



Department of Energy

Office of Science

ORNL Site Office
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Oak Ridge, Tennessee 37831-6269

June 30, 2023

Mr. Vojin Janjic, Manager
Tennessee Department of Environment and Conservation
Division of Water Resources
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

Dear Mr. Janjic:

OAK RIDGE NATIONAL LABORATORY (ORNL) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TN0002941 RENEWAL APPLICATION

The purpose of this correspondence is to submit the ORNL NPDES Permit Application. This application is submitted to meet the permit and statutory requirement to reapply no later than 180 days prior to the permit expiration date. An electronic file of the signed application is available at the link below. The Department of Energy looks forward to collaboration with you and your staff in the development of the new permit for ORNL.

If there are any questions or additional information required, please contact Walt Doty at (865) 576-7321.

Sincerely,

A handwritten signature in blue ink, appearing to read "Johnny O. Moore".

Johnny O. Moore, Manager
ORNL Site Office

Enclosure

cc w/enclosure:

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**United States Department of Energy
Oak Ridge National Laboratory
National Pollutant Discharge Elimination System
Permit Renewal Application
for
Wastewater, Non-process Wastewater, Storm Water
NPDES Permit No. TN0002941**

Prepared—May 2023

**Prepared by:
Environmental Protection Services Division
Oak Ridge National Laboratory
Oak Ridge, Tennessee
Managed by UT-Battelle, LLC.
for the U.S. Department of Energy
contract DE-AC05-00OR22725**

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Acronyms

AEA	Atomic Energy Act
AEC	Atomic Energy Commission
AOC	Areas of Concern
ARAP	Aquatic Resource Alteration Permit
AWQC	aquatic water quality criteria
Bdwn	Blowdown
BC	Bearden Creek
BMP	best management practice
BOD	biochemical oxygen demand
CAA	Clean Air Act
CCC	criterion continuous concentration
CCS	chlorine control strategy
CCTV	closed-circuit television
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CH	Contact-Handled
CMC	criterion maximum concentration
COD	chemical oxygen demand
Cond	condensate
Cs ¹³⁷	Cesium 137
CT	cooling tower
Cu	Copper
CWA	Clean Water Act
D&D	Decontamination and Demolition
Deg	degree
DMF	dual media filters
DMRs	Discharge Monitoring Reports
DOE	United States Department of Energy
DSWM	Division of Solid Waste Management
DWR	Division of Water Resources
ECR	Environmental Compliance Representative
EGCR	Experimental gas-cooled reactor
EISA	Energy Independence and Security Act
ELG	Effluent Limit Guideline
EPA	United States Environmental Protection Agency
EPO	environmental protection officer
EPSC	erosion prevention and sedimentation control
FCK	First Creek kilometer
FFA	Federal Facility Agreement
FFK	Fifth Creek kilometer
GAC	granular activated carbon filters
GIS	Geographical Information System
gpm	gallons per minute
H ³	Tritium
HMMP	Hazardous Materials Management Program
Hp	horsepower
HVAC	heating, ventilating, and air-conditioning
Irrigatn	irrigation
kg/day	kilograms per day
K-25	Gaseous Diffusion Plant (now called East Tennessee Technology Park/ETTP)

LLW	Low-Level Waste
LLLW	low-level liquid waste
LSS	laboratory shift superintendent
MEK	Melton Branch kilometer
MGD	million gallons per day
mg/L	milligrams per liter
Mod	modification
mS/cm	milliSiemens per centimeter
MVST	Melton Valley Storage Tanks
N/A	not applicable
NAICS	North American Industrial Classification System
NEPA	National Environmental Policy Act
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NHD	National Hydrologic Dataset
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NTRC	National Transportation Research Center
NTU	nephelometric turbidity units
NWT	Northwest Tributary
OF	outfall
OLCF	ORNL Leadership Computing Facility
OREM	DOE Oak Ridge Office of Environmental Management
ORNL	Oak Ridge National Laboratory
ORR	Oak Ridge Reservation
ORPS	Occurrence Reporting and Processing System
OTCW	once thru cooling water
PCBs	polychlorinated biphenyls
PM	Preventative Maintenance
PWTC	Process Waste Treatment Complex
RCRA	Resource Conservation and Recovery Act
RAs	Remedial Actions
RH	remote-handled
RFID	radio frequency identification
RO	reverse osmosis
ROD	Record of Decision
SDS	Safety Data Sheets
SIC	Standard Industrial Classification
SIPRC	Stable Isotope Production and Research Center
SLLW	Solid Low-Level Waste
SME	Subject matter expert
SOP	Standard Operating Procedure
SPCC	Spill Prevention, Control, and Countermeasure
SPMDs	semi-permeable membrane devices
SPP	Strategic Partnership Projects
SSTM	sufficiently sensitive test methods
Si ⁹⁰	Strontium 90
StdUnit	Standard Unit
STI	Steel Tank Institute
STP	Sewage Treatment Plant
STS	Second Target Station
SWMU	Solid Waste Management Unit
SWP3	storm water pollution prevention plan

TDEC	Tennessee Department of Environment and Conservation
TN	Tennessee
TN-IPC	Tennessee Invasive Plant Council
TN HW	Tennessee Hazardous Waste Corrective Action Permit
TOC	total organic carbon
TRC	total residual chlorine
TRO	total residual oxidant
TRC	Translational Research Capability
TRU	transuranic waste
TSS	total suspended solids
TWPC	Transuranic Waste Processing Center
TWRA	Tennessee Wildlife Resources Agency
TWRF	Transuranic Waste Remediation Facility
UCOR	United Cleanup Oak Ridge
US	United States of America
UT-B	UT-Battelle, LLC
UV	Ultraviolet
VOCs	Volatile organic compounds
WAC	Waste Acceptance Criteria
WCK	White Oak Creek kilometer
WET	whole effluent toxicity
WOC	White Oak Creek
WOL	White Oak Lake
WQC	water quality criteria/TN
WQPP	Water Quality Protection Plan
WWTU	wastewater treatment unit
X-01	Outfall number for the STP
X-10	original ORNL site name
X-12	Outfall number of the PWTC
Y-12	Y-12 National Security Complex
7500RB	7500 Road Bridge

Executive Summary

ORNL History

The Oak Ridge National Laboratory (ORNL) is the largest science and energy national laboratory in the United States Department of Energy (DOE) system. ORNL is one of three DOE facilities that compose the 34,434-acre Oak Ridge Reservation (ORR) in Anderson and Roane Counties, Tennessee. The ORR, including ORNL, lies in the valley and ridge physiographic region of East Tennessee. ORNL occupies approximately 4,400 acres in Bethel and Melton Valleys and on Chestnut Ridge, with the main campus area occupying approximately 1,100 acres. ORNL is situated on portions of the secured federal ORR in the Clinch River drainage basin.

Originally, Clinton National Laboratory (then named X-10 and now named ORNL) was operated in concert with two other facilities, K-25 and Y-12, the three of which comprised the Clinton Engineer Works (current day ORR). These three facilities on the ORR were originally built during World War II as part of the Manhattan Project. Formerly code-named X-10, ORNL was built in 1943 and its research centered around the Graphite Reactor. Following World War II, the United States (US) Atomic Energy Commission (AEC) was formed and management of the ORR, including the X-10/ORNL installation, began to be contracted to private companies and the work being done at all three sites became more independent of one another, each having separate individual AEC missions. In 1948 the X-10 site formally became named “Oak Ridge National Laboratory, or ORNL.” From an early focus on chemical technology and reactor development, ORNL’s research and development broadened to include programs supporting AEC, the Energy Research and Development Administration, then later DOE missions in scientific discovery and innovation, clean energy, and nuclear security.

Today, ORNL has grown to be the largest DOE Office of Science multidisciplinary science and energy laboratory in the US, capable of advanced research in a wide variety of scientific disciplines with the ability to conduct research in 23 of DOE’s 24 core capabilities. ORNL is an international leader in a wide range of areas that support the DOE mission. ORNL employs over 6,000 staff, and the laboratory’s extensive capabilities in scientific discovery and innovation are applied to the delivery of mission outcomes for DOE. ORNL researchers are focused on conducting research in biology and the environment, materials, clean energy, national security, fusion and fission, neutron science, isotopes, and supercomputing. ORNL is world renowned for its scientific discoveries and technical breakthroughs needed to realize solutions in energy and national security and providing economic benefit to the nation.

DOE ORNL NPDES Permit

The DOE ORNL NPDES permit regulates industrial wastewater, sanitary wastewater, non-process wastewater, and stormwater discharges into the environment from ORNL for those constituents not already regulated by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) or the Federal Atomic Energy Act (AEA). Receiving waters for the NPDES permit discharges are White Oak Creek, Northwest Tributary, First Creek, Fifth Creek, Melton Branch, Clinch River and other unnamed tributaries. DOE has two wastewater treatment facilities (the Sanitary Treatment Plant/X01 and the Process Waste Treatment Complex/X12), in addition to seventy (70) non-process wastewater outfalls, and one-hundred and thirty-two (132) stormwater outfalls that are located throughout ORNL that are included in this NPDES permit application. These facilities and their corresponding permit

applications are described in more detail and are included in the following sections of this permit application.

The last DOE NPDES permit for ORNL became effective on June 1, 2019, with an expiration date of December 31, 2023. The permit was issued by the Tennessee Department of Environment and Conservation (TDEC) for a 5-year period. However, this permit was appealed on May 30, 2019, and a revised permit draft was submitted for public comment in June 2021. The NPDES permit modification to resolve this 2019 permit appeal was submitted to DOE on December 15, 2022. The December 2022 Permit Modification was appealed on January 13, 2023. TDEC then submitted the February 24, 2023, NPDES Minor Modification of the permit to resolve the appeal, which was appealed again by DOE on March 24, 2023. Within this NPDES permitting cycle (2019 – 2023), a NPDES Permit Application was also submitted by DOE on December 21, 2020, for the design and construction of a new wastewater treatment plant, called the Sewage Treatment Plant Modernization Project. Since that time, DOE has been closely working with the TDEC Division of Water Resources (DWR) Engineering Department throughout the design/construction process by following TDEC's Design Criteria for Sewage Works Guidance, and by obtaining TDEC's required approvals at different phases in the planning, design, and construction process. Construction of the new sewage treatment plant (STP) is on-going and is expected to be completed in 2024.

In accordance with TDEC Rules 0400-04-05-.05 and 40 Code of Federal Regulations (CFR) 122.21(d), this DOE ORNL NPDES permit renewal application is being submitted by DOE to the TDEC DWR.

Chapter 1 – Introduction

DOE's ORNL NPDES Permit No. TN0002941 regulates the discharge of industrial wastewater, sanitary wastewater, non-process wastewater, and storm water runoff from the developed areas of the DOE ORNL site. Receiving waters for the discharges being permitted under this application are White Oak Creek, Northwest Tributary, First Creek, Fifth Creek, Melton Branch, Clinch River, and other unnamed tributaries. The DOE ORNL is in the Lower Clinch River watershed.

The current NPDES Permit TN 0002941 for DOE's ORNL became effective on June 1, 2019, and then was modified on December 15, 2022, and then modified again on February 24, 2023 (though appealed on March 24, 2023) and expires on December 31, 2023. In accordance with TDEC Rule 0400-40-05 and 40 CFR 122.21(d), this NPDES permit application is being submitted by the permittee to the TDEC Division of Water Resources to renew NPDES Permit TN 0002941. This application meets the requirements of Part II.A.1 of the General Provisions, Duty to Reapply, of the current permit, and is consistent with the General Regulations (0400-40-1) of the Tennessee Water Quality Control Board. This permit renewal application contains narrative information on the following:

- Executive Summary
- Chapter 2 - NPDES Permit History at ORNL
- Chapter 3 – Water-Related Monitoring Programs at ORNL
- General Descriptions – EPA Form 1, EPA Form 2C, EPA Form 2E, and EPA Form 2F

The **TDEC Form CN-1090 – Permit Contact Information** is also attached immediately following this chapter. This form lists the official permit contact, permit billing address, facility location, and the official authorized for permit reporting. Along with the TDEC form, a **Form Certification Signature Page** is also included immediately following this chapter, which includes signatures pertaining to each permit section.

In addition, this application contains analytical data for the discharge of treated sanitary wastewater, treated industrial wastewater, non-process wastewater, and storm water from ORNL. These data are presented on standard United States Environmental Protection Agency (EPA) forms that are required to be submitted as part of an application for an NPDES permit. The following EPA forms are included in this document:

- EPA Application Form 1 - General Information NPDES Permitting Program (1 form)
- EPA Application Form 2C – Existing Manufacturing, Commercial, Mining, and Silvicultural Operations NPDES Permitting Program (2 forms)
- EPA Application Form 2E – Manufacturing, Commercial, Mining, and Silvicultural Facilities which Discharge Non-process Wastewater NPDES Permitting Program (70 forms)
- EPA Application Form 2F - Stormwater Discharges Associated with Industrial Activity NPDES Permitting Program (8 forms)

In addition to the information outlined above, supplemental information describing approaches taken in planning and preparing this application will also be included in each section of the application where appropriate.

This NPDES permit application includes treated sanitary and treated industrial wastewater, non-process wastewater, and stormwater discharges that discharge to different outfalls that require different NPDES permit application forms. Therefore, for reference a summary table of the ORNL “active” outfalls needing an NPDES permit and their corresponding NPDES permit application forms that are included in this permit application is provided for reference in **Appendix A Table A-1 – Outfall Summary & Corresponding Permit Forms**. Also, in conformance with TDEC’s Antidegradation regulations, DOE has included an Antidegradation Statement for those outfalls that are “new” and have “increased” flow that are expected to be active, and it is provided in **Appendix B – ORNL Antidegradation Statement**. In addition to the outfalls listed in **Appendix A Table A-1**, there are several other outfalls located at ORNL that discharge from areas under CERCLA remediation control only, which is a separate regulatory authority governing legacy environmental cleanup on-site. Therefore, those outfalls are designated “CERCLA Only Outfalls” and are *not permitted or regulated* under the NPDES permit program and they are listed for reference only in **Appendix C Table C-1 - CERCLA Outfalls**. Finally, there are also many other outfalls located on-site for which NPDES permit application *are not* being submitted. These outfalls and the corresponding reasons that applications are no longer being submitted are included in **Appendix D Table D-1 – Outfalls Not Needing a NPDES Permit**.



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES

Water-Based Systems
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, TN 37243-1102

PERMIT CONTACT INFORMATION

Please complete all sections. If one person serves multiple functions, please repeat this information in each section.

PERMIT NUMBER: TN0002941 DATE: June 15, 2023
PERMITTED FACILITY: Oak Ridge National Laboratory COUNTY: Roane

OFFICIAL PERMIT CONTACT:

(The permit signatory authority, e.g. responsible corporate officer, principle executive officer or ranking elected official)

Official Contact: Johnny O. Moore	Title or Position: ORNL Site Manager		
Mailing Address: P.O. Box 2008	City: Oak Ridge	State: TN	Zip: 37831-6269
Phone number(s): 865-576-3536	E-mail: moorejo@ornl.gov		

PERMIT BILLING ADDRESS (where invoices should be sent):

Billing Contact: David Skipper	Title or Position: Director/Environmental Protection Services Division		
Mailing Address: P.O. Box 2008	City: Oak Ridge	State: TN	Zip: 37831-6395
Phone number(s): 865-576-5748	E-mail: skipperdd@ornl.gov		

FACILITY LOCATION (actual location of permit site and local contact for site activity):

Facility Location Contact: Thomas W. Doty IV	Title or Position: Physical Scientist		
Facility Location (physical street address): 1 Bethel Valley Road	City: Oak Ridge	State: TN	Zip: 37831-6269
Phone number(s): 865-576-7321	E-mail: dotytw@ornl.gov		

Alternate Contact (if desired):	Title or Position:		
Mailing Address:	City:	State:	Zip:
Phone number(s):	E-mail:		

FACILITY REPORTING (Discharge Monitoring Report (DMR) or other reporting):

Cognizant Official authorized for permit reporting: Wesley Goddard	Title or Position: CWA Team Leader		
Mailing Address: P.O. Box 2008	City: Oak Ridge	State: TN	Zip: 37831-6395
Phone number(s): 865-576-5749	E-mail: goddardwd@ornl.gov		
Fax number for reporting: 865-576-6196	Does the facility have interest in starting electronic DMR reporting? Yes No Yes		

**U.S. Department of Energy Oak Ridge National Laboratory
2023 National Pollutant Discharge Elimination System Permit Application EPA
Identification No. TN0002941**

Certification Sheet

The following certification applies, where applicable, to the attached application forms.

Form 1 Chapter 4

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

Forms 2C Chapter 5

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

Forms 2E Chapter 6

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

Forms 2F Chapter 7

“I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of non-stormwater discharges. Moreover, I certify that the outfalls identified as having non-stormwater discharges are described in either an accompanying NPDES Form 2C, 2D, or 2E application.”

Forms 2F Chapter 7


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

Johnny O. Moore

U.S. Department of Energy, ORNL Site Office
Manager

Name (print or type first and last name)

Official Title



Date: 2023.06.30 08:24:58 -04'00'

Signature

Date Signed

Chapter 2 – NPDES Permit History at ORNL

History of the NPDES Permit at ORNL

ORNL is a DOE research facility located in Oak Ridge, Tennessee that discharges treated wastewaters and some un-treated non-process wastewaters and stormwaters to several bodies of surface water, therefore, is required to have a NPDES permit. DOE was issued its first NPDES permit for ORNL on February 15, 1975, by the EPA following EPA's revision and reauthorization of the Water Pollution Control Act/Clean Water Act in 1972. This permit included covered discharges of four outfalls, one of which was the ORNL STP. This permit established technology-based effluent limitations for these outfalls.

The EPA granted the state of Tennessee primacy for administration of the NPDES permitting program on December 28, 1977, with the understanding that EPA would continue to administer permits issued prior to this date. However, several years later the DOE ORNL NPDES permit was reissued by EPA in 1986. This permit was issued to DOE at the time when EPA began developing more comprehensive permits. The 1986 DOE ORNL NPDES permit covered approximately 150 individual outfalls, including the STP, Coal Yard Runoff Treatment Facility, Process Waste Treatment Plant, and numerous other outfalls categorized based on their known constituents (e.g., storm water, cooling water, process wastewaters from site operations, or process wastewaters from research and development activities). The permit included technology-based, numeric effluent limits for most of the individual outfalls identified in the permit based on effluent characteristics and toxicity monitoring for the wastewater treatment facilities. The 1986 NPDES permit also included a compliance schedule which required: the elimination of a few outfalls that were found to discharge effluent constituents of concern, such as those from a handful of process-waste settling ponds on-site; the rerouting several of these ponds into a new wastewater treatment facility required to be constructed by 1990; requirements for storm-water-pollution-prevention; monitoring biological status; monitoring of mercury and polychlorinated biphenyls (PCBs); and a compliance schedule of projects, including construction of a new wastewater treatment facility now known as the Process Waste Treatment Complex (PWTC) was to begin in 1990. In March 1990, TDEC issued DOE a modified ORNL NPDES permit which included ORNL's first numeric, water-quality based effluent limits based on EPA's recently developed water quality criteria, which reflected the trend toward considering the effects of industrial discharges on the quality of the receiving streams.

The DOE ORNL NPDES permit was next renewed by TDEC in December 1996. The renewal acknowledged the extensive CERCLA remedial actions that were planned or being implemented at ORNL and addressed the distinction between pollutants regulated under the CWA versus legacy pollutants appropriately regulated under CERCLA. Discharges of chlorinated water were strictly limited based on water quality criteria and were required to be assessed under a chlorine control strategy. This was the first permit to include EPA's stormwater requirements and the development of a stormwater pollution prevention plan (SWP3) was required to assess the impact of storm water runoff from activities at the ORNL facility to receiving streams. In 1997, DOE appealed several permit conditions of the 1996 NPDES permit, including numeric effluent limits on mercury and selenium. The permit appeal was never resolved, and the permit expired unchanged. DOE submitted the application for renewal of the ORNL NPDES permit within the required 180 days of the expiration date of the permit in 2001. DOE operated under the expired 1996 permit until 2008. Around this same time there was a separate NPDES permit

issued to DOE for the Spallation Neutron Source (SNS) project outfalls also located on-site at ORNL. However, this permit was later combined in 2008 with the primary DOE NPDES permit at ORNL.

In July 2008, the DOE ORNL NPDES permit was reissued by TDEC and included the new SNS outfalls. While the 2008 NPDES permit contained many similar elements to the previous version, it also included a new provision for a Water Quality Protection Plan (WQPP), which was a new collaborative program concept developed between DOE and TDEC. The WQPP included dynamic requirements for monitoring and investigation intended to best-determine ORNL's most significant sources of aquatic pollutants and appropriate mitigation methods. Two important guiding principles were incorporated into ORNL's WQPP: (1) adaptive management and (2) the EPA Stressor Identification Process. The WQPP allowed DOE to integrate and build on the findings of the monitoring efforts of the CWA NPDES and CERCLA programs during the previous permit cycles in an effort to gain a more complete, consolidated information base, and to help identify sources of contaminants, as well as to mitigate the presence of these contaminants collaboratively with TDEC.

A few years later, TDEC issued a modification of the 2008 permit in February 2010 that included a new outfall (#585). This DOE ORNL NPDES permit was set to expire in July 2013. The DOE submitted an application for renewal of the ORNL permit within the required 180 days of the expiration date of the permit in 2013. The DOE ORNL NPDES permit was next reissued by TDEC in March 2014. This permit was quite similar in content to the 2010 revision of the permit as most NPDES-based programs including effluent monitoring and WQPP requirements were to continue as they were. A permit modification was submitted to DOE by TDEC in April 2015 which included two new outfalls and was set to expire on October 31, 2018. Before the permit expired, DOE requested a change to the disinfection processes at the STP to peracetic acid (PAA) and was issued a permit modification in October 2018. Also in 2018, DOE applied for renewal of the ORNL NPDES permit within the required 180 days of the expiration date of the permit. TDEC then reissued the DOE ORNL NPDES permit in May 2019. On May 30, 2019, DOE appealed several permit conditions, primarily those related to the regulation of CERCLA legacy and radiological pollutants (AEA). This resulted in TDEC's issuance of a modified NPDES permit on December 15, 2022, that is set to expire December 31, 2023. Several conditions in the permit were appealed on January 13, 2023. Therefore, a permit modification was issued to DOE on February 24, 2023. DOE appealed the permit modification again on March 24, 2023, and is waiting on resolution of the permit with TDEC.

Thousands of samples and field readings are collected annually as part of the DOE ORNL NPDES permit programs required under the current NPDES permit. The information and data generated under the industrial wastewater, sanitary wastewater, non-process wastewater, and stormwater investigative programs support this NPDES permit renewal application. Since the DOE ORNL NPDES permit became effective on June 1, 2019, the ORNL has maintained a > 99% compliance rate.

ORNL - CERCLA and AEA

The mission-critical work on the ORR since the 1940s through today has resulted in releases of pollutants into the environment. Some of these pollutants include radionuclides, volatile solvents, and metals. Since the 1970s, state and federal environmental regulations, and numerous site-wide environmental permits have monitored and controlled/limited these releases into the environment. There can be overlapping regulations of wastewater discharges at times, which pose a unique challenge for regulatory CWA

NPDES permitting. Therefore, following paragraphs are meant to help to clarify the distinction between them.

In 1989, the ORR (including ORNL) was placed on the EPA National Priorities List (NPL) that is part of the legacy contamination cleanup program being conducted in accordance with CERCLA. CERCLA regulates and controls potential remediation projects associated with releases or potential releases of legacy hazardous substances. In 1992, the ORR Federal Facility Agreement (FFA) was executed between EPA, TDEC, and DOE and established the framework and schedule for developing, implementing, and monitoring CERCLA remedial actions (RAs) to address legacy contamination on the ORR. The FFA governs the cleanup of the ORR NPL site and, through FFA protocols and agreements, has developed and prioritized potential remediation projects and the scheduling thereof. Therefore, the CERCLA and the FFA specifically govern the remediation and removal of legacy contamination at the ORR. CERCLA states that "[n]o Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely onsite, where such remedial action is selected and carried out in compliance with this [CERCLA cleanup standards]." 42 USC § 9621(e)(1). Therefore, the imposition of permit limits for CERCLA discharges from CERCLA RA projects is not appropriate. However, DOE's CWA NPDES permit WQPP adaptive management approach to monitoring showcases DOE's willingness to investigate and mitigate these contaminants collaboratively with TDEC, within competing regulatory frameworks.

While the CERCLA remediation efforts of legacy pollutants are on-going at ORNL, so are the current DOE mission-critical research and operations of the laboratory, which pose unique regulatory challenges. TDEC has acknowledged this directly in the most recent December 15, 2022, NPDES permit rationale which stated, "The complicated intersection of current activities and legacy pollutants at the site has always presented itself as a challenge for all parties." As a part of current day DOE missions at ORNL, there can be discharges of radioactive materials into the environment. However, the AEA vests sole regulatory authority to DOE over source, special nuclear, and by product material discharges. The AEA delegates authority to DOE to self-regulate radioactive materials on the ORR, including ORNL. Therefore, DOE Order 458.1, Radiation Protection of the Public and the Environment, provides the regulatory requirements for the release and monitoring of radioactive materials from DOE facilities and activities. The AEA precludes other federal, state, and local agencies from regulating radioactive discharges from DOE activities at ORNL and elsewhere on the ORR.

Chapter 3 – Water-Related Monitoring Programs at ORNL

There is a significant amount of water-related monitoring and surveillance done throughout the ORR, and specifically at ORNL. Surface water monitoring, stormwater monitoring, treatment plant effluent monitoring, biological monitoring, and groundwater monitoring are the main types of water related monitoring that take place at ORNL at different locations on campus. Some water monitoring is specific to the CWA NPDES permit requirements, and others are driven by other regulations, on-site research and investigations, required by various DOE directives/orders, or required by CERCLA RAs legacy pollutant monitoring/remediation efforts that are on-going. At times the water monitoring/analysis done under these programs may have separate and/or different requirements than the other monitoring done as a part of the CWA NPDES permit and/or the NPDES permit renewal application. Therefore, care should be taken prior to utilizing the results. A summary of the water monitoring required by the DOE ORNL CWA NPDES Permit is listed below.

CWA NPDES Permit Water-Related Monitoring

The water-related monitoring that takes place on-site at ORNL specific to the DOE NPDES Permit (No. TN0002941) requirements are located not only at the two wastewater treatment facilities located on-site, but at many other locations/outfalls located throughout campus and more specifically include the following:

- STP and PWTC discharge monitoring of various pollutants included in monthly TDEC Discharge Monitoring Report (DMR) submissions as required by the NPDES permit.
- Annual WQPP water-related monitoring includes year-long monitoring with some data sets submitted monthly or quarterly in the TDEC DMR and other data summarized in the annual WQPP report. The WQPP is a collaboration between TDEC and DOE that includes special investigations that are dynamic and are more directly focused on the end goal of mitigating stream impairments. The WQPP incorporates and aligns the goals of several plans established under previous permit cycles: Biological Monitoring and Abatement Program, Chlorine Control Strategy, SWP3, the non-storm-water best management practices plan, the radiological monitoring plan, the PCB monitoring plan, and the mercury monitoring plan. The WQPP provides flexibility to integrate and build on the findings of the monitoring efforts of NPDES and CERCLA programs during the previous permit cycles in an effort to gain a more complete, consolidated information base. The WQPP helps facilitate the gathering of information regarding the presence and sources of various pollutants on the ORNL site and their effects on water quality and in-stream biota. The WQPP was designed to provide an effective level of ongoing assessment and to be as efficient, insightful, adaptive, and reactive as possible. The information gained from the dynamic WQPP provides a solid overall assessment of the status of ORNL's receiving-stream watersheds and helps strengthen efforts to protect and restore those watersheds. The WQPP has a decreased emphasis on monitoring for the sake of meeting reporting requirements and an increased emphasis on interpreting results, finding sources of water quality impairment, and identifying opportunities to implement management actions that have real and measurable effects. Though some of the water monitoring activities contained in the WQPP are long term monitoring efforts (biological community and habitat monitoring, bioaccumulation monitoring, etc.), other

components for the WQPP are meant to be adaptive and investigatory in nature, so as research/DOE missions at ORNL change so may the investigations being done as a part of the WQPP. The water monitoring locations change as more information is learned through the WQPP process. Any planned WQPP investigation changes are included in the WQPP from the previous year. Please note that the mercury and PCB stormwater monitoring/data and results that are captured as a part of the WQPP requirements and submission is referenced on the NPDES permit application 2F forms. The most recent WQPP investigations and corresponding data/results for these parameters do not conform to the NPDES permit application 2F forms requirements, so are only referenced on the NPDES permit application and can be found in the most recent WQPP submission. Currently, the DOE ORNL WQPP water-related monitoring includes the following:

- Mercury monitoring (CERCLA legacy)
 - PCB monitoring (CERCLA legacy)
 - Biological monitoring (biological communities/bioaccumulation - in-stream bioassessments)
 - Cooling Tower monitoring (temperature and metals)
 - Chlorine control monitoring
 - Nutrient monitoring
 - Stormwater monitoring – mercury (CERCLA legacy)
 - Fish population studies
 - Background stream monitoring (also included here for ease of reference in **Appendix E – Table E-1 Background Stream Data**)
- NPDES permit application – various monitoring required by the NPDES permit application renewal every 5 years.
 - Nutrient study and short-term nutrient monitoring – study required/submitted by 2019 NPDES permit, in addition to monitoring done to support the new STP (short term duration)
 - Biological toxicity monitoring – required by NPDES permit and submitted to TDEC annually with TDEC DMR submission.


Chapter 4 – EPA Application Form 1

The DOE ORNL is considered a major industrial facility wastewater discharger, and therefore the General Information EPA NPDES Application Form 1 has been included in this application package. Information that requires additional explanation, or would not fit on the form, has been supplied in attachments that are referenced below.

- ***EPA Form 1 Section 6 Existing Environmental Permits*** - This is a comprehensive list of ORNL's environmental permits and can be found in in **Appendix F - Table F-1 Existing Environmental Permits**
- ***EPA Form 1 Section 7 Map*** - A topographic map of the area is located in **Appendix G – Topographic Map** for reference.

Please find EPA Form 1 attached immediately following this section.

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory	Form Approved 03/05/19 OMB No. 2040-0004
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Form 1 NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater GENERAL INFORMATION
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SECTION 1. ACTIVITIES REQUIRING AN NPDES PERMIT (40 CFR 122.21(f) and (f)(1))

Activities Requiring an NPDES Permit	1.1	Applicants <i>Not Required</i> to Submit Form 1	
	1.1.1	Is the facility a new or existing publicly owned treatment works ? If yes, STOP. Do NOT complete Form 1. Complete Form 2A.	1.1.2 Is the facility a new or existing treatment works treating domestic sewage ? If yes, STOP. Do NOT complete Form 1. Complete Form 2S.
	1.2	Applicants <i>Required</i> to Submit Form 1	
	1.2.1	Is the facility a concentrated animal feeding operation or a concentrated aquatic animal production facility ? <input type="checkbox"/> Yes → Complete Form 1 <input checked="" type="checkbox"/> No and Form 2B.	1.2.2 Is the facility an existing manufacturing, commercial, mining, or silvicultural facility that is currently discharging process wastewater ? <input checked="" type="checkbox"/> Yes → Complete Form 1 <input type="checkbox"/> No and Form 2C.
	1.2.3	Is the facility a new manufacturing, commercial, mining, or silvicultural facility that has not yet commenced to discharge ? <input type="checkbox"/> Yes → Complete Form 1 <input checked="" type="checkbox"/> No and Form 2D.	1.2.4 Is the facility a new or existing manufacturing, commercial, mining, or silvicultural facility that discharges only nonprocess wastewater ? <input checked="" type="checkbox"/> Yes → Complete Form 1 <input type="checkbox"/> No and Form 2E.
	1.2.5	Is the facility a new or existing facility whose discharge is composed entirely of stormwater associated with industrial activity or whose discharge is composed of both stormwater and non-stormwater ? <input checked="" type="checkbox"/> Yes → Complete Form 1 <input type="checkbox"/> No and Form 2F unless exempted by 40 CFR 122.26(b)(14)(x) or (b)(15).	

SECTION 2. NAME, MAILING ADDRESS, AND LOCATION (40 CFR 122.21(f)(2))

Name, Mailing Address, and Location	2.1	Facility Name		
		Oak Ridge National Laboratory		
	2.2	EPA Identification Number		
		TN1890090003		
	2.3	Facility Contact		
		Name (first and last) Johnny O. Moore	Title ORNL Site Office Manager	Phone number (865) 576-3536
	Email address moorejo@ornl.gov			
2.4	Facility Mailing Address			
	Street or P.O. box P.O. Box 2008			
	City or town Oak Ridge	State TN	ZIP code 37831	

Name, Mailing Address, and Location Continued	2.5	Facility Location		
	Street, route number, or other specific identifier 1 Bethel Valley Road			
	County name Roane		County code (if known) 145	
	City or town Oak Ridge		State TN	ZIP code 37831

SECTION 3. SIC AND NAICS CODES (40 CFR 122.21(f)(3))

SIC and NAICS Codes	3.1	SIC Code(s)		Description (optional)
		8733		Noncommercial Research Organization
	3.2	NAICS Code(s)		Description (optional)
		541715		Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)
		541713		Research and Development in Biotechnology (except Nanobiotechnology)
		541714		Research and Development in Nanotechnology

SECTION 4. OPERATOR INFORMATION (40 CFR 122.21(f)(4))

Operator Information	4.1	Name of Operator		
	United States Department of Energy			
	4.2	Is the name you listed in Item 4.1 also the owner? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
	4.3	Operator Status <input checked="" type="checkbox"/> Public—federal <input type="checkbox"/> Public—state <input type="checkbox"/> Other public (specify) _____ <input type="checkbox"/> Private <input type="checkbox"/> Other (specify) _____		
4.4	Phone Number of Operator			
	(865) 576-3536			

Operator Information Continued	4.5	Operator Address		
	Street or P.O. Box Post Office Box 2008			
	City or town Oak Ridge		State TN	ZIP code 37831
Email address of operator moorejo@ornl.gov				

SECTION 5. INDIAN LAND (40 CFR 122.21(f)(5))

Indian Land	5.1	Is the facility located on Indian Land? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
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SECTION 6. EXISTING ENVIRONMENTAL PERMITS (40 CFR 122.21(f)(6))

Existing Environmental Permits	6.1	Existing Environmental Permits (check all that apply and print or type the corresponding permit number for each)		
	<input checked="" type="checkbox"/>	NPDES (discharges to surface water) Appendix F attached	<input checked="" type="checkbox"/>	RCRA (hazardous wastes) Appendix F attached
	<input type="checkbox"/>	PSD (air emissions)	<input type="checkbox"/>	Nonattainment program (CAA)
	<input type="checkbox"/>	Ocean dumping (MPRSA)	<input type="checkbox"/>	Dredge or fill (CWA Section 404)
			<input type="checkbox"/>	UIC (underground injection of fluids)
			<input checked="" type="checkbox"/>	NESHAPs (CAA) Appendix F attached
			<input checked="" type="checkbox"/>	Other (specify) Appendix F attached

SECTION 7. MAP (40 CFR 122.21(f)(7))

Map	7.1	Have you attached a topographic map containing all required information to this application? (See instructions for specific requirements.) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> CAFO—Not Applicable (See requirements in Form 2B.)
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SECTION 8. NATURE OF BUSINESS (40 CFR 122.21(f)(8))

Nature of Business	8.1	Describe the nature of your business. The Oak Ridge National Laboratory (ORNL) is the largest Department of Energy (DOE) science and energy laboratory in the United States. ORNL was originally established in 1943 as a part of the Manhattan Project and continues to be the world's premier research institution today. ORNL researchers engage in diverse activities that support the DOE mission of ensuring America's security and prosperity by addressing its energy, environmental, and security challenges. ORNL researchers are focused on conducting research in biology and the environment, materials, clean energy, national security, fusion and fission, neutron science, isotopes, and supercomputing. ORNL is world renowned for its scientific discoveries and technical breakthroughs needed to realize solutions in energy and national security and providing economic benefit to the nation.
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SECTION 9. COOLING WATER INTAKE STRUCTURES (40 CFR 122.21(f)(9))

Cooling Water Intake Structures	9.1	Does your facility use cooling water? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 10.1.
	9.2	Identify the source of cooling water. (Note that facilities that use a cooling water intake structure as described at 40 CFR 125, Subparts I and J may have additional application requirements at 40 CFR 122.21(r). Consult with your NPDES permitting authority to determine what specific information needs to be submitted and when.) Cooling water intake supply water is from City of Oak Ridge Water Treatment Facility

SECTION 10. VARIANCE REQUESTS (40 CFR 122.21(f)(10))

Variance Requests	10.1	Do you intend to request or renew one or more of the variances authorized at 40 CFR 122.21(m)? (Check all that apply. Consult with your NPDES permitting authority to determine what information needs to be submitted and when.)
		<input type="checkbox"/> Fundamentally different factors (CWA Section 301(n)) <input type="checkbox"/> Water quality related effluent limitations (CWA Section 302(b)(2)) <input type="checkbox"/> Non-conventional pollutants (CWA Section 301(c) and (g)) <input type="checkbox"/> Thermal discharges (CWA Section 316(a)) <input checked="" type="checkbox"/> Not applicable

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SECTION 11. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	11.1	In Column 1 below, mark the sections of Form 1 that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.	
		Column 1	Column 2
	<input checked="" type="checkbox"/>	Section 1: Activities Requiring an NPDES Permit	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 2: Name, Mailing Address, and Location	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 3: SIC Codes	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 4: Operator Information	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 5: Indian Land	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 6: Existing Environmental Permits	<input checked="" type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 7: Map	<input checked="" type="checkbox"/> w/ topographic map <input checked="" type="checkbox"/> w/ additional attachments
	<input checked="" type="checkbox"/>	Section 8: Nature of Business	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 9: Cooling Water Intake Structures	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 10: Variance Requests	<input type="checkbox"/> w/ attachments
<input checked="" type="checkbox"/>	Section 11: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments	
11.2	Certification Statement		
	<i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i>		
	Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	
	Signature	Date signed	

Chapter 5 – EPA Form 2C Summary

National Pollutant Discharge Elimination System (NPDES) Permit No. TN0002941 regulates the discharge of industrial wastewater, sanitary wastewater, non-process wastewater, and storm water runoff from the 4,400-acre DOE ORNL site. The ultimate receiving water for the discharges is the Clinch River. White Oak Creek is the main receiving stream onsite within ORNL Campus. First Creek, Fifth Creek, the Northwest Tributary, and Melton Branch, in addition to several unnamed tributaries feed into White Oak Creek and then ultimately into the Clinch River. All of these receiving water bodies are located in the Lower Clinch River watershed. EPA Application Form 2C is required to be submitted for any existing facility that currently discharges process wastewaters.

ORNL has two (2) separate wastewater treatment facilities on-site: the STP and the PWTC. ORNL has included an EPA Form 2C for both wastewater treatment facilities (EPA Form 2C – STP/X01 and EPA Form 2C – PWTC/X12) immediately following this section. Both on-site wastewater treatment facilities are operated 24 hours per day 7 days a week. ORNL has been utilizing an internal Waste Acceptance Criteria (WAC) process (that has been on-going for over 30 years) which is used to determine which wastewaters are acceptable for treatment at which on-site wastewater treatment facility (or for what process treatment train at the PWTC) and to exclude wastewaters for on-site treatment that are unsuitable for treatment and discharge. As research and development operations at ORNL change over time, driven by different DOE missions, and as ORNL grows and expands as a result, these internal WAC processes are refined. ORNL research and development staff are trained regularly on these wastewater acceptance processes. The STP and the PWTC are both briefly discussed in more detail below.

STP– Outfall X01

The STP was originally designed to treat predominantly domestic sanitary wastewater generated onsite, though the STP also has the capability to treat some other biologically degradable wastewaters typically generated from research and development activities taking place at ORNL. The treated effluent from STP is discharged through Outfall - X01, which discharges into White Oak Creek (WOC). The current STP flow diagram and water balance, corresponding to the requirement in the *NPDES Permit Form 2C - Section 2 Line Drawing* of the permit application can be found in **Appendix H - Section 2 Line Drawing – STP**. Since 2020, ORNL has been working on the design and construction of a new STP and all required approvals have been provided by TDEC through the department's pre-design and design/construction permitting process. At this time, the new STP design is completed, and construction of the new STP is currently well underway and expected to be completed sometime in 2024. The details/data in this NPDES permit application apply to the existing STP since it may still be in operation during the next 5-year permit cycle. The new STP NPDES permit application was previously submitted to TDEC on December 21, 2020 and approved November 7, 2022 and then was incorporated in the modified permit in December 2022. It is the intent of DOE that this NPDES permit application will cover both the existing STP and the new STP.

PWTC – Outfall X12

The PWTC was designed to treat industrial process wastewaters of varying strength for a wide variety of contaminants. The treated effluent from PWTC is discharged through Outfall – X12, which discharges into WOC. The current PWTC flow diagram and water balance, corresponding to the requirement in the *NPDES Permit Form 2C Section 2 Line Drawing* of the permit application can be found in **Appendix I**

- **Section 2 Line Drawing – PWTC.** The PWTC has three (3) different treatment process trains that handle different compositions of wastewaters, which include radiological treatment/Building 3608, non-radiological treatment/Building 3608, and low-level waste (LLW) evaporator/Building 2531. The PWTC has the ability to divert the wastewater flows through different process trains depending on the expected contaminants in the wastewaters it is receiving. The PWTC treats wastewaters predominantly generated from on-going CERCLA legacy cleanup operations taking place on-site at ORNL and on the ORR, in addition to some process wastewaters from normal ORNL laboratory research and development activities that cannot be treated at the STP. The wastewaters typically treated at the PWTC contain heavy metals, wide variety/higher strength organics, and varying levels and types of radioactive constituents (note: most all of the heavy metals/radiological contaminants treated here are from legacy contamination currently regulated under CERCLA, and any newly generated radiological contaminants as a result of ORNL research and operations are self-regulated by DOE under the AEA). Currently, there are a handful of projects that are on-going at the PWTC for which Quarterly Report Updates are required by TDEC. These PWTC status updates to TDEC are expected to continue until project completion. The PWTC is a facility that is also able to treat some acceptable Resource Conservation and Recovery Act (RCRA) hazardous wastewaters. Due to overlapping regulations, facilities operating under CWA requirements are exempt from complying with certain RCRA requirements, due to the Permit By Rule, or Wastewater Treatment Unit exemption, which is discussed in more detail in **Appendix J – Permit By Rule.**

Additional Information

ORNL does not fall under a typical Effluent Limit Guideline (ELG) for either the STP or PWTC discharges, since it is a research and development DOE national laboratory, whose research processes change as DOE research missions change, etc. So, testing is not necessarily required for EPA Form 2C other than Table A for any of the contaminants listed. The EPA 2C Form does require an assessment of believed absent/believed present for the contaminants listed in tables B-E and Exhibit 2C-4. ORNL has developed an internal “believed absent/believed present” process for what parameters to test for in Tables B, C, D, E, and for those constituents listed in Exhibit 2C-4. ORNL conducted a very thorough and conservative analysis of available current and historical data for determining whether a contaminant was “believed absent” or “believed present” in either the STP or PWTC discharge. Each treatment facility was analyzed individually in this process, therefore if something is “believed present” at the PWTC it may not be “believed present” at the STP, etc. Please note that “believed present” having been indicated for a contaminant listed on EPA Form 2C Tables B – E and Exhibit 2C-4 does not necessarily mean the contaminant is ever present at a detectable concentration in the wastewater discharge; it may be that the STP or PWTC processes removes this contaminant entirely, it is diluted to below detection level prior to treatment, or the contaminant never actually entered the system, etc.

The data utilized in the completion of the EPA 2C Forms for both the STP and the PWTC were obtained from January 4, 2019, to February 1, 2023. In addition, the data reported on the 2C forms used consistent data qualifiers to those in the ORNL NPDES monthly discharge monitoring reports (DMRs): where >, <, and J (estimated value) are used. For some of the constituents on Table D or included on Exhibit 2C-4, ORNL does not have access to an analytical method which can measure its concentration. In these cases, and where a contaminant is believed to potentially be present in the discharge, no analytical data are provided on the form; instead, a summary of the reason it may be present in the discharge is noted on the form as allowed by the EPA Form 2C instructions. For the ORNL STP, instead of providing fecal

coliform concentration on Table C, data for E. Coli are provided, which is consistent with current ORNL NPDES permit requirements.

For sampling and analysis of volatile organic compounds at outfalls X01 and X12, consistent with permit instructions, at each location four (4) grab samples were collected at approximately equal intervals over a 24-hour period. Rather than instructing the analytical laboratory to manually composite the samples immediately prior to analysis, and then perform a single analysis for each location, ORNL elected to have each grab sample analyzed separately. This extra effort was taken to eliminate the possibility that organic compounds could be introduced to or eliminated from the samples during the sample compositing process, and to provide more information than the minimum required.

In addition, there were a few instances from evaluating sampling/analysis of data results of three (3) parameters listed on *EPA Form 2C Table B – Toxic Metals, Cyanide, Total Phenols, and Organic Toxic Pollutants* at both outfalls X01 and X12, that due to analysis of multiple test results from different laboratories using the same sufficiently sensitive test method (SSTM), the value reported as the maximum concentration on the EPA 2C Form was undetected at a higher report level, when actually a lower detectable concentration of the parameter was measured. In these instances, the maximum less than detected concentrations are reported on the EPA 2C Forms, and then are also listed below along with the lower detectable data for those parameters. See **Table 5-1 – Summary of Maximum Detected Data** below for more details. The values provided in the table below present a more accurate picture of the treatment plant effluent characteristics for these few parameters; being that there is a vast difference in report levels at different laboratories using the same approved SSTM EPA method.

Table 5-1 – Summary of Maximum Detected Data

Location	Parameter	Reported Daily Maximum Concentration Table B (mg/L)	Daily Maximum Detected Concentration (mg/L)	Maximum Monthly Concentration (mg/L)	Long Term Average Concentration (mg/L)
X01	Cd	0.000379	0.000379	0.000379	0.000176
X01	Ni	<0.073	0.00162	0.00148	J 0.00114
X01	Tl	<0.0006	0.0000508	0.0000508	< 0.0000187
X12	Cd	<0.000782	0.0000388	0.0000388	< 0.0000308
X12	Ni	<0.073	0.0118	0.00412	< 0.00107
X12	Tl	<0.000831	0.0000238	0.0000238	< 0.0000133

NPDES Permit Form 2C Section 6. Improvements (40 CFR 122.21(g)(6))

The instructions in this section of the form say to list/describe compliance projects or any other projects/programs affecting your discharge. Therefore, please see **Appendix K - EPA Form 2C Section 6.2-6.3 Improvements** for more details regarding these form requirements for the STP/X01 and the PWTC/X12.

EPA Form 2C


STP/Outfall X01
&
PWTC/Outfall X12

EPA Identification Number
TN1890090003

NPDES Permit Number
TN0002941

Facility Name
Oak Ridge National Laboratory

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Form 2C NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater EXISTING MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURE OPERATIONS
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		X01	White Oak Creek	35 ° 55 ' 20.15 " N	84 ° 19 ' 3.86 " W

SECTION 2. LINE DRAWING (40 CFR 122.21(g)(2))

Line Drawing	2.1	Have you attached a line drawing to this application that shows the water flow through your facility with a water balance? (See instructions for drawing requirements. See Exhibit 2C-1 at end of instructions for example.) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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SECTION 3. AVERAGE FLOWS AND TREATMENT (40 CFR 122.21(g)(3))

Average Flows and Treatment	3.1	For each outfall identified under Item 1.1, provide average flow and treatment information. Add additional sheets if necessary.		
		Outfall Number X01		
		Operations Contributing to Flow		
		Operation	Average Flow	
		Primarily sanitary wastewaters, cooling water,	0.2	mgd
		infiltration/inflow of stormwater, and those wastewaters from		mgd
		research/development, and other operations that are		mgd
		compatible with biological treatment.		mgd
		Treatment Units		
		Description (include size, flow rate through each treatment unit, retention time, etc.)	Code from Table 2C-1	Final Disposal of Solid or Liquid Wastes Other Than by Discharge
		Aerated lagoons Grit removal	3B 1M	
		Bar screening Activated sludge	1T 3A	
	Sedimentation, flocculation, multimedia filtration Ozone disinfection	1U, 1G, 1Q 2G		
	Discharge to surface water Aerobic diaest. heat drvina. drvina beds	4A 5A. 5M. 5H	Offsite Landfill Sludge Disposal 5Q	

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Average Flows and Treatment Continued	3.1 cont.	**Outfall Number** _____			
		Operations Contributing to Flow			
		Operation	Average Flow		
					mgd
					mgd
					mgd
					mgd
		Treatment Units			
		Description (include size, flow rate through each treatment unit, retention time, etc.)	Code from Table 2C-1	Final Disposal of Solid or Liquid Wastes Other Than by Discharge	
		Outfall Number _____			
		Operations Contributing to Flow			
	Operation	Average Flow			
				mgd	
				mgd	
				mgd	
				mgd	
Treatment Units					
Description (include size, flow rate through each treatment unit, retention time, etc.)	Code from Table 2C-1	Final Disposal of Solid or Liquid Wastes Other Than by Discharge			
System Users	3.2	Are you applying for an NPDES permit to operate a privately owned treatment works? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.			
	3.3	Have you attached a list that identifies each user of the treatment works? <input type="checkbox"/> Yes <input type="checkbox"/> No			

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SECTION 4. INTERMITTENT FLOWS (40 CFR 122.21(g)(4))

Intermittent Flows	4.1	Except for storm runoff, leaks, or spills, are any discharges described in Sections 1 and 3 intermittent or seasonal? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
	4.2	Provide information on intermittent or seasonal flows for each applicable outfall. Attach additional pages, if necessary.						
		Outfall Number	Operation (list)	Frequency		Flow Rate		Duration
				Average Days/Week	Average Months/Year	Long-Term Average	Maximum Daily	
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
			days/week	months/year	mgd	mgd	days	
			days/week	months/year	mgd	mgd	days	

SECTION 5. PRODUCTION (40 CFR 122.21(g)(5))

Applicable ELGs	5.1	Do any effluent limitation guidelines (ELGs) promulgated by EPA under Section 304 of the CWA apply to your facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 6.				
	5.2	Provide the following information on applicable ELGs.				
		ELG Category	ELG Subcategory		Regulatory Citation	
Production-Based Limitations	5.3	Are any of the applicable ELGs expressed in terms of production (or other measure of operation)? <input type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 6.				
	5.4	Provide an actual measure of daily production expressed in terms and units of applicable ELGs.				
		Outfall Number	Operation, Product, or Material	Quantity per Day	Unit of Measure	

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SECTION 6. IMPROVEMENTS (40 CFR 122.21(g)(6))

Upgrades and Improvements	6.1	Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application?			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 6.3.			
	6.2	Briefly identify each applicable project in the table below.			
		Brief Identification and Description of Project	Affected Outfalls (list outfall number)	Source(s) of Discharge	Final Compliance Dates
				Required	Projected
		See Appendix K - Improvements			
	6.3	Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? <i>(optional item)</i>			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable			

SECTION 7. EFFLUENT AND INTAKE CHARACTERISTICS (40 CFR 122.21(g)(7))

Effluent and Intake Characteristics	See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.				
	Table A. Conventional and Non-Conventional Pollutants				
	7.1	Are you requesting a waiver from your NPDES permitting authority for one or more of the Table A pollutants for any of your outfalls?			
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.3.			
	7.2	If yes, indicate the applicable outfalls below. Attach waiver request and other required information to the application.			
		Outfall Number _____ Outfall Number _____ Outfall Number _____			
	7.3	Have you completed monitoring for all Table A pollutants at each of your outfalls for which a waiver has not been requested and attached the results to this application package?			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority for all pollutants at all outfalls.			
	Table B. Toxic Metals, Cyanide, Total Phenols, and Organic Toxic Pollutants				
	7.4	Do any of the facility's processes that contribute wastewater fall into one or more of the primary industry categories listed in Exhibit 2C-3? (See end of instructions for exhibit.)			
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.8.				
7.5	Have you checked "Testing Required" for all toxic metals, cyanide, and total phenols in Section 1 of Table B?				
	<input type="checkbox"/> Yes <input type="checkbox"/> No				
7.6	List the applicable primary industry categories and check the boxes indicating the required GC/MS fraction(s) identified in Exhibit 2C-3.				
	Primary Industry Category	Required GC/MS Fraction(s) (Check applicable boxes.)			
		<input type="checkbox"/> Volatile <input type="checkbox"/> Acid <input type="checkbox"/> Base/Neutral <input type="checkbox"/> Pesticide			
		<input type="checkbox"/> Volatile <input type="checkbox"/> Acid <input type="checkbox"/> Base/Neutral <input type="checkbox"/> Pesticide			
		<input type="checkbox"/> Volatile <input type="checkbox"/> Acid <input type="checkbox"/> Base/Neutral <input type="checkbox"/> Pesticide			

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Effluent and Intake Characteristics Continued	7.7	Have you checked "Testing Required" for all required pollutants in Sections 2 through 5 of Table B for each of the GC/MS fractions checked in Item 7.6? <input type="checkbox"/> Yes <input type="checkbox"/> No
	7.8	Have you checked "Believed Present" or "Believed Absent" for all pollutants listed in Sections 1 through 5 of Table B where testing is not required? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.9	Have you provided (1) quantitative data for those Section 1, Table B, pollutants for which you have indicated testing is required or (2) quantitative data or other required information for those Section 1, Table B, pollutants that you have indicated are "Believed Present" in your discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.10	Does the applicant qualify for a small business exemption under the criteria specified in the instructions? <input type="checkbox"/> Yes → Note that you qualify at the top of Table B, then SKIP to Item 7.12. <input checked="" type="checkbox"/> No
	7.11	Have you provided (1) quantitative data for those Sections 2 through 5, Table B, pollutants for which you have determined testing is required or (2) quantitative data or an explanation for those Sections 2 through 5, Table B, pollutants you have indicated are "Believed Present" in your discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Table C. Certain Conventional and Non-Conventional Pollutants	
	7.12	Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed on Table C for all outfalls? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.13	Have you completed Table C by providing (1) quantitative data for those pollutants that are limited either directly or indirectly in an ELG and/or (2) quantitative data or an explanation for those pollutants for which you have indicated "Believed Present"? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Table D. Certain Hazardous Substances and Asbestos	
	7.14	Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed in Table D for all outfalls? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.15	Have you completed Table D by (1) describing the reasons the applicable pollutants are expected to be discharged and (2) by providing quantitative data, if available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Table E. 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (2,3,7,8-TCDD)	
	7.16	Does the facility use or manufacture one or more of the 2,3,7,8-TCDD congeners listed in the instructions, or do you know or have reason to believe that TCDD is or may be present in the effluent? <input type="checkbox"/> Yes → Complete Table E. <input checked="" type="checkbox"/> No → SKIP to Section 8.
	7.17	Have you completed Table E by reporting <i>qualitative</i> data for TCDD? <input type="checkbox"/> Yes <input type="checkbox"/> No
SECTION 8. USED OR MANUFACTURED TOXICS (40 CFR 122.21(g)(9))		
Used or Manufactured Toxics	8.1	Is any pollutant listed in Table B a substance or a component of a substance used or manufactured at your facility as an intermediate or final product or byproduct? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 9.
	8.2	List the pollutants below.
	1. These pollutants are listed as "believed present" in Table B	4. 7.
	2.	5. 8.
3.	6. 9.	

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SECTION 9. BIOLOGICAL TOXICITY TESTS (40 CFR 122.21(g)(11))

Biological Toxicity Tests	9.1	Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made within the last three years on (1) any of your discharges or (2) on a receiving water in relation to your discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 10.		
	9.2	Identify the tests and their purposes below.		
		Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?
		IC25 Static Renewal 7 Day Chronic Ceriodaphnia and	NPDES Permit requirement	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		IC25 Static Renewal 7 Day Chronic Pimephalas promelas	NPDES Permit requirement - Required re-test	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	IC25 Static Renewal 7 Day Chronic Ceriodaphnia,	NPDES Permit requirement - See Attachments	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
				Date Submitted
				1/28/2020
				7/26/2020
				1/29/2021

SECTION 10. CONTRACT ANALYSES (40 CFR 122.21(g)(12))

Contract Analyses	10.1	Were any of the analyses reported in Section 7 performed by a contract laboratory or consulting firm? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 11.			
	10.2	Provide information for each contract laboratory or consulting firm below.			
			Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
		Name of laboratory/firm	Eurofins Environment Testing Northwest, LLC	GEL Laboratories LLC	
		Laboratory address	5755 8th St E, Tacoma, WA 98424	2040 Savage Road Charleston, SC (USA) 29407	
		Phone number	(253) 922-2310	(843) 556-8171	
		Pollutant(s) analyzed	Mercury	Alpha Radium, Ammonia, Anions, BOD, COD, Cyanide, Phenol, PCBs, Nitrate/nitrite, Nitrogen, Oil & Grease, Surfactants, TOC, TSS, VOCs/SVOCs, Metals	

SECTION 11. ADDITIONAL INFORMATION (40 CFR 122.21(g)(13))

Additional Information	11.1	Has the NPDES permitting authority requested additional information? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 12.		
	11.2	List the information requested and attach it to this application.		
		1.	4.	
		2.	5.	
	3.	6.		

SECTION 12. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	12.1	In Column 1 below, mark the sections of Form 2C that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.	
		Column 1	Column 2
	<input checked="" type="checkbox"/>	Section 1: Outfall Location	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 2: Line Drawing	<input checked="" type="checkbox"/> w/ line drawing <input type="checkbox"/> w/ additional attachments
	<input checked="" type="checkbox"/>	Section 3: Average Flows and Treatment	<input type="checkbox"/> w/ attachments <input type="checkbox"/> w/ list of each user of privately owned treatment works
	<input checked="" type="checkbox"/>	Section 4: Intermittent Flows	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 5: Production	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 6: Improvements	<input checked="" type="checkbox"/> w/ attachments <input type="checkbox"/> w/ optional additional sheets describing any additional pollution control plans
	<input checked="" type="checkbox"/>	Section 7: Effluent and Intake Characteristics	<input type="checkbox"/> w/ request for a waiver and supporting information <input type="checkbox"/> w/ explanation for identical outfalls <input type="checkbox"/> w/ small business exemption request <input checked="" type="checkbox"/> w/ other attachments <input checked="" type="checkbox"/> w/ Table A <input checked="" type="checkbox"/> w/ Table B <input checked="" type="checkbox"/> w/ Table C <input checked="" type="checkbox"/> w/ Table D <input checked="" type="checkbox"/> w/ Table E <input checked="" type="checkbox"/> w/ analytical results as an attachment
	<input checked="" type="checkbox"/>	Section 8: Used or Manufactured Toxics	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 9: Biological Toxicity Tests	<input checked="" type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 10: Contract Analyses	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 11: Additional Information	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 12: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	12.2	Certification Statement	
	<i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i>		
	Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	
	Signature	Date signed	

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TABLE A. CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(iii)) ¹									
Pollutant	Waiver Requested (if applicable)	Units (specify)	Effluent				Intake (Optional)		
			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses	
<input type="checkbox"/> Check here if you have applied to your NPDES permitting authority for a waiver for <i>all</i> of the pollutants listed on this table for the noted outfall.									
1. Biochemical oxygen demand (BOD ₅)	<input type="checkbox"/>	Concentration	mg/L	< 4	< 4	< 4	1		
		Mass	kg/day	< 2	< 2	< 2			
2. Chemical oxygen demand (COD)	<input type="checkbox"/>	Concentration	mg/L	35.3	35.3	35.3	1		
		Mass	kg/day	19.8	19.8	19.8			
3. Total organic carbon (TOC)	<input type="checkbox"/>	Concentration	mg/L	2.72	2.71	2.42	5		
		Mass	kg/day	2.39	2	1			
4. Total suspended solids (TSS)	<input type="checkbox"/>	Concentration	mg/L	52	< 10	< 2.3	213		
		Mass	kg/day	56	< 13	< 1.72			
5. Ammonia (as N)	<input type="checkbox"/>	Concentration	mg/L	1.66	0.6423	J 0.2313	213		
		Mass	kg/day	1.09	0.5063	J 0.1649			
6. Flow	<input type="checkbox"/>	Rate	mgd	0.7404	0.3434	0.1994	274		
7. Temperature	<input type="checkbox"/>	winter	°C	°C	21.3	18.6	15.08	113	
		summer	°C	°C	29.2	28.28	24.45	107	
8. pH	<input type="checkbox"/>	minimum	Standard units	s.u.	6.1			213	
		maximum	Standard units	s.u.	8.2	7.8		213	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses

Check here if you qualify as a small business per the instructions to Form 2C and, therefore, do not need to submit quantitative data for any of the organic toxic pollutants in Sections 2 through 5 of this table. Note, however, that you must still indicate in the appropriate column of this table if you believe any of the pollutants listed are present in your discharge.

Section 1. Toxic Metals, Cyanide, and Total Phenols

1.1	Antimony, total (7440-36-0)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	1.13E-03	1.13E-03	< 8.79E-04	44		
					Mass	kg/day	< 2E-03	< 1E-03	< 6.3E-04			
1.2	Arsenic, total (7440-38-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 2E-03	< 2E-03	< 1.89E-03	44		
					Mass	kg/day	< 3E-03	< 3E-03	< 1.3E-03			
1.3	Beryllium, total (7440-41-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	mg/L	< 2E-04	< 2E-04	< 1.90E-04	44		
					Mass	kg/day	< 3E-04	< 2.3E-04	< 1.3E-04			
1.4	Cadmium, total (7440-43-9)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	3.79E-04	3.79E-04	< 2.92E-04	44	See Chapter 5	
					Mass	kg/day	6.18E-04	6.18E-04	< 2.1E-04			
1.5	Chromium, total (7440-47-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 0.01	< 0.01	< 3.56E-03	44		
					Mass	kg/day	< 0.02	< 0.02	< 2.7E-03			
1.6	Copper, total (7440-50-8)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.0574	0.0574	0.0117	44		
					Mass	kg/day	0.027	0.027	8.0E-03			
1.7	Lead, total (7439-92-1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 1.5E-03	< 1.5E-03	< 5.73E-04	44	See Chapter 5	
					Mass	kg/day	< 2.4E-03	< 2.4E-03	< 4.20E-04			
1.8	Mercury, total (7439-97-6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	4.58E-05	4.58E-05	7.82E-06	17		
					Mass	kg/day	3.45E-05	3.45E-05	5.84E-06			
1.9	Nickel, total (7440-02-0)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 0.073	< 0.073	<J 8.35E-03	44		
					Mass	kg/day	< 0.12	< 0.12	<J 6.8E-03			
1.10	Selenium, total (7782-49-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	mg/L	< 3.1E-03	< 3.1E-03	< 1.93E-03	44		
					Mass	kg/day	< 5.1E-03	< 5.1E-03	< 1.4E-03			
1.11	Silver, total (7440-22-4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	8.79E-04	8.79E-04	< 2.99E-04	44		
					Mass	kg/day	< 5E-04	4.1E-04	< 2.1E-04			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
1.12	Thallium, total (7440-28-0)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 6E-04	< 6E-04	< 5.05E-04	44	See Chapter 5	
					Mass	kg/day	< 1E-03	< 6E-04	< 3.6E-04			
1.13	Zinc, total (7440-66-6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.0603	0.0603	< 0.0348	44		
					Mass	kg/day	< 0.07	< 0.07	< 0.0248			
1.14	Cyanide, total (57-12-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	mg/L	< 1.67E-03	< 1.67E-03	< 1.67E-03	35		
					Mass	kg/day	< 2.70E-03	< 1.75E-03	< 1.15E-03			
1.15	Phenols, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	6.81E-03	6.81E-03	6.81E-03	1		
					Mass	kg/day	3.81E-03	3.81E-03	3.81E-03			

Section 2. Organic Toxic Pollutants (GC/MS Fraction—Volatile Compounds)

2.1	Acrolein (107-02-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 5	< 5	< 5	9		
					Mass	kg/day	< 5E-03	< 3.7E-03	< 3.0E-03			
2.2	Acrylonitrile (107-13-1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 5	< 5	< 5	9		
					Mass	kg/day	< 5E-03	< 3.7E-03	< 3.0E-03			
2.3	Benzene (71-43-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.4	Bromoform (75-25-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.5	Carbon tetrachloride (56-23-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.6	Chlorobenzene (108-90-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.7	Chlorodibromomethane (124-48-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.8	Chloroethane (75-00-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)		
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses	
2.9	2-chloroethylvinyl ether (110-75-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 5	< 5	< 5	9		
					Mass	kg/day	< 5E-03	< 3.7E-03	< 3.0E-03			
2.10	Chloroform (67-66-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1	< 1	J< 0.68	9		
					Mass	kg/day	< 7E-04	< 6.0E-04	J< 3.8E-04			
2.11	Dichlorobromomethane (75-27-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.12	1,1-dichloroethane (75-34-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.13	1,2-dichloroethane (107-06-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.14	1,1-dichloroethylene (75-35-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.15	1,2-dichloropropane (78-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.16	1,3-dichloropropylene (542-75-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 2	< 2	< 2	9		
					Mass	kg/day	< 2E-03	< 2E-03	< 1E-03			
2.17	Ethylbenzene (100-41-4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.18	Methyl bromide (74-83-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.19	Methyl chloride (74-87-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.20	Methylene chloride (75-09-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	J 2.06	<J 2.02	<J 2.01	9		
					Mass	kg/day	< 2E-03	<J 1E-03	<J 1E-03			
2.21	1,1,2,2- tetrachloroethane (79-34-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
2.22	Tetrachloroethylene (127-18-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.23	Toluene (108-88-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1	< 1	<J 0.919	9		
					Mass	kg/day	< 1E-03	< 7E-04	<J 6E-04			
2.24	1,2-trans-dichloroethylene (156-60-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.25	1,1,1-trichloroethane (71-55-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.26	1,1,2-trichloroethane (79-00-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.27	Trichloroethylene (79-01-6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
2.28	Vinyl chloride (75-01-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	9		
					Mass	kg/day	< 1E-03	< 7E-04	< 6E-04			
Section 3. Organic Toxic Pollutants (GC/MS Fraction—Acid Compounds)												
3.1	2-chlorophenol (95-57-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
3.2	2,4-dichlorophenol (120-83-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
3.3	2,4-dimethylphenol (105-67-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
3.4	4,6-dinitro-o-cresol (534-52-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
3.5	2,4-dinitrophenol (51-28-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 20	< 20	< 20	1		
					Mass	kg/day	< 0.01	< 0.01	< 0.01			

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	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)		
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses	
3.6	2-nitrophenol (88-75-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
3.7	4-nitrophenol (100-02-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
3.8	p-chloro-m-cresol (59-50-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
3.9	Pentachlorophenol (87-86-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
3.10	Phenol (108-95-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
3.11	2,4,6-trichlorophenol (88-05-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
Section 4. Organic Toxic Pollutants (GC/MS Fraction—Base /Neutral Compounds)												
4.1	Acenaphthene (83-32-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			
4.2	Acenaphthylene (208-96-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			
4.3	Anthracene (120-12-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			
4.4	Benzidine (92-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.5	Benzo (a) anthracene (56-55-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			
4.6	Benzo (a) pyrene (50-32-8)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			

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	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.7	3,4-benzofluoranthene (205-99-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			
4.8	Benzo (ghi) perylene (191-24-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			
4.9	Benzo (k) fluoranthene (207-08-9)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			
4.10	Bis (2-chloroethoxy) methane (111-91-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.11	Bis (2-chloroethyl) ether (111-44-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.12	Bis (2-chloroisopropyl) ether (102-80-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.13	Bis (2-ethylhexyl) phthalate (117-81-7)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	1		
					Mass	kg/day	< 5E-04	< 5E-04	< 5E-04			
4.14	4-bromophenyl phenyl ether (101-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.15	Butyl benzyl phthalate (85-68-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	1		
					Mass	kg/day	< 5E-04	< 5E-04	< 5E-04			
4.16	2-chloronaphthalene (91-58-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			
4.17	4-chlorophenyl phenyl ether (7005-72-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.18	Chrysene (218-01-9)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			
4.19	Dibenzo (a,h) anthracene (53-70-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)		
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses	
4.20	1,2-dichlorobenzene (95-50-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	4		
					Mass	kg/day	< 7E-04	< 6.0E-04	< 6.0E-04			
4.21	1,3-dichlorobenzene (541-73-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	4		
					Mass	kg/day	< 7E-04	< 6.0E-04	< 6.0E-04			
4.22	1,4-dichlorobenzene (106-46-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	4		
					Mass	kg/day	< 7E-04	< 6.0E-04	< 6.0E-04			
4.23	3,3-dichlorobenzidine (91-94-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.24	Diethyl phthalate (84-66-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	1		
					Mass	kg/day	< 5E-04	< 5E-04	< 5E-04			
4.25	Dimethyl phthalate (131-11-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	1		
					Mass	kg/day	< 5E-04	< 5E-04	< 5E-04			
4.26	Di-n-butyl phthalate (84-74-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	1		
					Mass	kg/day	< 5E-04	< 5E-04	< 5E-04			
4.27	2,4-dinitrotoluene (121-14-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.28	2,6-dinitrotoluene (606-20-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.29	Di-n-octyl phthalate (117-84-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	1		
					Mass	kg/day	< 5E-04	< 5E-04	< 5E-04			
4.30	1,2-Diphenylhydrazine (as azobenzene) (122-66-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.31	Fluoranthene (206-44-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			
4.32	Fluorene (86-73-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			

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	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.33	Hexachlorobenzene (118-74-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.34	Hexachlorobutadiene (87-68-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.35	Hexachlorocyclopentadiene (77-47-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.36	Hexachloroethane (67-72-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.37	Indeno (1,2,3-cd) pyrene (193-39-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			
4.38	Isophorone (78-59-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.39	Naphthalene (91-20-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			
4.40	Nitrobenzene (98-95-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.41	N-nitrosodimethylamine (62-75-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.42	N-nitrosodi-n-propylamine (621-64-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.43	N-nitrosodiphenylamine (86-30-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
4.44	Phenanthrene (85-01-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			
4.45	Pyrene (129-00-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 5E-05	< 5E-05	< 5E-05			

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			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.46	1,2,4-trichlorobenzene (120-82-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10	< 10	< 10	1		
					Mass	kg/day	< 5E-03	< 5E-03	< 5E-03			
Section 5. Organic Toxic Pollutants (GC/MS Fraction—Pesticides)												
5.1	Aldrin (309-00-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0203	< 0.0203	< 0.0203	1		
					Mass	kg/day	< 1.37E-05	< 1.37E-05	< 1.37E-05			
5.2	α-BHC (319-84-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0203	< 0.0203	< 0.0203	1		
					Mass	kg/day	< 1.37E-05	< 1.37E-05	< 1.37E-05			
5.3	β-BHC (319-85-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0203	< 0.0203	< 0.0203	1		
					Mass	kg/day	< 1.37E-05	< 1.37E-05	< 1.37E-05			
5.4	γ-BHC (58-89-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0203	< 0.0203	< 0.0203	1		
					Mass	kg/day	< 1.37E-05	< 1.37E-05	< 1.37E-05			
5.5	δ-BHC (319-86-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0203	< 0.0203	< 0.0203	1		
					Mass	kg/day	< 1.37E-05	< 1.37E-05	< 1.37E-05			
5.6	Chlordane (57-74-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.254	< 0.254	< 0.254	1		
					Mass	kg/day	< 1.72E-04	< 1.72E-04	< 1.72E-04			
5.7	4,4'-DDT (50-29-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0406	< 0.0406	< 0.0406	1		
					Mass	kg/day	< 2.74E-05	< 2.74E-05	< 2.74E-05			
5.8	4,4'-DDE (72-55-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0406	< 0.0406	< 0.0406	1		
					Mass	kg/day	< 2.74E-05	< 2.74E-05	< 2.74E-05			
5.9	4,4'-DDD (72-54-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0406	< 0.0406	< 0.0406	1		
					Mass	kg/day	< 2.74E-05	< 2.74E-05	< 2.74E-05			
5.10	Dieldrin (60-57-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0406	< 0.0406	< 0.0406	1		
					Mass	kg/day	< 2.74E-05	< 2.74E-05	< 2.74E-05			
5.11	α-endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0406	< 0.0406	< 0.0406	1		
					Mass	kg/day	< 2.74E-05	< 2.74E-05	< 2.74E-05			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
5.12	β-endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0203	< 0.0203	< 0.0203	1		
					Mass	kg/day	< 1.37E-05	< 1.37E-05	< 1.37E-05			
5.13	Endosulfan sulfate (1031-07-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0406	< 0.0406	< 0.0406	1		
					Mass	kg/day	< 2.74E-05	< 2.74E-05	< 2.74E-05			
5.14	Endrin (72-20-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0406	< 0.0406	< 0.0406	1		
					Mass	kg/day	< 2.74E-05	< 2.74E-05	< 2.74E-05			
5.15	Endrin aldehyde (7421-93-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0406	< 0.0406	< 0.0406	1		
					Mass	kg/day	< 2.74E-05	< 2.74E-05	< 2.74E-05			
5.16	Heptachlor (76-44-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0203	< 0.0203	< 0.0203	1		
					Mass	kg/day	< 1.37E-05	< 1.37E-05	< 1.37E-05			
5.17	Heptachlor epoxide (1024-57-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0203	< 0.0203	< 0.0203	1		
					Mass	kg/day	< 1.37E-05	< 1.37E-05	< 1.37E-05			
5.18	PCB-1242 (53469-21-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.507	< 0.507	< 0.507	1		
					Mass	kg/day	< 3.42E-04	< 3.42E-04	< 3.42E-04			
5.19	PCB-1254 (11097-69-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.507	< 0.507	< 0.507	1		
					Mass	kg/day	< 3.42E-04	< 3.42E-04	< 3.42E-04			
5.20	PCB-1221 (11104-28-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.507	< 0.507	< 0.507	1		
					Mass	kg/day	< 3.42E-04	< 3.42E-04	< 3.42E-04			
5.21	PCB-1232 (11141-16-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.507	< 0.507	< 0.507	1		
					Mass	kg/day	< 3.42E-04	< 3.42E-04	< 3.42E-04			
5.22	PCB-1248 (12672-29-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.507	< 0.507	< 0.507	1		
					Mass	kg/day	< 3.42E-04	< 3.42E-04	< 3.42E-04			
5.23	PCB-1260 (11096-82-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.507	< 0.507	< 0.507	1		
					Mass	kg/day	< 3.42E-04	< 3.42E-04	< 3.42E-04			
5.24	PCB-1016 (12674-11-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.507	< 0.507	< 0.507	1		
					Mass	kg/day	< 3.42E-04	< 3.42E-04	< 3.42E-04			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
5.25	Toxaphene (8001-35-2)		<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.507	< 0.507	< 0.507	1		
					Mass	kg/day	< 3.42E-04	< 3.42E-04	< 3.42E-04			

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi))¹

Pollutant	Presence or Absence (check one)		Units (specify)	Effluent				Intake (Optional)	
	Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses

Check here if you believe all pollutants on Table C to be **present** in your discharge from the noted outfall. You need *not* complete the "Presence or Absence" column of Table C for *each* pollutant.

Check here if you believe all pollutants on Table C to be **absent** in your discharge from the noted outfall. You need *not* complete the "Presence or Absence" column of Table C for *each* pollutant.

1.	Bromide (24959-67-9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	J 0.123	J 0.123	J 0.123	1		
				Mass	kg/day	J 0.0688	J 0.0688	J 0.0688			
2.	Chlorine, total residual	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	mg/L	< 0.05	< 0.05	< 0.05	3		
				Mass	kg/day	< 0.03	< 0.03	< 0.03			
3.	Color	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration					0		
				Mass							
4.	Fecal coliform	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration					0	See attachments	
				Mass							
5.	Fluoride (16984-48-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.578	0.578	0.578	1		
				Mass	kg/day	0.324	0.324	0.324			
6.	Nitrate-nitrite	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	44.3	40.78	18.29	166		
				Mass	kg/day	25.4	22.6	12.03			
7.	Nitrogen, total organic (as N)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	1.04	0.733	<J 0.358	56		
				Mass	kg/day	1.07	0.573	<J 0.2648			
8.	Oil and grease	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	J 4.88	J 4.88	J 4.88	1		
				Mass	kg/day	J 2.73	J 2.73	J 2.73			
9.	Phosphorus (as P), total (7723-14-0)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	4.83	4.83	2.27	56		
				Mass	kg/day	3.96	2.51	1.6			
10.	Sulfate (as SO ₄) (14808-79-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	37.9	37.9	37.9	1		
				Mass	kg/day	21.2	21.2	21.2			
11.	Sulfide (as S)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration					0		
				Mass							

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TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi))¹

	Pollutant	Presence or Absence (check one)		Units (specify)	Effluent				Intake (Optional)		
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses	
12.	Sulfite (as SO ₃) (14265-45-3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration					0		
				Mass							
13.	Surfactants	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.0885	0.0885	0.0885	1		
				Mass	kg/day	0.0495	0.0495	0.0495			
14.	Aluminum, total (7429-90-5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.0789	0.0762	< 0.0311	40		
				Mass	kg/day	< 0.12	< 0.12	< 0.022			
15.	Barium, total (7440-39-3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.0284	0.0273	0.022	40		
				Mass	kg/day	0.036	0.0284	0.015			
16.	Boron, total (7440-42-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.556	0.556	0.0683	40		
				Mass	kg/day	0.906	0.906	0.0582			
17.	Cobalt, total (7440-48-4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	mg/L	< 3E-04	< 3E-04	< 2.91E-04	40		
				Mass	kg/day	< 5E-04	3.1E-04	< 2.1E-04			
18.	Iron, total (7439-89-6)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 0.22	< 0.22	< 0.0594	42		
				Mass	kg/day	< 0.36	< 0.36	< 0.0442			
19.	Magnesium, total (7439-95-4)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	12.2	12.2	9.95	44		
				Mass	kg/day	18.3	18.3	7.02			
20.	Molybdenum, total (7439-98-7)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.282	0.247	0.0635	42		
				Mass	kg/day	0.288	0.288	0.0439			
21.	Manganese, total (7439-96-5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	6.11E-03	4.54E-03	< 1.94E-03	42		
				Mass	kg/day	5.58E-03	< 4.6E-03	< 1.4E-03			
22.	Tin, total (7440-31-5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 2E-03	< 2E-03	< 1.1E-03	40		
				Mass	kg/day	< 3E-03	< 3E-03	< 7.9E-04			
23.	Titanium, total (7440-32-6)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.0378	0.0378	< 5.10E-03	40		
				Mass	kg/day	0.0616	0.0616	< 4.10E-03			

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TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi))¹

Pollutant	Presence or Absence (check one)		Units (specify)	Effluent				Intake (Optional)		
	Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses	
24. Radioactivity										
Alpha, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	pCi/L	8.3	8.3	3.44	49		
			Mass							
Beta, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	pCi/L	530	530	214.1	49		
			Mass							
Radium, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	pCi/L	< 0.0242	< 0.0242	< 0.0242	1		
			Mass							
Radium 226, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	pCi/L	< 0.278	< 0.278	< 0.278	1		
			Mass							

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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ATTACHMENTS

Section	Description	Information
Table C	4. Fecal coliform (test results presented here are E. Coli)	Results for Escherichia coli Max daily discharge: >2420 col/100mL Max monthly discharge: >30 col/100mL Long-term average: <=4 col/100mL No. of analyses: 213
9.2	Biological Toxicity Tests	IC25 Static Renewal 7 Day Chronic Ceriodaphnia and Pimephales promelas, NPDES Permit requirement, Yes, Submitted 1/28/2022; IC25 Static Renewal 7 Day Chronic Ceriodaphnia and Pimephales promelas, NPDES Permit requirement, Yes, Submitted 1/31/2023

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
1.	Asbestos	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	None
2.	Acetaldehyde	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
3.	Allyl alcohol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.	Allyl chloride	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
5.	Amyl acetate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
6.	Aniline	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
7.	Benzonitrile	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
8.	Benzyl chloride	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
9.	Butyl acetate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
10.	Butylamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
11.	Captan	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
12.	Carbaryl	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
13.	Carbofuran	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
14.	Carbon disulfide	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	Below detection level n = 9 (ND)
15.	Chlorpyrifos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
16.	Coumaphos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
17.	Cresol	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	Below detection level n = 1 (ND)
18.	Crotonaldehyde	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
19.	Cyclohexane	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	Below detection level n = 4 (ND)

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
20.	2,4-D (2,4-dichlorophenoxyacetic acid)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
21.	Diazinon	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
22.	Dicamba	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
23.	Dichlobenil	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
24.	Dichlone	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
25.	2,2-dichloropropionic acid	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
26.	Dichlorvos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
27.	Diethyl amine	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	None
28.	Dimethyl amine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
29.	Dinitrobenzene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
30.	Diquat	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
31.	Disulfoton	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
32.	Diuron	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
33.	Epichlorohydrin	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
34.	Ethion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
35.	Ethylene diamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
36.	Ethylene dibromide	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
37.	Formaldehyde	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	None
38.	Furfural	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
39.	Guthion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
40.	Isoprene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
41.	Isopropanolamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
42.	Kelthane	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
43.	Kepone	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
44.	Malathion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
45.	Mercaptodimethur	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
46.	Methoxychlor	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
47.	Methyl mercaptan	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
48.	Methyl methacrylate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
49.	Methyl parathion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
50.	Mevinphos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
51.	Mexacarbate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
52.	Monoethyl amine	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	None
53.	Monomethyl amine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
54.	Naled	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
55.	Naphthenic acid	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
56.	Nitrotoluene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
57.	Parathion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
58.	Phenolsulfonate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
59.	Phosgene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
60.	Propargite	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
61.	Propylene oxide	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
62.	Pyrethrins	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
63.	Quinoline	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
64.	Resorcinol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
65.	Strontium	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Daily maximum 0.137 mg/L, Long-term average 0.115 mg/L	n = 40, all detects
66.	Strychnine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
67.	Styrene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
68.	2,4,5-T (2,4,5-trichlorophenoxyacetic acid)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
69.	TDE (tetrachlorodiphenyl ethane)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
70.	2,4,5-TP [2-(2,4,5-trichlorophenoxy) propanoic acid]	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
71.	Trichlorofon	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
72.	Triethanolamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
73.	Triethylamine	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	None
74.	Trimethylamine	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	None
75.	Uranium	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Daily maximum <0.001 mg/L, Long-term average <0.0002 mg/L	n = 39 (mix of prefixes)
76.	Vanadium	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Detected before/within last 10 years STP	Below detection level n = 40 (ND)

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
77.	Vinyl acetate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
78.	Xylene	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	Below detection level n = 9 (ND)
79.	Xylenol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
80.	Zirconium	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Detected before/within last 10 years STP	Below detection level n = 40 (ND)

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE E. 2,3,7,8 TETRACHLORODIBENZO P DIOXIN (2,3,7,8 TCDD) (40 CFR 122.21(g)(7)(viii))


Pollutant	TCDD Congeners Used or Manufactured	Presence or Absence (check one)		Results of Screening Procedure
		Believed Present	Believed Absent	
2,3,7,8-TCDD	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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Form 2C NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater EXISTING MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURE OPERATIONS
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		X12	White Oak Creek	35 ° 55 ' 29.21 " N	84 ° 18 ' 53.54 " W

SECTION 2. LINE DRAWING (40 CFR 122.21(g)(2))

Line Drawing	2.1	Have you attached a line drawing to this application that shows the water flow through your facility with a water balance? (See instructions for drawing requirements. See Exhibit 2C-1 at end of instructions for example.) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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SECTION 3. AVERAGE FLOWS AND TREATMENT (40 CFR 122.21(g)(3))

Average Flows and Treatment	3.1	For each outfall identified under Item 1.1, provide average flow and treatment information. Add additional sheets if necessary.		
		Outfall Number X12		
		Operations Contributing to Flow		
		Operation	Average Flow	
		Industrial wastewaters generated from various research and development, operations, and CERLA remediation activities.	0.2585	mgd
				mgd
				mgd
				mgd
		Treatment Units		
		Description (include size, flow rate through each treatment unit, retention time, etc.)	Code from Table 2C-1	Final Disposal of Solid or Liquid Wastes Other Than by Discharge
	Coagulation, flocculation, sedimentation, multimedia filtration, ion exchange	2D, 1G, 1U, 1Q, 2J		
	Chemical precipitation, multimedia filtration, carbon adsorption, reuse/recycle treated effluent	2C, 1Q, 2A, 4C		
	Discharge to surface water, pressure filtration, landfill	4A, 5R, 5Q		

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Average Flows and Treatment Continued	3.1 cont.	**Outfall Number** _____			
		Operations Contributing to Flow			
		Operation	Average Flow		
					mgd
					mgd
					mgd
					mgd
		Treatment Units			
		Description (include size, flow rate through each treatment unit, retention time, etc.)	Code from Table 2C-1	Final Disposal of Solid or Liquid Wastes Other Than by Discharge	
		Outfall Number _____			
		Operations Contributing to Flow			
		Operation	Average Flow		
					mgd
					mgd
					mgd
					mgd
Treatment Units					
Description (include size, flow rate through each treatment unit, retention time, etc.)	Code from Table 2C-1	Final Disposal of Solid or Liquid Wastes Other Than by Discharge			
System Users	3.2	Are you applying for an NPDES permit to operate a privately owned treatment works? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.			
	3.3	Have you attached a list that identifies each user of the treatment works? <input type="checkbox"/> Yes <input type="checkbox"/> No			

SECTION 4. INTERMITTENT FLOWS (40 CFR 122.21(g)(4))

Intermittent Flows	4.1	Except for storm runoff, leaks, or spills, are any discharges described in Sections 1 and 3 intermittent or seasonal? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
	4.2	Provide information on intermittent or seasonal flows for each applicable outfall. Attach additional pages, if necessary.						
		Outfall Number	Operation (list)	Frequency		Flow Rate		Duration
				Average Days/Week	Average Months/Year	Long-Term Average	Maximum Daily	
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
			days/week	months/year	mgd	mgd	days	

SECTION 5. PRODUCTION (40 CFR 122.21(g)(5))

Applicable ELGs	5.1	Do any effluent limitation guidelines (ELGs) promulgated by EPA under Section 304 of the CWA apply to your facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 6.				
	5.2	Provide the following information on applicable ELGs.				
		ELG Category	ELG Subcategory		Regulatory Citation	
Production-Based Limitations	5.3	Are any of the applicable ELGs expressed in terms of production (or other measure of operation)? <input type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 6.				
	5.4	Provide an actual measure of daily production expressed in terms and units of applicable ELGs.				
		Outfall Number	Operation, Product, or Material	Quantity per Day	Unit of Measure	

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SECTION 6. IMPROVEMENTS (40 CFR 122.21(g)(6))

Upgrades and Improvements	6.1	Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application?			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 6.3.			
	6.2	Briefly identify each applicable project in the table below.			
		Brief Identification and Description of Project	Affected Outfalls (list outfall number)	Source(s) of Discharge	Final Compliance Dates
				Required	Projected
		See Appendix K - Improvements			
	6.3	Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? <i>(optional item)</i>			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable			

SECTION 7. EFFLUENT AND INTAKE CHARACTERISTICS (40 CFR 122.21(g)(7))

Effluent and Intake Characteristics	See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.				
	Table A. Conventional and Non-Conventional Pollutants				
	7.1	Are you requesting a waiver from your NPDES permitting authority for one or more of the Table A pollutants for any of your outfalls?			
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.3.			
	7.2	If yes, indicate the applicable outfalls below. Attach waiver request and other required information to the application.			
		Outfall Number _____ Outfall Number _____ Outfall Number _____			
	7.3	Have you completed monitoring for all Table A pollutants at each of your outfalls for which a waiver has not been requested and attached the results to this application package?			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority for all pollutants at all outfalls.			
	Table B. Toxic Metals, Cyanide, Total Phenols, and Organic Toxic Pollutants				
	7.4	Do any of the facility's processes that contribute wastewater fall into one or more of the primary industry categories listed in Exhibit 2C-3? (See end of instructions for exhibit.)			
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.8.				
7.5	Have you checked "Testing Required" for all toxic metals, cyanide, and total phenols in Section 1 of Table B?				
	<input type="checkbox"/> Yes <input type="checkbox"/> No				
7.6	List the applicable primary industry categories and check the boxes indicating the required GC/MS fraction(s) identified in Exhibit 2C-3.				
	Primary Industry Category	Required GC/MS Fraction(s) (Check applicable boxes.)			
		<input type="checkbox"/> Volatile <input type="checkbox"/> Acid <input type="checkbox"/> Base/Neutral <input type="checkbox"/> Pesticide			
		<input type="checkbox"/> Volatile <input type="checkbox"/> Acid <input type="checkbox"/> Base/Neutral <input type="checkbox"/> Pesticide			
		<input type="checkbox"/> Volatile <input type="checkbox"/> Acid <input type="checkbox"/> Base/Neutral <input type="checkbox"/> Pesticide			

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Effluent and Intake Characteristics Continued	7.7	Have you checked "Testing Required" for all required pollutants in Sections 2 through 5 of Table B for each of the GC/MS fractions checked in Item 7.6? <input type="checkbox"/> Yes <input type="checkbox"/> No	
	7.8	Have you checked "Believed Present" or "Believed Absent" for all pollutants listed in Sections 1 through 5 of Table B where testing is not required? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	7.9	Have you provided (1) quantitative data for those Section 1, Table B, pollutants for which you have indicated testing is required or (2) quantitative data or other required information for those Section 1, Table B, pollutants that you have indicated are "Believed Present" in your discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	7.10	Does the applicant qualify for a small business exemption under the criteria specified in the instructions? <input type="checkbox"/> Yes → Note that you qualify at the top of Table B, then SKIP to Item 7.12. <input checked="" type="checkbox"/> No	
	7.11	Have you provided (1) quantitative data for those Sections 2 through 5, Table B, pollutants for which you have determined testing is required or (2) quantitative data or an explanation for those Sections 2 through 5, Table B, pollutants you have indicated are "Believed Present" in your discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	Table C. Certain Conventional and Non-Conventional Pollutants		
	7.12	Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed on Table C for all outfalls? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	7.13	Have you completed Table C by providing (1) quantitative data for those pollutants that are limited either directly or indirectly in an ELG and/or (2) quantitative data or an explanation for those pollutants for which you have indicated "Believed Present"? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	Table D. Certain Hazardous Substances and Asbestos		
	7.14	Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed in Table D for all outfalls? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	7.15	Have you completed Table D by (1) describing the reasons the applicable pollutants are expected to be discharged and (2) by providing quantitative data, if available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	Table E. 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (2,3,7,8-TCDD)		
	7.16	Does the facility use or manufacture one or more of the 2,3,7,8-TCDD congeners listed in the instructions, or do you know or have reason to believe that TCDD is or may be present in the effluent? <input type="checkbox"/> Yes → Complete Table E. <input checked="" type="checkbox"/> No → SKIP to Section 8.	
	7.17	Have you completed Table E by reporting <i>qualitative</i> data for TCDD? <input type="checkbox"/> Yes <input type="checkbox"/> No	
SECTION 8. USED OR MANUFACTURED TOXICS (40 CFR 122.21(g)(9))			
Used or Manufactured Toxics	8.1	Is any pollutant listed in Table B a substance or a component of a substance used or manufactured at your facility as an intermediate or final product or byproduct? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 9.	
	8.2	List the pollutants below.	
	1. These pollutants are listed as "Believed Present" in Table B	4.	7.
	2.	5.	8.
3.	6.	9.	

SECTION 9. BIOLOGICAL TOXICITY TESTS (40 CFR 122.21(g)(11))

Biological Toxicity Tests	9.1	Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made within the last three years on (1) any of your discharges or (2) on a receiving water in relation to your discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 10.		
	9.2	Identify the tests and their purposes below.		
		Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?
		IC25 Static Renewal 7 Day Chronic Ceriodaphnia and	NPDES Permit requirement	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		IC25 Static Renewal 7 Day Chronic Ceriodaphnia and	NPDES Permit requirement	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	IC25 Static Renewal 7 Day Chronic Ceriodaphnia	NPDES Permit - Required re-test - See attachments	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
				1/28/2020
				1/29/2021
				7/22/2021

SECTION 10. CONTRACT ANALYSES (40 CFR 122.21(g)(12))

Contract Analyses	10.1	Were any of the analyses reported in Section 7 performed by a contract laboratory or consulting firm? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 11.		
	10.2	Provide information for each contract laboratory or consulting firm below.		
			Laboratory Number 1	Laboratory Number 2
		Name of laboratory/firm	Eurofins Environment Testing Northwest, LLC	GEL Laboratories, LLC
		Laboratory address	5755 8th St E, Tacoma, WA 98424	2040 Savage Road Charleston, SC (USA) 29407
		Phone number	(253) 922-2310	(843) 556-8171
		Pollutant(s) analyzed	Mercury	Alpha Radium, Ammonia, Anions, BOD, COD, Cyanide, Phenol, PCBs, Nitrate/nitrite, Nitrogen, Oil & Grease, Surfactants, TOC, TSS, VOCs/SVOCs, Metals

SECTION 11. ADDITIONAL INFORMATION (40 CFR 122.21(g)(13))

Additional Information	11.1	Has the NPDES permitting authority requested additional information? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 12.	
	11.2	List the information requested and attach it to this application.	
		1.	4.
		2.	5.
	3.	6.	

SECTION 12. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	12.1	In Column 1 below, mark the sections of Form 2C that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.	
		Column 1	Column 2
	<input checked="" type="checkbox"/>	Section 1: Outfall Location	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 2: Line Drawing	<input checked="" type="checkbox"/> w/ line drawing <input type="checkbox"/> w/ additional attachments
	<input checked="" type="checkbox"/>	Section 3: Average Flows and Treatment	<input type="checkbox"/> w/ attachments <input type="checkbox"/> w/ list of each user of privately owned treatment works
	<input checked="" type="checkbox"/>	Section 4: Intermittent Flows	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 5: Production	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 6: Improvements	<input checked="" type="checkbox"/> w/ attachments <input type="checkbox"/> w/ optional additional sheets describing any additional pollution control plans
	<input checked="" type="checkbox"/>	Section 7: Effluent and Intake Characteristics	<input type="checkbox"/> w/ request for a waiver and supporting information <input type="checkbox"/> w/ explanation for identical outfalls <input type="checkbox"/> w/ small business exemption request <input checked="" type="checkbox"/> w/ other attachments <input checked="" type="checkbox"/> w/ Table A <input checked="" type="checkbox"/> w/ Table B <input checked="" type="checkbox"/> w/ Table C <input checked="" type="checkbox"/> w/ Table D <input checked="" type="checkbox"/> w/ Table E <input checked="" type="checkbox"/> w/ analytical results as an attachment
	<input checked="" type="checkbox"/>	Section 8: Used or Manufactured Toxics	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 9: Biological Toxicity Tests	<input checked="" type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 10: Contract Analyses	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 11: Additional Information	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 12: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	12.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
	Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	
	Signature	Date signed	

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TABLE A. CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(iii)) ¹									
Pollutant	Waiver Requested (if applicable)	Units (specify)	Effluent				Intake (Optional)		
			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses	
<input type="checkbox"/> Check here if you have applied to your NPDES permitting authority for a waiver for <i>all</i> of the pollutants listed on this table for the noted outfall.									
1. Biochemical oxygen demand (BOD ₅)	<input type="checkbox"/>	Concentration	mg/L	< 4	< 4	< 4	1		
		Mass	kg/day	< 5	< 5	< 5			
2. Chemical oxygen demand (COD)	<input type="checkbox"/>	Concentration	mg/L	J 10.3	J 10.3	J 10.3	1		
		Mass	kg/day	J 7.37	J 7.37	J 7.37			
3. Total organic carbon (TOC)	<input type="checkbox"/>	Concentration	mg/L	1.31	1.24	1.18	5		
		Mass	kg/day	1.76	1.29	1.14			
4. Total suspended solids (TSS)	<input type="checkbox"/>	Concentration	mg/L	< 2	< 2	< 2	17		
		Mass	kg/day	< 3	< 3	< 2			
5. Ammonia (as N)	<input type="checkbox"/>	Concentration	mg/L	0.198	0.198	J 0.101	16		
		Mass	kg/day	0.238	0.238	J 0.104			
6. Flow	<input type="checkbox"/>	Rate	mgd	0.5217	0.4124	0.2585	309		
7. Temperature	<input type="checkbox"/>	winter	°C	°C	22.8	19.5	16.64	109	
		summer	°C	°C	27.9	27.23	24.78	105	
8. pH	<input type="checkbox"/>	minimum	Standard units	s.u.	6.4			212	
		maximum	Standard units	s.u.	8.5	7.9		212	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses

Check here if you qualify as a small business per the instructions to Form 2C and, therefore, do not need to submit quantitative data for any of the organic toxic pollutants in Sections 2 through 5 of this table. Note, however, that you must still indicate in the appropriate column of this table if you believe any of the pollutants listed are present in your discharge.

Section 1. Toxic Metals, Cyanide, and Total Phenols

1.1	Antimony, total (7440-36-0)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 1E-03	< 1E-03	< 8.76E-04	45		
					Mass	kg/day	< 2E-03	< 1E-03	< 8.5E-04			
1.2	Arsenic, total (7440-38-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.0114	< 4.39E-03	< 2.25E-03	45		
					Mass	kg/day	9.57E-03	< 4.4E-03	< 2.3E-03			
1.3	Beryllium, total (7440-41-7)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 6.86E-04	< 6.86E-04	< 2.01E-04	45		
					Mass	kg/day	< 4E-04	< 3.55E-04	< 2.0E-04			
1.4	Cadmium, total (7440-43-9)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 7.82E-04	< 7.82E-04	< 2.95E-04	45		See Chapter 5
					Mass	kg/day	< 6E-04	< 6.0E-04	< 3.03E-04			
1.5	Chromium, total (7440-47-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 0.01	< 0.01	< 3.50E-03	45		
					Mass	kg/day	< 0.02	< 0.02	< 3.6E-03			
1.6	Copper, total (7440-50-8)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.0121	0.0121	J< 2.54E-03	45		
					Mass	kg/day	< 0.02	< 0.02	J< 2.59E-03			
1.7	Lead, total (7439-92-1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 1.5E-03	< 1.5E-03	< 5.86E-04	45		
					Mass	kg/day	< 2.7E-03	< 2.7E-03	< 5.84E-04			
1.8	Mercury, total (7439-97-6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	2.19E-04	2.19E-04	5.28E-05	17		
					Mass	kg/day	1.62E-04	1.62E-04	5.3E-05			
1.9	Nickel, total (7440-02-0)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 0.073	< 0.073	< 8.13E-03	45		See Chapter 5
					Mass	kg/day	< 0.13	< 0.13	< 7.2E-03			
1.10	Selenium, total (7782-49-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	mg/L	< 3.1E-03	< 3.1E-03	< 1.93E-03	45		
					Mass	kg/day	< 5.7E-03	< 5.7E-03	< 2.0E-03			
1.11	Silver, total (7440-22-4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 6.19E-04	< 6.19E-04	< 2.88E-04	45		
					Mass	kg/day	< 6E-04	< 4.52E-04	< 2.99E-04			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
1.12	Thallium, total (7440-28-0)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 8.31E-04	< 8.31E-04	< 5.12E-04	45	See Chapter 5	
					Mass	kg/day	< 1E-03	< 9E-04	< 5.4E-04			
1.13	Zinc, total (7440-66-6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.228	0.0762	< 0.0176	45		
					Mass	kg/day	0.158	< 0.07	< 0.015			
1.14	Cyanide, total (57-12-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	mg/L	< 1.67E-03	< 1.67E-03	< 1.67E-03	36		
					Mass	kg/day	< 3.15E-03	< 2.38E-03	< 1.77E-03			
1.15	Phenols, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.0159	0.0159	0.0159	1		
					Mass	kg/day	0.0114	0.0114	0.0114			

Section 2. Organic Toxic Pollutants (GC/MS Fraction—Volatile Compounds)

2.1	Acrolein (107-02-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 5	< 5	< 5	10		
					Mass	kg/day	< 8E-03	< 6.0E-03	< 4.8E-03			
2.2	Acrylonitrile (107-13-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 5	< 5	< 5	10		
					Mass	kg/day	< 8E-03	< 6.0E-03	< 4.8E-03			
2.3	Benzene (71-43-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.4	Bromoform (75-25-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	J 2.9	J 2.9	J < 1.23	10		
					Mass	kg/day	J 2.8E-03	J 2.8E-03	J < 1E-03			
2.5	Carbon tetrachloride (56-23-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.6	Chlorobenzene (108-90-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.7	Chlorodibromomethane (124-48-1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	J 1.14	J 1.14	J 0.9816	10		
					Mass	kg/day	J 1.58E-03	J 1.21E-03	J 9.17E-04			
2.8	Chloroethane (75-00-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
2.9	2-chloroethylvinyl ether (110-75-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 5	< 5	< 5	10		
					Mass	kg/day	< 8E-03	< 6.0E-03	< 4.8E-03			
2.10	Chloroform (67-66-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	J 7.96	J 7.77	J 7.08	10		
					Mass	kg/day	J 0.0108	J 8.47E-03	J 6.46E-03			
2.11	Dichlorobromomethane (75-27-4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	J 1.96	J 1.8	J 1.56	10		
					Mass	kg/day	J 2.67E-03	J 1.99E-03	J 1.44E-03			
2.12	1,1-dichloroethane (75-34-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.13	1,2-dichloroethane (107-06-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.14	1,1-dichloroethylene (75-35-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.15	1,2-dichloropropane (78-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.16	1,3-dichloropropylene (542-75-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 2	< 2	< 2	10		
					Mass	kg/day	< 3E-03	< 2E-03	< 1.8E-03			
2.17	Ethylbenzene (100-41-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.18	Methyl bromide (74-83-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.19	Methyl chloride (74-87-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.20	Methylene chloride (75-09-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	J 5.86	<J 3.29	<J 2.48	10		
					Mass	kg/day	J 8.90E-03	<J 4.0E-03	<J 2.5E-03			
2.21	1,1,2,2- tetrachloroethane (79-34-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)		
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses	
2.22	Tetrachloroethylene (127-18-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.23	Toluene (108-88-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1	< 1	<J 0.9766	10		
					Mass	kg/day	< 2E-03	< 1E-03	<J 9E-04			
2.24	1,2-trans-dichloroethylene (156-60-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.25	1,1,1-trichloroethane (71-55-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.26	1,1,2-trichloroethane (79-00-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.27	Trichloroethylene (79-01-6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
2.28	Vinyl chloride (75-01-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	10		
					Mass	kg/day	< 2E-03	< 1E-03	< 1E-03			
Section 3. Organic Toxic Pollutants (GC/MS Fraction—Acid Compounds)												
3.1	2-chlorophenol (95-57-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
3.2	2,4-dichlorophenol (120-83-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
3.3	2,4-dimethylphenol (105-67-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
3.4	4,6-dinitro-o-cresol (534-52-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
3.5	2,4-dinitrophenol (51-28-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 21.4	< 21.4	< 21.4	1		
					Mass	kg/day	< 0.0176	< 0.0176	< 0.0176			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
3.6	2-nitrophenol (88-75-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
3.7	4-nitrophenol (100-02-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
3.8	p-chloro-m-cresol (59-50-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
3.9	Pentachlorophenol (87-86-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
3.10	Phenol (108-95-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
3.11	2,4,6-trichlorophenol (88-05-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
Section 4. Organic Toxic Pollutants (GC/MS Fraction—Base /Neutral Compounds)												
4.1	Acenaphthene (83-32-9)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			
4.2	Acenaphthylene (208-96-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			
4.3	Anthracene (120-12-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			
4.4	Benzidine (92-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.5	Benzo (a) anthracene (56-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			
4.6	Benzo (a) pyrene (50-32-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			

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	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.7	3,4-benzofluoranthene (205-99-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			
4.8	Benzo (ghi) perylene (191-24-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			
4.9	Benzo (k) fluoranthene (207-08-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			
4.10	Bis (2-chloroethoxy) methane (111-91-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.11	Bis (2-chloroethyl) ether (111-44-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.12	Bis (2-chloroisopropyl) ether (102-80-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.13	Bis (2-ethylhexyl) phthalate (117-81-7)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1.07	< 1.07	< 1.07	1		
					Mass	kg/day	< 8.79E-04	< 8.79E-04	< 8.79E-04			
4.14	4-bromophenyl phenyl ether (101-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.15	Butyl benzyl phthalate (85-68-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1.07	< 1.07	< 1.07	1		
					Mass	kg/day	< 8.79E-04	< 8.79E-04	< 8.79E-04			
4.16	2-chloronaphthalene (91-58-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			
4.17	4-chlorophenyl phenyl ether (7005-72-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.18	Chrysene (218-01-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			
4.19	Dibenzo (a,h) anthracene (53-70-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			

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			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.20	1,2-dichlorobenzene (95-50-1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	4		
					Mass	kg/day	< 8E-04	< 7.0E-04	< 7.0E-04			
4.21	1,3-dichlorobenzene (541-73-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	4		
					Mass	kg/day	< 8E-04	< 7.0E-04	< 7.0E-04			
4.22	1,4-dichlorobenzene (106-46-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1	< 1	< 1	4		
					Mass	kg/day	< 8E-04	< 7.0E-04	< 7.0E-04			
4.23	3,3-dichlorobenzidine (91-94-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.24	Diethyl phthalate (84-66-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1.07	< 1.07	< 1.07	1		
					Mass	kg/day	< 8.79E-04	< 8.79E-04	< 8.79E-04			
4.25	Dimethyl phthalate (131-11-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1.07	< 1.07	< 1.07	1		
					Mass	kg/day	< 8.79E-04	< 8.79E-04	< 8.79E-04			
4.26	Di-n-butyl phthalate (84-74-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 1.07	< 1.07	< 1.07	1		
					Mass	kg/day	< 8.79E-04	< 8.79E-04	< 8.79E-04			
4.27	2,4-dinitrotoluene (121-14-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.28	2,6-dinitrotoluene (606-20-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.29	Di-n-octyl phthalate (117-84-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 1.07	< 1.07	< 1.07	1		
					Mass	kg/day	< 8.79E-04	< 8.79E-04	< 8.79E-04			
4.30	1,2-Diphenylhydrazine (as azobenzene) (122-66-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.31	Fluoranthene (206-44-0)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			
4.32	Fluorene (86-73-7)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)		
			Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses	
4.33	Hexachlorobenzene (118-74-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.34	Hexachlorobutadiene (87-68-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.35	Hexachlorocyclopentadiene (77-47-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.36	Hexachloroethane (67-72-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.37	Indeno (1,2,3-cd) pyrene (193-39-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			
4.38	Isophorone (78-59-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.39	Naphthalene (91-20-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			
4.40	Nitrobenzene (98-95-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.41	N-nitrosodimethylamine (62-75-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.42	N-nitrosodi-n-propylamine (621-64-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.43	N-nitrosodiphenylamine (86-30-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
4.44	Phenanthrene (85-01-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			
4.45	Pyrene (129-00-0)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.1	< 0.1	< 0.1	1		
					Mass	kg/day	< 8E-05	< 8E-05	< 8E-05			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.46	1,2,4-trichlorobenzene (120-82-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 10.7	< 10.7	< 10.7	1		
					Mass	kg/day	< 8.79E-03	< 8.79E-03	< 8.79E-03			
Section 5. Organic Toxic Pollutants (GC/MS Fraction—Pesticides)												
5.1	Aldrin (309-00-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0202	< 0.0202	< 0.0202	1		
					Mass	kg/day	< 1.27E-05	< 1.27E-05	< 1.27E-05			
5.2	α-BHC (319-84-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0202	< 0.0202	< 0.0202	1		
					Mass	kg/day	< 1.27E-05	< 1.27E-05	< 1.27E-05			
5.3	β-BHC (319-85-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0202	< 0.0202	< 0.0202	1		
					Mass	kg/day	< 1.27E-05	< 1.27E-05	< 1.27E-05			
5.4	γ-BHC (58-89-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0202	< 0.0202	< 0.0202	1		
					Mass	kg/day	< 1.27E-05	< 1.27E-05	< 1.27E-05			
5.5	δ-BHC (319-86-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0202	< 0.0202	< 0.0202	1		
					Mass	kg/day	< 1.27E-05	< 1.27E-05	< 1.27E-05			
5.6	Chlordane (57-74-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.252	< 0.252	< 0.252	1		
					Mass	kg/day	< 1.58E-04	< 1.58E-04	< 1.58E-04			
5.7	4,4'-DDT (50-29-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0403	< 0.0403	< 0.0403	1		
					Mass	kg/day	< 2.53E-05	< 2.53E-05	< 2.53E-05			
5.8	4,4'-DDE (72-55-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0403	< 0.0403	< 0.0403	1		
					Mass	kg/day	< 2.53E-05	< 2.53E-05	< 2.53E-05			
5.9	4,4'-DDD (72-54-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0403	< 0.0403	< 0.0403	1		
					Mass	kg/day	< 2.53E-05	< 2.53E-05	< 2.53E-05			
5.10	Dieldrin (60-57-1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.0403	< 0.0403	< 0.0403	1		
					Mass	kg/day	< 2.53E-05	< 2.53E-05	< 2.53E-05			
5.11	α-endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0403	< 0.0403	< 0.0403	1		
					Mass	kg/day	< 2.53E-05	< 2.53E-05	< 2.53E-05			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
5.12	β-endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0202	< 0.0202	< 0.0202	1		
					Mass	kg/day	< 1.27E-05	< 1.27E-05	< 1.27E-05			
5.13	Endosulfan sulfate (1031-07-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0403	< 0.0403	< 0.0403	1		
					Mass	kg/day	< 2.53E-05	< 2.53E-05	< 2.53E-05			
5.14	Endrin (72-20-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0403	< 0.0403	< 0.0403	1		
					Mass	kg/day	< 2.53E-05	< 2.53E-05	< 2.53E-05			
5.15	Endrin aldehyde (7421-93-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0403	< 0.0403	< 0.0403	1		
					Mass	kg/day	< 2.53E-05	< 2.53E-05	< 2.53E-05			
5.16	Heptachlor (76-44-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0202	< 0.0202	< 0.0202	1		
					Mass	kg/day	< 1.27E-05	< 1.27E-05	< 1.27E-05			
5.17	Heptachlor epoxide (1024-57-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.0202	< 0.0202	< 0.0202	1		
					Mass	kg/day	< 1.27E-05	< 1.27E-05	< 1.27E-05			
5.18	PCB-1242 (53469-21-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.504	< 0.504	< 0.504	1		
					Mass	kg/day	< 3.16E-04	< 3.16E-04	< 3.16E-04			
5.19	PCB-1254 (11097-69-1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.504	< 0.504	< 0.504	1		
					Mass	kg/day	< 3.16E-04	< 3.16E-04	< 3.16E-04			
5.20	PCB-1221 (11104-28-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.504	< 0.504	< 0.504	1		
					Mass	kg/day	< 3.16E-04	< 3.16E-04	< 3.16E-04			
5.21	PCB-1232 (11141-16-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.504	< 0.504	< 0.504	1		
					Mass	kg/day	< 3.16E-04	< 3.16E-04	< 3.16E-04			
5.22	PCB-1248 (12672-29-6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	ug/L	< 0.504	< 0.504	< 0.504	1		
					Mass	kg/day	< 3.16E-04	< 3.16E-04	< 3.16E-04			
5.23	PCB-1260 (11096-82-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.504	< 0.504	< 0.504	1		
					Mass	kg/day	< 3.16E-04	< 3.16E-04	< 3.16E-04			
5.24	PCB-1016 (12674-11-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.504	< 0.504	< 0.504	1		
					Mass	kg/day	< 3.16E-04	< 3.16E-04	< 3.16E-04			

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))¹

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
			Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
5.25	Toxaphene (8001-35-2)		<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration	ug/L	< 0.504	< 0.504	< 0.504	1		
					Mass	kg/day	< 3.16E-04	< 3.16E-04	< 3.16E-04			

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi))¹

Pollutant	Presence or Absence (check one)		Units (specify)	Effluent				Intake (Optional)		
	Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses	
<input type="checkbox"/> Check here if you believe all pollutants on Table C to be present in your discharge from the noted outfall. You need <i>not</i> complete the "Presence or Absence" column of Table C for <i>each</i> pollutant.										
<input type="checkbox"/> Check here if you believe all pollutants on Table C to be absent in your discharge from the noted outfall. You need <i>not</i> complete the "Presence or Absence" column of Table C for <i>each</i> pollutant.										
1. Bromide (24959-67-9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	J 0.111	J 0.111	J 0.111	1		
			Mass	kg/day	J 0.0794	J 0.0794	J 0.0794			
2. Chlorine, total residual	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 0.05	< 0.05	< 0.05	3		
			Mass	kg/day	< 0.04	< 0.04	< 0.04			
3. Color	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration				0			
			Mass							
4. Fecal coliform	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration				0			
			Mass							
5. Fluoride (16984-48-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.44	0.44	0.44	1		
			Mass	kg/day	0.31	0.31	0.31			
6. Nitrate-nitrite	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	20.1	20.1	3.97	16		
			Mass	kg/day	21.2	21.2	4.02			
7. Nitrogen, total organic (as N)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	1.14	1.14	J< 0.1973	16		
			Mass	kg/day	0.948	0.948	J< 0.1903			
8. Oil and grease	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	1.9	1.9	< 1.71	19		
			Mass	kg/day	< 2.5	< 2.5	< 1.71			
9. Phosphorus (as P), total (7723-14-0)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.202	0.202	0.1155	6		
			Mass	kg/day	0.173	0.173	0.11			
10. Sulfate (as SO ₄) (14808-79-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	172	172	172	1		
			Mass	kg/day	123	123	123			
11. Sulfide (as S)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration				0			
			Mass							

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TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi))¹

	Pollutant	Presence or Absence (check one)		Units (specify)	Effluent				Intake (Optional)		
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses	
12.	Sulfite (as SO ₃) (14265-45-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration					0		
				Mass							
13.	Surfactants	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	J 0.0175	J 0.0175	J 0.0175	1		
				Mass	kg/day	J 0.0125	J 0.0125	J 0.0125			
14.	Aluminum, total (7429-90-5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.305	< 0.1136	< 0.0644	40		
				Mass	kg/day	0.211	< 0.14	< 0.0655			
15.	Barium, total (7440-39-3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.0221	0.0221	0.01	40		
				Mass	kg/day	0.0203	0.0203	0.01			
16.	Boron, total (7440-42-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.219	0.151	0.0885	40		
				Mass	kg/day	0.347	0.146	0.0899			
17.	Cobalt, total (7440-48-4)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	4.76E-03	< 1.72E-03	< 4.37E-04	41		
				Mass	kg/day	3.30E-03	< 1.2E-03	< 4.02E-04			
18.	Iron, total (7439-89-6)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 0.22	< 0.22	< 0.0614	43		
				Mass	kg/day	< 0.4	< 0.4	< 0.0637			
19.	Magnesium, total (7439-95-4)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	6.84	6.84	3.44	44		
				Mass	kg/day	9.7	9.7	3.49			
20.	Molybdenum, total (7439-98-7)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.0118	0.0118	< 5.97E-03	43		
				Mass	kg/day	0.0168	0.011	< 6.31E-03			
21.	Manganese, total (7439-96-5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.0384	< 0.0127	< 2.28E-03	43		
				Mass	kg/day	0.0266	< 8.64E-03	< 1.9E-03			
22.	Tin, total (7440-31-5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	< 2E-03	< 2E-03	< 1.1E-03	40		
				Mass	kg/day	< 4E-03	< 4E-03	< 1.1E-03			
23.	Titanium, total (7440-32-6)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	mg/L	0.0247	0.0247	< 3.74E-03	40		
				Mass	kg/day	0.0341	0.0341	< 3.54E-03			

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TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi))¹

Pollutant	Presence or Absence (check one)		Units (specify)	Effluent				Intake (Optional)		
	Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses	
24. Radioactivity										
Alpha, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	pCi/L	150	150	23.9	49		
			Mass							
Beta, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	pCi/L	2500	2500	629.31	49		
			Mass							
Radium, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	pCi/L	< 0.524	< 0.524	< 0.524	1		
			Mass							
Radium 226, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration	pCi/L	< 0.0328	< 0.0328	< 0.0328	1		
			Mass							

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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ATTACHMENTS

Section	Description	Information
9.2	Biological Toxicity Tests	IC25 Static Renewal 7 Day Chronic Ceriodaphnia and Pimephales promelas, NPDES Permit requirement, Yes, Submitted 1/28/2022; IC25 Static Renewal 7 Day Chronic Ceriodaphnia and Pimephales promelas, NPDES Permit requirement, Yes, Submitted 1/31/2023

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
1.	Asbestos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
2.	Acetaldehyde	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
3.	Allyl alcohol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.	Allyl chloride	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
5.	Amyl acetate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
6.	Aniline	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
7.	Benzonitrile	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
8.	Benzyl chloride	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
9.	Butyl acetate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
10.	Butylamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
11.	Captan	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
12.	Carbaryl	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
13.	Carbofuran	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
14.	Carbon disulfide	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
15.	Chlorpyrifos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
16.	Coumaphos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
17.	Cresol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
18.	Crotonaldehyde	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
19.	Cyclohexane	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
20.	2,4-D (2,4-dichlorophenoxyacetic acid)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
21.	Diazinon	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
22.	Dicamba	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
23.	Dichlobenil	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
24.	Dichlone	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
25.	2,2-dichloropropionic acid	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
26.	Dichlorvos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
27.	Diethyl amine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
28.	Dimethyl amine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
29.	Dinitrobenzene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
30.	Diquat	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
31.	Disulfoton	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
32.	Diuron	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
33.	Epichlorohydrin	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
34.	Ethion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
35.	Ethylene diamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
36.	Ethylene dibromide	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
37.	Formaldehyde	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
38.	Furfural	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
39.	Guthion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
40.	Isoprene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
41.	Isopropanolamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
42.	Kelthane	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
43.	Kepone	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
44.	Malathion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
45.	Mercaptodimethur	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
46.	Methoxychlor	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
47.	Methyl mercaptan	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
48.	Methyl methacrylate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
49.	Methyl parathion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
50.	Mevinphos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
51.	Mexacarbate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
52.	Monoethyl amine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
53.	Monomethyl amine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
54.	Naled	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
55.	Naphthenic acid	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
56.	Nitrotoluene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
57.	Parathion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
58.	Phenolsulfonate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
59.	Phosgene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
60.	Propargite	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
61.	Propylene oxide	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
62.	Pyrethrins	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
63.	Quinoline	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
64.	Resorcinol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
65.	Strontium	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Daily maximum 0.198 mg/L, Long-term average 0.101 mg/L	n = 41, all detects
66.	Strychnine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
67.	Styrene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
68.	2,4,5-T (2,4,5-trichlorophenoxyacetic acid)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
69.	TDE (tetrachlorodiphenyl ethane)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
70.	2,4,5-TP [2-(2,4,5-trichlorophenoxy) propanoic acid]	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
71.	Trichlorofon	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
72.	Triethanolamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
73.	Triethylamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
74.	Trimethylamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
75.	Uranium	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Daily maximum 0.019 mg/L, Long-term average <0.001 mg/L	n = 40 (mix of prefixes)
76.	Vanadium	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Daily maximum 0.019 mg/L, Long-term average <0.005 mg/L	n = 40 (mix of prefixes)

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))¹

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
77.	Vinyl acetate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
78.	Xylene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
79.	Xylenol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
80.	Zirconium	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Detected before/within last 10 years PWTC	Below detection level n = 40 (ND)

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE E. 2,3,7,8 TETRACHLORODIBENZO P DIOXIN (2,3,7,8 TCDD) (40 CFR 122.21(g)(7)(viii))

Pollutant	TCDD Congeners Used or Manufactured	Presence or Absence (check one)		Results of Screening Procedure
		Believed Present	Believed Absent	
2,3,7,8-TCDD	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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EXHIBIT 2C-4. CWA HAZARDOUS SUBSTANCES

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
1.	Acetic Acid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	Common lab substance/No data
2.	Ammonium Bisulfite	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	No data
3.	Ammonium Chloride	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP & PWTC influent	Common lab substance/No data
4.	Ammonium Hydroxide	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP & PWTC influent	Common lab substance/No data
5.	Ammonium Thiosulfate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	No data
6.	Diethylamine	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	No data
7.	Ethylene Diaminetetracetic Acid EDTA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP & PWTC influent	No data
8.	Ferric Nitrate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	No data
9.	Ferric Sulfate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	No data
10.	Fumaric Acid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	No data
11.	Hydrochloric Acid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP & PWTC influent	Common lab substance/No data
12.	Hydrofluoric Acid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	No data
13.	Monoethylamine	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	No data
14.	Monomethylamine	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	No data
15.	Nitric Acid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP & PWTC influent	Common lab substance/No data
16.	Phosphoric Acid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP & PWTC influent	Common lab substance/No data
17.	Sodium	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptant of trace amounts in STP & PWTC influent	
18.	X01: Sodium	<input checked="" type="checkbox"/>	<input type="checkbox"/>	X01: Daily maximum 50.9 mg/L, Long-term average 34.6 mg/L	n=41
19.	X12: Sodium	<input checked="" type="checkbox"/>	<input type="checkbox"/>	X12: Daily maximum 219 mg/L, Long-term average 139.3 mg/L	n=41

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EXHIBIT 2C-4 CWA HAZARDOUS SUBSTANCES

	Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present	Believed Absent		
20.	Sodium Bisulfite	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	No data
21.	Sodium Hydroxide	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP & PWTC influent	No data
22.	Sodium Hypochlorite	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP & PWTC influent	No data
23.	Sodium Phosphate (Dibasic)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP & PWTC influent	No data
24.	Sodium Phosphate (Tribasic)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in STP influent	No data
25.	Sulfuric Acid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in PWTC influent	No data
26.	Uranyl Nitrate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Occasional acceptance of trace amounts in PWTC influent	No data
27.		<input type="checkbox"/>	<input type="checkbox"/>		
28.		<input type="checkbox"/>	<input type="checkbox"/>		
29.		<input type="checkbox"/>	<input type="checkbox"/>		
30.		<input type="checkbox"/>	<input type="checkbox"/>		
31.		<input type="checkbox"/>	<input type="checkbox"/>		
32.		<input type="checkbox"/>	<input type="checkbox"/>		
33.		<input type="checkbox"/>	<input type="checkbox"/>		
34.		<input type="checkbox"/>	<input type="checkbox"/>		
35.		<input type="checkbox"/>	<input type="checkbox"/>		
36.		<input type="checkbox"/>	<input type="checkbox"/>		
37.		<input type="checkbox"/>	<input type="checkbox"/>		
38.		<input type="checkbox"/>	<input type="checkbox"/>		

Chapter 6 – EPA Form 2E Summary

The EPA Application Form 2E is required for facilities that discharge non-process wastewaters. Non-process discharges at ORNL are comprised of once-thru cooling water, cooling tower blowdown, boiler blowdown, reverse osmosis (RO) reject water, heating ventilating and air conditioning (HVAC) condensates, steam condensates, foundation drains/sump discharges, utility sump discharges, and other facility non-process wastewaters. There are approximately 70 non-process outfalls at ORNL. The EPA 2E forms and associated data for these non-process wastewater outfalls are included immediately following this summary.

In the *General Instructions for Reporting, Sampling, and Analysis* section of the EPA Form 2E instructions, it mentions that existing dischargers “may report quantitative data that you have collected over the past 365 days if they are representative of your current operations.” In an October 28, 2021, email from TDEC, TDEC gave ORNL permission to report quantitative data on these 2E forms that has been collected during the past 3 years if needed. ORNL has approximately 70 outfalls categorized as non-process outfalls, which is an unusually large number of outfalls which can make it much more challenging to obtain sampling data for the NPDES permit application in that limited time period. The analytical and field data utilized in the completion of the EPA 2E forms for this section were from sampling data obtained from July 4, 2020, to February 1, 2023. Data from representative outfalls were utilized in cases where no discharge was present at a given outfall during multiple sampling attempts, or where an outfall could not be sampled because it was inaccessible (e.g. some outfalls are below grade because they are located on a culverted reach of the receiving stream), or where the outfall is submerged by the receiving stream at baseflow conditions. In these cases, the representative outfall used for these 2E outfalls is noted in *Section 7 – Other Information* of the EPA 2E forms. In addition, the data reported on the 2E individual application forms uses consistent data qualifiers to those in the ORNL NPDES monthly DMRs: where >, <, and J (estimated value) are used.

Field parameter data (e.g., flow, pH, temperature, and chlorine) that are summarized on the Form 2E data tables were collected at each outfall beginning in 2021. For outfalls that are suspected to have little or no variability in water quality over a 24-hour period, ORNL requested and received permission to collect samples for laboratory analysis by grab sample rather than composite sample (permission was granted in the same October 28, 2021, email mentioned in the previous paragraph). Types of non-process discharges that were sampled by grab sample include condensate and foundation drain water. Types of discharges that were sampled by composite sample are cooling tower blowdown, boiler blowdown, and RO reject water. Per the EPA Form 2E instructions, chemical oxygen demand (COD) and total organic carbon (TOC) were sampled at outfalls where noncontact (once-thru cooling water and cooling tower blowdown) cooling water is discharged. Data on total residual chlorine/total residual oxidant (TRC/TRO) was also collected at those locations.

EPA Form 2E Section 3 – Waste Types

For those outfalls identified in Section 3.2 of the EPA 2E forms as having non-process wastewater discharges which include cooling tower blowdown, any additives that are used are reported in a separate table included in **Appendix L – Form 2E Cooling Water Additives**

EPA Form 2E Section 4 – Effluent Characteristics

There are some 2E outfalls with a potential thermal component (e.g., steam condensate) that discharge to a rock/grassy bank area near the creeks, instead of directly into a receiving stream. These low-flow components often infiltrate or cool significantly before mixing with the receiving stream flow. In addition, the flow rates of

these discharges tend to be very small in comparison to the stream flows. In these instances, in addition to the temperatures measured directly at the source and reported in Section 4.2 of the 2E forms, instream temperatures were monitored directly upstream and downstream of the discharge to demonstrate the negligible impacts on temperature in the receiving stream. This information is specifically noted on the 2E form under ***Section 7 – Other Information*** for any outfalls with this configuration.

There may be additional monitoring of non-process outfalls as a part of other water monitoring programs occurring on-site, or even as a part of other NPDES permit requirements. These additional water monitoring efforts are briefly summarized in **Chapter 3 – Water-Related Monitoring Programs at ORNL**.

EPA Form 2E

Non-Process Outfalls

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Frequency and rate of discharge is variable depending on season for condensate discharges. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		005	White Oak Creek	35° 55' 21.12" N	84° 19' 0.75" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)	
		<input type="checkbox"/> New discharger	<input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:	

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below)	
		<input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water sump/foundation drain	
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.	
	3.3	List the cooling water additives used and describe their composition.	
		Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	0.04 kg/day	3.65 mg/L	0.04 kg/day	3.65 mg/L	N/A
		Total suspended solids (TSS)	1	0.09 kg/day	7.8 mg/L	0.09 kg/day	7.8 mg/L	N/A
		Oil and grease	1	< 0.02 kg/day	< 1.63 mg/L	< 0.02 kg/day	< 1.63 mg/L	N/A
		Ammonia (as N)	1	J 4E-04 kg/day	J 0.0363 mg/L	J 4E-04 kg/day	J 0.0363 mg/L	N/A
		Discharge flow	16	3E-03 mgd				N/A
		pH (report as range)	1	8 - 8 StdUnit				N/A
		Temperature (winter)	3	17.7 degC				N/A
		Temperature (summer)	1	22.4 degC				N/A

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. This outfall is a foundation drain and discharges occur from this outfall infrequently. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>Multiple attempts were made to sample a discharge from this outfall and flow was not found since prior to 2012 permit application. The data reported on this form for this outfall were collected at representative outfall 085 since this outfall most closely resembles the discharges here.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (Use codes per Instructions.)
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	7	0.5 kg/day	0.8 mg/L	< 0.09 kg/day	< 0.16 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	3.43 kg/day	36.5 mg/L	3.43 kg/day	36.5 mg/L	N/A	
	Total organic carbon (TOC)	1	1.34 kg/day	14.2 mg/L	1.34 kg/day	14.2 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. Discharges are intermittent, and the frequency and duration are dependent on thermal loads due to weather and research activities. This outfall discharges frequently but not continuously. See Section 4.2 for flowrate.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). A sodium sulfite tablet feeder is used to treat blowdown from the cooling towers prior to discharge.					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>DOE captures some additional data specific to cooling tower blowdown discharges from non-process wastewater outfalls. A summary of this monitoring, as well as the corresponding additional data can be found in the WQPP Report submitted annually to TDEC.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Name (print or type first and last name) Johnny O. Moore</td> <td style="width: 50%;">Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		021	White Oak Creek	35° 55' 41.81" N	84° 18' 36.63" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water Steam pit sump and steam condensate			
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.			
	3.3	List the cooling water additives used and describe their composition.			
		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: center;">Cooling Water Additives (list)</th> <th style="text-align: center;">Composition of Additives (if available to you)</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>	Cooling Water Additives (list)	Composition of Additives (if available to you)	
Cooling Water Additives (list)	Composition of Additives (if available to you)				

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 5E-04 kg/day	< 1 mg/L	< 5E-04 kg/day	< 1 mg/L	N/A
		Total suspended solids (TSS)	1	< 3E-04 kg/day	< 0.588 mg/L	< 3E-04 kg/day	< 0.588 mg/L	N/A
		Oil and grease	1	< 9E-04 kg/day	< 1.69 mg/L	< 9E-04 kg/day	< 1.69 mg/L	N/A
		Ammonia (as N)	1	J 2E-05 kg/day	J 0.029 mg/L	J 2E-05 kg/day	J 0.029 mg/L	N/A
		Discharge flow	4	1.4E-04 mgd				N/A
		pH (report as range)	1	7.8 - 7.8 StdUnit				N/A
		Temperature (winter)	2	59.1 degC				N/A
	Temperature (summer)	2	55. degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.	
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Discharges of steam condensate are intermittent but frequent and vary with seasonal weather conditions. Steam pit sump water is pumped intermittently based on rain and groundwater collection in the pit. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A			
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>The temperature data presented for this outfall was taken directly at the steam condensate discharge. However, the discharge at this location travels over land several feet before it gets to the receiving stream during stream baseflow conditions. Therefore the temperature evaluation at this location was expanded to measure both upstream temperature = 16.5 degrees C and the downstream temperature = 15.5 degrees C. This change in temperature of 1.0 degrees C and the temperatures included here all indicate these temperature values are within the permitted ranges.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Name (print or type first and last name) Johnny O. Moore</td> <td style="width: 50%;">Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		031	White Oak Creek	35° 55' 43.63" N	84° 18' 34.83" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)	
		<input type="checkbox"/> New discharger	<input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:	

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)	
		<input type="checkbox"/> Sanitary wastes <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water	<input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) Steam condensate
	3.2	Does the facility use cooling water additives?	
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.	
		Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.				
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 5E-04 kg/day	< 1 mg/L	< 5E-04 kg/day	< 1 mg/L	N/A
		Total suspended solids (TSS)	1	< 6E-04 kg/day	< 1.14 mg/L	< 6E-04 kg/day	< 1.14 mg/L	N/A
		Oil and grease	1	< 9E-04 kg/day	< 1.67 mg/L	< 9E-04 kg/day	< 1.67 mg/L	N/A
		Ammonia (as N)	1	J 2E-05 kg/day	J 0.0309 mg/L	J 2E-05 kg/day	J 0.0309 mg/L	N/A
		Discharge flow	4	3.6E-04 mgd				N/A
	pH (report as range)	1	8 - 8 StdUnit				N/A	
	Temperature (winter)	2	58.6 degC				N/A	
	Temperature (summer)	2	77.2 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.	
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Flows at this outfall are fairly consistent but can vary with seasonal weather conditions. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>The temperature data presented for this outfall was taken directly at the steam condensate discharge. However, the discharge at this location travels over land several feet before it gets to the receiving stream during stream baseflow conditions. Therefore the temperature evaluation at this location was expanded to measure both upstream temperature = 14.3 degrees C and the downstream temperature = 14.4 degrees C. This change in temperature of 0.1 degrees C and the temperatures included here all indicate these temperature values are within the permitted ranges.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		041	First Creek	35° 55' 24.51" N	84° 19' 12.23" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)
		<input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste unknown dry-weather source <input type="checkbox"/> Non-contact cooling water			
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.			
	3.3	List the cooling water additives used and describe their composition.			
		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; width: 60%; border-bottom: 1px solid black;">Cooling Water Additives (list)</th> <th style="text-align: center; border-bottom: 1px solid black;">Composition of Additives (if available to you)</th> </tr> </thead> <tbody> <tr style="height: 40px;"> <td> </td> <td> </td> </tr> </tbody> </table>	Cooling Water Additives (list)	Composition of Additives (if available to you)	
Cooling Water Additives (list)	Composition of Additives (if available to you)				

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 4E-03 kg/day	< 3 mg/L	< 4E-03 kg/day	< 3 mg/L	N/A
		Total suspended solids (TSS)	1	< 7.8E-03 kg/day	< 5.7 mg/L	< 7.8E-03 kg/day	< 5.7 mg/L	N/A
		Oil and grease	1	< 2.2E-03 kg/day	< 1.61 mg/L	< 2.2E-03 kg/day	< 1.61 mg/L	N/A
		Ammonia (as N)	1	< 2.3E-05 kg/day	< 0.017 mg/L	< 2.3E-05 kg/day	< 0.017 mg/L	N/A
		Discharge flow	4	3.6E-04 mgd				N/A
		pH (report as range)	1	7.6 - 7.6 StdUnit				N/A
		Temperature (winter)	3	19. degC				N/A
	Temperature (summer)	1	24. degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
	<i>E. coli</i>						
	Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
Chemical oxygen demand (COD)							
Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Dry weather flow is present at this outfall only intermittently. Because the source of the dry weather flow is not known, the frequency of discharge and the durations of the discharges are not known. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		051	Northwest Tributary	35° 55' 20.34" N	84° 19' 14.65" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)
		<input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)				
		<input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste HVAC and steam condensate, OTCW <input checked="" type="checkbox"/> Non-contact cooling water				
	3.2	Does the facility use cooling water additives?				
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.				
	3.3	List the cooling water additives used and describe their composition.				
		<table border="1"> <thead> <tr> <th>Cooling Water Additives (list)</th> <th>Composition of Additives (if available to you)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Cooling Water Additives (list)	Composition of Additives (if available to you)		
Cooling Water Additives (list)	Composition of Additives (if available to you)					

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
	Mass			Conc.	Mass	Conc.		
		Biochemical oxygen demand (BOD ₅)	1	< 0.02 kg/day	< 4 mg/L	< 0.02 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	0.04 kg/day	7.35 mg/L	0.04 kg/day	7.35 mg/L	N/A
		Oil and grease	1	< 9E-03 kg/day	< 1.59 mg/L	< 9E-03 kg/day	< 1.59 mg/L	N/A
		Ammonia (as N)	1	J 2E-04 kg/day	J 0.041 mg/L	J 2E-04 kg/day	J 0.041 mg/L	N/A
		Discharge flow	4	3E-03 mgd				N/A
	pH (report as range)	1	7.81 - 7.81 StdUnit				N/A	
	Temperature (winter)	3	13.6 degC				N/A	
	Temperature (summer)	2	18.2 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	1	< 3E-04 kg/day	< 0.05 mg/L	< 3E-04 kg/day	< 0.05 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	< 0.05 kg/day	< 8.95 mg/L	< 0.05 kg/day	< 8.95 mg/L	N/A	
	Total organic carbon (TOC)	1	6E-03 kg/day	1.03 mg/L	6E-03 kg/day	1.03 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. HVAC condensate and/or steam condensate discharges vary seasonally. There are intermittent once through cooling water and distilled water flushing discharges depending on research needs. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). There is distillation and UV dechlorination of water supply prior to experimental use.				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		052	Northwest Tributary	35° 55' 17.55" N	84° 19' 15.06" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)	
		<input type="checkbox"/> New discharger	<input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:	

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)	
		<input type="checkbox"/> Sanitary wastes <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water	<input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) HVAC cond, aquatic pond overflow and spring
	3.2	Does the facility use cooling water additives?	
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.	
		Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.05 kg/day	< 1 mg/L	< 0.05 kg/day	< 1 mg/L	N/A
		Total suspended solids (TSS)	1	J 0.2 kg/day	J 2.91 mg/L	J 0.2 kg/day	J 2.91 mg/L	N/A
		Oil and grease	1	< 0.09 kg/day	< 1.61 mg/L	< 0.09 kg/day	< 1.61 mg/L	N/A
		Ammonia (as N)	1	4E-03 kg/day	0.077 mg/L	4E-03 kg/day	0.077 mg/L	N/A
		Discharge flow	3	0.01 mgd				N/A
	pH (report as range)	1	6.9 - 6.9 StdUnit				N/A	
	Temperature (winter)	2	13.9 degC				N/A	
	Temperature (summer)	1	20.2 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.				
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)
				Mass	Conc.	Mass
						Conc.
		Fecal coliform				
		<i>E. coli</i>				
		Enterococci				
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.				
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Total Residual Chlorine					
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.					
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Chemical oxygen demand (COD)					
	Total organic carbon (TOC)					

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. This outfall discharges intermittently based on experiments in the aquatics laboratory and occasional valving changes downstream of First Creek spring. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>This outfall is the discharge pipe from a pond originally constructed and used for rearing fish for experimental purposes, but the pond is no longer used for that purpose. The inlet to this and its neighboring ponds (there are a total of 6 ponds that discharge through outfalls 052 - 057) is controlled by a valving system which can direct flow to any or all of the ponds. In most circumstances all flow is directed to the pond discharging through this Outfall 052. The source of water is discharge from the experimental fish tanks. A butterfly valve in the pipe from an upper First Creek spring can also discharge small amounts of water to the pond(s).</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		053	Northwest Tributary	35° 55' 17.64" N	84° 19' 15.8" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input checked="" type="checkbox"/> HVAC cond, aquatic pond overflow and spring <input type="checkbox"/> Non-contact cooling water	
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.	
	3.3	List the cooling water additives used and describe their composition.	
		Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>	Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
				Mass	Conc.		
		Biochemical oxygen demand (BOD ₅)	1	J 6E-04 kg/day	J 1.17 mg/L	J 6E-04 kg/day J 1.17 mg/L	N/A
		Total suspended solids (TSS)	1	0.31 kg/day	3.8 mg/L	0.31 kg/day 3.8 mg/L	N/A
		Oil and grease	1	J 0.18 kg/day	J 2.21 mg/L	J 0.18 kg/day J 2.21 mg/L	N/A
		Ammonia (as N)	1	J 3.8E-03 kg/day	J 0.0469 mg/L	J 3.8E-03 kg/day J 0.0469 mg/L	N/A
		Discharge flow	4	0.022 mgd			N/A
		pH (report as range)	3	6.7 - 7.5 StdUnit			N/A
	Temperature (winter)	1	13.7 degC			N/A	
	Temperature (summer)	3	23. degC			N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. This outfall discharges intermittently based on experiments in the aquatics laboratory and occasional valving changes downstream of First Creek spring. There are six ponds formerly used for aquatics research by the Environmental Sciences Division, and this outfall is the overflow pipe from one of them. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). ORNL potable/process supply water is dechlorinated prior to use in the Building 1504 aquatics laboratory. The water delivery system is equipped with in-line chlorine analyzers that stop the flow of process water into aquaria if dechlorination is not occurring. The water is also heated slightly for use in the research aquariums.
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>This outfall is the discharge pipe from a pond originally constructed and used for rearing fish for experimental purposes, but the pond is no longer used for that purpose. The inlet to this and its neighboring ponds (there are a total of 6 ponds that discharge through outfalls 052 - 057) is controlled by a valving system which can direct flow to any or all of the ponds. In most circumstances all flow is directed to the pond discharging through this Outfall 052, but on occasion flow can be directed through this outfall. The source of water is discharge from the experimental fish tanks. A butterfly valve in the pipe from an upper First Creek spring can also discharge small amounts of water to the pond(s). Multiple attempts were made to sample a discharge from this outfall and flow was not found. The data reported on this form for this outfall were collected at representative outfall 056 since this outfall most closely resembles the discharges here.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
	Outfall Number	Receiving Water Name	Latitude	Longitude	
	054	Northwest Tributary	35° 55' 17.7" N	84° 19' 16.48" W	

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste HVAC cond, aquatic pond overflow and spring <input type="checkbox"/> Non-contact cooling water _____
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.	
	Biochemical oxygen demand (BOD ₅)	1	J 6E-04 kg/day	J 1.17 mg/L	J 6E-04 kg/day	J 1.17 mg/L	N/A
	Total suspended solids (TSS)	1	0.31 kg/day	3.8 mg/L	0.31 kg/day	3.8 mg/L	N/A
	Oil and grease	1	J 0.18 kg/day	J 2.21 mg/L	J 0.18 kg/day	J 2.21 mg/L	N/A
	Ammonia (as N)	1	J 3.8E-03 kg/day	J 0.0469 mg/L	J 3.8E-03 kg/day	J 0.0469 mg/L	N/A
	Discharge flow	4	0.022 mgd				N/A
	pH (report as range)	3	6.7 - 7.5 StdUnit				N/A
Temperature (winter)	1	13.7 degC				N/A	
Temperature (summer)	3	23. degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.				
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)
				Mass	Conc.	Mass
						Conc.
		Fecal coliform				
		<i>E. coli</i>				
		Enterococci				
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.				
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Total Residual Chlorine					
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.					
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	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Chemical oxygen demand (COD)					
	Total organic carbon (TOC)					

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. This outfall discharges intermittently based on experiments in the aquatics laboratory and occasional valving changes downstream of First Creek spring. There are six ponds formerly used for aquatics research by the Environmental Sciences Division, and this outfall is the overflow pipe from one of them. See Section 4.2 for flowrate.

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>This outfall is the discharge pipe from a pond originally constructed and used for rearing fish for experimental purposes, but the pond is no longer used for that purpose. The inlet to this and its neighboring ponds (there are a total of 6 ponds that discharge through outfalls 052 - 057) is controlled by a valving system which can direct flow to any or all of the ponds. In most circumstances all flow is directed to the pond discharging through Outfall 052, but on occasion flow can be directed through this outfall. The source of water is discharge from the experimental fish tanks and HVAC condensate from Building 1504. A butterfly valve in the pipe from an upper First Creek spring can also discharge small amounts of water to the pond(s). Multiple attempts were made to sample a discharge from this outfall and flow was not found. The data reported on this form for this outfall were collected at representative outfall 056 since this outfall most closely resembles the discharges here.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

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		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
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		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory	Form Approved 03/05/19 OMB No. 2040-0004
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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.																
		<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;">Outfall Number</th> <th style="width:40%;">Receiving Water Name</th> <th style="width:25%;">Latitude</th> <th style="width:25%;">Longitude</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">055</td> <td>Northwest Tributary</td> <td style="text-align: center;">35° 55' 17.78" N</td> <td style="text-align: center;">84° 19' 17.19" W</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Outfall Number	Receiving Water Name	Latitude	Longitude	055	Northwest Tributary	35° 55' 17.78" N	84° 19' 17.19" W								
Outfall Number	Receiving Water Name	Latitude	Longitude															
055	Northwest Tributary	35° 55' 17.78" N	84° 19' 17.19" W															

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste HVAC cond., aquatic pond overflow and spring <input type="checkbox"/> Non-contact cooling water				
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.				
	3.3	List the cooling water additives used and describe their composition.				
		<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;">Cooling Water Additives <small>(list)</small></th> <th style="width:50%;">Composition of Additives <small>(if available to you)</small></th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>		
Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>					

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
				Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	J 6E-04 kg/day	J 1.17 mg/L	J 6E-04 kg/day	J 1.17 mg/L	N/A
		Total suspended solids (TSS)	1	0.31 kg/day	3.8 mg/L	0.31 kg/day	3.8 mg/L	N/A
		Oil and grease	1	J 0.18 kg/day	J 2.21 mg/L	J 0.18 kg/day	J 2.21 mg/L	N/A
		Ammonia (as N)	1	J 3.8E-03 kg/day	J 0.0469 mg/L	J 3.8E-03 kg/day	J 0.0469 mg/L	N/A
		Discharge flow	4	0.022 mgd				N/A
		pH (report as range)	3	6.7 - 7.5 StdUnit				N/A
		Temperature (winter)	1	13.7 degC				N/A
		Temperature (summer)	3	23. degC				N/A

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. This outfall discharges intermittently based on experiments in the aquatics laboratory and occasional valving changes downstream of First Creek spring. There are six ponds formerly used for aquatics research by the Environmental Sciences Division, and this outfall is the overflow pipe from one of them. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). ORNL potable/process supply water is dechlorinated prior to use in the Building 1504 aquatics laboratory. The water delivery system is equipped with in-line chlorine analyzers that stop the flow of process water into aquaria if dechlorination is not occurring. The water is also heated slightly for use in the research aquariums.
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>This outfall is the discharge pipe from a pond originally constructed and used for rearing fish for experimental purposes, but the pond is no longer used for that purpose. The inlet to this and its neighboring ponds (there are a total of 6 ponds that discharge through outfalls 052 - 057) is controlled by a valving system which can direct flow to any or all of the ponds. In most circumstances all flow is directed to the pond discharging through Outfall 052, but on occasion flow can be directed through this outfall. The source of water is discharge from the experimental fish tanks and HVAC condensate from Building 1504. A butterfly valve in the pipe from an upper First Creek spring can also discharge small amounts of water to the pond(s). Multiple attempts were made to sample a discharge from this outfall and flow was not found. The data reported on this form for this outfall were collected at representative outfall 056 since this outfall most closely resembles the discharges here.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.							
		Outfall Number	Receiving Water Name	Latitude		Longitude			
		056	Northwest Tributary	35°	55'	17.85" N	84°	19'	17.86" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)				
		<input type="checkbox"/> New discharger		<input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.		
	2.2	Specify your anticipated discharge date:				

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)				
		<input type="checkbox"/> Sanitary wastes		<input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) HVAC cond, aquatic pond overflow and spring		
		<input type="checkbox"/> Restaurant or cafeteria waste		<input type="checkbox"/> Non-contact cooling water		
	3.2	Does the facility use cooling water additives?				
		<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No → SKIP to Section 4.		
	3.3	List the cooling water additives used and describe their composition.				
		Cooling Water Additives <small>(list)</small>			Composition of Additives <small>(if available to you)</small>	

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.				
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	J 6E-04 kg/day	J 1.17 mg/L	J 6E-04 kg/day	J 1.17 mg/L	N/A
		Total suspended solids (TSS)	1	0.31 kg/day	3.8 mg/L	0.31 kg/day	3.8 mg/L	N/A
		Oil and grease	1	J 0.18 kg/day	J 2.21 mg/L	J 0.18 kg/day	J 2.21 mg/L	N/A
		Ammonia (as N)	1	J 3.8E-03 kg/day	J 0.0469 mg/L	J 3.8E-03 kg/day	J 0.0469 mg/L	N/A
		Discharge flow	4	0.022 mgd				N/A
	pH (report as range)	3	6.7 - 7.5 StdUnit				N/A	
	Temperature (winter)	1	13.7 degC				N/A	
	Temperature (summer)	3	23. degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.				
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)
				Mass	Conc.	Mass
						Conc.
		Fecal coliform				
		<i>E. coli</i>				
		Enterococci				
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.				
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Total Residual Chlorine					
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.					
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Chemical oxygen demand (COD)					
	Total organic carbon (TOC)					
SECTION 5. FLOW (40 CFR 122.21(h)(5))						
Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. This outfall discharges intermittently based on experiments in the aquatics laboratory and occasional valving changes downstream of First Creek spring. There are six ponds formerly used for aquatics research by the Environmental Sciences Division, and this outfall is the overflow pipe from one of them. There is almost always some discharge from this pond. However, this outfall has the potential to discharge at rates equivalent to Outfall 052 if the water that is normally directed to the pond that discharges through Outfall 052 is directed to this pond instead. See Section 4.2 for flowrate.				
SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))						
Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). ORNL potable/process supply water is dechlorinated prior to use in the Building 1504 aquatics laboratory. The water delivery system is equipped with in-line chlorine analyzers that stop the flow of process water into aquaria if dechlorination is not occurring. The water is also heated slightly for use in the research aquariums.				

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>This outfall is the discharge pipe from a pond originally constructed and used for rearing fish for experimental purposes, but the pond is no longer used for that purpose. The inlet to this and its neighboring ponds (there are a total of 6 ponds that discharge through outfalls 052 - 057) is controlled by a valving system which can direct flow to any or all of the ponds. In most circumstances all flow is directed to the pond discharging through Outfall 052. The source of water is discharge from the experimental fish tanks and HVAC condensate from Building 1504. A butterfly valve in the pipe from an upper First Creek spring can also discharge small amounts of water to the pond(s).</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		057	Northwest Tributary	35° 55' 17.92" N	84° 19' 18.55" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste HVAC cond, aquatic pond overflow and spring <input type="checkbox"/> Non-contact cooling water
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.03 kg/day	< 1 mg/L	< 0.03 kg/day	< 1 mg/L	N/A
		Total suspended solids (TSS)	1	0.2 kg/day	5.79 mg/L	0.2 kg/day	5.79 mg/L	N/A
		Oil and grease	1	< 0.04 kg/day	< 1.65 mg/L	< 0.04 kg/day	< 1.65 mg/L	N/A
		Ammonia (as N)	1	2E-03 kg/day	0.0818 mg/L	2E-03 kg/day	0.0818 mg/L	N/A
		Discharge flow	5	7E-03 mgd				N/A
	pH (report as range)	2	6.8 - 7 StdUnit				N/A	
	Temperature (winter)	3	14.2 degC				N/A	
	Temperature (summer)	2	22.7 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	Conc.
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.	
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. This outfall discharges intermittently based on experiments in the aquatics laboratory and occasional valving changes downstream of First Creek spring. There are six ponds formerly used for aquatics research by the Environmental Sciences Division, and this outfall is the overflow pipe from one of them. The discharge from this pond is intermittent, but discharge is frequently present. However, this outfall has the potential to discharge at rates equivalent to Outfall 052 if the water that is normally directed to the pond that discharges through Outfall 052 is directed to this pond instead. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). ORNL potable/process supply water is dechlorinated prior to use in the Building 1504 aquatics laboratory. The water delivery system is equipped with in-line chlorine analyzers that stop the flow of process water into aquaria if dechlorination is not occurring. The water is also heated slightly for use in the research aquariums.
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>This outfall is the discharge pipe from a pond originally constructed and used for rearing fish for experimental purposes, but the pond is no longer used for that purpose. The inlet to this and its neighboring ponds (there are a total of 6 ponds that discharge through outfalls 052 - 057) is controlled by a valving system which can direct flow to any or all of the ponds. In most circumstances all flow is directed to the pond discharging through Outfall 052. The source of water is discharge from the experimental fish tanks and HVAC condensate from Building 1504. A butterfly valve in the pipe from an upper First Creek spring can also discharge small amounts of water to the pond(s).</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		058	Northwest Tributary	35° 55' 20.88" N	84° 19' 20.64" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)	
		<input type="checkbox"/> New discharger	<input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:	

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)	
		<input type="checkbox"/> Sanitary wastes	<input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) HVAC & steam condensate, emergency CT blowdown
		<input type="checkbox"/> Restaurant or cafeteria waste	
		<input checked="" type="checkbox"/> Non-contact cooling water	
	3.2	Does the facility use cooling water additives?	
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.	
		Cooling Water Additives (list)	Composition of Additives (if available to you)
		See Appendix L	See Appendix L

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 2E-03 kg/day	< 4 mg/L	< 2E-03 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	3E-03 kg/day	5.7 mg/L	3E-03 kg/day	5.7 mg/L	N/A
		Oil and grease	1	J 1E-03 kg/day	J 2.32 mg/L	J 1E-03 kg/day	J 2.32 mg/L	N/A
		Ammonia (as N)	1	J 2E-05 kg/day	J 0.042 mg/L	J 2E-05 kg/day	J 0.042 mg/L	N/A
		Discharge flow	3	1E-03 mgd				N/A
	pH (report as range)	1	7.7 - 7.7 StdUnit				N/A	
	Temperature (winter)	2	9.2 degC				N/A	
	Temperature (summer)	2	19.8 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	1	< 3E-05 kg/day	< 0.05 mg/L	< 3E-05 kg/day	< 0.05 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	J 5E-03 kg/day	J 9.2 mg/L	J 5E-03 kg/day	J 9.2 mg/L	N/A	
	Total organic carbon (TOC)	1	1E-03 kg/day	2.56 mg/L	1E-03 kg/day	2.56 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. Steam and HVAC sources are intermittent and are dependent on ambient temperatures and heating and cooling demands. CT blowdown would only ever occur in an emergency overflow situation during power failure. See Section 4.2 for flowrate.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>This outfall cannot be sampled due to submergence of the outlet by the receiving stream and lack of other access points. Therefore, the concentration, flow, and flux data reported on the first page of this form are representative data taken at Outfall 204. Outfall 204 discharges similar types of nonprocess wastewaters.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Name (print or type first and last name) Johnny O. Moore</td> <td style="width: 50%;">Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		081	Tributary to Melton Branch	35° 55' 3.15" N	84° 18' 19.29" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input checked="" type="checkbox"/> Non-contact cooling water OTCW, HVAC, and steam condensate/sump
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.01 kg/day	< 4 mg/L	< 0.01 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	0.04 kg/day	13.9 mg/L	0.04 kg/day	13.9 mg/L	N/A
		Oil and grease	1	J 4E-03 kg/day	J 1.56 mg/L	J 4E-03 kg/day	J 1.56 mg/L	N/A
		Ammonia (as N)	1	1E-04 kg/day	0.0532 mg/L	1E-04 kg/day	0.0532 mg/L	N/A
		Discharge flow	8	6E-03 mgd				N/A
		pH (report as range)	1	7.6 - 7.6 StdUnit				N/A
	Temperature (winter)	3	15. degC				N/A	
	Temperature (summer)	2	17.8 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	1	< 1E-04 kg/day	< 0.05 mg/L	< 1E-04 kg/day	< 0.05 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	< 0.02 kg/day	< 8.95 mg/L	< 0.02 kg/day	< 8.95 mg/L	N/A	
	Total organic carbon (TOC)	1	J 2E-03 kg/day	J 0.666 mg/L	J 2E-03 kg/day	J 0.666 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. Cooling water from equipment rooms, individual steam/sump and HVAC condensate sources depend upon seasonal weather conditions and are intermittent. See Section 4.2 for flowrate.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). Dechlorination with sodium sulfite tablet feeder.					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		085	Melton Branch	35 ° 54 ' 37.61 " N	84 ° 18 ' 55.05 " W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water sump and foundation drain			
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.			
	3.3	List the cooling water additives used and describe their composition.			
		<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: center;">Cooling Water Additives <small>(list)</small></th> <th style="text-align: center;">Composition of Additives <small>(if available to you)</small></th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>	
Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>				

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	0.04 kg/day	3.65 mg/L	0.04 kg/day	3.65 mg/L	N/A
		Total suspended solids (TSS)	1	0.09 kg/day	7.8 mg/L	0.09 kg/day	7.8 mg/L	N/A
		Oil and grease	1	< 0.02 kg/day	< 1.63 mg/L	< 0.02 kg/day	< 1.63 mg/L	N/A
		Ammonia (as N)	1	J 4E-04 kg/day	J 0.0363 mg/L	J 4E-04 kg/day	J 0.0363 mg/L	N/A
		Discharge flow	16	3E-03 mgd				N/A
		pH (report as range)	1	8 - 8 StdUnit				N/A
	Temperature (winter)	3	17.7 degC				N/A	
	Temperature (summer)	1	22.4 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.				
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)
				Mass	Conc.	Mass
						Conc.
		Fecal coliform				
		<i>E. coli</i>				
		Enterococci				
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.				
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Total Residual Chlorine					
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.					
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Chemical oxygen demand (COD)					
	Total organic carbon (TOC)					

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Flow is intermittent and varies seasonally. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. Wastewater discharged to this outfall includes groundwater from the Building 7830 foundation.
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		102	White Oak Creek	35° 55' 31.1" N	84° 18' 50.82" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Emergency OTCW during power failure <input checked="" type="checkbox"/> Non-contact cooling water
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.2 kg/day	< 4 mg/L	< 0.2 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	J 0.1 kg/day	J 3.33 mg/L	J 0.1 kg/day	J 3.33 mg/L	N/A
		Oil and grease	1	J 0.1 kg/day	J 2.18 mg/L	J 0.1 kg/day	J 2.18 mg/L	N/A
		Ammonia (as N)	1	3E-03 kg/day	0.074 mg/L	3E-03 kg/day	0.074 mg/L	N/A
		Discharge flow	1	0.01 mgd				N/A
		pH (report as range)	1	7.7 - 7.7 StdUnit				N/A
	Temperature (winter)	1	28. degC		N/A			
	Temperature (summer)	0	See Section 7.1				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	1	< 2E-03 kg/day	< 0.05 mg/L	< 2E-03 kg/day	< 0.05 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	< 0.4 kg/day	< 8.95 mg/L	< 0.4 kg/day	< 8.95 mg/L	N/A	
	Total organic carbon (TOC)	1	0.1 kg/day	2.44 mg/L	0.1 kg/day	2.44 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. This outfall source only flows during emergencies when power outages occur. See Section 4.2 for flowrate.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). This outfall only discharges dry weather flow during emergencies, when power outages occur. At these times, once through cooling water is discharged for backup cooling during the outage and is dechlorinated with tablet feeder.					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. Multiple attempts were made to obtain temperatures for this outfall and flow was not found.
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		191	Tributary to Clinch River	35° 56' 7.25" N	84° 16' 36.23" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste HVAC condensate and cooling tower blowdown <input checked="" type="checkbox"/> Non-contact cooling water	
	3.2	Does the facility use cooling water additives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 4.	
	3.3	List the cooling water additives used and describe their composition.	

Cooling Water Additives (list)	Composition of Additives (if available to you)
See Appendix L	See Appendix L

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 2E-03 kg/day	< 4 mg/L	< 2E-03 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	3E-03 kg/day	5.7 mg/L	3E-03 kg/day	5.7 mg/L	N/A
		Oil and grease	1	J 1E-03 kg/day	J 2.32 mg/L	J 1E-03 kg/day	J 2.32 mg/L	N/A
		Ammonia (as N)	1	J 2E-05 kg/day	J 0.042 mg/L	J 2E-05 kg/day	J 0.042 mg/L	N/A
		Discharge flow	3	1E-03 mgd				N/A
		pH (report as range)	1	7.7 - 7.7 StdUnit				N/A
	Temperature (winter)	2	9.2 degC				N/A	
	Temperature (summer)	2	19.8 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
	<i>E. coli</i>							
	Enterococci							
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
Mass				Conc.	Mass	Conc.		
Total Residual Chlorine	1	< 3E-05 kg/day	< 0.05 mg/L	< 3E-05 kg/day	< 0.05 mg/L	N/A		
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
Chemical oxygen demand (COD)	1	J 5E-03 kg/day	J 9.2 mg/L	J 5E-03 kg/day	J 9.2 mg/L	N/A		
Total organic carbon (TOC)	1	1E-03 kg/day	2.56 mg/L	1E-03 kg/day	2.56 mg/L	N/A		

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. This discharge is intermittent depending on the weather/season. Some of the condensate discharges are pumped to the outfall from sumps. The blowdown discharge from the small cooling tower is a minor component of dry weather flow to this outfall. See Section 4.2 for flowrate.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>DOE captures some additional data specific to cooling tower blowdown discharges from non-process wastewater outfalls. A summary of this monitoring, as well as the corresponding additional data can be found in the WQPP Report submitted annually to TDEC.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	1	< 3E-05 kg/day	< 0.05 mg/L	< 3E-05 kg/day	< 0.05 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	J 5E-03 kg/day	J 9.2 mg/L	J 5E-03 kg/day	J 9.2 mg/L	N/A	
	Total organic carbon (TOC)	1	1E-03 kg/day	2.56 mg/L	1E-03 kg/day	2.56 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. HVAC, steam condensate and cooling tower blowdown sources are intermittent. The cooling tower is thought to minimally discharge blowdown about one to two times per year. See Section 4.2 for flowrate.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). Best management practice is to place sodium sulfite (92%) tablets in the drainage ditch during blowdown or tower drainage cycles.					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>DOE captures some additional data specific to cooling tower blowdown discharges from non-process wastewater outfalls. A summary of this monitoring, as well as the corresponding additional data can be found in the WQPP Report submitted annually to TDEC.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		207	White Oak Creek	35° 55' 32.88" N	84° 18' 50.28" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste HVAC & steam condensate, sump discharge <input type="checkbox"/> Non-contact cooling water
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	0.07 kg/day	4.22 mg/L	0.07 kg/day	4.22 mg/L	N/A
		Total suspended solids (TSS)	1	0.04 kg/day	2.45 mg/L	0.04 kg/day	2.45 mg/L	N/A
		Oil and grease	1	< 0.03 kg/day	< 1.61 mg/L	< 0.03 kg/day	< 1.61 mg/L	N/A
		Ammonia (as N)	1	2E-03 kg/day	0.111 mg/L	2E-03 kg/day	0.111 mg/L	N/A
		Discharge flow	39	0.1 mgd				N/A
		pH (report as range)	24	7.3 - 9.5 StdUnit				N/A
	Temperature (winter)	14	15.3 degC				N/A	
	Temperature (summer)	13	24.3 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)	
				Mass	Conc.	Mass		Conc.
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)		
			Mass	Conc.	Mass		Conc.	
	Chemical oxygen demand (COD)							
	Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. HVAC condensate, steam condensate, and sump drainage sources are intermittent. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.						
	Outfall Number	Receiving Water Name	Latitude		Longitude			
	210	White Oak Creek	35°	55'	35.59" N	84°	18'	47.17" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> OTCW <input checked="" type="checkbox"/> Non-contact cooling water _____		
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.		
	3.3	List the cooling water additives used and describe their composition.		
		<table border="1" style="width:45%"> <tr> <th style="text-align:center;">Cooling Water Additives (list)</th> <th style="text-align:center;">Composition of Additives (if available to you)</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>	Cooling Water Additives (list)	Composition of Additives (if available to you)
Cooling Water Additives (list)	Composition of Additives (if available to you)			

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.	
	Biochemical oxygen demand (BOD ₅)	1	< 0.07 kg/day	< 4 mg/L	< 0.07 kg/day	< 4 mg/L	N/A
	Total suspended solids (TSS)	1	0.07 kg/day	4.5 mg/L	0.07 kg/day	4.5 mg/L	N/A
	Oil and grease	1	0.2 kg/day	13.4 mg/L	0.2 kg/day	13.4 mg/L	N/A
	Ammonia (as N)	1	J 4E-04 kg/day	J 0.0242 mg/L	J 4E-04 kg/day	J 0.0242 mg/L	N/A
	Discharge flow	66	0.04 mgd				N/A
	pH (report as range)	63	6.8 - 8.5 StdUnit				N/A
Temperature (winter)	33	21.3 degC				N/A	
Temperature (summer)	33	24.4 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
	<i>E. coli</i>							
	Enterococci							
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
Mass				Conc.	Mass	Conc.		
Total Residual Chlorine	63	0.09 kg/day	2 mg/L	< 4.5E-03 kg/day	< 0.137 mg/L	N/A		
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
Chemical oxygen demand (COD)	1	0.4 kg/day	25.9 mg/L	0.4 kg/day	25.9 mg/L	N/A		
Total organic carbon (TOC)	1	0.02 kg/day	1.01 mg/L	0.02 kg/day	1.01 mg/L	N/A		

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. There are multiple once through cooling water sources that are intermittent. See Section 4.2 for flowrate.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). The source of residual chlorine is once through cooling water from multiple sources. The discharge is treated to reduce residual chlorine and/or residual bromine with a liquid-feed sodium bisulfite system. The chemical feed rate is controlled by wastewater flow rate and the system is equipped with appropriate alarms.					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))


Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. The once through cooling water system is mainly for research furnaces that cannot use recirculated cooling water.
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
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EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		211	White Oak Creek	35° 55' 36.85" N	84° 18' 44.92" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste HVAC & steam condensate, sump, OTCW <input checked="" type="checkbox"/> Non-contact cooling water			
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.			
	3.3	List the cooling water additives used and describe their composition. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Cooling Water Additives (list)</th> <th style="text-align: center;">Composition of Additives (if available to you)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Cooling Water Additives (list)	Composition of Additives (if available to you)	
Cooling Water Additives (list)	Composition of Additives (if available to you)				

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 1 kg/day	< 4 mg/L	< 1 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	< 0.2 kg/day	< 0.576 mg/L	< 0.2 kg/day	< 0.576 mg/L	N/A
		Oil and grease	1	J 1 kg/day	J 3.13 mg/L	J 1 kg/day	J 3.13 mg/L	N/A
		Ammonia (as N)	1	< 6E-03 kg/day	< 0.017 mg/L	< 6E-03 kg/day	< 0.017 mg/L	N/A
		Discharge flow	70	0.1 mgd				N/A
		pH (report as range)	63	6.8 - 8.4 StdUnit				N/A
	Temperature (winter)	33	21.5 degC				N/A	
	Temperature (summer)	33	23. degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (Use codes per instructions.)
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	63	0.1 kg/day	0.4 mg/L	< 0.01 kg/day	< 0.056 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	< 3 kg/day	< 8.95 mg/L	< 3 kg/day	< 8.95 mg/L	N/A	
	Total organic carbon (TOC)	1	0.5 kg/day	1.52 mg/L	0.5 kg/day	1.52 mg/L	N/A	
SECTION 5. FLOW (40 CFR 122.21(h)(5))								
Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.						
	5.2	Briefly describe the frequency and duration of flow. Individual sources are intermittent but there is continuous flow at the outfall. See Section 4.2 for flowrate.						
SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))								
Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). The dry-weather discharge is treated to reduce residual chlorine with two tablet feeder dechlorinators located at the outfall. Tablet feeders are manufactured boxes with inlets, baffles and hoppers on top. The hoppers are loaded with sodium sulfite (92%) tablets that are gravity-fed to the bottom of the box where they make contact with the water flowing through the box.						

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))	
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Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
	Outfall Number	Receiving Water Name	Latitude	Longitude	
	212	White Oak Creek	35° 55' 37.14" N	84° 18' 43.65" W	

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))	
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Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)
		<input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))	
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Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)
		<input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste steam condensate <input type="checkbox"/> Non-contact cooling water
	3.2	Does the facility use cooling water additives?
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
3.3	List the cooling water additives used and describe their composition.	
	Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))	
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Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 2E-03 kg/day	< 4 mg/L	< 2E-03 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	< 6E-04 kg/day	< 1.14 mg/L	< 6E-04 kg/day	< 1.14 mg/L	N/A
		Oil and grease	1	< 8E-04 kg/day	< 1.54 mg/L	< 8E-04 kg/day	< 1.54 mg/L	N/A
		Ammonia (as N)	1	1E-04 kg/day	0.191 mg/L	1E-04 kg/day	0.191 mg/L	N/A
		Discharge flow	4	4E-03 mgd				N/A
	pH (report as range)	1	7.4 - 7.4 StdUnit		N/A			
	Temperature (winter)	4	68.2 degC		N/A			
	Temperature (summer)	2	59.7 degC		N/A			

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Steam condensate is discharged through this outfall intermittently. The frequency of discharge is variable and is weather dependent. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>Multiple attempts were made to sample a discharge from this outfall and flow was not found. The data reported on this form for this outfall were collected at representative outfall 263 since this outfall most closely resembles the discharges here.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		213	White Oak Creek	35° 55' 37.62" N	84° 18' 43.29" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)	
		<input type="checkbox"/> New discharger	<input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:	

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)	
		<input type="checkbox"/> Sanitary wastes	<input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) foundation drain and sump
		<input type="checkbox"/> Restaurant or cafeteria waste	
		<input type="checkbox"/> Non-contact cooling water	
	3.2	Does the facility use cooling water additives?	
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.	
		Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	0.04 kg/day	3.65 mg/L	0.04 kg/day	3.65 mg/L	N/A
		Total suspended solids (TSS)	1	0.09 kg/day	7.8 mg/L	0.09 kg/day	7.8 mg/L	N/A
		Oil and grease	1	< 0.02 kg/day	< 1.63 mg/L	< 0.02 kg/day	< 1.63 mg/L	N/A
		Ammonia (as N)	1	J 4E-04 kg/day	J 0.0363 mg/L	J 4E-04 kg/day	J 0.0363 mg/L	N/A
		Discharge flow	16	3E-03 mgd				N/A
	pH (report as range)	1	8 - 8 StdUnit				N/A	
	Temperature (winter)	3	17.7 degC				N/A	
	Temperature (summer)	1	22.4 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)							
	Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Foundation drainage is expected to be dependent on weather conditions. This outfall is typically not discharging during monitoring attempts. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>Multiple attempts were made to sample a discharge from this outfall and flow was not found. The data reported on this form for this outfall were collected at representative outfall 085 since this outfall most closely resembles the discharges here.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed


EPA Identification Number
TN1890090003

NPDES Permit Number
TN0002941

Facility Name
Oak Ridge National Laboratory

Form Approved 03/05/19
OMB No. 2040-0004

FORM 2E NPDES



**U.S. Environmental Protection Agency
Application for NPDES Permit to Discharge Wastewater
MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH
DISCHARGE ONLY NONPROCESS WASTEWATER**

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		214	White Oak Creek	35° 55' 38.34" N	84° 18' 41.99" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste Steam pit sump and steam condensate <input type="checkbox"/> Non-contact cooling water					
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.					
	3.3	List the cooling water additives used and describe their composition. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">Cooling Water Additives <small>(list)</small></th> <th style="width: 50%; text-align: center;">Composition of Additives <small>(if available to you)</small></th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"> </td> <td> </td> </tr> <tr> <td style="height: 20px;"> </td> <td> </td> </tr> </tbody> </table>	Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>			
Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>						

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.03 kg/day	< 3 mg/L	< 0.03 kg/day	< 3 mg/L	N/A
		Total suspended solids (TSS)	1	< 6E-03 kg/day	< 0.57 mg/L	< 6E-03 kg/day	< 0.57 mg/L	N/A
		Oil and grease	1	< 0.02 kg/day	< 1.56 mg/L	< 0.02 kg/day	< 1.56 mg/L	N/A
		Ammonia (as N)	1	2E-03 kg/day	0.145 mg/L	2E-03 kg/day	0.145 mg/L	N/A
		Discharge flow	3	3E-03 mgd				N/A
		pH (report as range)	1	7.3 - 7.3 StdUnit				N/A
	Temperature (winter)	2	28.6 degC				N/A	
	Temperature (summer)	2	36.6 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.	
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Sump discharge is intermittent and the frequency is dependent on seasonal weather conditions. Groundwater and steam condensate may be present during some conditions, but flow is not typically observed from this outfall in dry-weather. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A			
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>The temperature data presented for this outfall was taken directly at the steam condensate discharge. However, the discharge at this location travels over land several feet before it gets to the receiving stream during stream baseflow conditions. Therefore the temperature evaluation at this location was expanded to measure both upstream temperature = 16.5 degrees C and the downstream temperature = 16.5 degrees C. This change in temperature of 0 degrees C and the temperatures included here all indicate these temperature values are within the permitted ranges.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.							
		Outfall Number	Receiving Water Name	Latitude		Longitude			
		217	White Oak Creek	35°	55'	38.73" N	84°	18'	41.28" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)		
		<input type="checkbox"/> New discharger	<input checked="" type="checkbox"/> Existing discharger	→ SKIP to Section 3.
	2.2	Specify your anticipated discharge date:		

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)		
		<input type="checkbox"/> Sanitary wastes	<input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below)	Steam pit sump and steam condensate
		<input type="checkbox"/> Restaurant or cafeteria waste	<input type="checkbox"/> Non-contact cooling water	
	3.2	Does the facility use cooling water additives?		
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	→ SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.		
		Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>	

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	0.01 kg/day	4.74 mg/L	0.01 kg/day	4.74 mg/L	N/A
		Total suspended solids (TSS)	1	< 3E-03 kg/day	< 1.14 mg/L	< 3E-03 kg/day	< 1.14 mg/L	N/A
		Oil and grease	1	< 5E-03 kg/day	< 1.73 mg/L	< 5E-03 kg/day	< 1.73 mg/L	N/A
		Ammonia (as N)	1	4E-04 kg/day	0.141 mg/L	4E-04 kg/day	0.141 mg/L	N/A
		Discharge flow	4	0.022 mgd				N/A
	pH (report as range)	1	7.7 - 7.7 StdUnit				N/A	
	Temperature (winter)	3	40.9 degC				N/A	
	Temperature (summer)	2	30.3 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.				
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)
				Mass	Conc.	Mass
						Conc.
		Fecal coliform				
		<i>E. coli</i>				
		Enterococci				
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.				
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Total Residual Chlorine					
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.					
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Chemical oxygen demand (COD)					
	Total organic carbon (TOC)					

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. There is typically a small discharge from this outfall, but sump discharges of groundwater and steam condensate are expected to be intermittent and vary in volume based on weather conditions. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>The temperature data presented for this outfall was taken directly at the steam condensate discharge. However, the discharge at this location travels over land several feet before it gets to the receiving stream during stream baseflow conditions. Therefore the temperature evaluation at this location was expanded to measure both upstream temperature = 15.6 degrees C and the downstream temperature = 15.7 degrees C. This change in temperature of 0.1 degrees C and the temperatures included here all indicate these temperature values are within the permitted ranges.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		218	White Oak Creek	35° 55' 39.98" N	84° 18' 38.91" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)	
		<input type="checkbox"/> New discharger	<input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:	

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)	
		<input type="checkbox"/> Sanitary wastes	<input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) HVAC & steam condensate, sump discharge
		<input type="checkbox"/> Restaurant or cafeteria waste	
		<input type="checkbox"/> Non-contact cooling water	
	3.2	Does the facility use cooling water additives?	
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.	
		Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.3 kg/day	< 4 mg/L	< 0.3 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	J 0.11 kg/day	J 1.36 mg/L	J 0.11 kg/day	J 1.36 mg/L	N/A
		Oil and grease	1	< 0.13 kg/day	< 1.59 mg/L	< 0.13 kg/day	< 1.59 mg/L	N/A
		Ammonia (as N)	1	< 1.4E-03 kg/day	< 0.017 mg/L	< 1.4E-03 kg/day	< 0.017 mg/L	N/A
		Discharge flow	1	0.022 mgd				N/A
	pH (report as range)	1	7.7 - 7.7 StdUnit				N/A	
	Temperature (winter)	1	13.3 degC				N/A	
	Temperature (summer)	1	19.2 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.	
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Flows of this type are typically intermittent and vary with seasonal weather conditions. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A			
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory	Form Approved 03/05/19 OMB No. 2040-0004
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FORM
2E
NPDES



U.S. Environmental Protection Agency
Application for NPDES Permit to Discharge Wastewater
MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH
DISCHARGE ONLY NONPROCESS WASTEWATER

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		219	White Oak Creek	35° 55' 41.31" N	84° 18' 36.81" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste HVAC and steam condensate <input checked="" type="checkbox"/> Non-contact cooling water
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.3 kg/day	< 4 mg/L	< 0.3 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	8.3 kg/day	102 mg/L	8.3 kg/day	102 mg/L	N/A
		Oil and grease	1	< 0.13 kg/day	< 1.65 mg/L	< 0.13 kg/day	< 1.65 mg/L	N/A
		Ammonia (as N)	1	0.01 kg/day	0.125 mg/L	0.01 kg/day	0.125 mg/L	N/A
		Discharge flow	9	0.022 mgd				N/A
		pH (report as range)	6	7.7 - 8.5 StdUnit				N/A
	Temperature (winter)	7	41.2 degC				N/A	
	Temperature (summer)	2	30.3 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	Conc.
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.	
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Flow records indicate that flow from this outfall is intermittent. There is discharge of HVAC and steam condensate, which can vary in volume with weather conditions. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). There is a sodium sulfite tablet dechlorinator that is maintained at this outfall, however dechlorination is only needed when cold water is necessary to moderate the temperature of steam condensate discharges during work on condensate return systems.
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))	
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Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		220	White Oak Creek	35° 55' 41.67" N	84° 18' 36.62" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))	
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Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))	
-----------------------------------------------------	--

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water Steam pit sump and steam condensate
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))	
------------------------------------------------------------------	--

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 5E-04 kg/day	< 1 mg/L	< 5E-04 kg/day	< 1 mg/L	N/A
		Total suspended solids (TSS)	1	< 3E-04 kg/day	< 0.57 mg/L	< 3E-04 kg/day	< 0.57 mg/L	N/A
		Oil and grease	1	< 9E-04 kg/day	< 1.69 mg/L	< 9E-04 kg/day	< 1.69 mg/L	N/A
		Ammonia (as N)	1	4E-05 kg/day	0.0644 mg/L	4E-05 kg/day	0.0644 mg/L	N/A
		Discharge flow	3	1.4E-04 mgd				N/A
		pH (report as range)	1	7.8 - 7.8 StdUnit				N/A
	Temperature (winter)	1	42.5 degC		N/A			
	Temperature (summer)	2	84. degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. The volume of the discharge to this outfall is intermittent and depend somewhat on weather conditions. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>The temperature data presented for this outfall was taken directly at the steam condensate discharge. However, the discharge at this location travels over land several feet before it gets to the receiving stream during stream baseflow conditions. Therefore the temperature evaluation at this location was expanded to measure both upstream temperature = 11.7 degrees C and the downstream temperature = 11.8 degrees C. This change in temperature of 0.1 degrees C and the temperatures included here all indicate these temperature values are within the permitted ranges.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

EPA Identification Number: TN1890090003
 NPDES Permit Number: TN0002941
 Facility Name: Oak Ridge National Laboratory

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U.S. Environmental Protection Agency
Application for NPDES Permit to Discharge Wastewater
MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		223	White Oak Creek	35° 55' 41.77" N	84° 18' 36.12" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water steam pit sump and condensate
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
	Mass			Conc.	Mass	Conc.		
		Biochemical oxygen demand (BOD ₅)	1	< 5E-04 kg/day	< 1 mg/L	< 5E-04 kg/day	< 1 mg/L	N/A
		Total suspended solids (TSS)	1	3E-03 kg/day	4.85 mg/L	3E-03 kg/day	4.85 mg/L	N/A
		Oil and grease	1	< 9E-04 kg/day	< 1.63 mg/L	< 9E-04 kg/day	< 1.63 mg/L	N/A
		Ammonia (as N)	1	< 9E-06 kg/day	< 0.017 mg/L	< 9E-06 kg/day	< 0.017 mg/L	N/A
		Discharge flow	1	1E-04 mgd				N/A
		pH (report as range)	1	7.8 - 7.8 StdUnit				N/A
	Temperature (winter)	0	See Section 7.1				N/A	
	Temperature (summer)	1	20.9 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)							
	Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Typically, discharges are not occurring from this outfall when sampling attempts are made. Steam condensate and discharges from steam pit sumps are expected to be intermittent and dependent on weather conditions. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. Multiple attempts were made to obtain temperatures for this outfall and flow was not found.
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

EPA Identification Number: TN1890090003
 NPDES Permit Number: TN0002941
 Facility Name: Oak Ridge National Laboratory

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U.S. Environmental Protection Agency
Application for NPDES Permit to Discharge Wastewater
MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH
DISCHARGE ONLY NONPROCESS WASTEWATER

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		224	White Oak Creek	35° 55' 42.13" N	84° 18' 36.07" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste foundation drain and sump <input type="checkbox"/> Non-contact cooling water
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.03 kg/day	< 3 mg/L	< 0.03 kg/day	< 3 mg/L	N/A
		Total suspended solids (TSS)	1	< 0.1 kg/day	< 11.4 mg/L	< 0.1 kg/day	< 11.4 mg/L	N/A
		Oil and grease	1	< 0.02 kg/day	< 1.61 mg/L	< 0.02 kg/day	< 1.61 mg/L	N/A
		Ammonia (as N)	1	J 4E-04 kg/day	J 0.041 mg/L	J 4E-04 kg/day	J 0.041 mg/L	N/A
		Discharge flow	3	3E-03 mgd				N/A
		pH (report as range)	1	7.2 - 7.2 StdUnit				N/A
	Temperature (winter)	2	19.9 degC				N/A	
	Temperature (summer)	1	22.2 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.				
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)
				Mass	Conc.	Mass
						Conc.
		Fecal coliform				
		<i>E. coli</i>				
		Enterococci				
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.				
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Total Residual Chlorine					
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.					
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Chemical oxygen demand (COD)					
	Total organic carbon (TOC)					

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Flows are intermittent and foundation drainage discharge is weather dependent. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		227	White Oak Creek	35° 55' 43.01" N	84° 18' 35.47" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input checked="" type="checkbox"/> Non-contact cooling water CT blowdown, steam condensate, and OTCW			
	3.2	Does the facility use cooling water additives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 4.			
	3.3	List the cooling water additives used and describe their composition.			
		<table border="1"> <thead> <tr> <th>Cooling Water Additives (list)</th> <th>Composition of Additives (if available to you)</th> </tr> </thead> <tbody> <tr> <td>See Appendix L</td> <td>See Appendix L</td> </tr> </tbody> </table>	Cooling Water Additives (list)	Composition of Additives (if available to you)	See Appendix L
	Cooling Water Additives (list)	Composition of Additives (if available to you)			
See Appendix L	See Appendix L				

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.																																																																			
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)																																																																			
		<table border="1"> <thead> <tr> <th rowspan="2">Parameter or Pollutant</th> <th rowspan="2">Number of Analyses (if actual data reported)</th> <th colspan="2">Maximum Daily Discharge (specify units)</th> <th colspan="2">Average Daily Discharge (specify units)</th> <th rowspan="2">Source (use codes per instructions)</th> </tr> <tr> <th>Mass</th> <th>Conc.</th> <th>Mass</th> <th>Conc.</th> </tr> </thead> <tbody> <tr> <td>Biochemical oxygen demand (BOD₅)</td> <td>1</td> <td>< 0.7 kg/day</td> <td>< 4 mg/L</td> <td>< 0.7 kg/day</td> <td>< 4 mg/L</td> <td>N/A</td> </tr> <tr> <td>Total suspended solids (TSS)</td> <td>1</td> <td>< 0.11 kg/day</td> <td>< 0.633 mg/L</td> <td>< 0.11 kg/day</td> <td>< 0.633 mg/L</td> <td>N/A</td> </tr> <tr> <td>Oil and grease</td> <td>1</td> <td>< 0.28 kg/day</td> <td>< 1.63 mg/L</td> <td>< 0.28 kg/day</td> <td>< 1.63 mg/L</td> <td>N/A</td> </tr> <tr> <td>Ammonia (as N)</td> <td>1</td> <td>0.016 kg/day</td> <td>0.0927 mg/L</td> <td>0.016 kg/day</td> <td>0.0927 mg/L</td> <td>N/A</td> </tr> <tr> <td>Discharge flow</td> <td>66</td> <td colspan="2">0.09 mgd</td> <td colspan="2"></td> <td>N/A</td> </tr> <tr> <td>pH (report as range)</td> <td>65</td> <td colspan="2">6.3 - 8.9 StdUnit</td> <td colspan="2"></td> <td>N/A</td> </tr> <tr> <td>Temperature (winter)</td> <td>36</td> <td colspan="2">28.9 degC</td> <td colspan="2"></td> <td>N/A</td> </tr> <tr> <td>Temperature (summer)</td> <td>32</td> <td colspan="2">29.6 degC</td> <td colspan="2"></td> <td>N/A</td> </tr> </tbody> </table>	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)	Mass	Conc.	Mass	Conc.	Biochemical oxygen demand (BOD ₅)	1	< 0.7 kg/day	< 4 mg/L	< 0.7 kg/day	< 4 mg/L	N/A	Total suspended solids (TSS)	1	< 0.11 kg/day	< 0.633 mg/L	< 0.11 kg/day	< 0.633 mg/L	N/A	Oil and grease	1	< 0.28 kg/day	< 1.63 mg/L	< 0.28 kg/day	< 1.63 mg/L	N/A	Ammonia (as N)	1	0.016 kg/day	0.0927 mg/L	0.016 kg/day	0.0927 mg/L	N/A	Discharge flow	66	0.09 mgd				N/A	pH (report as range)	65	6.3 - 8.9 StdUnit				N/A	Temperature (winter)	36	28.9 degC				N/A	Temperature (summer)	32	29.6 degC				N/A
		Parameter or Pollutant			Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)																																																											
			Mass	Conc.		Mass	Conc.																																																														
		Biochemical oxygen demand (BOD ₅)	1	< 0.7 kg/day	< 4 mg/L	< 0.7 kg/day	< 4 mg/L	N/A																																																													
		Total suspended solids (TSS)	1	< 0.11 kg/day	< 0.633 mg/L	< 0.11 kg/day	< 0.633 mg/L	N/A																																																													
		Oil and grease	1	< 0.28 kg/day	< 1.63 mg/L	< 0.28 kg/day	< 1.63 mg/L	N/A																																																													
		Ammonia (as N)	1	0.016 kg/day	0.0927 mg/L	0.016 kg/day	0.0927 mg/L	N/A																																																													
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Temperature (winter)	36	28.9 degC				N/A																																																															
Temperature (summer)	32	29.6 degC				N/A																																																															

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	63	< 0.02 kg/day	< 0.05 mg/L	< 7.2E-03 kg/day	< 0.05 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	5.3 kg/day	30.6 mg/L	5.3 kg/day	30.6 mg/L	N/A	
	Total organic carbon (TOC)	1	1.5 kg/day	8.56 mg/L	1.5 kg/day	8.56 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. Flows are intermittent and vary with seasonal weather. Both steam heating and cooling tower systems are operated year round. Quantities of cooling tower blow down, steam condensate discharges, and HVAC condensate discharges will be somewhat dependent on weather conditions. See Section 4.2 for flowrate.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). A sodium sulfite tablet-feeder dechlorination box is installed for each discharge, inside the building storm drain. Sodium sulfite tablets (92%) are used. A back-up dechlorination box continues to be stocked at Outfall 227.					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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Form Approved 03/05/19
OMB No. 2040-0004

SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>DOE captures some additional data specific to cooling tower blowdown discharges from non-process wastewater outfalls. A summary of this monitoring, as well as the corresponding additional data can be found in the WQPP Report submitted annually to TDEC.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

EPA Identification Number: TN1890090003
 NPDES Permit Number: TN0002941
 Facility Name: Oak Ridge National Laboratory
 Form Approved 03/05/19
 OMB No. 2040-0004

FORM 2E NPDES

**U.S. Environmental Protection Agency
 Application for NPDES Permit to Discharge Wastewater
 MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH
 DISCHARGE ONLY NONPROCESS WASTEWATER**

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

1.1 Provide information on each of the facility's outfalls in the table below.

Outfall Number	Receiving Water Name	Latitude		Longitude	
		Lat	Long	Lat	Long
230	White Oak Creek	35° 55' 43.75" N		84° 18' 34.79" W	

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

2.1 Are you a new or existing discharger? (Check only one response.)
 New discharger
 Existing discharger → SKIP to Section 3.

2.2 Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

3.1 What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)

Sanitary wastes
 Restaurant or cafeteria waste
 Non-contact cooling water

Other nonprocess wastewater (describe/explain directly below)
 HVAC and steam condensate

3.2 Does the facility use cooling water additives?
 Yes
 No → SKIP to Section 4.

3.3 List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

4.1 Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?
 Yes
 No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.

4.2 Provide data as requested in the table below.¹ (See instructions for specifics.)

Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
		Mass	Conc.	Mass	Conc.	
Biochemical oxygen demand (BOD ₅)	1	< 2E-03 kg/day	< 3 mg/L	< 2E-03 kg/day	< 3 mg/L	N/A
Total suspended solids (TSS)	1	0.02 kg/day	32.5 mg/L	0.02 kg/day	32.5 mg/L	N/A
Oil and grease	1	< 9E-04 kg/day	< 1.63 mg/L	< 9E-04 kg/day	< 1.63 mg/L	N/A
Ammonia (as N)	1	1E-04 kg/day	0.213 mg/L	1E-04 kg/day	0.213 mg/L	N/A
Discharge flow	4	0.03 mgd				N/A
pH (report as range)	1	8 - 8 StdUnit				N/A
Temperature (winter)	3	13.4 degC				N/A
Temperature (summer)	1	22.4 degC				N/A

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.	
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. HVAC condensate discharges and steam condensate are somewhat dependent upon seasonal use. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A			
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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Form Approved 03/05/19
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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		231	White Oak Creek	35° 55' 45.85" N	84° 18' 32.22" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)
		<input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)				
		<input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) Steam condensate, CT blowdown, sump discharge				
		<input type="checkbox"/> Restaurant or cafeteria waste <input checked="" type="checkbox"/> Non-contact cooling water				
	3.2	Does the facility use cooling water additives?				
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 4.				
	3.3	List the cooling water additives used and describe their composition.				
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">Cooling Water Additives (list)</th> <th style="width: 50%; text-align: center;">Composition of Additives (if available to you)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">See Appendix L</td> <td style="text-align: center;">See Appendix L</td> </tr> </tbody> </table>	Cooling Water Additives (list)	Composition of Additives (if available to you)	See Appendix L	See Appendix L
Cooling Water Additives (list)	Composition of Additives (if available to you)					
See Appendix L	See Appendix L					

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.3 kg/day	< 4 mg/L	< 0.3 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	J 0.0514 kg/day	J 0.612 mg/L	J 0.0514 kg/day	J 0.612 mg/L	N/A
		Oil and grease	1	J 0.274 kg/day	J 3.26 mg/L	J 0.274 kg/day	J 3.26 mg/L	N/A
		Ammonia (as N)	1	0.0402 kg/day	0.479 mg/L	0.0402 kg/day	0.479 mg/L	N/A
		Discharge flow	66	0.22 mgd				N/A
	pH (report as range)	63	6.7 - 8.8 StdUnit				N/A	
	Temperature (winter)	33	22.1 degC				N/A	
	Temperature (summer)	33	27.4 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (Use codes per Instructions.)
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	63	1 kg/day	3 mg/L	< 0.03 kg/day	< 0.137 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	7.11 kg/day	84.7 mg/L	7.11 kg/day	84.7 mg/L	N/A	
	Total organic carbon (TOC)	1	1.52 kg/day	18.1 mg/L	1.52 kg/day	18.1 mg/L	N/A	
SECTION 5. FLOW (40 CFR 122.21(h)(5))								
Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.						
	5.2	Briefly describe the frequency and duration of flow. Steam pit sump, steam condensate, and cooling tower blowdown are intermittent. See Section 4.2 for flowrate.						
SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))								
Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). Prior to discharge, blow down from building 5800 cooling towers pass through a sodium sulfite tablet dechlorinator utilizing 92% sodium sulfite tablets. OCLF5 cooling tower blowdown is treated using a separate liquid sodium bisulfite dechlorination system.						

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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OMB No. 2040-0004

SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>DOE captures some additional data specific to cooling tower blowdown discharges from non-process wastewater outfalls. A summary of this monitoring, as well as the corresponding additional data can be found in the WQPP Report submitted annually to TDEC.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		234	White Oak Creek	35° 56' 3.68" N	84° 18' 5.31" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste HVAC condensate <input type="checkbox"/> Non-contact cooling water
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 5E-03 kg/day	< 1 mg/L	< 5E-03 kg/day	< 1 mg/L	N/A
		Total suspended solids (TSS)	1	0.02 kg/day	3.8 mg/L	0.02 kg/day	3.8 mg/L	N/A
		Oil and grease	1	< 9E-03 kg/day	< 1.65 mg/L	< 9E-03 kg/day	< 1.65 mg/L	N/A
		Ammonia (as N)	1	J 2E-04 kg/day	J 0.0307 mg/L	J 2E-04 kg/day	J 0.0307 mg/L	N/A
		Discharge flow	5	7E-03 mgd				N/A
		pH (report as range)	4	7.2 - 8.4 StdUnit				N/A
	Temperature (winter)	3	14.1 degC				N/A	
	Temperature (summer)	1	19.4 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)							
	Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Individual HVAC condensate sources are intermittent and dependent on weather conditions. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (Use codes per Instructions.)
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	63	< 0.02 kg/day		0.1 mg/L		< 4.0E-03 kg/day < 0.0508 mg/L N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	J 1.9 kg/day		J 9.79 mg/L		N/A	
	Total organic carbon (TOC)	1	0.76 kg/day		3.88 mg/L		N/A	
SECTION 5. FLOW (40 CFR 122.21(h)(5))								
Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.						
	5.2	Briefly describe the frequency and duration of flow. The smaller HVAC and steam condensate sources and the RO reject water and boiler blowdown that discharge to this outfall vary with weather and are intermittent. See Section 4.2 for flowrate.						
SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))								
Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). The Steam Plant reverse osmosis treatment system uses an oxygen scavenger/dechlorinating agent (ChemTreat 1254 Potassium Sulfite) and an antiscalant (ChemTreat RL9907 containing Diethylenetriamine penta methylene phosphonic acid, and 2-Phosphono-1,2,4- butanetricarboxylic acid, sodium salt). The boiler water is treated with an oxygen scavenger/dechlorinating agent (ChemTreat 1254 Potassium Sulfite); a pH stabilizer (ChemTreat BL1304 Potassium and Sodium Hydroxide); and scale inhibitor (currently ChemTreat BL4357 which is a phosphate polymer).						

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		243	First Creek	35 ° 55 ' 25.94 " N	84 ° 19 ' 13.36 " W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste Steam condensate <input type="checkbox"/> Non-contact cooling water
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Biochemical oxygen demand (BOD ₅)	1	< 2E-03 kg/day	< 4 mg/L	< 2E-03 kg/day	< 4 mg/L	N/A
	Total suspended solids (TSS)	1	< 6E-04 kg/day	< 1.14 mg/L	< 6E-04 kg/day	< 1.14 mg/L	N/A
	Oil and grease	1	J 2E-03 kg/day	J 3.18 mg/L	J 2E-03 kg/day	J 3.18 mg/L	N/A
	Ammonia (as N)	1	6E-05 kg/day	0.11 mg/L	6E-05 kg/day	0.11 mg/L	N/A
	Discharge flow	3	3.6E-04 mgd				N/A
	pH (report as range)	1	7.5 - 7.5 StdUnit				N/A
Temperature (winter)	2	94.1 degC				N/A	
Temperature (summer)	3	99.5 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)							
	Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Steam condensate is expected to be intermittent and dependent on seasonal weather conditions. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>The temperature data presented for this outfall was taken directly at the steam condensate discharge. However, the discharge at this location travels over land several feet before it gets to the receiving stream during stream baseflow conditions. Therefore the temperature evaluation at this location was expanded to measure both upstream temperature = 10.7 degrees C and the downstream temperature = 10.7 degrees C. This change in temperature of 0 degrees C and the temperatures included here all indicate these temperature values are within the permitted ranges.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
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		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
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		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Name (print or type first and last name) Johnny O. Moore</td> <td style="width: 50%;">Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES

U.S. Environmental Protection Agency
Application for NPDES Permit to Discharge Wastewater
MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1		Provide information on each of the facility's outfalls in the table below.			
	Outfall Number	Receiving Water Name	Latitude		Longitude	
	249	First Creek	35°	55'	31.83"	N

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input type="checkbox"/> Restaurant or cafeteria waste <input checked="" type="checkbox"/> Non-contact cooling water <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) HVAC & steam cond & sump and OTCW, CT blowdown
	3.2	Does the facility use cooling water additives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)
See Appendix L	See Appendix L

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 1 kg/day	< 4 mg/L	< 1 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	1.08 kg/day	4.29 mg/L	1.08 kg/day	4.29 mg/L	N/A
		Oil and grease	1	< 0.397 kg/day	< 1.57 mg/L	< 0.397 kg/day	< 1.57 mg/L	N/A
		Ammonia (as N)	1	0.0191 kg/day	0.0755 mg/L	0.0191 kg/day	0.0755 mg/L	N/A
		Discharge flow	1	0.0668 mgd				N/A
		pH (report as range)	1	7.5 - 7.5 StdUnit				N/A
	Temperature (winter)	1	11.8 degC		N/A			
	Temperature (summer)	0	See Section 7.1		N/A			

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	1	< 0.01 kg/day	< 0.05 mg/L	< 0.01 kg/day	< 0.05 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	< 2.26 kg/day	< 8.95 mg/L	< 2.26 kg/day	< 8.95 mg/L	N/A	
	Total organic carbon (TOC)	1	0.576 kg/day	2.28 mg/L	0.576 kg/day	2.28 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. Sources such as sump and steam condensate is seasonal and varies with weather. Cooling tower blowdown is intermittent. See Section 4.2 for flowrate.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). When the cooling tower is drained for winterization maintenance, a sodium sulfite (92%) tablet feeder installed on the drain line, is used on the roof to reduce residual chlorine and bromine in the discharge.					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>None of these sources usually reach the receiving stream during dry-weather conditions (the discharge likely infiltrates the ground at leaky pipe joint connections). Multiple attempts were made to obtain temperature at this outfall and flow was not found. DOE captures some additional data specific to cooling tower blowdown discharges from non-process wastewater outfalls. A summary of this monitoring, as well as the corresponding additional data can be found in the WQPP Report submitted annually to TDEC.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		250	First Creek	35° 55' 33.2" N	84° 19' 18.81" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water Steam condensate
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 2E-03 kg/day	< 1 mg/L	< 2E-03 kg/day	< 1 mg/L	N/A
		Total suspended solids (TSS)	1	< 2E-03 kg/day	< 1.12 mg/L	< 2E-03 kg/day	< 1.12 mg/L	N/A
		Oil and grease	1	< 3E-03 kg/day	< 1.59 mg/L	< 3E-03 kg/day	< 1.59 mg/L	N/A
		Ammonia (as N)	1	9E-05 kg/day	0.0554 mg/L	9E-05 kg/day	0.0554 mg/L	N/A
		Discharge flow	35	3E-03 mgd				N/A
		pH (report as range)	1	8 - 8 StdUnit				N/A
	Temperature (winter)	3	16.2 degC		N/A			
	Temperature (summer)	1	24.3 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Steam condensate discharges are dependent on weather conditions. In recent years (since early 2007) flow has not been detected at the end of the pipe in dry-weather conditions. However, it is possible that dry-weather discharges do occur at times when they are not observed.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>Multiple attempts were made to sample a discharge from this outfall and flow was not found. The data reported on this form for this outfall were collected at representative Outfall 302 since this outfall most closely resembles the discharges here.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		261	Fifth Creek	35° 55' 38.92" N	84° 18' 52" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste Foundation drain <input type="checkbox"/> Non-contact cooling water
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.02 kg/day	< 4 mg/L	< 0.02 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	J 8E-03 kg/day	J 1.52 mg/L	J 8E-03 kg/day	J 1.52 mg/L	N/A
		Oil and grease	1	J 0.01 kg/day	J 2.18 mg/L	J 0.01 kg/day	J 2.18 mg/L	N/A
		Ammonia (as N)	1	7E-04 kg/day	0.127 mg/L	7E-04 kg/day	0.127 mg/L	N/A
		Discharge flow	1	1E-03 mgd				N/A
		pH (report as range)	1	8.3 - 8.3 StdUnit				N/A
Temperature (winter)	1	12. degC				N/A		
Temperature (summer)	0	See Section 7.1				N/A		

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.				
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)
				Mass	Conc.	Mass
						Conc.
		Fecal coliform				
		<i>E. coli</i>				
		Enterococci				
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.				
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Total Residual Chlorine					
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.					
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Chemical oxygen demand (COD)					
	Total organic carbon (TOC)					

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Discharges of foundation drainage are dependent on precipitation and seasonal water table levels can be weather dependent. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. Multiple attempts were made to obtain temperatures for this outfall and flow was not found.
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		263	Fifth Creek	35° 55' 40.42" N	84° 18' 52.96" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste Steam pit sump and steam condensate <input type="checkbox"/> Non-contact cooling water				
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.				
	3.3	List the cooling water additives used and describe their composition.				
		<table border="1"> <thead> <tr> <th>Cooling Water Additives (list)</th> <th>Composition of Additives (if available to you)</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Cooling Water Additives (list)	Composition of Additives (if available to you)		
Cooling Water Additives (list)	Composition of Additives (if available to you)					

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 2E-03 kg/day	< 4 mg/L	< 2E-03 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	< 6E-04 kg/day	< 1.14 mg/L	< 6E-04 kg/day	< 1.14 mg/L	N/A
		Oil and grease	1	< 8E-04 kg/day	< 1.54 mg/L	< 8E-04 kg/day	< 1.54 mg/L	N/A
		Ammonia (as N)	1	1E-04 kg/day	0.191 mg/L	1E-04 kg/day	0.191 mg/L	N/A
		Discharge flow	4	4E-03 mgd				N/A
		pH (report as range)	1	7.4 - 7.4 StdUnit				N/A
	Temperature (winter)	4	68.2 degC				N/A	
	Temperature (summer)	2	59.7 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)							
	Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. This outfall discharges steam condensate almost continuously, but there are occasions when it does not discharge. Sump discharges from steam pits are intermittent. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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OMB No. 2040-0004

SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>The temperature data presented for this outfall was taken directly at the steam condensate discharge. However, the discharge at this location travels over land several feet before it gets to the receiving stream during stream baseflow conditions. Therefore the temperature evaluation at this location was expanded to measure both upstream temperature = 16.7 degrees C and the downstream temperature = 16.8 degrees C. This change in temperature of 0.1 degrees C and the temperatures included here all indicate these temperature values are within the permitted ranges.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		264	Fifth Creek	35° 55' 40.28" N	84° 18' 53.15" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)	
		<input type="checkbox"/> New discharger	<input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:	

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)		
		<input type="checkbox"/> Sanitary wastes <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water	<input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) steam sump and steam condensate	
	3.2	Does the facility use cooling water additives?		
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 4.	
	3.3	List the cooling water additives used and describe their composition.		
		Cooling Water Additives (list)	Composition of Additives (if available to you)	

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 1E-03 kg/day	< 4 mg/L	< 1E-03 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	0.02 kg/day	64.1 mg/L	0.02 kg/day	64.1 mg/L	N/A
		Oil and grease	1	< 5E-04 kg/day	< 1.49 mg/L	< 5E-04 kg/day	< 1.49 mg/L	N/A
		Ammonia (as N)	1	2E-05 kg/day	0.0632 mg/L	2E-05 kg/day	0.0632 mg/L	N/A
		Discharge flow	1	9E-05 mgd				N/A
	pH (report as range)	1	8.1 - 8.1 StdUnit				N/A	
	Temperature (winter)	1	18.9 degC				N/A	
	Temperature (summer)	0	See Section 7.1				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)	
				Mass	Conc.	Mass		Conc.
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)		
			Mass	Conc.	Mass		Conc.	
	Chemical oxygen demand (COD)							
	Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Steam condensate discharges and discharges from steam pit sumps are expected to be intermittent and dependent on weather conditions. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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Form Approved 03/05/19
OMB No. 2040-0004

SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. Multiple attempts were made to obtain temperatures at this outfall and no flow was found.
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory	Form Approved 03/05/19 OMB No. 2040-0004
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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

1.1	Provide information on each of the facility's outfalls in the table below.																
Outfall Location	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;">Outfall Number</th> <th style="width:40%;">Receiving Water Name</th> <th style="width:25%;">Latitude</th> <th style="width:20%;">Longitude</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">265</td> <td>Fifth Creek</td> <td style="text-align: center;">35° 55' 40.85" N</td> <td style="text-align: center;">84° 18' 53.61" W</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Outfall Number	Receiving Water Name	Latitude	Longitude	265	Fifth Creek	35° 55' 40.85" N	84° 18' 53.61" W								
	Outfall Number	Receiving Water Name	Latitude	Longitude													
	265	Fifth Creek	35° 55' 40.85" N	84° 18' 53.61" W													

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste steam and sump condensate, OTCW, CT blowdown <input checked="" type="checkbox"/> Non-contact cooling water				
3.2	Does the facility use cooling water additives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 4.				
3.3	List the cooling water additives used and describe their composition.				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;">Cooling Water Additives (list)</th> <th style="width:50%;">Composition of Additives (if available to you)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">See Appendix L</td> <td style="text-align: center;">See Appendix L</td> </tr> </tbody> </table>	Cooling Water Additives (list)	Composition of Additives (if available to you)	See Appendix L	See Appendix L
Cooling Water Additives (list)	Composition of Additives (if available to you)				
See Appendix L	See Appendix L				

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.																																																																			
4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)																																																																			
Effluent Characteristics	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width:40%;">Parameter or Pollutant</th> <th rowspan="2" style="width:10%;">Number of Analyses (if actual data reported)</th> <th colspan="2" style="width:20%;">Maximum Daily Discharge (specify units)</th> <th colspan="2" style="width:20%;">Average Daily Discharge (specify units)</th> <th rowspan="2" style="width:10%;">Source (use codes per instructions)</th> </tr> <tr> <th style="width:10%;">Mass</th> <th style="width:10%;">Conc.</th> <th style="width:10%;">Mass</th> <th style="width:10%;">Conc.</th> </tr> </thead> <tbody> <tr> <td>Biochemical oxygen demand (BOD₅)</td> <td style="text-align: center;">1</td> <td style="text-align: center;">< 2E-03 kg/day</td> <td style="text-align: center;">< 4 mg/L</td> <td style="text-align: center;">< 2E-03 kg/day</td> <td style="text-align: center;">< 4 mg/L</td> <td style="text-align: center;">N/A</td> </tr> <tr> <td>Total suspended solids (TSS)</td> <td style="text-align: center;">1</td> <td style="text-align: center;">3E-03 kg/day</td> <td style="text-align: center;">5.8 mg/L</td> <td style="text-align: center;">3E-03 kg/day</td> <td style="text-align: center;">5.8 mg/L</td> <td style="text-align: center;">N/A</td> </tr> <tr> <td>Oil and grease</td> <td style="text-align: center;">1</td> <td style="text-align: center;">< 9E-04 kg/day</td> <td style="text-align: center;">< 1.59 mg/L</td> <td style="text-align: center;">< 9E-04 kg/day</td> <td style="text-align: center;">< 1.59 mg/L</td> <td style="text-align: center;">N/A</td> </tr> <tr> <td>Ammonia (as N)</td> <td style="text-align: center;">1</td> <td style="text-align: center;">5E-05 kg/day</td> <td style="text-align: center;">0.0965 mg/L</td> <td style="text-align: center;">5E-05 kg/day</td> <td style="text-align: center;">0.0965 mg/L</td> <td style="text-align: center;">N/A</td> </tr> <tr> <td>Discharge flow</td> <td style="text-align: center;">7</td> <td colspan="2" style="text-align: center;">0.036 mgd</td> <td colspan="2"></td> <td style="text-align: center;">N/A</td> </tr> <tr> <td>pH (report as range)</td> <td style="text-align: center;">7</td> <td colspan="2" style="text-align: center;">7.7 - 8.1 StdUnit</td> <td colspan="2"></td> <td style="text-align: center;">N/A</td> </tr> <tr> <td>Temperature (winter)</td> <td style="text-align: center;">5</td> <td colspan="2" style="text-align: center;">15.9 degC</td> <td colspan="2"></td> <td style="text-align: center;">N/A</td> </tr> <tr> <td>Temperature (summer)</td> <td style="text-align: center;">2</td> <td colspan="2" style="text-align: center;">23. degC</td> <td colspan="2"></td> <td style="text-align: center;">N/A</td> </tr> </tbody> </table>	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)	Mass	Conc.	Mass	Conc.	Biochemical oxygen demand (BOD ₅)	1	< 2E-03 kg/day	< 4 mg/L	< 2E-03 kg/day	< 4 mg/L	N/A	Total suspended solids (TSS)	1	3E-03 kg/day	5.8 mg/L	3E-03 kg/day	5.8 mg/L	N/A	Oil and grease	1	< 9E-04 kg/day	< 1.59 mg/L	< 9E-04 kg/day	< 1.59 mg/L	N/A	Ammonia (as N)	1	5E-05 kg/day	0.0965 mg/L	5E-05 kg/day	0.0965 mg/L	N/A	Discharge flow	7	0.036 mgd				N/A	pH (report as range)	7	7.7 - 8.1 StdUnit				N/A	Temperature (winter)	5	15.9 degC				N/A	Temperature (summer)	2	23. degC				N/A
	Parameter or Pollutant			Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)																																																											
		Mass	Conc.		Mass	Conc.																																																														
	Biochemical oxygen demand (BOD ₅)	1	< 2E-03 kg/day	< 4 mg/L	< 2E-03 kg/day	< 4 mg/L	N/A																																																													
	Total suspended solids (TSS)	1	3E-03 kg/day	5.8 mg/L	3E-03 kg/day	5.8 mg/L	N/A																																																													
	Oil and grease	1	< 9E-04 kg/day	< 1.59 mg/L	< 9E-04 kg/day	< 1.59 mg/L	N/A																																																													
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	Discharge flow	7	0.036 mgd				N/A																																																													
	pH (report as range)	7	7.7 - 8.1 StdUnit				N/A																																																													
	Temperature (winter)	5	15.9 degC				N/A																																																													
Temperature (summer)	2	23. degC				N/A																																																														

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	7	< 7E-03 kg/day	< 0.05 mg/L	< 2.7E-03 kg/day	< 0.05 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	< 5E-03 kg/day	< 8.95 mg/L	< 5E-03 kg/day	< 8.95 mg/L	N/A	
	Total organic carbon (TOC)	1	2E-03 kg/day	2.95 mg/L	2E-03 kg/day	2.95 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Steam condensate, sump condensate, cooling tower blowdown, and once through cooling water discharges are intermittent and vary with weather and other influences on cooling and heating demand. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). Dechlorination feed and backup tablet feeder used on cooling tower blowdown.				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>DOE captures some additional data specific to cooling tower blowdown discharges from non-process wastewater outfalls. A summary of this monitoring, as well as the corresponding additional data can be found in the WQPP report submitted annually to TDEC.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

FORM 2E NPDES		<p align="center">U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER</p>	
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		267	Fifth Creek	35° 55' 47.02" N	84° 18' 58.85" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input checked="" type="checkbox"/> Non-contact cooling water HVAC & steam condensate & OTCW
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.1 kg/day	< 4 mg/L	< 0.1 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	0.6 kg/day	22 mg/L	0.6 kg/day	22 mg/L	N/A
		Oil and grease	1	J 0.09 kg/day	J 3.26 mg/L	J 0.09 kg/day	J 3.26 mg/L	N/A
		Ammonia (as N)	1	5E-03 kg/day	0.178 mg/L	5E-03 kg/day	0.178 mg/L	N/A
		Discharge flow	5	0.036 mgd				N/A
		pH (report as range)	3	7.7 - 8 StdUnit				N/A
	Temperature (winter)	4	13.9 degC				N/A	
	Temperature (summer)	2	21. degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (Use codes per Instructions.)
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	3	0.02 kg/day	0.2 mg/L	0.01 kg/day	0.2 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	10 kg/day	437 mg/L	10 kg/day	437 mg/L	N/A	
	Total organic carbon (TOC)	1	0.03 kg/day	1.28 mg/L	0.03 kg/day	1.28 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. This outfall discharges continuously, but sources are intermittent discharges are dependant on weather. See Section 4.2 for flowrate.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). Carbon filter dechlorinator used on intake of once through cooling water for dechlorination					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))


Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		281	Melton Branch	35 ° 55 ' 0.6 " N	84 ° 18 ' 7.05 " W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input checked="" type="checkbox"/> Non-contact cooling water steam condensate, foundation drain, CT blowdown
	3.2	Does the facility use cooling water additives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)
See Appendix L	See Appendix L

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)	Average Daily Discharge (specify units)		Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.	
	Biochemical oxygen demand (BOD ₅)	1	4 kg/day	6.9 mg/L	4 kg/day	6.9 mg/L	N/A
	Total suspended solids (TSS)	1	2 kg/day	3.35 mg/L	2 kg/day	3.35 mg/L	N/A
	Oil and grease	1	J 2 kg/day	J 2.86 mg/L	J 2 kg/day	J 2.86 mg/L	N/A
	Ammonia (as N)	5	0.2 kg/day	0.126 mg/L	J 0.06 kg/day	J 0.0703 mg/L	N/A
Discharge flow	79	0.6 mgd				N/A	
pH (report as range)	67	6.6 - 8.3 StdUnit				N/A	
Temperature (winter)	35	28.3 degC				N/A	
Temperature (summer)	35	29. degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	63	0.07 kg/day	0.2 mg/L	< 0.0189 kg/day	< 0.0532 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	20 kg/day	29.7 mg/L	20 kg/day	29.7 mg/L	N/A	
	Total organic carbon (TOC)	1	5 kg/day	8.71 mg/L	5 kg/day	8.71 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. The largest source of non-process wastewater from this outfall is blowdown from the cooling tower. The outfall discharges continuously, but the rate of flow from the outfall can vary considerably depending on cooling loads in the building. The rate of blowdown varies with season and operational cycles. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). The discharge from the cooling tower is treated to reduce residual chlorine and bromine with a liquid-feed dechlorination system. Sodium bisulfite is dispensed at the tower discharge and feed rate is operator controlled.				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>Cooling tower waters discharged at Outfall 281 contribute an intermittent thermal load to the receiving stream. Thermal monitoring at this outfall is ongoing and recorded at least quarterly. DOE captures some additional data specific to cooling tower blowdown discharges from non-process wastewater outfalls. A summary of this monitoring, as well as the corresponding additional data can be found in the WQPP Report submitted annually to TDEC.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Name (print or type first and last name) Johnny O. Moore</td> <td style="width: 50%;">Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		291	Tributary to Clinch River	35° 56' 17.65" N	84° 16' 31.83" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste boiler blowdown, HVAC condensate <input type="checkbox"/> Non-contact cooling water
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 5E-03 kg/day	< 1 mg/L	< 5E-03 kg/day	< 1 mg/L	N/A
		Total suspended solids (TSS)	1	0.02 kg/day	3.8 mg/L	0.02 kg/day	3.8 mg/L	N/A
		Oil and grease	1	< 9E-03 kg/day	< 1.65 mg/L	< 9E-03 kg/day	< 1.65 mg/L	N/A
		Ammonia (as N)	1	J 2E-04 kg/day	J 0.0307 mg/L	J 2E-04 kg/day	J 0.0307 mg/L	N/A
		Discharge flow	5	7E-03 mgd				N/A
		pH (report as range)	4	7.2 - 8.4 StdUnit				N/A
	Temperature (winter)	3	14.1 degC				N/A	
	Temperature (summer)	1	19.4 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.				
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)
				Mass	Conc.	Mass
						Conc.
		Fecal coliform				
		<i>E. coli</i>				
		Enterococci				
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.				
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Total Residual Chlorine					
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.					
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Chemical oxygen demand (COD)					
	Total organic carbon (TOC)					

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. A boiler used for heating facilities during the winter also contributes blow-down to the storm drain during cold months. HVAC condensate sources may be present intermittently and vary with the seasons. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>Multiple attempts were made to sample a discharge from this outfall and flow was not found. The data reported on this form for this outfall were collected at representative Outfall 234 since this outfall most closely resembles the discharges here.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))	
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Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		302	White Oak Creek	35° 55' 27.71" N	84° 18' 57.38" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))	
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Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)
		<input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))	
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Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)				
		<input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste Steam condensate and steam sump discharge <input type="checkbox"/> Non-contact cooling water				
	3.2	Does the facility use cooling water additives?				
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.				
	3.3	List the cooling water additives used and describe their composition.				
		<table style="width:100%; border: none;"> <tr> <th style="width:50%; border: none;">Cooling Water Additives (list)</th> <th style="width:50%; border: none;">Composition of Additives (if available to you)</th> </tr> <tr> <td style="height: 30px; border: none;"></td> <td style="border: none;"></td> </tr> </table>	Cooling Water Additives (list)	Composition of Additives (if available to you)		
Cooling Water Additives (list)	Composition of Additives (if available to you)					

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))	
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Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
	Mass			Conc.	Mass	Conc.		
		Biochemical oxygen demand (BOD ₅)	1	< 2E-03 kg/day	< 1 mg/L	< 2E-03 kg/day	< 1 mg/L	N/A
		Total suspended solids (TSS)	1	< 2E-03 kg/day	< 1.12 mg/L	< 2E-03 kg/day	< 1.12 mg/L	N/A
		Oil and grease	1	< 3E-03 kg/day	< 1.59 mg/L	< 3E-03 kg/day	< 1.59 mg/L	N/A
		Ammonia (as N)	1	9E-05 kg/day	0.0554 mg/L	9E-05 kg/day	0.0554 mg/L	N/A
		Discharge flow	35	3E-03 mgd				N/A
	pH (report as range)	1		8 - 8 StdUnit			N/A	
	Temperature (winter)	3		16.2 degC			N/A	
	Temperature (summer)	1		24.3 degC			N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)	
				Mass	Conc.	Mass		Conc.
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)		
			Mass	Conc.	Mass		Conc.	
	Chemical oxygen demand (COD)							
	Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Dry-weather flows are infrequent and some of the larger of the recorded flows may be influenced by rain events. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		304	White Oak Creek	35° 55' 28.21" N	84° 18' 55.87" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste HVAC & steam condensate, steam sump discharge <input type="checkbox"/> Non-contact cooling water	
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.	
	3.3	List the cooling water additives used and describe their composition.	
		Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 5E-04 kg/day	< 1 mg/L	< 5E-04 kg/day	< 1 mg/L	N/A
		Total suspended solids (TSS)	1	< 3E-04 kg/day	< 0.57 mg/L	< 3E-04 kg/day	< 0.57 mg/L	N/A
		Oil and grease	1	< 9E-04 kg/day	< 1.63 mg/L	< 9E-04 kg/day	< 1.63 mg/L	N/A
		Ammonia (as N)	1	3E-05 kg/day	0.0567 mg/L	3E-05 kg/day	0.0567 mg/L	N/A
		Discharge flow	48	0.12 mgd				N/A
		pH (report as range)	14	7.5 - 8.7 StdUnit				N/A
	Temperature (winter)	11	16.5 degC				N/A	
	Temperature (summer)	6	23.5 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)							
	Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. A small discharge from this outfall is continuous, but sources are intermittent and based on weather conditions. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. The flow is intermittent and the frequency is dependent on seasonal weather conditions. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>The temperature data presented for this outfall was taken directly at the steam condensate discharge. However, the discharge at this location travels over land several feet before it gets to the receiving stream during stream baseflow conditions. Therefore the temperature evaluation at this location was expanded to measure both upstream temperature = 17.0 degrees C and the downstream temperature = 16.9 degrees C. This change in temperature of 0.1 degrees C and the temperatures included here all indicate these temperature values are within the permitted ranges.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		312	White Oak Creek	35° 55' 42.88" N	84° 18' 35.31" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)	
		<input type="checkbox"/> New discharger	<input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:	

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)	
		<input type="checkbox"/> Sanitary wastes	<input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) HVAC and steam condensate
		<input type="checkbox"/> Restaurant or cafeteria waste	
		<input type="checkbox"/> Non-contact cooling water	
	3.2	Does the facility use cooling water additives?	
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.	
		Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 5E-04 kg/day	< 1 mg/L	< 5E-04 kg/day	< 1 mg/L	N/A
		Total suspended solids (TSS)	1	< 6E-04 kg/day	< 1.1 mg/L	< 6E-04 kg/day	< 1.1 mg/L	N/A
		Oil and grease	1	< 9E-04 kg/day	< 1.67 mg/L	< 9E-04 kg/day	< 1.67 mg/L	N/A
		Ammonia (as N)	1	3E-05 kg/day	0.0572 mg/L	3E-05 kg/day	0.0572 mg/L	N/A
		Discharge flow	2	0.01 mgd				N/A
	pH (report as range)	1	8 - 8 StdUnit				N/A	
	Temperature (winter)	1	11.9 degC				N/A	
	Temperature (summer)	1	22.2 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.	
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Discharges of HVAC and steam condensate are intermittent and vary with season and weather. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A			
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		313	White Oak Creek	35° 55' 47.11" N	84° 18' 30.96" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input checked="" type="checkbox"/> pond overflow, HVAC & steam condensate <input type="checkbox"/> Non-contact cooling water
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	J 0.04 kg/day	J 1.4 mg/L	J 0.04 kg/day	J 1.4 mg/L	N/A
		Total suspended solids (TSS)	1	< 0.1 kg/day	< 1.11 mg/L	< 0.1 kg/day	< 1.11 mg/L	N/A
		Oil and grease	1	J 0.2 kg/day	J 2 mg/L	J 0.2 kg/day	J 2 mg/L	N/A
		Ammonia (as N)	1	0.01 kg/day	0.137 mg/L	0.01 kg/day	0.137 mg/L	N/A
		Discharge flow	5	0.4 mgd				N/A
		pH (report as range)	2	7.3 - 7.7 StdUnit				N/A
	Temperature (winter)	3	15.6 degC				N/A	
	Temperature (summer)	2	22.4 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	Conc.
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.	
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. HVAC and steam condensate discharges vary seasonally. Flow from Outfall 313 is continuous but the rate of flow out of the East Campus/Swan Pond varies with weather conditions. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). The East Campus/Swan Pond has a 4-head aeration system.
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		314	White Oak Creek	35° 55' 48.36" N	84° 18' 28.64" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> No → SKIP to Section 4. <input checked="" type="checkbox"/> Non-contact cooling water HVAC & steam cond, OTCW, CT blowdown, RO, sump	
	3.2	Does the facility use cooling water additives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 4.	
	3.3	List the cooling water additives used and describe their composition.	
		Cooling Water Additives (list)	Composition of Additives (if available to you)
		See Appendix L	See Appendix L

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 3E-03 kg/day	< 4 mg/L	< 3E-03 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	5.7E-03 kg/day	6.97 mg/L	5.7E-03 kg/day	6.97 mg/L	N/A
		Oil and grease	1	J 1.9E-03 kg/day	J 2.35 mg/L	J 1.9E-03 kg/day	J 2.35 mg/L	N/A
		Ammonia (as N)	1	6.4E-05 kg/day	0.0784 mg/L	6.4E-05 kg/day	0.0784 mg/L	N/A
		Discharge flow	65	0.065 mgd				N/A
		pH (report as range)	63	7.1 - 8.8 StdUnit				N/A
	Temperature (winter)	32	18.6 degC				N/A	
	Temperature (summer)	34	47.2 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (Use codes per instructions.)
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	63	< 0.08 kg/day	< 0.7 mg/L	< 4.6E-03 kg/day	< 0.0675 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	0.026 kg/day	32.2 mg/L	0.026 kg/day	32.2 mg/L	N/A	
	Total organic carbon (TOC)	1	5.1E-03 kg/day	6.28 mg/L	5.1E-03 kg/day	6.28 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. Blowdown from the cooling tower is triggered automatically based on conductivity of the water circulating in the tower, and therefore blowdown is intermittent and frequency varies with weather conditions and other influences on cooling demand. HVAC and steam condensate discharges are expected to vary with ambient temperatures and demands for heating and cooling. Frequency of groundwater/foundation discharge from sumps may vary with rainfall and seasonal water table fluctuations. RO intermittently discharges to this outfall only when in use. See Section 4.2 for flowrate.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). A sodium bisulfite tablet feeder is used for dechlorination.					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>The temperature data presented for this outfall was taken directly at the steam condensate discharge. However, the discharge at this location travels over land several feet before it gets to the receiving stream during stream baseflow conditions. Therefore the temperature evaluation at this location was expanded to measure both upstream temperature = 14.9 degrees C and the downstream temperature = 14.9 degrees C. This change in temperature of 0 degrees C and the temperatures included here all indicate these temperature values are within the permitted ranges.</p> <p>DOE captures some additional data specific to cooling tower blowdown discharges from non-process wastewater outfalls. A summary of this monitoring, as well as the corresponding additional data can be found in the WQPP Report submitted annually to TDEC.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)							
	Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Discharge from this outfall is continuous but the flow rate varies. Steam pit sumps operate intermittently, and steam and HVAC condensate discharges vary with ambient temperature and heating/cooling demand. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (Use codes per Instructions.)
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	68	0.05 kg/day	0.5 mg/L	< 4.7E-03 kg/day	< 0.063 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	11 kg/day	126 mg/L	11 kg/day	126 mg/L	N/A	
	Total organic carbon (TOC)	1	1.8 kg/day	21.2 mg/L	1.8 kg/day	21.2 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Cooling tower blowdown, steam and HVAC condensate, steam pit sump discharges, and rainwater harvest irrigation system discharges are intermittent and vary with temperature and season. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). Dechlorination boxes using 92% sodium sulfite tablets are installed in-line with blowdown discharges. There is secondary dechlorination maintained at Outfall 363.
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>DOE captures some additional data specific to cooling tower blowdown discharges from non-process wastewater outfalls. A summary of this monitoring, as well as the corresponding additional data can be found in the WQPP Report submitted annually to TDEC.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)	
				Mass	Conc.	Mass		Conc.
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)		
			Mass	Conc.	Mass		Conc.	
	Chemical oxygen demand (COD)							
	Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Foundation drainage is intermittent. Flows tend to increase following rainfall. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	7	0.5 kg/day	0.8 mg/L	< 0.09 kg/day	< 0.16 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	3.43 kg/day	36.5 mg/L	3.43 kg/day	36.5 mg/L	N/A	
	Total organic carbon (TOC)	1	1.34 kg/day	14.2 mg/L	1.34 kg/day	14.2 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. Cooling tower blowdown is typically intermittent, triggered automatically by conductivity of tower circulation and based on cooling demand.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). A sodium sulfite tablet feeder will be used to dechlorinate cooling tower discharges.					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>Multiple attempts were made to sample a discharge from this outfall for the permit application. The data reported on this form for this outfall were collected at representative Outfall 014 since this outfall most closely resembles the discharges here. DOE captures some additional data specific to cooling tower blowdown discharges from non-process wastewater outfalls. A summary of this monitoring, as well as the corresponding additional data can be found in the WQPP Report submitted annually to TDEC.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		368	Fifth Creek	35° 55' 45.25" N	84° 18' 57.39" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)	
		<input type="checkbox"/> New discharger	<input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:	

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)	
		<input type="checkbox"/> Sanitary wastes <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water	<input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) steam condensate and steam sump
	3.2	Does the facility use cooling water additives?	
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.	
		Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.					
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.04 kg/day	< 4 mg/L	< 0.04 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	0.4 kg/day	37.5 mg/L	0.4 kg/day	37.5 mg/L	N/A
		Oil and grease	1	J 0.02 kg/day	J 2.12 mg/L	J 0.02 kg/day	J 2.12 mg/L	N/A
		Ammonia (as N)	1	7E-04 kg/day	0.0642 mg/L	7E-04 kg/day	0.0642 mg/L	N/A
		Discharge flow	2	3E-03 mgd				N/A
	pH (report as range)	1	7.6 - 7.6 StdUnit				N/A	
	Temperature (winter)	1	11.2 degC				N/A	
	Temperature (summer)	2	17.5 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.	
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Steam pit sumps operate intermittently, and steam condensate discharges vary with ambient temperature and heating/cooling demand. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A			
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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Form Approved 03/05/19
OMB No. 2040-0004

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		383	Tributary to Melton Branch	35° 54' 57.66" N	84° 18' 8.92" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water HVAC condensate, foundation drainage
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.09 kg/day	< 4 mg/L	< 0.09 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	< 0.02 kg/day	< 0.57 mg/L	< 0.02 kg/day	< 0.57 mg/L	N/A
		Oil and grease	1	< 0.04 kg/day	< 1.61 mg/L	< 0.04 kg/day	< 1.61 mg/L	N/A
		Ammonia (as N)	1	< 5E-04 kg/day	< 0.017 mg/L	< 5E-04 kg/day	< 0.017 mg/L	N/A
		Discharge flow	8	0.022 mgd				N/A
		pH (report as range)	1	7.7 - 7.7 StdUnit				N/A
	Temperature (winter)	3	15.7 degC				N/A	
	Temperature (summer)	1	22.9 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Foundation drainage and HVAC condensate discharges are weather dependent. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		435	White Oak Creek	35° 56' 24.95" N	84° 18' 3.51" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)	
		<input type="checkbox"/> New discharger	<input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:	

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)	
		<input type="checkbox"/> Sanitary wastes	<input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below)
		<input type="checkbox"/> Restaurant or cafeteria waste	CT Bdwn steam & HVAC cond, found drain, fire flush
		<input checked="" type="checkbox"/> Non-contact cooling water	
	3.2	Does the facility use cooling water additives?	
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.	
		Cooling Water Additives (list)	Composition of Additives (if available to you)
		See Appendix L	See Appendix L

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?				
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.			
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)
				Mass	Conc.	Mass Conc.
		Biochemical oxygen demand (BOD ₅)	1	< 0.2 kg/day	< 4 mg/L	< 0.2 kg/day < 4 mg/L
		Total suspended solids (TSS)	1	< 0.025 kg/day	< 0.57 mg/L	< 0.025 kg/day < 0.57 mg/L
		Oil and grease	1	J 0.0943 kg/day	J 2.12 mg/L	J 0.0943 kg/day J 2.12 mg/L
		Ammonia (as N)	5	0.02 kg/day	0.0765 mg/L	J 0.01 kg/day J 0.0526 mg/L
		Discharge flow	69	0.22 mgd		N/A
	pH (report as range)	66	6.8 - 8.8 StdUnit		N/A	
	Temperature (winter)	35	15.3 degC		N/A	
	Temperature (summer)	34	21.9 degC		N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (Use codes per Instructions.)
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	62	< 0.04 kg/day	< 0.05 mg/L	< 0.0185 kg/day	< 0.05 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	J 0.765 kg/day	J 17.2 mg/L	J 0.765 kg/day	J 17.2 mg/L	N/A	
	Total organic carbon (TOC)	1	J 0.0384 kg/day	J 0.864 mg/L	J 0.0384 kg/day	J 0.864 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Blowdown is released intermittently, triggered by conductivity of the tower water. Blowdown frequency varies with weather conditions and other influences on cooling demand. HVAC and steam condensate, and foundation drainage discharge intermittently with weather and with research. Fire system flush also discharges occasionally to this outfall. The discharge flows through a long open channel before reaching the sizable stormwater detention pond. A surface skimmer on the surface of the detention pond feeds water continuously to Outfall 435. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). Cooling tower blowdown is treated with 30-60% sodium bisulfite drip dechlorinator for removal of residual chlorine/bromine at the tower discharge point. Blowdown plus all other nonprocess wastewater and storm water flow into a large storm water retention pond. In addition to the primary function of reducing peak storm water flow rates, the retention pond provides opportunity for temperature moderation of the discharges and traps a portion of the settleable solids.
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>Sources of nonprocess wastewaters from industrial operations flow through a long open natural channel before entering into a large retention pond. Water from this retention pond then discharges through Outfall 435 into White Oak Creek. The largest source of nonprocess wastewater to the retention pond is cooling tower blowdown. DOE captures additional data specific to cooling tower blowdown discharges from non-process wastewater outfalls. A summary of this monitoring, as well as the corresponding additional data can be found in the WQPP Report submitted annually to TDEC.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		436	White Oak Creek	35° 57' 10.55" N	84° 17' 42.12" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste unknown discharges <input type="checkbox"/> Non-contact cooling water
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.02 kg/day	< 4 mg/L	< 0.02 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	J 0.01 kg/day	J 1.8 mg/L	J 0.01 kg/day	J 1.8 mg/L	N/A
		Oil and grease	1	J 0.02 kg/day	J 2.86 mg/L	J 0.02 kg/day	J 2.86 mg/L	N/A
		Ammonia (as N)	1	J 2E-04 kg/day	J 0.0349 mg/L	J 2E-04 kg/day	J 0.0349 mg/L	N/A
		Discharge flow	6	0.05 mgd				N/A
		pH (report as range)	4	7.6 - 8.2 StdUnit				N/A
	Temperature (winter)	5	12.4 degC				N/A	
	Temperature (summer)	2	26.2 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Discharges at this outfall vary seasonally with the changes in weather. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		437	White Oak Creek	35° 56' 51.09" N	84° 18' 15.59" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input checked="" type="checkbox"/> Non-contact cooling water CT Blwn steam & HVAC cond, found drain, fire flush
	3.2	Does the facility use cooling water additives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives <small>(list)</small>	Composition of Additives <small>(if available to you)</small>
See Appendix L	See Appendix L

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.2 kg/day	< 4 mg/L	< 0.2 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	< 0.025 kg/day	< 0.57 mg/L	< 0.025 kg/day	< 0.57 mg/L	N/A
		Oil and grease	1	J 0.0943 kg/day	J 2.12 mg/L	J 0.0943 kg/day	J 2.12 mg/L	N/A
		Ammonia (as N)	5	0.02 kg/day	0.0765 mg/L	J 0.01 kg/day	J 0.0526 mg/L	N/A
		Discharge flow	69	0.22 mgd				N/A
		pH (report as range)	66	6.8 - 8.8 StdUnit				N/A
	Temperature (winter)	35	15.3 degC				N/A	
	Temperature (summer)	34	21.9 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.
		Fecal coliform					
	<i>E. coli</i>						
	Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.	
Total Residual Chlorine	62	< 0.04 kg/day	< 0.05 mg/L	< 0.0185 kg/day	< 0.05 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.	
Chemical oxygen demand (COD)	1	J 0.765 kg/day	J 17.2 mg/L	J 0.765 kg/day	J 17.2 mg/L	N/A	
Total organic carbon (TOC)	1	J 0.0384 kg/day	J 0.864 mg/L	J 0.0384 kg/day	J 0.864 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Cooling tower discharge, which can vary in volume seasonally and is intermittent, enters a large storm water retention basin. Outfall 437 is the emergency spillway for this detention basin, that normally drains through a skimmer and a submerged pipe to Outfall 435. Any discharge over the spillway would only occur during an extreme precipitation event. Discharge over the spillway would enter the tributary north of the weir at the SNS Access Road (and north of Outfall 435). During large rain events, cooling tower blowdown and/or other non-process discharges through both the Outfall 435 pipe and over the Outfall 437 spillway would be significantly diluted by storm water runoff. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). A drip of NALCO 7408 (30-60% Sodium Bisulfite) is used at the cooling tower blowdown discharge point. The storm water detention basin reduces peak storm water flow rates, and provides moderation of temperature of cooling tower blowdown and surface runoff. The basin also traps a portion of settleable solids and the pollutants associated with those solids. Other than rare detention basin maintenance activities, water is discharged over the spillway only during very large storms. During those events nonprocess wastewaters are significantly diluted by stormwater.				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>Outfall 437 is the concrete emergency spillway for the west storm water detention pond. This outfall is an overflow for waters normally discharged through the Outfall 435 pipe. Discharges through Outfall 437 only occur when the capacity of the normal outlet (Outfall 435) is exceeded by heavy storm water loading or in the past when dewatering was performed in association with maintenance activities. The dry-weather component of the discharge is the same as that discharged to Outfall 435. Therefore, the estimated pollutant concentrations, flow rates, and loadings reported on this form are from sampling conducted at Outfall 435. During wet weather events, any nonprocess wastewaters are significantly diluted by stormwater.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.				
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)
				Mass	Conc.	Mass
						Conc.
		Fecal coliform				
		<i>E. coli</i>				
		Enterococci				
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.				
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Total Residual Chlorine					
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.					
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Chemical oxygen demand (COD)					
	Total organic carbon (TOC)					

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Discharges from this outfall are intermittent. The sources of discharge are steam condensate and sump discharge from a steam pit, which are expected to vary with weather conditions. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>Multiple attempts were made to sample the discharge for this outfall for the permit application. The data reported on this form for this outfall were collected at representative Outfall 243, since this outfall most closely resembles discharges here. The temperature data presented for this outfall was taken directly at the steam condensate discharge. However, the discharge at this location travels over land several feet before it gets to the receiving stream during stream baseflow conditions. Therefore the temperature evaluation at this location was expanded to measure both upstream temperature = 10.7 degrees C and the downstream temperature = 10.7 degrees C. This change in temperature of 0 degrees C and the temperatures included here all indicate these temperature values are within the permitted ranges.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Discharges from this outfall are intermittent. The sources of discharge are steam condensate and sump discharge from a steam pit, which are expected to vary with weather conditions. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>The temperature data presented for this outfall was taken directly at the steam condensate discharge. However, the discharge at this location travels over land several feet before it gets to the receiving stream during stream baseflow conditions. Therefore the temperature evaluation at this location was expanded to measure both upstream temperature = 8.7 degrees C and the downstream temperature = 8.8 degrees C. This change in temperature of 0.1 degrees C and the temperatures included here all indicate these temperature values are within the permitted ranges.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	7	0.5 kg/day	0.8 mg/L	< 0.09 kg/day	< 0.16 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	3.43 kg/day	36.5 mg/L	3.43 kg/day	36.5 mg/L	N/A	
	Total organic carbon (TOC)	1	1.34 kg/day	14.2 mg/L	1.34 kg/day	14.2 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. Blowdown from cooling towers is intermittent and the frequency of blowdown varies with weather conditions and other influences on cooling demand. This cooling tower is not currently discharging to the receiving stream due to outfall pipe damage. See Section 4.2 for flowrate.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). The cooling tower blowdown discharge was previously routed through a tablet feeder located in the adjacent storm catch basin where tablets (92% sodium sulfite) would be utilized to reduce residual chlorine and bromine to less toxic forms. The tablet feeder is currently not maintained because of damage to the outfall pipe and does not directly convey flow.					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))


Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>The cooling tower blowdown was originally piped to a catch basin leading to Outfall 481. Currently, water backs up in the storm grate when the tower blows down, slowly draining from the catch basin to the subsurface since there is damage to the outfall pipe. This pipe is scheduled to be repaired as resources allow. Flow was not found at this outfall due to pipe damage. The data reported on this form for this outfall were collected at representative Outfall 014 since this outfall most closely resembles the discharges here.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory
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Form Approved 03/05/19
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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		482	Tributary to Melton Branch	35° 55' 8.26" N	84° 18' 11.86" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water HVAC & steam conden, steam sump, foundation drain
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.04 kg/day	< 4 mg/L	< 0.04 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	0.9 kg/day	86.9 mg/L	0.9 kg/day	86.9 mg/L	N/A
		Oil and grease	1	< 0.02 kg/day	< 1.61 mg/L	< 0.02 kg/day	< 1.61 mg/L	N/A
		Ammonia (as N)	1	7E-04 kg/day	0.0618 mg/L	7E-04 kg/day	0.0618 mg/L	N/A
		Discharge flow	4	4E-03 mgd				N/A
		pH (report as range)	1	8 - 8 StdUnit				N/A
	Temperature (winter)	3	15.2 degC				N/A	
	Temperature (summer)	2	17. degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)	
				Mass	Conc.	Mass		Conc.
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)		
			Mass	Conc.	Mass		Conc.	
	Chemical oxygen demand (COD)							
	Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. This outfall is in a topographic low area and flows most of the time, but the flow rate is variable. Steam and HVAC condensate discharges are expected to vary with weather and other factors related to steam demand. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		506	White Oak Creek	35° 55' 36.42" N	84° 18' 45.21" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water HVAC & steam condensate, foundation drainage
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 2E-03 kg/day	< 4 mg/L	< 2E-03 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	2E-03 kg/day	2.8 mg/L	2E-03 kg/day	2.8 mg/L	N/A
		Oil and grease	1	< 8E-04 kg/day	< 1.41 mg/L	< 8E-04 kg/day	< 1.41 mg/L	N/A
		Ammonia (as N)	1	3E-05 kg/day	0.0554 mg/L	3E-05 kg/day	0.0554 mg/L	N/A
		Discharge flow	1	1E-04 mgd				N/A
		pH (report as range)	1	7.4 - 7.4 StdUnit				N/A
	Temperature (winter)	0	See Section 7.1				N/A	
	Temperature (summer)	1	17.2 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Foundation drainage, HVAC condensate and steam condensate vary with weather and precipitation. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. Multiple attempts were made to obtain temperatures at this outfall and flow was not found.
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		583	White Oak Creek	35° 54' 34.31" N	84° 18' 57.29" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.)			
		<input type="checkbox"/> New discharger		<input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.	
	2.2	Specify your anticipated discharge date:			

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.)			
		<input type="checkbox"/> Sanitary wastes <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water	<input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) HVAC condensate and foundation drainage		
	3.2	Does the facility use cooling water additives?			
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 4.		
	3.3	List the cooling water additives used and describe their composition.			
		Cooling Water Additives (list)	Composition of Additives (if available to you)		

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package?						
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.1 kg/day	< 4 mg/L	< 0.1 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	0.2 kg/day	8.1 mg/L	0.2 kg/day	8.1 mg/L	N/A
		Oil and grease	1	J 0.05 kg/day	J 1.8 mg/L	J 0.05 kg/day	J 1.8 mg/L	N/A
		Ammonia (as N)	1	2E-03 kg/day	0.0563 mg/L	2E-03 kg/day	0.0563 mg/L	N/A
		Discharge flow	1	7E-03 mgd				N/A
	pH (report as range)	1	7.6 - 7.6 StdUnit		N/A			
	Temperature (winter)	1	12.7 degC		N/A			
	Temperature (summer)	2	19.4 degC		N/A			

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (Use codes per Instructions.)
				Mass	Conc.	Mass	
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine						
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	Source (use codes per instructions)	
			Mass	Conc.	Mass		Conc.
	Chemical oxygen demand (COD)						
	Total organic carbon (TOC)						

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. Discharges of HVAC condensate and foundation drainage are expected to be intermittent and vary with seasonal weather conditions. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. N/A
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
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	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
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Form Approved 03/05/19
OMB No. 2040-0004

FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		585	Tributary to Melton Branch	35° 55' 18.99" N	84° 18' 16" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input type="checkbox"/> New discharger <input checked="" type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date:

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input checked="" type="checkbox"/> Non-contact cooling water reverse osmosis reject water
	3.2	Does the facility use cooling water additives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Source (use codes per instructions)
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	< 0.2 kg/day	< 4 mg/L	< 0.2 kg/day	< 4 mg/L	N/A
		Total suspended solids (TSS)	1	J 0.087 kg/day	J 1.88 mg/L	J 0.087 kg/day	J 1.88 mg/L	N/A
		Oil and grease	1	< 0.0722 kg/day	< 1.56 mg/L	< 0.0722 kg/day	< 1.56 mg/L	N/A
		Ammonia (as N)	1	8.75E-03 kg/day	0.189 mg/L	8.75E-03 kg/day	0.189 mg/L	N/A
		Discharge flow	19	0.03 mgd				N/A
		pH (report as range)	19	7.3 - 8.3 StdUnit				N/A
	Temperature (winter)	11	16.1 degC				N/A	
	Temperature (summer)	8	27.4 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.					
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.
		Fecal coliform					
		<i>E. coli</i>					
		Enterococci					
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.					
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.	
	Total Residual Chlorine	19	< 5E-03 kg/day		0.4 mg/L	< 1.5E-03 kg/day < 0.0816 mg/L	N/A
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.						
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>	Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.	
	Chemical oxygen demand (COD)	0				N/A	
	Total organic carbon (TOC)	0				N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. There are two reverse osmosis (RO) trains. With one operating at design capacity, reject water would be discharged at a continuous rate of approximately 4 gpm. A second train cycles on and off as needed to meet makeup water requirements during times of peak steam demand and it has a similar reject rate. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). There is a dechlorination system on the intake to the RO unit. This discharge receives no active treatment.				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed. RO system additives are ChemTreat BL8860 (boiler water multifunction treatment; contains sulfite, caustic, polymer, and amine).
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td>Name (print or type first and last name) Johnny O. Moore</td> <td>Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.				
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
		Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)
				Mass	Conc.	Mass
						Conc.
		Fecal coliform				
		<i>E. coli</i>				
		Enterococci				
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.				
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)				
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Total Residual Chlorine					
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.					
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)					
	Parameter or Pollutant	Number of Analyses (if actual data reported)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)	
			Mass	Conc.	Mass	
					Conc.	
	Chemical oxygen demand (COD)					
	Total organic carbon (TOC)					

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.
	5.2	Briefly describe the frequency and duration of flow. The steam trap discharges condensate year round, but more condensate is expected during colder weather. This outfall is not expected to have a significant effect on water temperature in White Oak Creek primarily due to its small flow rate in comparison to the receiving stream baseflow. See Section 4.2 for flowrate.

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>The temperature data presented for this outfall was taken directly at the steam condensate discharge. However, the discharge at this location is released onto the surface of a boulder in the creek bank that is elevated several feet above the stream. The condensate travels over land/boulder several feet before it gets to the receiving stream during stream baseflow conditions. Therefore the temperature evaluation at this location was expanded to measure both upstream temperature = 9.7 degrees C and the downstream temperature = 9.7 degrees C. This change in temperature of 0 degrees C and the temperatures included here all indicate these temperature values are within the permitted ranges.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>					
		Column 1	Column 2				
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)				
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments				
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments				
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Name (print or type first and last name) Johnny O. Moore</td> <td style="width: 50%;">Official title Manager, ORNL Site Office</td> </tr> <tr> <td>Signature</td> <td>Date signed</td> </tr> </table>		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office	Signature	Date signed
Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office						
Signature	Date signed						

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine							
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)							
	Total organic carbon (TOC)							

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.				
	5.2	Briefly describe the frequency and duration of flow. Discharges from this outfall are expected to be intermittent whenever they begin. The sources of discharge are steam condensate which is expected to vary with weather conditions. See Section 4.2 for flowrate.				

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). N/A				
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>This outfall is currently the existing sewage treatment plant outfall/X01, This outfall is planned to be converted to a non-process outfall when the new sewage treatment plant comes online. At that time, this outfall is expected to begin to discharge steam condensate intermittently. The steam condensate line from the existing sewage treatment plant sludge dryers is the non-process discharge that is planned to be rerouted to this outfall in the next few years during the same time as the construction of the new sewage treatment plant. Until such time as the new sewage treatment plant comes online and the construction rerouting of this steam condensate line is completed the data reported on this form for this outfall were collected at representative Outfall 447 since this outfall most closely resembles the discharges expected here.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

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FORM 2E NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL FACILITIES WHICH DISCHARGE ONLY NONPROCESS WASTEWATER
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(h)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below.			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		732	White Oak Creek	35° 55' 51" N	84° 18' 23" W

SECTION 2. DISCHARGE DATE (40 CFR 122.21(h)(2))

Discharge Date	2.1	Are you a new or existing discharger? (Check only one response.) <input checked="" type="checkbox"/> New discharger <input type="checkbox"/> Existing discharger → SKIP to Section 3.
	2.2	Specify your anticipated discharge date: 12/31/2025

SECTION 3. WASTE TYPES (40 CFR 122.21(h)(3))

Waste Types	3.1	What types of wastes are currently being discharged if you are an existing discharger or will be discharged if you are a new discharger? (Check all that apply.) <input type="checkbox"/> Sanitary wastes <input checked="" type="checkbox"/> Other nonprocess wastewater (describe/explain directly below) <input type="checkbox"/> Restaurant or cafeteria waste <input type="checkbox"/> Non-contact cooling water CT blowdown - under construction
	3.2	Does the facility use cooling water additives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 4.
	3.3	List the cooling water additives used and describe their composition.

Cooling Water Additives (list)	Composition of Additives (if available to you)
See Appendix L	See Appendix L

SECTION 4. EFFLUENT CHARACTERISTICS (40 CFR 122.21(h)(4))

Effluent Characteristics	4.1	Have you completed monitoring for all parameters in the table below at each of your outfalls and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority (attach waiver request and additional information) → SKIP to Section 5.						
	4.2	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
				Mass	Conc.	Mass	Conc.	
		Biochemical oxygen demand (BOD ₅)	1	0.42 kg/day	4.5 mg/L	0.42 kg/day	4.5 mg/L	N/A
		Total suspended solids (TSS)	1	J 0.194 kg/day	J 2.06 mg/L	J 0.194 kg/day	J 2.06 mg/L	N/A
		Oil and grease	1	J 0.344 kg/day	J 3.66 mg/L	J 0.344 kg/day	J 3.66 mg/L	N/A
		Ammonia (as N)	1	0.0284 kg/day	0.302 mg/L	0.0284 kg/day	0.302 mg/L	N/A
		Discharge flow	9	0.166 mgd				N/A
		pH (report as range)	7	7.9 - 8.8 StdUnit				N/A
	Temperature (winter)	7	24.3 degC				N/A	
	Temperature (summer)	2	28.7 degC				N/A	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Effluent Characteristics Continued	4.3	Is fecal coliform believed present, or is sanitary waste discharged (or will it be discharged)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.5.						
	4.4	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(Use codes per Instructions.)</small>
				Mass	Conc.	Mass	Conc.	
		Fecal coliform						
		<i>E. coli</i>						
		Enterococci						
	4.5	Is chlorine used (or will it be used)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.						
	4.6	Provide data as requested in the table below. ¹ (See instructions for specifics.)						
		Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>
			Mass	Conc.	Mass	Conc.		
	Total Residual Chlorine	7	0.5 kg/day	0.8 mg/L	< 0.09 kg/day	< 0.16 mg/L	N/A	
4.7	Is non-contact cooling water discharged (or will it be discharged)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 5.							
4.8	Provide data as requested in the table below. ¹ (See instructions for specifics.)							
	Parameter or Pollutant	Number of Analyses <small>(if actual data reported)</small>	Maximum Daily Discharge <small>(specify units)</small>		Average Daily Discharge <small>(specify units)</small>		Source <small>(use codes per instructions)</small>	
			Mass	Conc.	Mass	Conc.		
	Chemical oxygen demand (COD)	1	3.43 kg/day	36.5 mg/L	3.43 kg/day	36.5 mg/L	N/A	
	Total organic carbon (TOC)	1	1.34 kg/day	14.2 mg/L	1.34 kg/day	14.2 mg/L	N/A	

SECTION 5. FLOW (40 CFR 122.21(h)(5))

Flow	5.1	Except for stormwater water runoff, leaks, or spills, are any of the discharges you described in Sections 1 and 3 of this application intermittent or seasonal? <input checked="" type="checkbox"/> Yes → Complete this section. <input type="checkbox"/> No → SKIP to Section 6.					
	5.2	Briefly describe the frequency and duration of flow. Flow is expected to be intermittent and vary with weather and research activities. See Section 4.2 for flowrate.					

SECTION 6. TREATMENT SYSTEM (40 CFR 122.21(h)(6))

Treatment System	6.1	Briefly describe any treatment system(s) used (or to be used). Dechlorinator - TBD					
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¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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OMB No. 2040-0004

SECTION 7. OTHER INFORMATION (40 CFR 122.21(h)(7))

Other Information	7.1	<p>Use the space below to expand upon any of the above items. Use this space to provide any information you believe the reviewer should consider in establishing permit limitations. Attach additional sheets as needed.</p> <p>This outfall and associated dry weather flows are currently under construction. Therefore, the data reported on this form for this outfall were collected at representative Outfall 014 since this outfall most closely resembles the discharges expected here.</p>
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SECTION 8. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	8.1	<p>In Column 1 below, mark the sections of Form 2E that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.</p>	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1: Outfall Location	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2: Discharge Date	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3: Waste Types	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 4: Effluent Characteristics	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5: Flow	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6: Treatment System	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7: Other Information	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 8: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	8.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		<p>Name (print or type first and last name) Johnny O. Moore</p>	<p>Official title Manager, ORNL Site Office</p>
		<p>Signature</p>	<p>Date signed</p>

Chapter 7 – EPA Form 2F

Discharges of stormwater from ORNL are carried by an extensive storm drain piping system, as well as through lined channels, ditches, swales, and similar structures. Stormwater outfalls at ORNL are permitted under ORNL NPDES Permit No. TN0002941. The EPA 2F Forms for stormwater discharges are being submitted for ORNL as a part of this NPDES permit renewal application. Several outfalls at ORNL have non-storm water components as well as stormwater runoff contributing to their discharge. In these cases where outfalls receive non-process wastewaters and stormwater runoff, the EPA 2E Forms will also be submitted. See **Appendix A – Outfall Summary** for more details regarding the EPA forms provided in this permit renewal for each outfall. The EPA 2F Forms and associated data for the stormwater outfalls are included immediately following this summary.

There are 132 outfalls at ORNL that discharge stormwater that will need an EPA Form 2F. Due to the large number of outfalls on-site, substantially identical, or representative, outfalls were selected to be utilized for the EPA 2F Forms. Stormwater outfalls located on-site at ORNL were put into six (6) groups based on similar drainage areas for each outfall. See **Appendix M – EPA Form 2F Stormwater Outfall Groups** for more details. However, where any additional stormwater data was available for use with this NPDES permit application, that data was also included on separate EPA 2F Forms (stormwater outfalls 302 and 304 will also have EPA 2F forms). There will be EPA 2F forms attached for each group, and also for the individual outfalls mentioned immediately following this summary. Each group will also have a corresponding map in **Appendix N – EPA Form 2F Site Drainage Map**, which satisfies *NPDES EPA 2F Form Section 3.1 Site Drainage Map (40 CFR 122.26(c)(1)(i)(A))* requirement. The maps also include those outfalls that have their own individual EPA Form 2F application (outfalls 302 and 304). The stormwater outfalls were grouped first based on their impervious acreage (Groups 1 - greater than 50% imperviousness and Groups 2 - less than 50% impervious acreage within a drainage area) and then were further divided based on whether they had a specific non-process wastewater component, if there is one present in the discharge (Groups A, B, and C) as described in more detail here:

- **Group A1 Stormwater Outfalls** - those outfalls with a high imperviousness, including a cooling tower blowdown component and stormwater
- **Group A2 Stormwater Outfalls** - those outfalls with a low imperviousness, including a cooling tower blowdown component and stormwater
- **Group B1 Stormwater Outfalls** – those outfalls with a high imperviousness, including dry-weather discharges (of either steam condensate, HVAC condensate, groundwater, foundation drainage, sump discharges) and stormwater
- **B2 Stormwater Outfalls** - those outfalls with a low imperviousness, including dry-weather discharges (of either steam condensate, HVAC condensate, groundwater, foundation drainage, or sump discharges) and stormwater
- **Group C1 Stormwater Outfalls** – those outfalls with high imperviousness and stormwater-only discharges
- **Group C2 Stormwater Outfalls** – those outfalls with low imperviousness and stormwater-only outfalls

The representative outfalls for each stormwater group will have data provided on the EPA 2F forms and are listed here for reference.

Table 7-1. Stormwater Group Representative Outfalls

Group A1	Group A2	Group B1	Group B2	Group C1	Group C2
227	204	207	234	403	434

There are very few pollutants from current ORNL research laboratory operations that are expected to be present in stormwater discharges at ORNL apart from on-going construction, grounds maintenance, and utility operations. Even though ORNL is an active CERCLA site with legacy pollutant concerns, some of which are currently regulated under CERCLA and AEA, the presence of these legacy pollutants in ORNL stormwater has historically been minimal. In addition, ORNL employs an extensive/detailed safety materials management system as described in detail below which includes proper tracking, handling and storage of materials, in order to ensure the potential to impact stormwater is minimal. More importantly, ORNL has numerous regulations that are being followed for materials handling, waste management, storage, and disposal that help ensure minimal stormwater risk. A conservative internal process was used to objectively assess the pollutants potentially present in ORNL stormwater discharges. Two (2) test methods were utilized for analyzing those potentially present parameters in Table C. Those methods also returned many additional results from the analytical laboratory that were not necessarily targeted analytes (so not believed present). Those additional parameters not specifically targeted are also included on the EPA 2F Forms where applicable. Of those parameters not expected to be present, approximately five (5) parameters were returned with an estimated concentration¹. However, the laboratory blanks associated with these samples (quality assurance samples that are prepared by the analytical lab – not sourced from ORNL) had similar concentrations for these parameters, therefore the actual presence of these contaminants in ORNL stormwater samples is indeterminant.

The data utilized in the completion of the EPA 2F Forms were obtained from January 1, 2022, to February 1, 2023. In addition, the data reported on the 2F forms used consistent data qualifiers to those in the ORNL NPDES monthly DMRs: where prefixes >, <, and J (estimated value) are used. Stormwater runoff discharge analytical data summarized on the 2F forms do not include fecal coliform because ORNL does not have a combined sanitary sewer and stormwater system. At ORNL, it is typical to have naturally occurring fecal coliform in stormwater runoff on-site due to large number of acres of undeveloped land and the native animal communities present. The test for fecal coliform does not distinguish between these animal-derived sources and human-derived sources. Therefore, due to these limitations, monitoring for fecal coliform is not a definitive method for evaluating any potential sanitary/septic issues in the ORNL stormwater discharges. However, there are other pollutant parameters reported on the EPA 2F Form included that, when evaluated together, help to better identify whether a potential cross connection exists, and those parameter results are displayed on the EPA 2F forms. For example, elevated measurements of total suspended solids (TSS), oil and grease (due to the presence of organic material), total Kjeldahl nitrogen, and nitrate/nitrite nitrogen are some indicators of this, in addition to oxygen demand indicated by biological oxygen demand (BOD) and COD analyses which can also be used in helping in evaluating sanitary issues in stormwater at ORNL.

¹Benzo(b)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(k)fluoranthene, and Indeno(1,2,3-cd)pyrene.

Analytical data utilized in the completion of EPA 2F forms were collected predominantly as a part of the NPDES Permit renewal sampling effort. In addition, stormwater data are also collected for a few known CERCLA legacy pollutant parameters (mercury and PCBs) as a part of the ongoing NPDES permit WQPP investigation effort as described in more detail below and in **Section 3 – Water-Related Monitoring Programs at ORNL**. However, for those stormwater outfalls where legacy mercury and PCBs are potentially a concern, the stormwater monitoring data is only referenced on the EPA 2F Forms, though it can be found in more detail in the 2023 WQPP Report submitted to TDEC in May 2023. The reason for this is due to the different types of sampling and analysis done, as well as methods used for analysis in the WQPP, which don't meet the requirements, or fit into the constraints detailed on the EPA 2F Forms for these parameters. PCBs and mercury are known CERCLA legacy pollutants potentially present in storm effluent from specific outfalls located on ORNL campus. This CERCLA legacy issue does not align with the outfall grouping strategy for this application which is based on current land use and operational practices. The investigation into these CERCLA legacy sources has been well-documented under the WQPP, and thus it will be noted on the EPA 2F Forms that information and data for these pollutants can be found in the most recent WQPP report submitted May 1, 2023.

EPA Form 2F – Section 2 Improvements

The *NPDES Permit Form 2F Section 2 Improvements (40 CFR 122.21(g)(6))* of the **EPA 2F Form** instructions say to list/describe compliance projects or any other projects/programs affecting your discharge. Therefore, please see **Appendix K - Improvements** for more details regarding these form requirements for the STP/X01 and the PWTC/X12 and for the stormwater outfalls.

Receiving Streams

The Clinch River is the major hydrologic feature near the ORNL Campus. The Oak Ridge area is drained by the Clinch River and some smaller creeks, which are tributaries to the Clinch River. White Oak Creek (WCK) is the main receiving stream that originates within ORNL boundaries that eventually flows to the Clinch River. First Creek (FCK), Fifth Creek (FFK), the Northwest Tributary (NWT), and Melton Branch (MEK), in addition to several unnamed tributaries also feed into White Oak Creek. White Oak Creek originates east of the ORNL main campus in Bethel Valley and flows to the southwest to Melton Valley and into White Oak Lake before flowing into the Clinch River. First Creek and the Northwest Tributary both receive runoff from research, office, and operations buildings located on the western side of main ORNL campus. Fifth Creek receives runoff from the central part of ORNL campus. Melton Branch originates on the southeastern portion of the ORNL site in Melton Valley and flows in a southwesterly direction into lower White Oak Creek. Melton Branch receives runoff from smaller research, office, and operations sites remotely located within the forested region of the ORNL reservation in Melton Valley.

EPA Form 2F - Section 4.2 Significant Materials

The ORNL is the largest DOE national laboratory in the US. ORNL consists of numerous office/research and laboratory buildings with many support facilities, maintenance, and associated utilities located across the campus. In addition to these facilities, there is also significant greenspace interspersed throughout the buildings on campus as well as around the perimeter of the site and the perimeter of the ORR. Its facilities support past, present, and future DOE missions. As a direct result, and depending on current DOE missions, there can be widely varying materials usage that changes in real-time on-site at ORNL. However, most materials used for research at ORNL are stored and used indoors, eliminating the stormwater runoff risk. In addition, there are numerous laws, regulations, procedures, and best management practices in place that DOE follows to ensure proper handling, use, storage (and at times treatment, if required), and disposal of these chemicals.

Semi-annual stormwater inspections have been conducted on the on-site stormwater outfall drainage areas since 1996, when it became a PWTC requirement in the NPDES Permit. Since that time, these inspections have been retained under the WQPP portion of the NPDES Permit to further help minimize the risk of stormwater runoff issues. The stormwater inspections focus on the dynamic outdoor storage areas around buildings across the campus, consisting mainly of finished metal equipment or products, liquid storage in containers less than 55-gal in capacity, and construction sites that may not otherwise be covered under the Tennessee Stormwater Construction General Permit. Liquid storage in containers/tanks (containing hazardous substances or oil) that are 55-gal or greater in capacity are covered under the ORNL SPCC Plan described below.

SPCC Regulated Materials - The ORNL SPCC Plan (developed in accordance with 40 CFR 112) requires ORNL to maintain a comprehensive inventory of containers, tanks, and/equipment containing oil products with 55-gal or larger capacities. In addition, the ORNL SPCC Plan covers non-radiological hazardous substances (refer to 40 CFR 116) in 55-gal or larger capacity containers and tanks as a Best Management Practice (BMP) contained within the SPCC. The containers and tanks are required to have sized secondary containment that is capable to contain the entire volume of the largest container within the storage area along with adequate freeboard for rainwater, if the containment area is exposed to rainfall. General containment is satisfied through a Spill Contingency Plan attached to the ORNL SPCC Plan. SPCC inventories are tracked through an internal geographic information system (GIS) that is updated by Environmental Protection Officers/Environmental Compliance Representative (EPO/ECR) personnel as inventory reductions or additions occur. Annually, ORNL staff confirm inventories are accurate. Inspections are performed quarterly. Annual inspections by a Steel Tank Institute (STI) certified inspector are also performed on oil storage tanks in accordance with STI Standard SP001. Deficiencies or concerns noted during inspections are typically addressed before the next quarterly inspection is performed. Records of these inspections are maintained for at least a 3-year period. In addition, oil handlers are required to take an internal SPCC training module initially and as a refresher course annually.

RCRA and CERCLA Wastes – Hazardous wastes are managed on-site under the permits and regulations of RCRA and CERCLA, which specify management, handling, storage, disposal of these materials including requirements limiting potential contact with stormwater. A Hazardous Waste Corrective Action Permit (TNHW-164) is in effect that addresses corrective actions taking place throughout the ORR, including on-site at ORNL. The permit requires ORNL to investigate any releases of hazardous constituents that have occurred at the facility and to take appropriate corrective action for those releases. In addition, the permit contains a list of solid waste management units (SWMUs) and areas of concern (AOC) that have been identified on the ORR, including ORNL. The permit requires the permittees to notify EPA and TDEC of any newly identified SWMUs and AOCs and to annually update the SWMU and AOC information list.

DOE addresses investigation and cleanup of legacy hazardous wastes under CERCLA, instead of RCRA, as specified in the FFA for the ORR. The FFA outlines implementation strategies, milestone schedules, and progress reporting agreed to by DOE, TDEC, and EPA, which includes all SWMUs/AOCs listed in the RCRA permit. As new records of decision (RODs) are agreed upon, new projects and implementation schedules are implemented. The Portfolio Plan for ORNL (DOE/OR/01-2578) provides a schedule for cleanup from FY 2014 through FY 2046 for hazardous wastes on-site. Included are cleanup of inactive facilities, and of contaminated soil, sediment, and groundwater. Additionally, ORNL also works under the Hazardous Waste Corrective Action Permit, as described above, which provides another mechanism for enforcement, if it is determined insufficient progress is being made under the FFA.

CERCLA Materials Investigated Under the CWA (Mercury and PCBs) - Even though DOE typically addresses investigation and cleanup of legacy hazardous wastes under CERCLA, mercury and PCB presence in stormwater has historically been investigated under the CWA NPDES permit at ORNL, specifically as a part of the WQPP (as described in **Section 3 – Water-Related Monitoring Programs at ORNL**). The WQPP CERCLA mercury stormwater investigation is expected to further delineate mercury sources and to help prioritize future abatement actions on-site. The mercury investigation highlights the complex science of mercury in water, mercury bioaccumulation in fish tissue, and mercury source investigations at ORNL. In addition, CERCLA legacy contamination of PCBs has also been an ongoing issue in a few locations in ORNL stormwater that is currently being investigated and monitored under the WQPP. A conceptual model was developed that delineates the location of legacy PCB sources, transport pathways and flux based on the most recent stormwater data and scientific interpretation. Stormwater monitoring conducted under this model involves deployments of semi-permeable membrane devices (SPMDs) into the stormwater catch basins and an analysis of the presence in PCBs over some time period. Mercury and PCB stormwater monitoring is done in different conditions and typically using different methods, which does not correlate directly into the EPA 2F forms. Therefore, at those stormwater outfalls where these legacy contaminants are expected to be present, there is only a reference on the form and the corresponding data can be found in the 2023 WQPP Annual Report.

Materials Management & Loading and Access Areas

The Safety Division at ORNL is responsible for managing the ORNL Hazardous Materials Management Program (HMMP) and plays a key role in the management, tracking and reporting of hazardous materials at ORNL. The HMMP helps meet regulatory requirements pertaining to management and information relative to hazardous materials. The Materials Division is responsible for tracking materials accepted at ORNL's onsite receiving facilities to the recipients' requested delivery locations. The majority of ORNL-purchased materials are delivered to Receiving at Buildings 7120, 7121, 7122, or 8920. Materials are inspected for obvious damage and leaks by materials personnel. Most materials are unloaded at a covered dock and staged inside prior to delivery to recipients' delivery locations. Large materials/equipment and metals may be staged outdoors. Goods receipts for materials received are entered into systems inventory, which is a tracking system used to support the purchase, payment, and delivery of services and materials, equipment, and supplies and property accountability. Before transporting hazardous materials to the recipients on-site, most hazmat packages are segregated for a hazardous materials management review. This information system is the primary tool utilized by ORNL to maintain real-time hazardous materials inventories and hazard information at ORNL. All materials system users have access to safety data sheets (SDS's) for all hazardous material receipts. The materials system displays the carcinogenicity of materials and provides and maintains an on-line carcinogen report. In addition to available SDS information, staff input hazard classification data for each hazardous material where such information is required to meet inventory and reporting requirements. Hazardous materials (trackable in materials system inventory) are sorted and staged at the materials workstation at Building 7120 after they have been received by materials management personnel. This building was built with a sloped floor that drains to the center of the warehouse space which would prevent releases of spilled material to the outdoor environment. Materials management personnel identify the material by an indicator on a purchase order barcode label or goods receipt created from the system inventory. Materials management personnel will then scan the purchase order barcode or goods receipt barcode applying the material-to-material system inventory and creating and attaching the material system radio frequency identification (RFID) barcodes to the containers. Materials requiring material system inventory that bypass the material system workstation (for various reasons) will be added to the material system inventory and RFID labels created and mailed to the purchase order requestor from a data dump of unaddressed system inventory goods receipts to the

material system from the previous day. Hazardous material packages are sorted by high and low hazards. The high hazard packages are retained for further review. A hazardous material subject matter expert (SME) will determine if any additional paperwork and placarding is necessary prior to the delivery to the recipient's delivery location. Materials are delivered to the requested delivery locations provided by the recipients, and most all the delivery locations are indoors. The materials system ensures that locations and quantities of hazardous materials are known, and hazardous materials are not stored in unsafe locations.

Herbicides, Pesticides and Fertilizers and Soil Conditioners

Herbicides – Herbicides are typically applied by groundskeeping staff in turf grass areas for weed control, landscaped areas, around fences, utility lines (e.g., aboveground steam lines), and around mowing obstacles in order to remove invasive plants (typically during April-September) predominantly on main campus. Herbicides used to control the invasive plants are carefully selected to be suitable for each site, and applications follow manufacturer's instructions to ensure the most safe and effective results. ORNL has a shallow pond located on the east side of ORNL's main campus named the East Campus Pond, which is treated with herbicides monthly during the growing season from April – September. A subcontractor is responsible for implementing all herbicide treatments to the East Campus Pond. Chemical products used include both surface and subsurface herbicides in various locations throughout the pond. ORNL also has an Invasive Plant Management Plan that describes DOE's responsibility for addressing invasive plant issues on the ORR, including ORNL. ORNL natural resources staff help identify alternate solutions to any herbicide applications when feasible, as these alternative methods are the preferred environmentally protective solution before herbicides are considered as an option.

Pesticides - ORNL has a service contract with a local pest control company to address pest issues specific to various buildings on-site. This company comes to ORNL once a week to handle specific requests typically a result of staff complaints. The contractor puts together a monthly service report summary which contains the type and quantity of chemicals used. Interior and Exterior High Performance and Sustainable Building Integrated Pest Management Guidelines are included as an integral part of this contract, in order to minimize chemical use, personnel exposure, and release to the environment. When needed, pesticides are used outside on both vegetated and gravel areas to control invasive fire ants, ticks, grubs, lawn pests, landscape pests, and to control stinging insects or insects of complaint. There has been no public health/nuisance mosquito or other flying insect pest control done at ORNL.

Fertilizers - Fertilizers are primarily applied to re-establish vegetation in areas where soil has been disturbed by construction excavation but can be also utilized by landscape staff who regularly collect soil samples to send off for analysis and apply fertilizer as needed. Grounds that are monitored and treated (if necessary) include high profile and high traffic areas/lawns.

EPA Form 2F Section 4.3 - Structural and Nonstructural Controls

Best Management Practices (BMPs) have been established under the WQPP NPDES Permit requirement for activities that have potential to impact to storm water runoff. The BMPs include both structural and non-structural controls and allows for flexibility so that the controls can be tailored to the specific activity as deemed practical. BMPs are measures or practices used to reduce the amount of pollution entering surface water, air, land, or groundwater. BMPs may be very broad in spectrum and can include processes, procedures, schedules of activities, prohibitions on practices, and other management practices. The BMPs mainly emphasize practices to

eliminate potential sources of pollution, isolate or cover material stored outside that could erode/degrade and preserve or improve runoff quality.

Additional structural and non-structural controls are also utilized to satisfy the intent of the Energy Independence and Security Act – Stormwater Management Section 438 (EISA-438) for federal facilities. Under this rule, federal facilities are to restore “predevelopment hydrology”, to the extent possible, by controlling storm water runoff to allow infiltration and evaporation to occur. EISA-438 applies to development and redevelopment projects with a footprint that exceeds 5,000 sf.

Structural Controls

Various structural pollutant control measures for stormwater discharges have been (and continue to be) implemented on-site at ORNL throughout numerous NPDES permit cycles as a part of the WQPP. ORNL policy is to preserve, cultivate, and maintain native plant species within riparian buffer zones along ORNL streams and waterways. These buffer zones increase filtration/retention of sediments and nutrients being conveyed by storm water runoff, encourage healthier ecosystems, and moderate stream temperature as more mature vegetation increases the shade over the stream. Some other examples of structural controls implemented on-site include storm water detention ponds, bio-retention ponds, water quality swales, hydrodynamic separators, and oil-water separators. In addition, a flow control dam is present at White Oak Lake (WOL) which causes water flow to slow allowing particulates to settle out of the water. The spillway in the dam has a gate that can be closed in the event of an emergency and temporarily stop flow into the Clinch River. Between WOL and the Clinch River, within the WOC Embayment, a submerged gabion structure aids in further settlement of particles within the water column. Other structural controls used onsite at ORNL include roofing eaves over loading/unloading areas, roof structures over material and equipment storage areas, secondary containment structures, chemical storage sheds, and dikes, berms, or catch pans. Numerous controls that provide spill containment are also employed to prevent spills from being released into the environment. For more detailed structural controls provided at individual outfalls please refer to **Appendix O – EPA Form 2F Structural Controls**.

Non-Structural Controls

The following examples are non-structural control BMPs implemented on-site at ORNL:

- Good housekeeping
- Preventive maintenance (PM)
- Visual inspections
- Spill prevention and response
- Sediment and erosion control
- Management of runoff
- Employee training

Good housekeeping - Good housekeeping practices are designed to maintain a clean and orderly workplace. Poor housekeeping can result in increased potential for stormwater to become contaminated by spills, leaks, etc., and may increase the number and severity of environmental impacts. A clean and orderly work area reduces the possibility of accidental spills caused by mishandling of chemicals and equipment. Well-maintained material and chemical storage also reduce the possibility of spills and leaks that might contaminate storm water runoff. Housekeeping concerns are noted during routine inspections performed by ORNL personnel during semiannual stormwater inspections that are performed as part of the ORNL WQPP. Additionally, environmental protection

officers and environmental compliance representatives (EPO/ECRs) through various employee involvement programs address good housekeeping issues. Issues noted during these inspections are addressed promptly.

Preventive maintenance (PM) - PM includes the regular inspection and testing of plant equipment and operational systems. These inspections may uncover conditions that could lead to mechanical or structural breakdowns or failures that result in spills or releases. ORNL site and operation/maintenance personnel, and contractors who operate heavy machinery or who operate fleet vehicles at ORNL, are encouraged to perform routine inspections and perform PM activities as part of their ORNL training, regular safety briefings, informational bulletins, etc.

Visual inspections - Routine visual inspections of the facility are conducted to identify conditions or situations that could result in contamination of storm water runoff. Site inspections are performed on a routine semi-annual basis by ORNL personnel as part of the WQPP NPDES permit requirements. Visual inspections of site facilities are also performed regularly by EPO/ECR's, ORNL project managers and health and safety representatives, ORNL facility management personnel, ORNL supervisors, DOE personnel, and environmental sampling personnel. In addition, ORNL employees are trained to report any visual observations out of the norm to the laboratory shift superintendent (LSS) emergency line. Inspections are documented using electronic correspondence, DOE Walkthrough Reports, the DOE Occurrence Reporting and Processing System (ORPS), EPO/ECR field walkdowns, etc.

Spill prevention and response - Spills and leaks can be major sources of industrial stormwater pollutants. Prevention of spills and leaks is preferable to cleaning them up after they occur; therefore, reliable spill prevention best management practices are necessary to avoid the occurrence of leaks and spills. An effective spill response program is also necessary to contain and clean up spills if they should occur, as discussed previously in the SPCC section. The recent update of the SPCC Plan for ORNL provides extensive information on spill prevention and response at ORNL and can be accessed on-line in the ORNL Standards Based Management System.

Sediment and erosion control - Steep slopes, sandy soils, unvegetated areas, and other locations may be prone to soil erosion, especially during construction or land-disturbing activities. Erosion can be controlled or prevented with the use of appropriate BMPs. Therefore, ORNL BMPs for Erosion and Sedimentation Control are included as part of the latest revision of the ORNL Stormwater Pollution Prevention BMPs. Erosion protection and sediment controls (EPSCs) in the latest edition of the Tennessee EPSC Handbook are typically utilized for excavations and construction projects of all sizes.

Stormwater management - Various stormwater management practices can be used to direct stormwater away from areas where contaminants may potentially be removed and transported to receiving streams. Stormwater management practices can also be used to redirect the flow of stormwater that contains pollutants to catchment ponds, treatment facilities, or other areas where it can be stored and/or treated. Stormwater management practices are covered extensively in the ORNL Stormwater BMP for Erosion and Sedimentation Control.

Employee education - Employee education is essential to effective implementation of the ORNL BMPs. The purpose of an education program is to inform personnel at all levels of responsibility of the importance of the ORNL Stormwater BMPs and what they can do to prevent stormwater pollution. Personnel are more able to

recognize the importance of preventing spills, reporting leaks from equipment and machinery, responding safely and effectively to a spill when one occurs, and recognizing situations that could lead to contamination of stormwater runoff when properly trained. Anytime staff observe something out of the norm there is an emergency lab hotline (LSS) they can call for assistance. An online training module titled “Water Quality Compliance Awareness” has been developed to address stormwater pollution prevention at ORNL for personnel working at ORNL. This module is required to be completed by all employees. There is also an initial one-time training module and an annual refresher training module entitled SPCC Training for oil-handlers that discusses oil spill prevention, response, and reporting. This module is required for all personnel involved in oil-handling operations. Information on Stormwater BMPs is also provided to ORNL employees by means of EPO/ECR team meetings and distributed to ORNL staff in the areas that they manage.

EPA Form 2F Section 5. Non-Stormwater Discharges (40 CFR 122.26(c)(1)(i)(C))

Significant efforts have been made to identify those outfalls with non-stormwater discharge components at ORNL. ORNL has conducted various dye trace studies, performed smoke testing studies, and closed-circuit television (CCTV) studies in order to confirm appropriate connections throughout ORNL campus. In April 2022, a Sanitary Sewer Condition Assessment was completed which included smoke testing, CCTV pipe inspection, manhole inspections, and pump station drawdown testing. Approximately 133 manholes were investigated, including 6 high-priority lift stations had drawdown testing, approximately 17,000 LF of existing 4” – 12” sanitary sewer pipes were CCTV-tested, and approximately 20,000 LF of smoke testing of existing 4” – 12” sanitary sewer pipe was included. In addition, a Stormwater CCTV Study was completed in April 2022 of approximately 27,500 LF of storm gravity sewer and 338 storm sewer access points that were assessed for condition. Dye trace studies have also been undertaken on ORNL main campus as needed to verify system connections to new or modified systems.

ORNL maintains a comprehensive sink and drain survey and a database to track sink and drain connections, including connections to storm drain networks. In cases where flow has not been observed at an outfall by the environmental sampling technicians, the outfall and the storm drain network leading to the outfall gets physically inspected as needed to look for evidence of additional non-storm water discharges. Some of the common methods recorded are visual inspections (of pipe routing), hydraulic testing, dye testing, and review of facility drawings. Field surveys and process knowledge, combined with a review of dry-weather flows are used to identify outfalls with non-storm water discharges.

All non-stormwater discharges on-site at ORNL are identified in other required EPA forms included in the NPDES permit renewal application package. Those outfalls with only non-stormwater discharges (i.e. non-process wastewater discharges) will have an EPA Form 2E submitted, as well as those outfalls that discharge both stormwater and non-process wastewater. EPA Forms 2C are being submitted for the two (2) industrial wastewater treatment facilities located at ORNL called, the STP (X01) and PWTC (X12). See **Appendix A – Outfall Summary** for more details regarding the EPA forms provided in this permit renewal for each outfall.

EPA Form 2F

Stormwater Outfalls

Stormwater Group A1


High Imperviousness with Cooling Tower Blowdown

EPA Identification Number
TN1890090003

NPDES Permit Number
TN0002941

Facility Name
Oak Ridge National Laboratory

Form Approved 03/05/19
OMB No. 2040-0004

Form 2F NPDES  **U.S Environmental Protection Agency**
Application for NPDES Permit to Discharge Wastewater
STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		227	White Oak Creek	35 ° 55 ' 43.01 " N	84 ° 18 ' 35.47 " W
		<p><i>Storm Water:</i> Group A1 High imperviousness w/Cooling Tower Blowdown</p> <p><i>Other Outfalls Included:</i> 231; 281; 314; 363; 481; 732</p>			

SECTION 2. IMPROVEMENTS (40 CFR 122.21(g)(6))

Improvements	2.1	Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 3.			
	2.2	Briefly identify each applicable project in the table below.			
		Brief Identification and Description of Project	Affected Outfalls (list outfall numbers)	Source(s) of Discharge	Final Compliance Dates
					Required Projected
		See Appendix K - Improvements			
2.3	Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? (Optional Item) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

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SECTION 3. SITE DRAINAGE MAP (40 CFR 122.26(c)(1)(i)(A))

Site Drainage Map	3.1	Have you attached a site drainage map containing all required information to this application? (See instructions for specific guidance.)
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

SECTION 4. POLLUTANT SOURCES (40 CFR 122.26(c)(1)(i)(B))

Pollutant Sources	4.1	Provide information on the facility's pollutant sources in the table below.				
		Outfall Number	Impervious Surface Area <small>(within a mile radius of the facility)</small>		Total Surface Area Drained <small>(within a mile radius of the facility)</small>	
		227	1.899	<i>specify units</i> acres	2.716	<i>specify units</i> acres
				<i>specify units</i>		<i>specify units</i>
				<i>specify units</i>		<i>specify units</i>
				<i>specify units</i>		<i>specify units</i>
				<i>specify units</i>		<i>specify units</i>
				<i>specify units</i>		<i>specify units</i>
				<i>specify units</i>		<i>specify units</i>
				<i>specify units</i>		<i>specify units</i>
	4.2	Provide a narrative description of the facility's significant material in the space below. (See instructions for content requirements.) This stormwater Group A1 Outfall 227 was selected to represent outfalls that have greater than 50% impervious surface within the drainage area and contains a cooling tower blowdown component which may be present at the time of the stormwater sample. This outfall's drainage area is typical of an industrial research park with impervious surfaces and grassed or graveled areas. Paved parking, building infrastructure, and paved roadways comprise most of the land use within this drainage area, although utilities such as transformers, generator equipment, cooling systems, and steam lines are located throughout the ORNL campus. During the growing season, herbicides are applied in turf and landscaped areas for weed control and to remove invasive plants. When needed, pesticides are used to control fire ants, ticks, and other nuisance insects. Fertilizers are primarily applied to re-establish vegetation in areas where soil has been disturbed by construction excavation but are also utilized by landscape contractors in grass areas and along roadways. Refer to Chapter 7 - EPA Form 2F for more detail.				
	4.3	Provide the location and a description of existing structural and non-structural control measures to reduce pollutants in stormwater runoff. (See instructions for specific guidance.)				
		Stormwater Treatment				
		Outfall Number	Control Measures and Treatment		Codes from Exhibit 2F-1 (list)	
		227	A 5000-gallon rain harvest tank is located at Bldg 4100 for use in landscaped areas. This building drains to Outfall 363 which is in the Stormwater Group A1. See Chapter 7 - EPA Form 2F for more detail.		N/A	

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SECTION 5. NON STORMWATER DISCHARGES (40 CFR 122.26(c)(1)(i)(C))

Non-Stormwater Discharges	5.1	<i>I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of non-stormwater discharges. Moreover, I certify that the outfalls identified as having non-stormwater discharges are described in either an accompanying NPDES Form 2C, 2D, or 2E application.</i>			
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office		
		Signature	Date signed		
	5.2	Provide the testing information requested in the table below.			
		Outfall Number	Description of Testing Method Used	Date(s) of Testing	Onsite Drainage Points Directly Observed During Test
		227	See Chapter 7 - EPA Form 2F for information.		

SECTION 6. SIGNIFICANT LEAKS OR SPILLS (40 CFR 122.26(c)(1)(i)(D))

Significant Leaks or Spills	6.1	Describe any significant leaks or spills of toxic or hazardous pollutants in the last three years. In May, 2021, a hydraulic line rupture resulted in the release of ~ 1 gallon of hydraulic fluid which spilled to the ground and drained into a catch basin connected to Outfall 227. This release did not impact aquatic life, but was reported in the NetDMR as an unpermitted release. ORNL maintains an aggressive spill prevention and control program through the ORNL SPCC Plan, which stresses awareness of spill prevention to both ORNL employees and subcontractor employees on site. As part of the Spill Contingency Plan, a subpart of the ORNL SPCC, ORNL has an experienced spill response team that is available around-the-clock for spill control and cleanup operations, and that maintains a database of spills and record of clean-up. In addition, spill materials; consisting of spreadable granular absorbents, absorbent booms, containment containers, containment curtain and oil skimmer; are available for use by the spill response team. Additionally, construction sites are required to maintain spill kits during the duration of the construction project. Over the past three years between (2019-2022), ORNL has experienced minor spills or leaks, most of which were heavy equipment- or vehicle-related, and generally involved several ounces to several gallons of ethylene glycol or petroleum-based fuels, lubricants, and/or hydraulic fluids. In every instance the spill response team enacted clean-up. None of these were reportable-quantity spills of oil or hazardous substances as defined within the ORNL NPDES Permit TN0002941, 40 CFR 117 or 40 CFR 403 .
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SECTION 7. DISCHARGE INFORMATION (40 CFR 122.26(c)(1)(i)(E))

Discharge Information	See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.	
	7.1	Is this a new source or new discharge? <input type="checkbox"/> Yes → See instructions regarding submission of <i>estimated</i> data. <input checked="" type="checkbox"/> No → See instructions regarding submission of <i>actual</i> data.
	Tables A, B, C, and D	
	7.2	Have you completed Table A for each outfall? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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Discharge Information Continued

7.3	Is the facility subject to an effluent limitation guideline (ELG) or effluent limitations in an NPDES permit for its process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.5.	
7.4	Have you completed Table B by providing quantitative data for those pollutants that are (1) limited either directly or indirectly in an ELG and/or (2) subject to effluent limitations in an NPDES permit for the facility's process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
7.5	Do you know or have reason to believe any pollutants in Exhibit 2F-2 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.7.	
7.6	Have you listed all pollutants in Exhibit 2F-2 that you know or have reason to believe are present in the discharge and provided quantitative data or an explanation for those pollutants in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
7.7	Do you qualify for a small business exemption under the criteria specified in the Instructions? <input type="checkbox"/> Yes → SKIP to Item 7.18. <input checked="" type="checkbox"/> No	
7.8	Do you know or have reason to believe any pollutants in Exhibit 2F-3 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.10.	
7.9	Have you listed all pollutants in Exhibit 2F-3 that you know or have reason to believe are present in the discharge in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
7.10	Do you expect any of the pollutants in Exhibit 2F-3 to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.12.	
7.11	Have you provided quantitative data in Table C for those pollutants in Exhibit 2F-3 that you expect to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No	
7.12	Do you expect acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6-dinitrophenol to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.14.	
7.13	Have you provided quantitative data in Table C for the pollutants identified in Item 7.12 that you expect to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No	
7.14	Have you provided quantitative data or an explanation in Table C for pollutants you expect to be present in the discharge at concentrations less than 10 ppb (or less than 100 ppb for the pollutants identified in Item 7.12)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
7.15	Do you know or have reason to believe any pollutants in Exhibit 2F-4 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.17.	
7.16	Have you listed pollutants in Exhibit 2F-4 that you know or believe to be present in the discharge and provided an explanation in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
7.17	Have you provided information for the storm event(s) sampled in Table D? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Used or Manufactured Toxics

7.18 Is any pollutant listed on Exhibits 2F-2 through 2F-4 a substance or a component of a substance used or manufactured as an intermediate or final product or byproduct?
 Yes No → SKIP to Section 8.

7.19 List the pollutants below, including TCDD if applicable.

1.	4.	7.
2.	5.	8.
3.	6.	9.

SECTION 8. BIOLOGICAL TOXICITY TESTING DATA (40 CFR 122.21(g)(11))

8.1 Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last three years?
 Yes No → SKIP to Section 9.

8.2 Identify the tests and their purposes below.

Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?	Date Submitted
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	

SECTION 9. CONTRACT ANALYSIS INFORMATION (40 CFR 122.21(g)(12))

9.1 Were any of the analyses reported in Section 7 (on Tables A through C) performed by a contract laboratory or consulting firm?
 Yes No → SKIP to Section 10.

9.2 Provide information for each contract laboratory or consulting firm below.

	Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
Name of laboratory/firm	GEL Laboratories, LLC		
Laboratory address	2040 Savage Road Charleston, SC (USA) 29407		
Phone number	(843) 556-8171		
Pollutant(s) analyzed	Ammonia, BOD, COD, Nitrogen, Nitrate/nitrite, Oil & Grease, VOCs/SVOCs, Phosphorus, TSS		

Contract Analysis Information

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SECTION 10. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	10.1	In Column 1 below, mark the sections of Form 2F that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.		
	Column 1	Column 2		
	<input checked="" type="checkbox"/> Section 1	<input checked="" type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)		
	<input checked="" type="checkbox"/> Section 2	<input checked="" type="checkbox"/> w/ attachments		
	<input checked="" type="checkbox"/> Section 3	<input checked="" type="checkbox"/> w/ site drainage map		
	<input checked="" type="checkbox"/> Section 4	<input checked="" type="checkbox"/> w/ attachments		
	<input checked="" type="checkbox"/> Section 5	<input checked="" type="checkbox"/> w/ attachments		
	<input checked="" type="checkbox"/> Section 6	<input type="checkbox"/> w/ attachments		
	<input checked="" type="checkbox"/> Section 7	<input checked="" type="checkbox"/> Table A <input type="checkbox"/> w/ small business exemption request <input checked="" type="checkbox"/> Table B <input type="checkbox"/> w/ analytical results as an attachment <input checked="" type="checkbox"/> Table C <input checked="" type="checkbox"/> Table D		
	<input checked="" type="checkbox"/> Section 8	<input type="checkbox"/> w/attachments		
	<input checked="" type="checkbox"/> Section 9	<input type="checkbox"/> w/attachments (e.g., responses for additional contact laboratories or firms)		
<input checked="" type="checkbox"/> Section 10				
10.2	Certification Statement I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.			
	Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office		
	Signature		Date signed	

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TABLE A. CONVENTIONAL AND NON CONVENTIONAL PARAMETERS (40 CFR 122.26(c)(1)(i)(E)(3))¹

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 and requirements.

Pollutant or Parameter	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1. Oil and grease	J2 mg/L J0.03 lbs		J2 mg/L J0.03 lbs		1	
2. Biochemical oxygen demand (BOD ₅)	<5 mg/L <0.07 lbs	<5 mg/L <0.3 lbs	<5 mg/L <0.07 lbs	<5 mg/L <0.3 lbs	1	
3. Chemical oxygen demand (COD)	31.1 mg/L 0.42 lbs	28.4 mg/L 1.6 lbs	31.1 mg/L 0.42 lbs	28.4 mg/L 1.6 lbs	1	
4. Total suspended solids (TSS)	4.02 mg/L 0.054 lbs	3.4 mg/L 0.19 lbs	4.02 mg/L 0.054 lbs	3.4 mg/L 0.19 lbs	1	
5. Total phosphorus	0.0696 mg/L 0.00093 lbs	0.074 mg/L 0.0041 lbs	0.0696 mg/L 0.00093 lbs	0.074 mg/L 0.0041 lbs	1	
6. Total Kjeldahl nitrogen (TKN)	0.906 mg/L 0.012 lbs	1 mg/L 0.06 lbs	0.906 mg/L 0.012 lbs	1 mg/L 0.06 lbs	1	
7. Total nitrogen (as N)	1.35 mg/L 0.018 lbs	1.51 mg/L 0.084 lbs	1.35 mg/L 0.018 lbs	1.51 mg/L 0.084 lbs	1	
8. pH (minimum)	7.8					
	pH (maximum)	7.8				

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(A))¹

List each pollutant that is limited in an effluent limitation guideline (ELG) that the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <i>(new source/new dischargers only; use codes in instructions)</i>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Ammonia (as N)	0.318 mg/L 0.0042 lbs	0.45 mg/L 0.025 lbs	0.318 mg/L 0.0042 lbs	0.45 mg/L 0.025 lbs	1	
Antimony 7440-36-0	0.000285 mg/L 0.0000038 lbs	0.000294 mg/L 0.000016 lbs	0.000285 mg/L 0.0000038 lbs	0.000294 mg/L 0.000016 lbs	1	
Arsenic 7440-38-2	<0.002 mg/L <0.00003 lbs	<0.002 mg/L <0.0001 lbs	<0.002 mg/L <0.00003 lbs	<0.002 mg/L <0.0001 lbs	1	
Cadmium 7440-43-9	<0.00033 mg/L <0.0000044 lbs	<0.00033 mg/L <0.000018 lbs	<0.00033 mg/L <0.0000044 lbs	<0.00033 mg/L <0.000018 lbs	1	
Chromium 7440-47-3	<0.01 mg/L <0.0001 lbs	<0.01 mg/L <0.0006 lbs	<0.01 mg/L <0.0001 lbs	<0.01 mg/L <0.0006 lbs	1	
Copper 7440-50-8	<0.011 mg/L <0.00015 lbs	<0.011 mg/L <0.00062 lbs	<0.011 mg/L <0.00015 lbs	<0.011 mg/L <0.00062 lbs	1	
Iron 7439-89-6	<0.22 mg/L <0.0029 lbs	<0.22 mg/L <0.012 lbs	<0.22 mg/L <0.0029 lbs	<0.22 mg/L <0.012 lbs	1	
Lead 7439-92-1	<0.0015 mg/L <0.000020 lbs	<0.0015 mg/L <0.000084 lbs	<0.0015 mg/L <0.000020 lbs	<0.0015 mg/L <0.000084 lbs	1	
Mercury 7439-97-6					0	See Chapter 7
Nickel 7440-02-0	<0.073 mg/L <0.00097 lbs	<0.073 mg/L <0.0041 lbs	<0.073 mg/L <0.00097 lbs	<0.073 mg/L <0.0041 lbs	1	
Nitrogen, Total Organic (as N)	0.588 mg/L 0.0079 lbs	0.55 mg/L 0.031 lbs	0.588 mg/L 0.0079 lbs	0.55 mg/L 0.031 lbs	1	
Selenium 7782-49-2	<0.0031 mg/L <0.000041 lbs	<0.0031 mg/L <0.00017 lbs	<0.0031 mg/L <0.000041 lbs	<0.0031 mg/L <0.00017 lbs	1	
Silver 7440-22-4	<0.00012 mg/L <0.0000016 lbs	<0.00012 mg/L <0.0000067 lbs	<0.00012 mg/L <0.0000016 lbs	<0.00012 mg/L <0.0000067 lbs	1	
Zinc 7440-66-6	0.129 mg/L 0.0017 lbs	0.127 mg/L 0.0071 lbs	0.129 mg/L 0.0017 lbs	0.127 mg/L 0.0071 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1,1,1-Trichloroethane 71-55-6	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,1,2,2-Tetrachloroethane 79-34-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,1,2-Trichloroethane 79-00-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,1-Dichloroethane 75-34-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,1-Dichloroethene 75-35-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2,4,5-Tetrachlorobenzene 95-94-3	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
1,2,4-Trichlorobenzene 120-82-1	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
1,2-Dibromoethane 106-93-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2-Dichlorobenzene 95-50-1	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2-Dichloroethane 107-06-2	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2-Dichloroethene 540-59-0	<2 ug/L <0.00003 lbs		<2 ug/L <0.00003 lbs		1	
1,2-Dichloropropane 78-87-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2-Diphenylhydrazine 122-66-7	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
1,3-Dichlorobenzene 541-73-1	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,3-Dichloropropylene 542-75-6	<2 ug/L <0.00003 lbs		<2 ug/L <0.00003 lbs		1	
1,4-Dichlorobenzene 106-46-7	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
2,4,5-Trichlorophenol 95-95-4	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
2,4,6-Trichlorophenol 88-06-2	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
2,4-Dichlorophenol 120-83-2	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
2,4-Dimethylphenol 105-67-9	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
2,4-Dinitrophenol 51-28-5	<21.8 ug/L <0.00029 lbs	<22 ug/L <0.0012 lbs	<21.8 ug/L <0.00029 lbs	<22 ug/L <0.0012 lbs	1	
2,4-Dinitrotoluene 121-14-2	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
2,6-Dinitrotoluene 606-20-2	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
2-Butanone 78-93-3	<5 ug/L <0.00007 lbs		<5 ug/L <0.00007 lbs		1	
2-Chloroethylvinyl ether 110-75-8	<5 ug/L <0.00007 lbs		<5 ug/L <0.00007 lbs		1	
2-Chloronaphthalene 91-58-7	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
2-Chlorophenol 95-57-8	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
2-Hexanone 591-78-6	<5 ug/L <0.00007 lbs		<5 ug/L <0.00007 lbs		1	
2-Methylphenol 95-48-7	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
2-Nitrophenol 88-75-5	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
3,3'-Dichlorobenzidine 91-94-1	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
4,6-Dinitro-O-Cresol 534-52-1	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
4-Bromophenylphenyl ether 101-55-3	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
4-Chlorophenylphenyl ether 7005-72-3	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
4-Methyl-2-pentanone 108-10-1	<5 ug/L <0.00007 lbs		<5 ug/L <0.00007 lbs		1	
4-Nitrophenol 100-02-7	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Acenaphthene 83-32-9	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Acenaphthylene 208-96-8	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Acetone 67-64-1	6.41 ug/L 0.000086 lbs		6.41 ug/L 0.000086 lbs		1	
Acrolein 107-02-8	<5 ug/L <0.00007 lbs		<5 ug/L <0.00007 lbs		1	
Acrylonitrile 107-13-1	<5 ug/L <0.00007 lbs		<5 ug/L <0.00007 lbs		1	
Allyl chloride 107-05-1	<5 ug/L <0.00007 lbs		<5 ug/L <0.00007 lbs		1	
Aluminum 7429-90-5	0.0758 mg/L 0.0010 lbs	<0.075 mg/L <0.0042 lbs	0.0758 mg/L 0.0010 lbs	<0.075 mg/L <0.0042 lbs	1	
Aniline 62-53-3	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Anthracene 120-12-7	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Barium 7440-39-3	0.0262 mg/L 0.00035 lbs	0.0258 mg/L 0.0014 lbs	0.0262 mg/L 0.00035 lbs	0.0258 mg/L 0.0014 lbs	1	
Benzene 71-43-2	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Benzidine 92-87-5	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Benzo(a)anthracene 56-55-3	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Benzo(a)pyrene 50-32-8	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Benzo(b)fluoranthene 205-99-2	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Benzo(ghi)perylene 191-24-2	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Benzo(k)fluoranthene 207-08-9	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Benzyl chloride 100-44-7	<5 ug/L <0.00007 lbs		<5 ug/L <0.00007 lbs		1	
Beryllium 7440-41-7	<0.00014 mg/L <0.0000019 lbs	<0.00014 mg/L <0.0000078 lbs	<0.00014 mg/L <0.0000019 lbs	<0.00014 mg/L <0.0000078 lbs	1	
Bis(2-chloroethoxy)methane 111-91-1	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Bis(2-chloroethyl) ether 111-44-4	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Bis(2-chloroisopropyl) ether 108-60-1	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Bis(2-ethylhexyl)phthalate 117-81-7	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Boron 7440-42-8	0.0159 mg/L 0.00021 lbs	0.0159 mg/L 0.00089 lbs	0.0159 mg/L 0.00021 lbs	0.0159 mg/L 0.00089 lbs	1	
Bromodichloromethane 75-27-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Bromoform 75-25-2	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Bromomethane 74-83-9	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Butylbenzylphthalate 85-68-7	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

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Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Calcium 7440-70-2	32.1 mg/L 0.43 lbs	31.2 mg/L 1.7 lbs	32.1 mg/L 0.43 lbs	31.2 mg/L 1.7 lbs	1	
Carbon Disulfide 75-15-0	<5 ug/L <0.00007 lbs		<5 ug/L <0.00007 lbs		1	
Carbon tetrachloride 56-23-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Cesium 7440-46-2	<0.0000400 mg/L <5.30E-07 lbs	<0.0000400 mg/L <0.0000022 lbs	<0.0000400 mg/L <5.30E-07 lbs	<0.0000400 mg/L <0.0000022 lbs	1	
Chlorobenzene 108-90-7	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Chloroethane 75-00-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Chloroform 67-66-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Chloromethane 74-87-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Chrysene 218-01-9	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
cis-1,2-Dichloroethene 156-59-2	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
cis-1,3-Dichloropropene 10061-01-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Cobalt 7440-48-4	<0.00016 mg/L <0.0000021 lbs	<0.00016 mg/L <0.0000089 lbs	<0.00016 mg/L <0.0000021 lbs	<0.00016 mg/L <0.0000089 lbs	1	
Cyclohexane 110-82-7	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Dibenzo(a,h)anthracene 53-70-3	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Dibromochloromethane 124-48-1	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Diethylphthalate 84-66-2	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	

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Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Dimethylphthalate 131-11-3	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Di-n-butylphthalate 84-74-2	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Di-n-octylphthalate 117-84-0	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Diphenylamine 122-39-4	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Disulfoton 298-04-4	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Ethylbenzene 100-41-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Fluoranthene 206-44-0	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Fluorene 86-73-7	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Hexachlorobenzene 118-74-1	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Hexachlorobutadiene 87-68-3	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Hexachlorocyclopentadiene 77-47-4	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Hexachloroethane 67-72-1	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Indeno(1,2,3-cd)pyrene 193-39-5	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Isophorone 78-59-1	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Kepone 143-50-0	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
m+p Methylphenol 65794-96-9	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	

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Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Magnesium 7439-95-4	5.53 mg/L 0.074 lbs	5.47 mg/L 0.31 lbs	5.53 mg/L 0.074 lbs	5.47 mg/L 0.31 lbs	1	
Manganese 7439-96-5	0.00688 mg/L 0.000092 lbs	0.0067 mg/L 0.00037 lbs	0.00688 mg/L 0.000092 lbs	0.0067 mg/L 0.00037 lbs	1	
Methyl methacrylate 80-62-6	<5 ug/L <0.00007 lbs		<5 ug/L <0.00007 lbs		1	
Methyl parathion 298-00-0	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Methylene chloride 75-09-2	<2 ug/L <0.00003 lbs		<2 ug/L <0.00003 lbs		1	
Molybdenum 7439-98-7	<0.0032 mg/L <0.000043 lbs	<0.0032 mg/L <0.00018 lbs	<0.0032 mg/L <0.000043 lbs	<0.0032 mg/L <0.00018 lbs	1	
Naphthalene 91-20-3	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Nitrobenzene 98-95-3	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
N-Nitrosodiethylamine 55-18-5	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
N-Nitrosodimethylamine 62-75-9	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
N-Nitroso-di-n-propylamine 621-64-7	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
N-Nitrosopyrrolidine 930-55-2	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Parathion 56-38-2	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
PCB-1016 12674-11-2					0	See Chapter 7
PCB-1221 11104-28-2					0	See Chapter 7
PCB-1232 11141-16-5					0	See Chapter 7

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
PCB-1242 53469-21-9					0	See Chapter 7
PCB-1248 12672-29-6					0	See Chapter 7
PCB-1254 11097-69-1					0	See Chapter 7
PCB-1260 11096-82-5					0	See Chapter 7
P-Chloro-M-Cresol 59-50-7	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Pentachlorobenzene 608-93-5	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Pentachlorophenol 87-86-5	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Phenanthrene 85-01-8	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Phenol 108-95-2	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	<10.9 ug/L <0.00015 lbs	<11 ug/L <0.00062 lbs	1	
Potassium 7440-09-7	1.03 mg/L 0.014 lbs	1.01 mg/L 0.056 lbs	1.03 mg/L 0.014 lbs	1.01 mg/L 0.056 lbs	1	
Pyrene 129-00-0	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	<1.09 ug/L <0.000015 lbs	<1.1 ug/L <0.000062 lbs	1	
Sodium 7440-23-5	21.5 mg/L 0.29 lbs	21.3 mg/L 1.2 lbs	21.5 mg/L 0.29 lbs	21.3 mg/L 1.2 lbs	1	
Strontium 7440-24-6	0.0708 mg/L 0.00095 lbs	0.069 mg/L 0.0039 lbs	0.0708 mg/L 0.00095 lbs	0.069 mg/L 0.0039 lbs	1	
Styrene 100-42-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Tetrachloroethene 127-18-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Thallium 7440-28-0	<0.0000400 mg/L <5.30E-07 lbs	<0.0000400 mg/L <0.0000022 lbs	<0.0000400 mg/L <5.30E-07 lbs	<0.0000400 mg/L <0.0000022 lbs	1	

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Tin 7440-31-5	0.00635 mg/L 0.000085 lbs	0.00638 mg/L 0.00036 lbs	0.00635 mg/L 0.000085 lbs	0.00638 mg/L 0.00036 lbs	1	
Titanium 7440-32-6	0.0225 mg/L 0.00030 lbs	0.0226 mg/L 0.0013 lbs	0.0225 mg/L 0.00030 lbs	0.0226 mg/L 0.0013 lbs	1	
Toluene 108-88-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Total Cresols 1319-77-3	<21.8 ug/L <0.00029 lbs	<22 ug/L <0.0012 lbs	<21.8 ug/L <0.00029 lbs	<22 ug/L <0.0012 lbs	1	
trans-1,2-Dichloroethene 156-60-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
trans-1,3-Dichloropropene 10061-02-6	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Trichloroethene 79-01-6	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Trichlorofluoromethane 75-69-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Uranium 7440-61-1	<0.0012 mg/L <0.000016 lbs	<0.0012 mg/L <0.000067 lbs	<0.0012 mg/L <0.000016 lbs	<0.0012 mg/L <0.000067 lbs	1	
Vanadium 7440-62-2	<0.0009 mg/L <0.00001 lbs	<0.0009 mg/L <0.00005 lbs	<0.0009 mg/L <0.00001 lbs	<0.0009 mg/L <0.00005 lbs	1	
Vinyl acetate 108-05-4	<5 ug/L <0.00007 lbs		<5 ug/L <0.00007 lbs		1	
Vinyl chloride 75-01-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Xylene 1330-20-7	<3 ug/L <0.00004 lbs		<3 ug/L <0.00004 lbs		1	
Zirconium 7440-67-7	<0.0031 mg/L <0.000041 lbs	<0.0031 mg/L <0.00017 lbs	<0.0031 mg/L <0.000041 lbs	<0.0031 mg/L <0.00017 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE D. STORM EVENT INFORMATION (40 CFR 122.26(c)(1)(i)(E)(6))

Provide data for the storm event(s) that resulted in the maximum daily discharges for the flow-weighted composite sample.

Date of Storm Event	Duration of Storm Event (in hours)	Total Rainfall During Storm Event (in inches)	Number of Hours Between Beginning of Storm Measured and End of Previous Measurable Rain Event	Maximum Flow Rate During Rain Event (in gpm or specify units)	Total Flow from Rain Event (in gallons or specify units)
3/23/2022	11.8 hrs	.66 in	158.5 hrs	85 gpm	6700 gal

Provide a description of the method of flow measurement or estimate.

All flow rates were measured or estimated by measuring the time required for the stormwater discharge to fill a container of a known volume.

Outfall: 227

Group A1 High Imperviousness w/CT Blowdown

EPA ID Number

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Outfall Number	Latitude			Longitude			ReceivingWater
	Deg	Min	Sec	Deg	Min	Sec	
227	35	55	43	84	18	35	White Oak Creek
231	35	55	46	84	18	32	White Oak Creek
281	35	55	01	84	18	07	Melton Branch
314	35	55	48	84	18	29	White Oak Creek
363	35	55	39	84	18	52	Fifth Creek
481	35	55	07	84	18	09	Tributary to Melton Branch
732	35	55	51	84	18	23	White Oak Creek

Outfall: 227

Group A1 High Imperviousness w/CT Blowdown

EPA ID Number

TN0002941

Outfall Number	Area of Impervious Surface (acres)	Total Area Drained (acres)
227	1.899	2.716
231	3.788	4.432
281	2.141	3.497
314	2.696	4.579
363	2.308	3.63
481	0.298	0.357
732	>50%	9.076

Stormwater Group A2


Low Imperviousness with Cooling Tower Blowdown

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Form 2F NPDES  **U.S Environmental Protection Agency**
Application for NPDES Permit to Discharge Wastewater
STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		204	White Oak Creek	35 ° 55 ' 26.81 " N	84 ° 18 ' 58.34 " W
	<p><i>Storm Water:</i> Group A2 Low Imperviousness w/Cooling Tower Blowdown</p> <p><i>Other Outfalls Included:</i> 435; 437</p>				

SECTION 2. IMPROVEMENTS (40 CFR 122.21(g)(6))

Improvements	2.1	Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application?			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 3.			
	2.2	Briefly identify each applicable project in the table below.			
		Brief Identification and Description of Project	Affected Outfalls (list outfall numbers)	Source(s) of Discharge	Final Compliance Dates
					Required Projected
		See Appendix K - Improvements			
	2.3	Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? (Optional Item)			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

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SECTION 3. SITE DRAINAGE MAP (40 CFR 122.26(c)(1)(i)(A))

Site Drainage Map	3.1	Have you attached a site drainage map containing all required information to this application? (See instructions for specific guidance.)
	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

SECTION 4. POLLUTANT SOURCES (40 CFR 122.26(c)(1)(i)(B))

Pollutant Sources	4.1	Provide information on the facility's pollutant sources in the table below.			
		Outfall Number	Impervious Surface Area (within a mile radius of the facility)		Total Surface Area Drained (within a mile radius of the facility)
		204	1.117	<i>specify units</i> acres	2.964 <i>specify units</i> acres
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
		4.2	Provide a narrative description of the facility's significant material in the space below. (See instructions for content requirements.) The Stormwater Group A2 Outfall 204 was selected to represent outfalls that have less than 50% impervious surface within the drainage areas and contain a cooling tower blowdown component which may be present at the time of the stormwater sample. This outfall's drainage area land use is typical of an industrial research park with impervious surfaces (roads, sidewalks, buildings) and grassed (landscape or natural) areas. There are loading docks on many buildings, utility equipment such as transformers, generators, cooling and heating systems located throughout the ORNL campus, and some dynamic laydown areas used as delivery drop points, including the area around the Liquid Low Level Waste process buildings, cooling towers, and industrial shops. During the growing season, herbicides are applied in turf and landscaped areas for weed control and to remove invasive plants. When needed, pesticides are used to control fire ants, ticks, and other nuisance insects. Fertilizers are primarily applied to re-establish vegetation in areas where soil has been disturbed by construction excavation but are also occasionally utilized by landscape contractors in turf grass areas and along roadways. Refer to Chapter 7 - EPA Form 2F for additional detail.		
	4.3	Provide the location and a description of existing structural and non-structural control measures to reduce pollutants in stormwater runoff. (See instructions for specific guidance.)			
		Stormwater Treatment			
		Outfall Number	Control Measures and Treatment		Codes from Exhibit 2F-1 (list)
		204	A stormwater detention pond retains runoff from the Spallation Neutron Source research area which drains through Outfall 435 is in ths Stormwater Group A2. See Chapter 7 - EPA Form 2F for more detail.		N/A

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SECTION 5. NON STORMWATER DISCHARGES (40 CFR 122.26(c)(1)(i)(C))

Non-Stormwater Discharges	5.1	<i>I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of non-stormwater discharges. Moreover, I certify that the outfalls identified as having non-stormwater discharges are described in either an accompanying NPDES Form 2C, 2D, or 2E application.</i>			
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office		
		Signature	Date signed		
	5.2	Provide the testing information requested in the table below.			
		Outfall Number	Description of Testing Method Used	Date(s) of Testing	Onsite Drainage Points Directly Observed During Test
		204	See Chapter 7 - EPA Form 2F for information.		

SECTION 6. SIGNIFICANT LEAKS OR SPILLS (40 CFR 122.26(c)(1)(i)(D))

Significant Leaks or Spills	6.1	Describe any significant leaks or spills of toxic or hazardous pollutants in the last three years. None. ORNL maintains an aggressive spill prevention and control program through the ORNL SPCC Plan, which stresses awareness of spill prevention to both ORNL employees and subcontractor employees on site. As part of the Spill Contingency Plan, a subpart of the ORNL SPCC, ORNL has an experienced spill response team that is available around-the-clock for spill control and cleanup operations, and that maintains a database of spills and record of clean-up. In addition, spill materials; consisting of spreadable granular absorbents, absorbent booms, containment containers, containment curtain and oil skimmer; are available for use by the spill response team. Additionally, construction sites are required to maintain spill kits during the duration of the construction project. Over the past three years between (2019-2022), ORNL has experienced minor spills or leaks, most of which were heavy equipment- or vehicle-related, and generally involved several ounces to several gallons of ethylene glycol or petroleum-based fuels, lubricants, and/or hydraulic fluids. In every instance the spill response team enacted clean-up. None of these were reportable-quantity spills of oil or hazardous substances as defined within the ORNL NPDES Permit TN0002941, 40 CFR 117 or 40 CFR 403 .
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SECTION 7. DISCHARGE INFORMATION (40 CFR 122.26(c)(1)(i)(E))

Discharge Information	See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.	
	7.1	Is this a new source or new discharge? <input type="checkbox"/> Yes → See instructions regarding submission of <i>estimated</i> data. <input checked="" type="checkbox"/> No → See instructions regarding submission of <i>actual</i> data.
	Tables A, B, C, and D	
7.2	Have you completed Table A for each outfall? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Discharge Information Continued	7.3	Is the facility subject to an effluent limitation guideline (ELG) or effluent limitations in an NPDES permit for its process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.5.
	7.4	Have you completed Table B by providing quantitative data for those pollutants that are (1) limited either directly or indirectly in an ELG and/or (2) subject to effluent limitations in an NPDES permit for the facility's process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.5	Do you know or have reason to believe any pollutants in Exhibit 2F-2 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.7.
	7.6	Have you listed all pollutants in Exhibit 2F-2 that you know or have reason to believe are present in the discharge and provided quantitative data or an explanation for those pollutants in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.7	Do you qualify for a small business exemption under the criteria specified in the Instructions? <input type="checkbox"/> Yes → SKIP to Item 7.18. <input checked="" type="checkbox"/> No
	7.8	Do you know or have reason to believe any pollutants in Exhibit 2F-3 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.10.
	7.9	Have you listed all pollutants in Exhibit 2F-3 that you know or have reason to believe are present in the discharge in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.10	Do you expect any of the pollutants in Exhibit 2F-3 to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.12.
	7.11	Have you provided quantitative data in Table C for those pollutants in Exhibit 2F-3 that you expect to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
	7.12	Do you expect acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6-dinitrophenol to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.14.
	7.13	Have you provided quantitative data in Table C for the pollutants identified in Item 7.12 that you expect to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
	7.14	Have you provided quantitative data or an explanation in Table C for pollutants you expect to be present in the discharge at concentrations less than 10 ppb (or less than 100 ppb for the pollutants identified in Item 7.12)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.15	Do you know or have reason to believe any pollutants in Exhibit 2F-4 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.17.
	7.16	Have you listed pollutants in Exhibit 2F-4 that you know or believe to be present in the discharge and provided an explanation in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7.17	Have you provided information for the storm event(s) sampled in Table D? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Discharge Information Continued	Used or Manufactured Toxics		
	7.18	Is any pollutant listed on Exhibits 2F-2 through 2F-4 a substance or a component of a substance used or manufactured as an intermediate or final product or byproduct?	
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 8.
	7.19	List the pollutants below, including TCDD if applicable.	
	1.	4.	7.
	2.	5.	8.
	3.	6.	9.

SECTION 8. BIOLOGICAL TOXICITY TESTING DATA (40 CFR 122.21(g)(11))

Biological Toxicity Testing Data	8.1	Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last three years?		
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 9.	
	8.2	Identify the tests and their purposes below.		
		Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	

SECTION 9. CONTRACT ANALYSIS INFORMATION (40 CFR 122.21(g)(12))

Contract Analysis Information	9.1	Were any of the analyses reported in Section 7 (on Tables A through C) performed by a contract laboratory or consulting firm?			
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No → SKIP to Section 10.		
	9.2	Provide information for each contract laboratory or consulting firm below.			
			Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
		Name of laboratory/firm	GEL Laboratories, LLC		
		Laboratory address	2040 Savage Road Charleston, SC (USA) 29407		
	Phone number	(843) 556-8171			
	Pollutant(s) analyzed	Ammonia, BOD, COD, Nitrogen, Nitrate/nitrite, Oil & Grease, VOCs/SVOCs, Phosphorus, TSS			

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SECTION 10. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	10.1	In Column 1 below, mark the sections of Form 2F that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1	<input checked="" type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3	<input checked="" type="checkbox"/> w/ site drainage map
		<input checked="" type="checkbox"/> Section 4	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7	<input checked="" type="checkbox"/> Table A <input type="checkbox"/> w/ small business exemption request <input checked="" type="checkbox"/> Table B <input type="checkbox"/> w/ analytical results as an attachment <input checked="" type="checkbox"/> Table C <input checked="" type="checkbox"/> Table D
		<input checked="" type="checkbox"/> Section 8	<input type="checkbox"/> w/attachments
		<input checked="" type="checkbox"/> Section 9	<input type="checkbox"/> w/attachments (e.g., responses for additional contact laboratories or firms)
		<input checked="" type="checkbox"/> Section 10	
	10.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

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TABLE A. CONVENTIONAL AND NON CONVENTIONAL PARAMETERS (40 CFR 122.26(c)(1)(i)(E)(3))¹

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 and requirements.

Pollutant or Parameter	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1. Oil and grease	<1.69 mg/L <0.00004 lbs		<1.69 mg/L <0.00004 lbs		1	
2. Biochemical oxygen demand (BOD ₅)	<4 mg/L <0.0001 lbs	<4 mg/L <0.1 lbs	<4 mg/L <0.0001 lbs	<4 mg/L <0.1 lbs	1	
3. Chemical oxygen demand (COD)	37.7 mg/L 0.0009 lbs	37.7 mg/L 1.2 lbs	37.7 mg/L 0.0009 lbs	37.7 mg/L 1.2 lbs	1	
4. Total suspended solids (TSS)	250 mg/L 0.006 lbs	78.1 mg/L 2.4 lbs	250 mg/L 0.006 lbs	78.1 mg/L 2.4 lbs	1	
5. Total phosphorus	0.342 mg/L 0.000009 lbs	0.105 mg/L 0.0032 lbs	0.342 mg/L 0.000009 lbs	0.105 mg/L 0.0032 lbs	1	
6. Total Kjeldahl nitrogen (TKN)	1.42 mg/L 0.00004 lbs	0.438 mg/L 0.014 lbs	1.42 mg/L 0.00004 lbs	0.438 mg/L 0.014 lbs	1	
7. Total nitrogen (as N)	1.58 mg/L 0.00004 lbs	0.705 mg/L 0.022 lbs	1.58 mg/L 0.00004 lbs	0.705 mg/L 0.022 lbs	1	
8. pH (minimum)	7.7					
	7.7					

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(A))¹

List each pollutant that is limited in an effluent limitation guideline (ELG) that the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <i>(new source/new dischargers only; use codes in instructions)</i>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Ammonia (as N)	0.236 mg/L 0.000006 lbs	0.153 mg/L 0.0047 lbs	0.236 mg/L 0.000006 lbs	0.153 mg/L 0.0047 lbs	1	
Antimony 7440-36-0	<0.00026 mg/L <7.00E-09 lbs	0.000417 mg/L 0.000013 lbs	<0.00026 mg/L <1.00E-08 lbs	0.000417 mg/L 0.000013 lbs	1	
Arsenic 7440-38-2	<0.002 mg/L <5.00E-08 lbs	0.00459 mg/L 0.00014 lbs	<0.002 mg/L <5.00E-08 lbs	0.00459 mg/L 0.00014 lbs	1	
Cadmium 7440-43-9	<0.00033 mg/L <8.00E-09 lbs	<0.00033 mg/L <0.000010 lbs	<0.00033 mg/L <1.00E-08 lbs	<0.00033 mg/L <0.000010 lbs	1	
Chromium 7440-47-3	0.0108 mg/L 3.00E-07 lbs	<0.01 mg/L <0.0003 lbs	0.0108 mg/L 3.00E-07 lbs	<0.01 mg/L <0.0003 lbs	1	
Copper 7440-50-8	<0.011 mg/L <3.00E-07 lbs	<0.011 mg/L <0.00034 lbs	<0.011 mg/L <3.00E-07 lbs	<0.011 mg/L <0.00034 lbs	1	
Iron 7439-89-6	1.83 mg/L 0.00005 lbs	1.97 mg/L 0.061 lbs	1.83 mg/L 0.00005 lbs	1.97 mg/L 0.061 lbs	1	
Lead 7439-92-1	0.00444 mg/L 1.00E-07 lbs	0.00502 mg/L 0.00016 lbs	0.00444 mg/L 1.00E-07 lbs	0.00502 mg/L 0.00016 lbs	1	
Mercury 7439-97-6					0	See Chapter 7
Nickel 7440-02-0	<0.073 mg/L <0.000002 lbs	<0.073 mg/L <0.0023 lbs	<0.073 mg/L <0.000002 lbs	<0.073 mg/L <0.0023 lbs	1	
Nitrogen, Total Organic (as N)	1.18 mg/L 0.00003 lbs	0.285 mg/L 0.0088 lbs	1.18 mg/L 0.00003 lbs	0.285 mg/L 0.0088 lbs	1	
Selenium 7782-49-2	<0.0209 mg/L <5.00E-07 lbs	<0.0209 mg/L <0.00065 lbs	<0.0209 mg/L <5.00E-07 lbs	<0.0209 mg/L <0.00065 lbs	1	
Silver 7440-22-4	<0.00012 mg/L <3.00E-09 lbs	<0.00012 mg/L <0.0000037 lbs	<0.00012 mg/L <0.00E+00 lbs	<0.00012 mg/L <0.0000037 lbs	1	
Zinc 7440-66-6	0.0721 mg/L 0.000002 lbs	0.0753 mg/L 0.0023 lbs	0.0721 mg/L 0.000002 lbs	0.0753 mg/L 0.0023 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Aluminum 7429-90-5	2.21 mg/L 0.00006 lbs	3.84 mg/L 0.12 lbs	2.21 mg/L 0.00006 lbs	3.84 mg/L 0.12 lbs	1	
Barium 7440-39-3	0.0794 mg/L 0.000002 lbs	0.0381 mg/L 0.0012 lbs	0.0794 mg/L 0.000002 lbs	0.0381 mg/L 0.0012 lbs	1	
Beryllium 7440-41-7	<0.00014 mg/L <4.00E-09 lbs	<0.00014 mg/L <0.0000043 lbs	<0.00014 mg/L <0.00E+00 lbs	<0.00014 mg/L <0.0000043 lbs	1	
Boron 7440-42-8	0.0181 mg/L 5.00E-07 lbs	0.00917 mg/L 0.00028 lbs	0.0181 mg/L 5.00E-07 lbs	0.00917 mg/L 0.00028 lbs	1	
Calcium 7440-70-2	71.6 mg/L 0.002 lbs	21.5 mg/L 0.66 lbs	71.6 mg/L 0.002 lbs	21.5 mg/L 0.66 lbs	1	
Cesium 7440-46-2	0.000245 mg/L 6.00E-09 lbs	0.000316 mg/L 0.0000098 lbs	0.000245 mg/L 1.00E-08 lbs	0.000316 mg/L 0.0000098 lbs	1	
Cobalt 7440-48-4	0.00134 mg/L 3.00E-08 lbs	0.00109 mg/L 0.000034 lbs	0.00134 mg/L 3.00E-08 lbs	0.00109 mg/L 0.000034 lbs	1	
Magnesium 7439-95-4	10.7 mg/L 0.0003 lbs	3.66 mg/L 0.11 lbs	10.7 mg/L 0.0003 lbs	3.66 mg/L 0.11 lbs	1	
Manganese 7439-96-5	0.205 mg/L 0.000005 lbs	0.077 mg/L 0.0024 lbs	0.205 mg/L 0.000005 lbs	0.077 mg/L 0.0024 lbs	1	
Molybdenum 7439-98-7	0.00565 mg/L 1.00E-07 lbs	<0.0032 mg/L <0.000099 lbs	0.00565 mg/L 1.00E-07 lbs	<0.0032 mg/L <0.000099 lbs	1	
PCB-1016 12674-11-2					0	See Chapter 7
PCB-1221 11104-28-2					0	See Chapter 7
PCB-1232 11141-16-5					0	See Chapter 7
PCB-1242 53469-21-9					0	See Chapter 7
PCB-1248 12672-29-6					0	See Chapter 7
PCB-1254 11097-69-1					0	See Chapter 7

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
PCB-1260 11096-82-5					0	See Chapter 7
Potassium 7440-09-7	2.37 mg/L 0.00006 lbs	2.1 mg/L 0.065 lbs	2.37 mg/L 0.00006 lbs	2.1 mg/L 0.065 lbs	1	
Sodium 7440-23-5	5.81 mg/L 0.0001 lbs	2.25 mg/L 0.069 lbs	5.81 mg/L 0.0001 lbs	2.25 mg/L 0.069 lbs	1	
Strontium 7440-24-6	0.143 mg/L 0.000004 lbs	0.0432 mg/L 0.0013 lbs	0.143 mg/L 0.000004 lbs	0.0432 mg/L 0.0013 lbs	1	
Thallium 7440-28-0	<0.0000400 mg/L <1.00E-09 lbs	0.0000410 mg/L 0.0000013 lbs	<0.0000400 mg/L <0.00E+00 lbs	0.0000410 mg/L 0.0000013 lbs	1	
Tin 7440-31-5	<0.002 mg/L <5.00E-08 lbs	<0.002 mg/L <0.00006 lbs	<0.002 mg/L <5.00E-08 lbs	<0.002 mg/L <0.00006 lbs	1	
Titanium 7440-32-6	0.0839 mg/L 0.000002 lbs	0.107 mg/L 0.0033 lbs	0.0839 mg/L 0.000002 lbs	0.107 mg/L 0.0033 lbs	1	
Uranium 7440-61-1	<0.0012 mg/L <3.00E-08 lbs	<0.0012 mg/L <0.000037 lbs	<0.0012 mg/L <3.00E-08 lbs	<0.0012 mg/L <0.000037 lbs	1	
Vanadium 7440-62-2	0.00417 mg/L 1.00E-07 lbs	0.00578 mg/L 0.00018 lbs	0.00417 mg/L 1.00E-07 lbs	0.00578 mg/L 0.00018 lbs	1	
Zirconium 7440-67-7	<0.0031 mg/L <8.00E-08 lbs	<0.0031 mg/L <0.000096 lbs	<0.0031 mg/L <8.00E-08 lbs	<0.0031 mg/L <0.000096 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE D. STORM EVENT INFORMATION (40 CFR 122.26(c)(1)(i)(E)(6))

Provide data for the storm event(s) that resulted in the maximum daily discharges for the flow-weighted composite sample.

Date of Storm Event	Duration of Storm Event (in hours)	Total Rainfall During Storm Event (in inches)	Number of Hours Between Beginning of Storm Measured and End of Previous Measurable Rain Event	Maximum Flow Rate During Rain Event (in gpm or specify units)	Total Flow from Rain Event (in gallons or specify units)
1/12/2023	9.8 hrs	.99 in	92.5 hrs	80 gpm	3700 gal

Provide a description of the method of flow measurement or estimate.

All flow rates were measured or estimated by measuring the time required for the stormwater discharge to fill a container of a known volume.

Outfall: 204

Group A2 Low impervious w/CT Blowdown

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Outfall Number	Latitude			Longitude			ReceivingWater
	Deg	Min	Sec	Deg	Min	Sec	
204	35	55	27	84	18	58	White Oak Creek
435	35	56	25	84	18	04	White Oak Creek
437	35	56	51	84	18	16	White Oak Creek

Outfall: 204

Group A2 Low impervious w/CT Blowdown

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Outfall Number	Area of Impervious Surface (acres)	Total Area Drained (acres)
204	1.117	2.964
435	22.381	127.978
437	22.381	127.978

Stormwater Group B1


High Imperviousness with Dry-Weather Discharge

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Form 2F NPDES  **U.S Environmental Protection Agency**
Application for NPDES Permit to Discharge Wastewater
STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		207	White Oak Creek	35 ° 55 ' 32.88 " N	84 ° 18 ' 50.28 " W
		<p><i>Storm Water:</i> Group B1 High Imperviousness with Dry-Weather Discharge</p> <p><i>Other Outfalls Included:</i> 001; 041; 051; 058; 210; 211; 217; 218; 219; 224; 249; 250; 265; 291; 312; 368; 383; 506</p>			

SECTION 2. IMPROVEMENTS (40 CFR 122.21(g)(6))

Improvements	2.1	Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application?			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 3.			
	2.2	Briefly identify each applicable project in the table below.			
		Brief Identification and Description of Project	Affected Outfalls (list outfall numbers)	Source(s) of Discharge	Final Compliance Dates
					Required Projected
		See Appendix K - Improvements			
	2.3	Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? (Optional Item)			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

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SECTION 3. SITE DRAINAGE MAP (40 CFR 122.26(c)(1)(i)(A))

Site Drainage Map	3.1	Have you attached a site drainage map containing all required information to this application? (See instructions for specific guidance.)
	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

SECTION 4. POLLUTANT SOURCES (40 CFR 122.26(c)(1)(i)(B))

Pollutant Sources	4.1	Provide information on the facility's pollutant sources in the table below.			
		Outfall Number	Impervious Surface Area (within a mile radius of the facility)		Total Surface Area Drained (within a mile radius of the facility)
		207	3.519	<i>specify units</i> acres	5.11 <i>specify units</i> acres
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
	4.2	Provide a narrative description of the facility's significant material in the space below. (See instructions for content requirements.) Stormwater Group B1 Outfall 207 is the outfall chosen to represent grouped stormwater outfalls throughout the ORNL campus that have greater than 50% impervious surface within their drainage areas and also contains a dry-weather component (e.g., condensate, groundwater, other facility wastewaters) that may be present at the time of the stormwater sample collection. Legacy CERCLA contamination can exist in the drainage areas - especially those in the central part of the ORNL campus. This outfall's drainage area is typical of an industrial research park with impervious surfaces such as roads, sidewalks, and buildings, and grassed or graveled areas. There are loading docks on many of the buildings with some outdoor storage of metal pipes or containers, utilities such as transformers, generator equipment, cooling systems, and steam lines are located throughout the ORNL campus, and some dynamic laydown areas are used as material delivery drop points. During the growing season, herbicides are applied in turf and landscaped areas for weed control and to remove invasive plants. When needed, pesticides are used to control fire ants, ticks, and other nuisance insects. Fertilizers are primarily applied to re-establish vegetation in areas where soil has been disturbed by construction excavation but are also occasionally utilized by landscape contractors in turf grass areas and along roadways. Refer to Chapter 7 - EPA Form 2F for more detail.			
	4.3	Provide the location and a description of existing structural and non-structural control measures to reduce pollutants in stormwater runoff. (See instructions for specific guidance.)			
		Stormwater Treatment			
		Outfall Number	Control Measures and Treatment		Codes from Exhibit 2F-1 (list)
		207	Drainage from the eastern portion of the 7600 area is directed to a retention basin prior to discharge through the Outfall 291 included in the SW Group B1 outfalls. See Chapter 7 - EPA Form 2F for details.		N/A

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SECTION 5. NON STORMWATER DISCHARGES (40 CFR 122.26(c)(1)(i)(C))

Non-Stormwater Discharges	5.1	<i>I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of non-stormwater discharges. Moreover, I certify that the outfalls identified as having non-stormwater discharges are described in either an accompanying NPDES Form 2C, 2D, or 2E application.</i>			
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office		
		Signature	Date signed		
	5.2	Provide the testing information requested in the table below.			
		Outfall Number	Description of Testing Method Used	Date(s) of Testing	Onsite Drainage Points Directly Observed During Test
		207	See Chapter 7 - EPA Form 2F for information.		

SECTION 6. SIGNIFICANT LEAKS OR SPILLS (40 CFR 122.26(c)(1)(i)(D))

Significant Leaks or Spills	6.1	Describe any significant leaks or spills of toxic or hazardous pollutants in the last three years. None. ORNL maintains an aggressive spill prevention and control program through the ORNL SPCC Plan, which stresses awareness of spill prevention to both ORNL employees and subcontractor employees on site. As part of the Spill Contingency Plan, a subpart of the ORNL SPCC, ORNL has an experienced spill response team that is available around-the-clock for spill control and cleanup operations, and that maintains a database of spills and record of clean-up. In addition, spill materials; consisting of spreadable granular absorbents, absorbent booms, containment containers, containment curtain and oil skimmer; are available for use by the spill response team. Additionally, construction sites are required to maintain spill kits during the duration of the construction project. Over the past three years between (2019-2022), ORNL has experienced minor spills or leaks, most of which were heavy equipment- or vehicle-related, and generally involved several ounces to several gallons of ethylene glycol or petroleum-based fuels, lubricants, and/or hydraulic fluids. In every instance the spill response team enacted clean-up. None of these were reportable-quantity spills of oil or hazardous substances as defined within the ORNL NPDES Permit TN0002941, 40 CFR 117 or 40 CFR 403 .
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SECTION 7. DISCHARGE INFORMATION (40 CFR 122.26(c)(1)(i)(E))

Discharge Information	See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.	
	7.1	Is this a new source or new discharge? <input type="checkbox"/> Yes → See instructions regarding submission of <i>estimated</i> data. <input checked="" type="checkbox"/> No → See instructions regarding submission of <i>actual</i> data.
	Tables A, B, C, and D	
7.2	Have you completed Table A for each outfall? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Discharge Information - Continued	7.3	Is the facility subject to an effluent limitation guideline (ELG) or effluent limitations in an NPDES permit for its process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.5.
	7.4	Have you completed Table B by providing quantitative data for those pollutants that are (1) limited either directly or indirectly in an ELG and/or (2) subject to effluent limitations in an NPDES permit for the facility's process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.5	Do you know or have reason to believe any pollutants in Exhibit 2F-2 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.7.
	7.6	Have you listed all pollutants in Exhibit 2F-2 that you know or have reason to believe are present in the discharge and provided quantitative data or an explanation for those pollutants in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.7	Do you qualify for a small business exemption under the criteria specified in the Instructions? <input type="checkbox"/> Yes → SKIP to Item 7.18. <input checked="" type="checkbox"/> No
	7.8	Do you know or have reason to believe any pollutants in Exhibit 2F-3 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.10.
	7.9	Have you listed all pollutants in Exhibit 2F-3 that you know or have reason to believe are present in the discharge in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.10	Do you expect any of the pollutants in Exhibit 2F-3 to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.12.
	7.11	Have you provided quantitative data in Table C for those pollutants in Exhibit 2F-3 that you expect to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
	7.12	Do you expect acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6-dinitrophenol to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.14.
	7.13	Have you provided quantitative data in Table C for the pollutants identified in Item 7.12 that you expect to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
	7.14	Have you provided quantitative data or an explanation in Table C for pollutants you expect to be present in the discharge at concentrations less than 10 ppb (or less than 100 ppb for the pollutants identified in Item 7.12)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.15	Do you know or have reason to believe any pollutants in Exhibit 2F-4 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.17.
	7.16	Have you listed pollutants in Exhibit 2F-4 that you know or believe to be present in the discharge and provided an explanation in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7.17	Have you provided information for the storm event(s) sampled in Table D? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Discharge Information Continued	Used or Manufactured Toxics		
	7.18	Is any pollutant listed on Exhibits 2F-2 through 2F-4 a substance or a component of a substance used or manufactured as an intermediate or final product or byproduct?	
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 8.
	7.19	List the pollutants below, including TCDD if applicable.	
	1.	4.	7.
	2.	5.	8.
	3.	6.	9.

SECTION 8. BIOLOGICAL TOXICITY TESTING DATA (40 CFR 122.21(g)(11))

Biological Toxicity Testing Data	8.1	Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last three years?		
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 9.	
	8.2	Identify the tests and their purposes below.		
		Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	

SECTION 9. CONTRACT ANALYSIS INFORMATION (40 CFR 122.21(g)(12))

Contract Analysis Information	9.1	Were any of the analyses reported in Section 7 (on Tables A through C) performed by a contract laboratory or consulting firm?			
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No → SKIP to Section 10.		
	9.2	Provide information for each contract laboratory or consulting firm below.			
			Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
		Name of laboratory/firm	GEL Laboratories, LLC		
		Laboratory address	2040 Savage Road Charleston, SC (USA) 29407		
	Phone number	(843) 556-8171			
	Pollutant(s) analyzed	Ammonia, BOD, COD, Nitrogen, Nitrate/nitrite, Oil & Grease, VOCs/SVOCs, Phosphorus, TSS			

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SECTION 10. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	10.1	In Column 1 below, mark the sections of Form 2F that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1	<input checked="" type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3	<input checked="" type="checkbox"/> w/ site drainage map
		<input checked="" type="checkbox"/> Section 4	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7	<input checked="" type="checkbox"/> Table A <input type="checkbox"/> w/ small business exemption request <input checked="" type="checkbox"/> Table B <input type="checkbox"/> w/ analytical results as an attachment <input checked="" type="checkbox"/> Table C <input checked="" type="checkbox"/> Table D
		<input checked="" type="checkbox"/> Section 8	<input type="checkbox"/> w/attachments
		<input checked="" type="checkbox"/> Section 9	<input type="checkbox"/> w/attachments (e.g., responses for additional contact laboratories or firms)
		<input checked="" type="checkbox"/> Section 10	
	10.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

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TABLE A. CONVENTIONAL AND NON CONVENTIONAL PARAMETERS (40 CFR 122.26(c)(1)(i)(E)(3))¹

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 and requirements.

Pollutant or Parameter	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1. Oil and grease	<1.67 mg/L <0.008 lbs		<1.67 mg/L <0.008 lbs		1	
2. Biochemical oxygen demand (BOD ₅)	<5 mg/L <0.03 lbs	<5 mg/L <0.1 lbs	<5 mg/L <0.03 lbs	<5 mg/L <0.1 lbs	1	
3. Chemical oxygen demand (COD)	23 mg/L 0.1 lbs	28.4 mg/L 0.69 lbs	23 mg/L 0.1 lbs	28.4 mg/L 0.69 lbs	1	
4. Total suspended solids (TSS)	74.8 mg/L 0.4 lbs	46.8 mg/L 1.1 lbs	74.8 mg/L 0.4 lbs	46.8 mg/L 1.1 lbs	1	
5. Total phosphorus	0.113 mg/L 0.0006 lbs	0.118 mg/L 0.0029 lbs	0.113 mg/L 0.0006 lbs	0.118 mg/L 0.0029 lbs	1	
6. Total Kjeldahl nitrogen (TKN)	0.713 mg/L 0.004 lbs	0.643 mg/L 0.016 lbs	0.713 mg/L 0.004 lbs	0.643 mg/L 0.016 lbs	1	
7. Total nitrogen (as N)	1.32 mg/L 0.007 lbs	1.25 mg/L 0.030 lbs	1.32 mg/L 0.007 lbs	1.25 mg/L 0.030 lbs	1	
8. pH (minimum)	7.3					
	pH (maximum)	7.3				

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(A))¹

List each pollutant that is limited in an effluent limitation guideline (ELG) that the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Ammonia (as N)	0.312 mg/L 0.002 lbs	0.27 mg/L 0.0065 lbs	0.312 mg/L 0.002 lbs	0.27 mg/L 0.0065 lbs	1	
Antimony 7440-36-0	0.000385 mg/L 0.000002 lbs	0.000358 mg/L 0.0000087 lbs	0.000385 mg/L 0.000002 lbs	0.000358 mg/L 0.0000087 lbs	1	
Arsenic 7440-38-2	<0.002 mg/L <0.00001 lbs	<0.002 mg/L <0.00005 lbs	<0.002 mg/L <0.00001 lbs	<0.002 mg/L <0.00005 lbs	1	
Cadmium 7440-43-9	<0.00033 mg/L <0.000002 lbs	<0.00033 mg/L <0.0000080 lbs	<0.00033 mg/L <0.000002 lbs	<0.00033 mg/L <0.0000080 lbs	1	
Chromium 7440-47-3	<0.01 mg/L <0.00005 lbs	<0.01 mg/L <0.0002 lbs	<0.01 mg/L <0.00005 lbs	<0.01 mg/L <0.0002 lbs	1	
Copper 7440-50-8	<0.011 mg/L <0.00006 lbs	<0.011 mg/L <0.00027 lbs	<0.011 mg/L <0.00006 lbs	<0.011 mg/L <0.00027 lbs	1	
Iron 7439-89-6	1.49 mg/L 0.007 lbs	1.43 mg/L 0.035 lbs	1.49 mg/L 0.007 lbs	1.43 mg/L 0.035 lbs	1	
Lead 7439-92-1	0.00383 mg/L 0.00002 lbs	0.00334 mg/L 0.000081 lbs	0.00383 mg/L 0.00002 lbs	0.00334 mg/L 0.000081 lbs	1	
Mercury 7439-97-6					0	See Chapter 7
Nickel 7440-02-0	<0.073 mg/L <0.0004 lbs	<0.073 mg/L <0.0018 lbs	<0.073 mg/L <0.0004 lbs	<0.073 mg/L <0.0018 lbs	1	
Nitrogen, Total Organic (as N)	0.401 mg/L 0.002 lbs	0.373 mg/L 0.0090 lbs	0.401 mg/L 0.002 lbs	0.373 mg/L 0.0090 lbs	1	
Selenium 7782-49-2	<0.0031 mg/L <0.00002 lbs	<0.0031 mg/L <0.000075 lbs	<0.0031 mg/L <0.00002 lbs	<0.0031 mg/L <0.000075 lbs	1	
Silver 7440-22-4	<0.00012 mg/L <6.00E-07 lbs	<0.00012 mg/L <0.0000029 lbs	<0.00012 mg/L <6.00E-07 lbs	<0.00012 mg/L <0.0000029 lbs	1	
Zinc 7440-66-6	0.0599 mg/L 0.0003 lbs	0.0571 mg/L 0.0014 lbs	0.0599 mg/L 0.0003 lbs	0.0571 mg/L 0.0014 lbs	1	

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1,1,1-Trichloroethane 71-55-6	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
1,1,2,2-Tetrachloroethane 79-34-5	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
1,1,2-Trichloroethane 79-00-5	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
1,1-Dichloroethane 75-34-3	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
1,1-Dichloroethene 75-35-4	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
1,2,4,5-Tetrachlorobenzene 95-94-3	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
1,2,4-Trichlorobenzene 120-82-1	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
1,2-Dibromoethane 106-93-4	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
1,2-Dichlorobenzene 95-50-1	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
1,2-Dichloroethane 107-06-2	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
1,2-Dichloroethene 540-59-0	<2 ug/L <0.00001 lbs		<2 ug/L <0.00001 lbs		1	
1,2-Dichloropropane 78-87-5	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
1,2-Diphenylhydrazine 122-66-7	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
1,3-Dichlorobenzene 541-73-1	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
1,3-Dichloropropylene 542-75-6	<2 ug/L <0.00001 lbs		<2 ug/L <0.00001 lbs		1	
1,4-Dichlorobenzene 106-46-7	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
2,4,5-Trichlorophenol 95-95-4	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
2,4,6-Trichlorophenol 88-06-2	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
2,4-Dichlorophenol 120-83-2	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
2,4-Dimethylphenol 105-67-9	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
2,4-Dinitrophenol 51-28-5	<106 ug/L <0.0005 lbs	<20.8 ug/L <0.00050 lbs	<106 ug/L <0.0005 lbs	<20.8 ug/L <0.00050 lbs	1	
2,4-Dinitrotoluene 121-14-2	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
2,6-Dinitrotoluene 606-20-2	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
2-Butanone 78-93-3	<5 ug/L <0.00003 lbs		<5 ug/L <0.00003 lbs		1	
2-Chloroethylvinyl ether 110-75-8	<5 ug/L <0.00003 lbs		<5 ug/L <0.00003 lbs		1	
2-Chloronaphthalene 91-58-7	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
2-Chlorophenol 95-57-8	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
2-Hexanone 591-78-6	<5 ug/L <0.00003 lbs		<5 ug/L <0.00003 lbs		1	
2-Methylphenol 95-48-7	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
2-Nitrophenol 88-75-5	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
3,3'-Dichlorobenzidine 91-94-1	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
4,6-Dinitro-O-Cresol 534-52-1	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	

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Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
4-Bromophenylphenyl ether 101-55-3	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
4-Chlorophenylphenyl ether 7005-72-3	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
4-Methyl-2-pentanone 108-10-1	<5 ug/L <0.00003 lbs		<5 ug/L <0.00003 lbs		1	
4-Nitrophenol 100-02-7	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Acenaphthene 83-32-9	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Acenaphthylene 208-96-8	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Acetone 67-64-1	33.06 ug/L 0.00002 lbs		33.06 ug/L 0.00002 lbs		1	
Acrolein 107-02-8	<5 ug/L <0.00003 lbs		<5 ug/L <0.00003 lbs		1	
Acrylonitrile 107-13-1	<5 ug/L <0.00003 lbs		<5 ug/L <0.00003 lbs		1	
Allyl chloride 107-05-1	<5 ug/L <0.00003 lbs		<5 ug/L <0.00003 lbs		1	
Aluminum 7429-90-5	1.7 mg/L 0.009 lbs	1.68 mg/L 0.041 lbs	1.7 mg/L 0.009 lbs	1.68 mg/L 0.041 lbs	1	
Aniline 62-53-3	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Anthracene 120-12-7	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Barium 7440-39-3	0.0519 mg/L 0.0003 lbs	0.0529 mg/L 0.0013 lbs	0.0519 mg/L 0.0003 lbs	0.0529 mg/L 0.0013 lbs	1	
Benzene 71-43-2	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Benzidine 92-87-5	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Benzo(a)anthracene 56-55-3	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Benzo(a)pyrene 50-32-8	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Benzo(b)fluoranthene 205-99-2	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Benzo(ghi)perylene 191-24-2	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Benzo(k)fluoranthene 207-08-9	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Benzyl chloride 100-44-7	<5 ug/L <0.00003 lbs		<5 ug/L <0.00003 lbs		1	
Beryllium 7440-41-7	<0.00014 mg/L <7.00E-07 lbs	<0.00014 mg/L <0.0000034 lbs	<0.00014 mg/L <7.00E-07 lbs	<0.00014 mg/L <0.0000034 lbs	1	
Bis(2-chloroethoxy)methane 111-91-1	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Bis(2-chloroethyl) ether 111-44-4	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Bis(2-chloroisopropyl) ether 108-60-1	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Bis(2-ethylhexyl)phthalate 117-81-7	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Boron 7440-42-8	0.0202 mg/L 0.0001 lbs	0.0212 mg/L 0.00051 lbs	0.0202 mg/L 0.0001 lbs	0.0212 mg/L 0.00051 lbs	1	
Bromodichloromethane 75-27-4	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Bromoform 75-25-2	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Bromomethane 74-83-9	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Butylbenzylphthalate 85-68-7	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Calcium 7440-70-2	39.8 mg/L 0.2 lbs	40.9 mg/L 0.99 lbs	39.8 mg/L 0.2 lbs	40.9 mg/L 0.99 lbs	1	
Carbon Disulfide 75-15-0	<5 ug/L <0.00003 lbs		<5 ug/L <0.00003 lbs		1	
Carbon tetrachloride 56-23-5	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Cesium 7440-46-2	0.000178 mg/L 9.00E-07 lbs	0.000174 mg/L 0.0000042 lbs	0.000178 mg/L 9.00E-07 lbs	0.000174 mg/L 0.0000042 lbs	1	
Chlorobenzene 108-90-7	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Chloroethane 75-00-3	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Chloroform 67-66-3	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Chloromethane 74-87-3	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Chrysene 218-01-9	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
cis-1,2-Dichloroethene 156-59-2	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
cis-1,3-Dichloropropene 10061-01-5	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Cobalt 7440-48-4	0.00108 mg/L 0.000005 lbs	0.00104 mg/L 0.000025 lbs	0.00108 mg/L 0.000005 lbs	0.00104 mg/L 0.000025 lbs	1	
Cyclohexane 110-82-7	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Dibenzo(a,h)anthracene 53-70-3	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Dibromochloromethane 124-48-1	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Diethylphthalate 84-66-2	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	

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Dimethylphthalate 131-11-3	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Di-n-butylphthalate 84-74-2	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Di-n-octylphthalate 117-84-0	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Diphenylamine 122-39-4	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Disulfoton 298-04-4	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Ethylbenzene 100-41-4	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Fluoranthene 206-44-0	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Fluorene 86-73-7	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Hexachlorobenzene 118-74-1	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Hexachlorobutadiene 87-68-3	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Hexachlorocyclopentadiene 77-47-4	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Hexachloroethane 67-72-1	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Indeno(1,2,3-cd)pyrene 193-39-5	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Isophorone 78-59-1	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Kepone 143-50-0	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
m+p Methylphenol 65794-96-9	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory	Outfall Number 207
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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Magnesium 7439-95-4	9.56 mg/L 0.05 lbs	9.63 mg/L 0.23 lbs	9.56 mg/L 0.05 lbs	9.63 mg/L 0.23 lbs	1	
Manganese 7439-96-5	0.102 mg/L 0.0005 lbs	0.0929 mg/L 0.0022 lbs	0.102 mg/L 0.0005 lbs	0.0929 mg/L 0.0022 lbs	1	
Methyl methacrylate 80-62-6	<5 ug/L <0.00003 lbs		<5 ug/L <0.00003 lbs		1	
Methyl parathion 298-00-0	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Methylene chloride 75-09-2	<2 ug/L <0.00001 lbs		<2 ug/L <0.00001 lbs		1	
Molybdenum 7439-98-7	0.00429 mg/L 0.00002 lbs	0.00446 mg/L 0.00011 lbs	0.00429 mg/L 0.00002 lbs	0.00446 mg/L 0.00011 lbs	1	
Naphthalene 91-20-3	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Nitrobenzene 98-95-3	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
N-Nitrosodiethylamine 55-18-5	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
N-Nitrosodimethylamine 62-75-9	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
N-Nitroso-di-n-propylamine 621-64-7	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
N-Nitrosopyrrolidine 930-55-2	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Parathion 56-38-2	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
PCB-1016 12674-11-2					0	See Chapter 7
PCB-1221 11104-28-2					0	See Chapter 7
PCB-1232 11141-16-5					0	See Chapter 7

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
PCB-1242 53469-21-9					0	See Chapter 7
PCB-1248 12672-29-6					0	See Chapter 7
PCB-1254 11097-69-1					0	See Chapter 7
PCB-1260 11096-82-5					0	See Chapter 7
P-Chloro-M-Cresol 59-50-7	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Pentachlorobenzene 608-93-5	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Pentachlorophenol 87-86-5	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Phenanthrene 85-01-8	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Phenol 108-95-2	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	<52.9 ug/L <0.0003 lbs	<10.4 ug/L <0.00025 lbs	1	
Potassium 7440-09-7	3 mg/L 0.02 lbs	3.08 mg/L 0.075 lbs	3 mg/L 0.02 lbs	3.08 mg/L 0.075 lbs	1	
Pyrene 129-00-0	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	<5.29 ug/L <0.00003 lbs	<1.04 ug/L <0.000025 lbs	1	
Sodium 7440-23-5	41.9 mg/L 0.2 lbs	44.9 mg/L 1.1 lbs	41.9 mg/L 0.2 lbs	44.9 mg/L 1.1 lbs	1	
Strontium 7440-24-6	0.115 mg/L 0.0006 lbs	0.121 mg/L 0.0029 lbs	0.115 mg/L 0.0006 lbs	0.121 mg/L 0.0029 lbs	1	
Styrene 100-42-5	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Tetrachloroethene 127-18-4	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Thallium 7440-28-0	0.0000526 mg/L 3.00E-07 lbs	<0.0000400 mg/L <9.70E-07 lbs	0.0000526 mg/L 3.00E-07 lbs	<0.0000400 mg/L <9.70E-07 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Tin 7440-31-5	<0.002 mg/L <0.00001 lbs	<0.002 mg/L <0.00005 lbs	<0.002 mg/L <0.00001 lbs	<0.002 mg/L <0.00005 lbs	1	
Titanium 7440-32-6	0.176 mg/L 0.0009 lbs	0.0901 mg/L 0.0022 lbs	0.176 mg/L 0.0009 lbs	0.0901 mg/L 0.0022 lbs	1	
Toluene 108-88-3	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Total Cresols 1319-77-3	<106 ug/L <0.0005 lbs	<20.8 ug/L <0.00050 lbs	<106 ug/L <0.0005 lbs	<20.8 ug/L <0.00050 lbs	1	
trans-1,2-Dichloroethene 156-60-5	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
trans-1,3-Dichloropropene 10061-02-6	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Trichloroethene 79-01-6	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Trichlorofluoromethane 75-69-4	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Uranium 7440-61-1	0.00355 mg/L 0.00002 lbs	0.00365 mg/L 0.000088 lbs	0.00355 mg/L 0.00002 lbs	0.00365 mg/L 0.000088 lbs	1	
Vanadium 7440-62-2	0.0061 mg/L 0.00003 lbs	0.00604 mg/L 0.00015 lbs	0.0061 mg/L 0.00003 lbs	0.00604 mg/L 0.00015 lbs	1	
Vinyl acetate 108-05-4	<5 ug/L <0.00003 lbs		<5 ug/L <0.00003 lbs		1	
Vinyl chloride 75-01-4	<1 ug/L <0.000005 lbs		<1 ug/L <0.000005 lbs		1	
Xylene 1330-20-7	<3 ug/L <0.00002 lbs		<3 ug/L <0.00002 lbs		1	
Zirconium 7440-67-7	<0.0031 mg/L <0.00002 lbs	<0.0031 mg/L <0.000075 lbs	<0.0031 mg/L <0.00002 lbs	<0.0031 mg/L <0.000075 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE D. STORM EVENT INFORMATION (40 CFR 122.26(c)(1)(i)(E)(6))

Provide data for the storm event(s) that resulted in the maximum daily discharges for the flow-weighted composite sample.

Date of Storm Event	Duration of Storm Event (in hours)	Total Rainfall During Storm Event (in inches)	Number of Hours Between Beginning of Storm Measured and End of Previous Measurable Rain Event	Maximum Flow Rate During Rain Event (in gpm or specify units)	Total Flow from Rain Event (in gallons or specify units)
3/23/2022	11.8 hrs	0.66 in	158.5 hrs	40 gpm	2900 gal

Provide a description of the method of flow measurement or estimate.
All flow rates were measured or estimated by measuring the time required for the stormwater discharge to fill a container of a known volume.

Outfall: 207

Group B1 High impervious with dry-weather discharge

EPA ID Number

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Outfall Number	Latitude			Longitude			ReceivingWater
	Deg	Min	Sec	Deg	Min	Sec	
001	35	55	21	84	19	05	White Oak Creek
041	35	55	25	84	19	12	First Creek
051	35	55	20	84	19	15	Northwest Tributary
058	35	55	21	84	19	21	Northwest Tributary
207	35	55	33	84	18	50	White Oak Creek
210	35	55	36	84	18	47	White Oak Creek
211	35	55	37	84	18	45	White Oak Creek
217	35	55	39	84	18	41	White Oak Creek
218	35	55	40	84	18	39	White Oak Creek
219	35	55	41	84	18	37	White Oak Creek
224	35	55	42	84	18	36	White Oak Creek
249	35	55	32	84	19	18	First Creek
250	35	55	33	84	19	19	First Creek
265	35	55	41	84	18	54	Fifth Creek
291	35	56	18	84	16	32	Tributary to Clinch River
312	35	55	43	84	18	35	White Oak Creek
368	35	55	45	84	18	57	Fifth Creek
383	35	54	58	84	18	09	Tributary to Melton Branch
506	35	55	36	84	18	45	White Oak Creek

Outfall: 207

Group B1 High impervious with dry-weather discharge

EPA ID Number

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Outfall Number	Area of Impervious Surface (acres)	Total Area Drained (acres)
001	4.218	7.705
041	0.885	1.115
051	2.153	4.572
058	2.686	5.282
207	3.519	5.11
210	0.359	0.364
211	4.153	4.616
217	0.333	0.339
218	7.495	10.59
219	0.252	0.382
224	0.034	0.035
249	7.032	15.181
250	1.086	1.916
265	3.53	5.285
291	2.294	4.267
312	0.361	0.376
368	0.771	1.535
383	2.881	5.529
506	0.593	0.781

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Form 2F NPDES  **U.S Environmental Protection Agency**
Application for NPDES Permit to Discharge Wastewater
STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		302	White Oak Creek	35 ° 55 ' 27.71 " N	84 ° 18 ' 57.38 " W
		<i>Storm Water: Group B1 High Imperviousness with Dry-Weather Discharge</i>			

SECTION 2. IMPROVEMENTS (40 CFR 122.21(g)(6))

Improvements	2.1	Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 3.			
	2.2	Briefly identify each applicable project in the table below.			
		Brief Identification and Description of Project	Affected Outfalls (list outfall numbers)	Source(s) of Discharge	Final Compliance Dates
					Required Projected
		See Appendix K - Improvements			
2.3	Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? (Optional Item) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

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SECTION 3. SITE DRAINAGE MAP (40 CFR 122.26(c)(1)(i)(A))

Site Drainage Map	3.1	Have you attached a site drainage map containing all required information to this application? (See instructions for specific guidance.)
	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

SECTION 4. POLLUTANT SOURCES (40 CFR 122.26(c)(1)(i)(B))

Pollutant Sources	4.1	Provide information on the facility's pollutant sources in the table below.																								
		<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: center;">Outfall Number</th> <th style="text-align: center;">Impervious Surface Area (within a mile radius of the facility)</th> <th style="text-align: center;">Total Surface Area Drained (within a mile radius of the facility)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">302</td> <td style="text-align: center;">4.551</td> <td style="text-align: center;">7.615</td> </tr> <tr> <td></td> <td style="text-align: center;"><i>specify units</i> acres</td> <td style="text-align: center;"><i>specify units</i> acres</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>specify units</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>specify units</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>specify units</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>specify units</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>specify units</i></td> </tr> </tbody> </table>	Outfall Number	Impervious Surface Area (within a mile radius of the facility)	Total Surface Area Drained (within a mile radius of the facility)	302	4.551	7.615		<i>specify units</i> acres	<i>specify units</i> acres			<i>specify units</i>			<i>specify units</i>			<i>specify units</i>			<i>specify units</i>			<i>specify units</i>
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			<i>specify units</i>																							
			<i>specify units</i>																							
			<i>specify units</i>																							
4.2	<p>Provide a narrative description of the facility's significant material in the space below. (See instructions for content requirements.)</p> <p>Outfall 302 is a part of Group B1 stormwater outfalls throughout the ORNL campus that have greater than 50% impervious surface within their drainage areas and also contains a dry-weather component (e.g., condensate, groundwater, other facility wastewaters) that may be present at the time of the stormwater sample collection. Since data for this outfall was available, it is included here on a separate 2F form. Legacy CERCLA contamination can exist in the drainage areas - especially those in the central part of the ORNL campus. This outfall's drainage area is typical of an industrial research park with impervious surfaces such as roads, sidewalks, and buildings, and grassed or graveled areas. There are loading docks on many of the buildings with some outdoor storage of metal pipes or containers, utilities such as transformers, generator equipment, cooling systems, and steam lines are located throughout the ORNL campus, and some dynamic laydown areas are used as material delivery drop points. During the growing season, herbicides are applied in turf and landscaped areas for weed control and to remove invasive plants. When needed, pesticides are used to control fire ants, ticks, and other nuisance insects. Fertilizers are primarily applied to re-establish vegetation in areas where soil has been disturbed by construction excavation but are also occasionally utilized by landscape contractors in turf grass areas and along roadways. Refer to Chapter 7 - EPA Form 2F for more detail.</p>																									
4.3	<p>Provide the location and a description of existing structural and non-structural control measures to reduce pollutants in stormwater runoff. (See instructions for specific guidance.)</p> <table border="1" style="width: 100%;"> <thead> <tr> <th colspan="3" style="text-align: center;">Stormwater Treatment</th> </tr> <tr> <th style="text-align: center;">Outfall Number</th> <th style="text-align: center;">Control Measures and Treatment</th> <th style="text-align: center;">Codes from Exhibit 2F-1 (list)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">302</td> <td>Drainage from the eastern portion of the 7600 area is directed to a retention basin prior to discharge through OF 291, which is in the SW Group B1 outfalls. See Chapter 7 - EPA Form 2F for additional detail.</td> <td style="text-align: center;">N/A</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Stormwater Treatment			Outfall Number	Control Measures and Treatment	Codes from Exhibit 2F-1 (list)	302	Drainage from the eastern portion of the 7600 area is directed to a retention basin prior to discharge through OF 291, which is in the SW Group B1 outfalls. See Chapter 7 - EPA Form 2F for additional detail.	N/A																
Stormwater Treatment																										
Outfall Number	Control Measures and Treatment	Codes from Exhibit 2F-1 (list)																								
302	Drainage from the eastern portion of the 7600 area is directed to a retention basin prior to discharge through OF 291, which is in the SW Group B1 outfalls. See Chapter 7 - EPA Form 2F for additional detail.	N/A																								

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SECTION 5. NON STORMWATER DISCHARGES (40 CFR 122.26(c)(1)(i)(C))

Non-Stormwater Discharges	5.1	<i>I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of non-stormwater discharges. Moreover, I certify that the outfalls identified as having non-stormwater discharges are described in either an accompanying NPDES Form 2C, 2D, or 2E application.</i>			
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office		
		Signature	Date signed		
	5.2	Provide the testing information requested in the table below.			
		Outfall Number	Description of Testing Method Used	Date(s) of Testing	Onsite Drainage Points Directly Observed During Test
		302	See Chapter 7 - EPA Form 2F for information.		

SECTION 6. SIGNIFICANT LEAKS OR SPILLS (40 CFR 122.26(c)(1)(i)(D))

Significant Leaks or Spills	6.1	Describe any significant leaks or spills of toxic or hazardous pollutants in the last three years. None. ORNL maintains an aggressive spill prevention and control program through the ORNL SPCC Plan, which stresses awareness of spill prevention to both ORNL employees and subcontractor employees on site. As part of the Spill Contingency Plan, a subpart of the ORNL SPCC, ORNL has an experienced spill response team that is available around-the-clock for spill control and cleanup operations, and that maintains a database of spills and record of clean-up. In addition, spill materials; consisting of spreadable granular absorbents, absorbent booms, containment containers, containment curtain and oil skimmer; are available for use by the spill response team. Additionally, construction sites are required to maintain spill kits during the duration of the construction project. Over the past three years between (2019-2022), ORNL has experienced minor spills or leaks, most of which were heavy equipment- or vehicle-related, and generally involved several ounces to several gallons of ethylene glycol or petroleum-based fuels, lubricants, and/or hydraulic fluids. In every instance the spill response team enacted clean-up. None of these were reportable-quantity spills of oil or hazardous substances as defined within the ORNL NPDES Permit TN0002941, 40 CFR 117 or 40 CFR 403 .
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SECTION 7. DISCHARGE INFORMATION (40 CFR 122.26(c)(1)(i)(E))

Discharge Information	See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.	
	7.1	Is this a new source or new discharge? <input type="checkbox"/> Yes → See instructions regarding submission of <i>estimated</i> data. <input checked="" type="checkbox"/> No → See instructions regarding submission of <i>actual</i> data.
	Tables A, B, C, and D	
7.2	Have you completed Table A for each outfall? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Discharge Information Continued	7.3	Is the facility subject to an effluent limitation guideline (ELG) or effluent limitations in an NPDES permit for its process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.5.
	7.4	Have you completed Table B by providing quantitative data for those pollutants that are (1) limited either directly or indirectly in an ELG and/or (2) subject to effluent limitations in an NPDES permit for the facility's process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.5	Do you know or have reason to believe any pollutants in Exhibit 2F-2 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.7.
	7.6	Have you listed all pollutants in Exhibit 2F-2 that you know or have reason to believe are present in the discharge and provided quantitative data or an explanation for those pollutants in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.7	Do you qualify for a small business exemption under the criteria specified in the Instructions? <input type="checkbox"/> Yes → SKIP to Item 7.18. <input checked="" type="checkbox"/> No
	7.8	Do you know or have reason to believe any pollutants in Exhibit 2F-3 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.10.
	7.9	Have you listed all pollutants in Exhibit 2F-3 that you know or have reason to believe are present in the discharge in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.10	Do you expect any of the pollutants in Exhibit 2F-3 to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.12.
	7.11	Have you provided quantitative data in Table C for those pollutants in Exhibit 2F-3 that you expect to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
	7.12	Do you expect acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6-dinitrophenol to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.14.
	7.13	Have you provided quantitative data in Table C for the pollutants identified in Item 7.12 that you expect to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
	7.14	Have you provided quantitative data or an explanation in Table C for pollutants you expect to be present in the discharge at concentrations less than 10 ppb (or less than 100 ppb for the pollutants identified in Item 7.12)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.15	Do you know or have reason to believe any pollutants in Exhibit 2F-4 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.17.
	7.16	Have you listed pollutants in Exhibit 2F-4 that you know or believe to be present in the discharge and provided an explanation in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7.17	Have you provided information for the storm event(s) sampled in Table D? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Discharge Information Continued	Used or Manufactured Toxics		
	7.18	Is any pollutant listed on Exhibits 2F-2 through 2F-4 a substance or a component of a substance used or manufactured as an intermediate or final product or byproduct?	
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 8.
	7.19	List the pollutants below, including TCDD if applicable.	
	1.	4.	7.
	2.	5.	8.
	3.	6.	9.

SECTION 8. BIOLOGICAL TOXICITY TESTING DATA (40 CFR 122.21(g)(11))

Biological Toxicity Testing Data	8.1	Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last three years?		
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 9.	
	8.2	Identify the tests and their purposes below.		
		Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	

SECTION 9. CONTRACT ANALYSIS INFORMATION (40 CFR 122.21(g)(12))

Contract Analysis Information	9.1	Were any of the analyses reported in Section 7 (on Tables A through C) performed by a contract laboratory or consulting firm?			
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No → SKIP to Section 10.		
	9.2	Provide information for each contract laboratory or consulting firm below.			
			Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
		Name of laboratory/firm	GEL Laboratories, LLC		
		Laboratory address	2040 Savage Road, Charleston, SC (USA) 29407		
	Phone number	(843) 556-8171			
	Pollutant(s) analyzed	Ammonia, BOD, COD, Nitrogen, Nitrate/nitrite, Oil & Grease, VOCs/SVOCs, Phosphorus, TSS			

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SECTION 10. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	10.1	In Column 1 below, mark the sections of Form 2F that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1	<input checked="" type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3	<input checked="" type="checkbox"/> w/ site drainage map
		<input checked="" type="checkbox"/> Section 4	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7	<input checked="" type="checkbox"/> Table A <input type="checkbox"/> w/ small business exemption request <input checked="" type="checkbox"/> Table B <input type="checkbox"/> w/ analytical results as an attachment <input checked="" type="checkbox"/> Table C <input checked="" type="checkbox"/> Table D
		<input checked="" type="checkbox"/> Section 8	<input type="checkbox"/> w/attachments
		<input checked="" type="checkbox"/> Section 9	<input type="checkbox"/> w/attachments (e.g., responses for additional contact laboratories or firms)
		<input checked="" type="checkbox"/> Section 10	
	10.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

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TABLE A. CONVENTIONAL AND NON CONVENTIONAL PARAMETERS (40 CFR 122.26(c)(1)(i)(E)(3))¹

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 and requirements.

Pollutant or Parameter	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1. Oil and grease	<1.69 mg/L <0.018 lbs		<1.69 mg/L <0.018 lbs		1	
2. Biochemical oxygen demand (BOD ₅)	J5.62 mg/L J0.061 lbs	<5 mg/L <0.2 lbs	J5.62 mg/L J0.061 lbs	<5 mg/L <0.2 lbs	1	
3. Chemical oxygen demand (COD)	<8.95 mg/L <0.097 lbs	23 mg/L 1.0 lbs	<8.95 mg/L <0.097 lbs	23 mg/L 1.0 lbs	1	
4. Total suspended solids (TSS)	6.2 mg/L 0.067 lbs	13.7 mg/L 0.62 lbs	6.2 mg/L 0.067 lbs	13.7 mg/L 0.62 lbs	1	
5. Total phosphorus	0.079 mg/L 0.00086 lbs	0.0621 mg/L 0.0028 lbs	0.079 mg/L 0.00086 lbs	0.0621 mg/L 0.0028 lbs	1	
6. Total Kjeldahl nitrogen (TKN)	0.302 mg/L 0.0033 lbs	0.323 mg/L 0.015 lbs	0.302 mg/L 0.0033 lbs	0.323 mg/L 0.015 lbs	1	
7. Total nitrogen (as N)	0.486 mg/L 0.0053 lbs	0.506 mg/L 0.023 lbs	0.486 mg/L 0.0053 lbs	0.506 mg/L 0.023 lbs	1	
8. pH (minimum)	8					
	8					

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(A))¹

List each pollutant that is limited in an effluent limitation guideline (ELG) that the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Ammonia (as N)	0.119 mg/L 0.0013 lbs	0.189 mg/L 0.0085 lbs	0.119 mg/L 0.0013 lbs	0.189 mg/L 0.0085 lbs	1	
Antimony 7440-36-0	0.000419 mg/L 0.0000045 lbs	0.000429 mg/L 0.000019 lbs	0.000419 mg/L 0.0000045 lbs	0.000429 mg/L 0.000019 lbs	1	
Arsenic 7440-38-2	<0.002 mg/L <0.00002 lbs	<0.002 mg/L <0.00009 lbs	<0.002 mg/L <0.00002 lbs	<0.002 mg/L <0.00009 lbs	1	
Cadmium 7440-43-9	<0.00033 mg/L <0.0000036 lbs	<0.00033 mg/L <0.000015 lbs	<0.00033 mg/L <0.0000036 lbs	<0.00033 mg/L <0.000015 lbs	1	
Chromium 7440-47-3	<0.01 mg/L <0.0001 lbs	<0.01 mg/L <0.0005 lbs	<0.01 mg/L <0.0001 lbs	<0.01 mg/L <0.0005 lbs	1	
Copper 7440-50-8	<0.011 mg/L <0.00012 lbs	<0.011 mg/L <0.00050 lbs	<0.011 mg/L <0.00012 lbs	<0.011 mg/L <0.00050 lbs	1	
Iron 7439-89-6	<0.22 mg/L <0.0024 lbs	0.247 mg/L 0.011 lbs	<0.22 mg/L <0.0024 lbs	0.247 mg/L 0.011 lbs	1	
Lead 7439-92-1	<0.0015 mg/L <0.000016 lbs	0.00225 mg/L 0.00010 lbs	<0.0015 mg/L <0.000016 lbs	0.00225 mg/L 0.00010 lbs	1	
Mercury 7439-97-6					0	See Chapter 7
Nickel 7440-02-0	<0.073 mg/L <0.00079 lbs	<0.073 mg/L <0.0033 lbs	<0.073 mg/L <0.00079 lbs	<0.073 mg/L <0.0033 lbs	1	
Nitrogen, Total Organic (as N)	0.183 mg/L 0.0020 lbs	0.134 mg/L 0.0060 lbs	0.183 mg/L 0.0020 lbs	0.134 mg/L 0.0060 lbs	1	
Selenium 7782-49-2	<0.0031 mg/L <0.000034 lbs	<0.0031 mg/L <0.00014 lbs	<0.0031 mg/L <0.000034 lbs	<0.0031 mg/L <0.00014 lbs	1	
Silver 7440-22-4	<0.00012 mg/L <0.0000013 lbs	<0.00012 mg/L <0.0000054 lbs	<0.00012 mg/L <0.0000013 lbs	<0.00012 mg/L <0.0000054 lbs	1	
Zinc 7440-66-6	0.0536 mg/L 0.00058 lbs	0.0786 mg/L 0.0035 lbs	0.0536 mg/L 0.00058 lbs	0.0786 mg/L 0.0035 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1,1,1-Trichloroethane 71-55-6	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,1,2,2-Tetrachloroethane 79-34-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,1,2-Trichloroethane 79-00-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,1-Dichloroethane 75-34-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,1-Dichloroethene 75-35-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2,4,5-Tetrachlorobenzene 95-94-3	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
1,2,4-Trichlorobenzene 120-82-1	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
1,2-Dibromoethane 106-93-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2-Dichlorobenzene 95-50-1	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2-Dichloroethane 107-06-2	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2-Dichloroethene 540-59-0	<2 ug/L <0.00002 lbs		<2 ug/L <0.00002 lbs		1	
1,2-Dichloropropane 78-87-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2-Diphenylhydrazine 122-66-7	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
1,3-Dichlorobenzene 541-73-1	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,3-Dichloropropylene 542-75-6	<2 ug/L <0.00002 lbs		<2 ug/L <0.00002 lbs		1	
1,4-Dichlorobenzene 106-46-7	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	

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List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
2,4,5-Trichlorophenol 95-95-4	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
2,4,6-Trichlorophenol 88-06-2	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
2,4-Dichlorophenol 120-83-2	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
2,4-Dimethylphenol 105-67-9	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
2,4-Dinitrophenol 51-28-5	<20 ug/L <0.0002 lbs	<21.7 ug/L <0.00098 lbs	<20 ug/L <0.0002 lbs	<21.7 ug/L <0.00098 lbs	1	
2,4-Dinitrotoluene 121-14-2	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
2,6-Dinitrotoluene 606-20-2	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
2-Butanone 78-93-3	<5 ug/L <0.00005 lbs		<5 ug/L <0.00005 lbs		1	
2-Chloroethylvinyl ether 110-75-8	<5 ug/L <0.00005 lbs		<5 ug/L <0.00005 lbs		1	
2-Chloronaphthalene 91-58-7	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
2-Chlorophenol 95-57-8	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
2-Hexanone 591-78-6	<5 ug/L <0.00005 lbs		<5 ug/L <0.00005 lbs		1	
2-Methylphenol 95-48-7	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
2-Nitrophenol 88-75-5	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
3,3'-Dichlorobenzidine 91-94-1	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
4,6-Dinitro-O-Cresol 534-52-1	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
4-Bromophenylphenyl ether 101-55-3	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
4-Chlorophenylphenyl ether 7005-72-3	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
4-Methyl-2-pentanone 108-10-1	<5 ug/L <0.00005 lbs		<5 ug/L <0.00005 lbs		1	
4-Nitrophenol 100-02-7	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Acenaphthene 83-32-9	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Acenaphthylene 208-96-8	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Acetone 67-64-1	4.05 ug/L 0.000044 lbs		4.05 ug/L 0.000044 lbs		1	
Acrolein 107-02-8	<5 ug/L <0.00005 lbs		<5 ug/L <0.00005 lbs		1	
Acrylonitrile 107-13-1	<5 ug/L <0.00005 lbs		<5 ug/L <0.00005 lbs		1	
Allyl chloride 107-05-1	<5 ug/L <0.00005 lbs		<5 ug/L <0.00005 lbs		1	
Aluminum 7429-90-5	0.178 mg/L 0.0019 lbs	0.216 mg/L 0.0097 lbs	0.178 mg/L 0.0019 lbs	0.216 mg/L 0.0097 lbs	1	
Aniline 62-53-3	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Anthracene 120-12-7	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Barium 7440-39-3	0.0132 mg/L 0.00014 lbs	0.0149 mg/L 0.00067 lbs	0.0132 mg/L 0.00014 lbs	0.0149 mg/L 0.00067 lbs	1	
Benzene 71-43-2	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Benzidine 92-87-5	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Benzo(a)anthracene 56-55-3	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Benzo(a)pyrene 50-32-8	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Benzo(b)fluoranthene 205-99-2	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Benzo(ghi)perylene 191-24-2	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Benzo(k)fluoranthene 207-08-9	<1 ug/L <0.00001 lbs	0.358 ug/L 0.000016 lbs	<1 ug/L <0.00001 lbs	0.358 ug/L 0.000016 lbs	1	
Benzyl chloride 100-44-7	<5 ug/L <0.00005 lbs		<5 ug/L <0.00005 lbs		1	
Beryllium 7440-41-7	<0.00014 mg/L <0.0000015 lbs	<0.00014 mg/L <0.0000063 lbs	<0.00014 mg/L <0.0000015 lbs	<0.00014 mg/L <0.0000063 lbs	1	
Bis(2-chloroethoxy)methane 111-91-1	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Bis(2-chloroethyl) ether 111-44-4	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Bis(2-chloroisopropyl) ether 108-60-1	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Bis(2-ethylhexyl)phthalate 117-81-7	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Boron 7440-42-8	0.00445 mg/L 0.000048 lbs	0.00453 mg/L 0.00020 lbs	0.00445 mg/L 0.000048 lbs	0.00453 mg/L 0.00020 lbs	1	
Bromodichloromethane 75-27-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Bromoform 75-25-2	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Bromomethane 74-83-9	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Butylbenzylphthalate 85-68-7	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Calcium 7440-70-2	7.42 mg/L 0.081 lbs	8.72 mg/L 0.39 lbs	7.42 mg/L 0.081 lbs	8.72 mg/L 0.39 lbs	1	
Carbon Disulfide 75-15-0	<5 ug/L <0.00005 lbs		<5 ug/L <0.00005 lbs		1	
Carbon tetrachloride 56-23-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Cesium 7440-46-2	0.0000450 mg/L 4.90E-07 lbs	<0.0000400 mg/L <0.0000018 lbs	0.0000450 mg/L 4.90E-07 lbs	<0.0000400 mg/L <0.0000018 lbs	1	
Chlorobenzene 108-90-7	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Chloroethane 75-00-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Chloroform 67-66-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Chloromethane 74-87-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Chrysene 218-01-9	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
cis-1,2-Dichloroethene 156-59-2	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
cis-1,3-Dichloropropene 10061-01-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Cobalt 7440-48-4	0.000193 mg/L 0.0000021 lbs	0.000221 mg/L 0.000010 lbs	0.000193 mg/L 0.0000021 lbs	0.000221 mg/L 0.000010 lbs	1	
Cyclohexane 110-82-7	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Dibenzo(a,h)anthracene 53-70-3	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Dibromochloromethane 124-48-1	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Diethylphthalate 84-66-2	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	

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List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Dimethylphthalate 131-11-3	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Di-n-butylphthalate 84-74-2	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Di-n-octylphthalate 117-84-0	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Diphenylamine 122-39-4	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Disulfoton 298-04-4	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Ethylbenzene 100-41-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Fluoranthene 206-44-0	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Fluorene 86-73-7	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Hexachlorobenzene 118-74-1	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Hexachlorobutadiene 87-68-3	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Hexachlorocyclopentadiene 77-47-4	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Hexachloroethane 67-72-1	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Indeno(1,2,3-cd)pyrene 193-39-5	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Isophorone 78-59-1	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Kepone 143-50-0	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
m+p Methylphenol 65794-96-9	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Magnesium 7439-95-4	1.13 mg/L 0.012 lbs	1.47 mg/L 0.066 lbs	1.13 mg/L 0.012 lbs	1.47 mg/L 0.066 lbs	1	
Manganese 7439-96-5	0.0116 mg/L 0.00013 lbs	0.0165 mg/L 0.00074 lbs	0.0116 mg/L 0.00013 lbs	0.0165 mg/L 0.00074 lbs	1	
Methyl methacrylate 80-62-6	<5 ug/L <0.00005 lbs		<5 ug/L <0.00005 lbs		1	
Methyl parathion 298-00-0	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Methylene chloride 75-09-2	<2 ug/L <0.00002 lbs		<2 ug/L <0.00002 lbs		1	
Molybdenum 7439-98-7	<0.0032 mg/L <0.000035 lbs	<0.0032 mg/L <0.00014 lbs	<0.0032 mg/L <0.000035 lbs	<0.0032 mg/L <0.00014 lbs	1	
Naphthalene 91-20-3	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Nitrobenzene 98-95-3	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
N-Nitrosodiethylamine 55-18-5	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
N-Nitrosodimethylamine 62-75-9	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
N-Nitroso-di-n-propylamine 621-64-7	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
N-Nitrosopyrrolidine 930-55-2	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Parathion 56-38-2	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
PCB-1016 12674-11-2					0	See Chapter 7
PCB-1221 11104-28-2					0	See Chapter 7
PCB-1232 11141-16-5					0	See Chapter 7

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List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
PCB-1242 53469-21-9					0	See Chapter 7
PCB-1248 12672-29-6					0	See Chapter 7
PCB-1254 11097-69-1					0	See Chapter 7
PCB-1260 11096-82-5					0	See Chapter 7
P-Chloro-M-Cresol 59-50-7	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Pentachlorobenzene 608-93-5	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Pentachlorophenol 87-86-5	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Phenanthrene 85-01-8	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Phenol 108-95-2	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	<10 ug/L <0.0001 lbs	<10.8 ug/L <0.00049 lbs	1	
Potassium 7440-09-7	0.582 mg/L 0.0063 lbs	0.558 mg/L 0.025 lbs	0.582 mg/L 0.0063 lbs	0.558 mg/L 0.025 lbs	1	
Pyrene 129-00-0	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	<1 ug/L <0.00001 lbs	<1.08 ug/L <0.000049 lbs	1	
Sodium 7440-23-5	5.79 mg/L 0.063 lbs	5.95 mg/L 0.27 lbs	5.79 mg/L 0.063 lbs	5.95 mg/L 0.27 lbs	1	
Strontium 7440-24-6	0.0145 mg/L 0.00016 lbs	0.0154 mg/L 0.00069 lbs	0.0145 mg/L 0.00016 lbs	0.0154 mg/L 0.00069 lbs	1	
Styrene 100-42-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Tetrachloroethene 127-18-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Thallium 7440-28-0	<0.0000400 mg/L <4.30E-07 lbs	<0.0000400 mg/L <0.0000018 lbs	<0.0000400 mg/L <4.30E-07 lbs	<0.0000400 mg/L <0.0000018 lbs	1	

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Tin 7440-31-5	<0.002 mg/L <0.00002 lbs	<0.002 mg/L <0.00009 lbs	<0.002 mg/L <0.00002 lbs	<0.002 mg/L <0.00009 lbs	1	
Titanium 7440-32-6	0.0104 mg/L 0.00011 lbs	0.0157 mg/L 0.00071 lbs	0.0104 mg/L 0.00011 lbs	0.0157 mg/L 0.00071 lbs	1	
Toluene 108-88-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Total Cresols 1319-77-3	<20 ug/L <0.0002 lbs	<21.7 ug/L <0.00098 lbs	<20 ug/L <0.0002 lbs	<21.7 ug/L <0.00098 lbs	1	
trans-1,2-Dichloroethene 156-60-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
trans-1,3-Dichloropropene 10061-02-6	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Trichloroethene 79-01-6	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Trichlorofluoromethane 75-69-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Uranium 7440-61-1	<0.0012 mg/L <0.000013 lbs	<0.0012 mg/L <0.000054 lbs	<0.0012 mg/L <0.000013 lbs	<0.0012 mg/L <0.000054 lbs	1	
Vanadium 7440-62-2	0.00161 mg/L 0.000017 lbs	0.00166 mg/L 0.000075 lbs	0.00161 mg/L 0.000017 lbs	0.00166 mg/L 0.000075 lbs	1	
Vinyl acetate 108-05-4	<5 ug/L <0.00005 lbs		<5 ug/L <0.00005 lbs		1	
Vinyl chloride 75-01-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Xylene 1330-20-7	<3 ug/L <0.00003 lbs		<3 ug/L <0.00003 lbs		1	
Zirconium 7440-67-7	<0.0031 mg/L <0.000034 lbs	<0.0031 mg/L <0.00014 lbs	<0.0031 mg/L <0.000034 lbs	<0.0031 mg/L <0.00014 lbs	1	

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TABLE D. STORM EVENT INFORMATION (40 CFR 122.26(c)(1)(i)(E)(6))

Provide data for the storm event(s) that resulted in the maximum daily discharges for the flow-weighted composite sample.

Date of Storm Event	Duration of Storm Event (in hours)	Total Rainfall During Storm Event (in inches)	Number of Hours Between Beginning of Storm Measured and End of Previous Measurable Rain Event	Maximum Flow Rate During Rain Event (in gpm or specify units)	Total Flow from Rain Event (in gallons or specify units)
3/23/2022	11.8 hrs	.66 in	158.5 hrs	70 gpm	5400 gal

Provide a description of the method of flow measurement or estimate.


All flow rates were measured or estimated by measuring the time required for the stormwater discharge to fill a container of a known volume.

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Form 2F NPDES  **U.S Environmental Protection Agency**
Application for NPDES Permit to Discharge Wastewater
STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		304	White Oak Creek	35 ° 55 ' 28.21 " N	84 ° 18 ' 55.87 " W
		<i>Storm Water: Group B1 High Imperviousness with Dry-Weather Discharge</i>			

SECTION 2. IMPROVEMENTS (40 CFR 122.21(g)(6))

Improvements	2.1	Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 3.			
	2.2	Briefly identify each applicable project in the table below.			
		Brief Identification and Description of Project	Affected Outfalls (list outfall numbers)	Source(s) of Discharge	Final Compliance Dates
					Required Projected
		See Appendix K - Improvements			
2.3	Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? (Optional Item) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

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SECTION 3. SITE DRAINAGE MAP (40 CFR 122.26(c)(1)(i)(A))

Site Drainage Map	3.1	Have you attached a site drainage map containing all required information to this application? (See instructions for specific guidance.)
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

SECTION 4. POLLUTANT SOURCES (40 CFR 122.26(c)(1)(i)(B))

Pollutant Sources	4.1	Provide information on the facility's pollutant sources in the table below.			
		Outfall Number	Impervious Surface Area <small>(within a mile radius of the facility)</small>	Total Surface Area Drained <small>(within a mile radius of the facility)</small>	
			<i>specify units</i> acres		<i>specify units</i> acres
		304	5.551	8.749	
			<i>specify units</i>		<i>specify units</i>
			<i>specify units</i>		<i>specify units</i>
			<i>specify units</i>		<i>specify units</i>
			<i>specify units</i>		<i>specify units</i>
			<i>specify units</i>		<i>specify units</i>
			<i>specify units</i>		<i>specify units</i>
	4.2	Provide a narrative description of the facility's significant material in the space below. (See instructions for content requirements.) Outfall 304 is a part of Group B1 stormwater outfalls throughout the ORNL campus that have greater than 50% impervious surface within their drainage areas and also contains a dry-weather component (e.g., condensate, groundwater, other facility wastewaters) that may be present at the time of the stormwater sample collection. Since data was available for this outfall, it is included on a separate 2F form. Legacy CERCLA contamination can exist in the drainage areas - especially those in the central part of the ORNL campus. This outfall's drainage area is typical of an industrial research park with impervious surfaces such as roads, sidewalks, and buildings, and grassed or graveled areas. There are loading docks on many of the buildings with some outdoor storage of metal pipes or containers, utilities such as transformers, generator equipment, cooling systems, and steam lines are located throughout the ORNL campus, and some dynamic laydown areas are used as material delivery drop points. During the growing season, herbicides are applied in turf and landscaped areas for weed control and to remove invasive plants. When needed, pesticides are used to control fire ants, ticks, and other nuisance insects. Fertilizers are primarily applied to re-establish vegetation in areas where soil has been disturbed by construction excavation but are also occasionally utilized by landscape contractors in turf grass areas and along roadways. Refer to Chapter 7 - EPA Form 2F for more detail.			
	4.3	Provide the location and a description of existing structural and non-structural control measures to reduce pollutants in stormwater runoff. (See instructions for specific guidance.)			
		Stormwater Treatment			
		Outfall Number	Control Measures and Treatment	Codes from Exhibit 2F-1 (list)	
		304	Drainage from the eastern portion of the 7600 area is directed to a retention basin prior to discharge through OF 291, which is in the SW Group B1 outfalls. See Chapter 7 - EPA Form 2F for more detail.	N/A	

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SECTION 5. NON STORMWATER DISCHARGES (40 CFR 122.26(c)(1)(i)(C))

Non-Stormwater Discharges	5.1	<i>I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of non-stormwater discharges. Moreover, I certify that the outfalls identified as having non-stormwater discharges are described in either an accompanying NPDES Form 2C, 2D, or 2E application.</i>			
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office		
		Signature	Date signed		
	5.2	Provide the testing information requested in the table below.			
		Outfall Number	Description of Testing Method Used	Date(s) of Testing	Onsite Drainage Points Directly Observed During Test
		304	See Chapter 7 - EPA Form 2F for information.		

SECTION 6. SIGNIFICANT LEAKS OR SPILLS (40 CFR 122.26(c)(1)(i)(D))

Significant Leaks or Spills	6.1	Describe any significant leaks or spills of toxic or hazardous pollutants in the last three years. None. ORNL maintains an aggressive spill prevention and control program through the ORNL SPCC Plan, which stresses awareness of spill prevention to both ORNL employees and subcontractor employees on site. As part of the Spill Contingency Plan, a subpart of the ORNL SPCC, ORNL has an experienced spill response team that is available around-the-clock for spill control and cleanup operations, and that maintains a database of spills and record of clean-up. In addition, spill materials; consisting of spreadable granular absorbents, absorbent booms, containment containers, containment curtain and oil skimmer; are available for use by the spill response team. Additionally, construction sites are required to maintain spill kits during the duration of the construction project. Over the past three years between (2019-2022), ORNL has experienced minor spills or leaks, most of which were heavy equipment- or vehicle-related, and generally involved several ounces to several gallons of ethylene glycol or petroleum-based fuels, lubricants, and/or hydraulic fluids. In every instance the spill response team enacted clean-up. None of these were reportable-quantity spills of oil or hazardous substances as defined within the ORNL NPDES Permit TN0002941, 40 CFR 117 or 40 CFR 403 .
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SECTION 7. DISCHARGE INFORMATION (40 CFR 122.26(c)(1)(i)(E))

Discharge Information	See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.	
	7.1	Is this a new source or new discharge? <input type="checkbox"/> Yes → See instructions regarding submission of <i>estimated</i> data. <input checked="" type="checkbox"/> No → See instructions regarding submission of <i>actual</i> data.
	Tables A, B, C, and D	
7.2	Have you completed Table A for each outfall? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Discharge Information - Continued	7.3	Is the facility subject to an effluent limitation guideline (ELG) or effluent limitations in an NPDES permit for its process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.5.
	7.4	Have you completed Table B by providing quantitative data for those pollutants that are (1) limited either directly or indirectly in an ELG and/or (2) subject to effluent limitations in an NPDES permit for the facility's process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.5	Do you know or have reason to believe any pollutants in Exhibit 2F-2 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.7.
	7.6	Have you listed all pollutants in Exhibit 2F-2 that you know or have reason to believe are present in the discharge and provided quantitative data or an explanation for those pollutants in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.7	Do you qualify for a small business exemption under the criteria specified in the Instructions? <input type="checkbox"/> Yes → SKIP to Item 7.18. <input checked="" type="checkbox"/> No
	7.8	Do you know or have reason to believe any pollutants in Exhibit 2F-3 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.10.
	7.9	Have you listed all pollutants in Exhibit 2F-3 that you know or have reason to believe are present in the discharge in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.10	Do you expect any of the pollutants in Exhibit 2F-3 to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.12.
	7.11	Have you provided quantitative data in Table C for those pollutants in Exhibit 2F-3 that you expect to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
	7.12	Do you expect acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6-dinitrophenol to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.14.
	7.13	Have you provided quantitative data in Table C for the pollutants identified in Item 7.12 that you expect to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
	7.14	Have you provided quantitative data or an explanation in Table C for pollutants you expect to be present in the discharge at concentrations less than 10 ppb (or less than 100 ppb for the pollutants identified in Item 7.12)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.15	Do you know or have reason to believe any pollutants in Exhibit 2F-4 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.17.
	7.16	Have you listed pollutants in Exhibit 2F-4 that you know or believe to be present in the discharge and provided an explanation in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7.17	Have you provided information for the storm event(s) sampled in Table D? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Discharge Information Continued	Used or Manufactured Toxics		
	7.18	Is any pollutant listed on Exhibits 2F-2 through 2F-4 a substance or a component of a substance used or manufactured as an intermediate or final product or byproduct?	
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 8.
	7.19	List the pollutants below, including TCDD if applicable.	
	1.	4.	7.
	2.	5.	8.
	3.	6.	9.

SECTION 8. BIOLOGICAL TOXICITY TESTING DATA (40 CFR 122.21(g)(11))

Biological Toxicity Testing Data	8.1	Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last three years?		
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 9.	
	8.2	Identify the tests and their purposes below.		
		Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	

SECTION 9. CONTRACT ANALYSIS INFORMATION (40 CFR 122.21(g)(12))

Contract Analysis Information	9.1	Were any of the analyses reported in Section 7 (on Tables A through C) performed by a contract laboratory or consulting firm?			
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No → SKIP to Section 10.		
	9.2	Provide information for each contract laboratory or consulting firm below.			
			Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
		Name of laboratory/firm	GEL Laboratories, LLC		
		Laboratory address	2040 Savage Road Charleston, SC (USA) 29407		
	Phone number	(843) 556-8171			
	Pollutant(s) analyzed	Ammonia, BOD, COD, Nitrogen, Nitrate/nitrite, Oil & Grease, VOCs/SVOCs, Phosphorus, TSS			

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SECTION 10. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	10.1	In Column 1 below, mark the sections of Form 2F that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1	<input checked="" type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3	<input checked="" type="checkbox"/> w/ site drainage map
		<input checked="" type="checkbox"/> Section 4	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7	<input checked="" type="checkbox"/> Table A <input type="checkbox"/> w/ small business exemption request <input checked="" type="checkbox"/> Table B <input type="checkbox"/> w/ analytical results as an attachment <input checked="" type="checkbox"/> Table C <input checked="" type="checkbox"/> Table D
		<input checked="" type="checkbox"/> Section 8	<input type="checkbox"/> w/attachments
		<input checked="" type="checkbox"/> Section 9	<input type="checkbox"/> w/attachments (e.g., responses for additional contact laboratories or firms)
		<input checked="" type="checkbox"/> Section 10	
	10.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

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TABLE A. CONVENTIONAL AND NON CONVENTIONAL PARAMETERS (40 CFR 122.26(c)(1)(i)(E)(3))¹

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 and requirements.

Pollutant or Parameter	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1. Oil and grease	J1.69 mg/L J0.020 lbs		J1.69 mg/L J0.020 lbs		1	
2. Biochemical oxygen demand (BOD ₅)	<5 mg/L <0.06 lbs	<5 mg/L <0.2 lbs	<5 mg/L <0.06 lbs	<5 mg/L <0.2 lbs	1	
3. Chemical oxygen demand (COD)	28.4 mg/L 0.33 lbs	33.8 mg/L 1.6 lbs	28.4 mg/L 0.33 lbs	33.8 mg/L 1.6 lbs	1	
4. Total suspended solids (TSS)	23.8 mg/L 0.28 lbs	45.8 mg/L 2.2 lbs	23.8 mg/L 0.28 lbs	45.8 mg/L 2.2 lbs	1	
5. Total phosphorus	0.108 mg/L 0.0013 lbs	0.0911 mg/L 0.0043 lbs	0.108 mg/L 0.0013 lbs	0.0911 mg/L 0.0043 lbs	1	
6. Total Kjeldahl nitrogen (TKN)	3.44 mg/L 0.040 lbs	3.66 mg/L 0.17 lbs	3.44 mg/L 0.040 lbs	3.66 mg/L 0.17 lbs	1	
7. Total nitrogen (as N)	3.67 mg/L 0.043 lbs	3.89 mg/L 0.19 lbs	3.67 mg/L 0.043 lbs	3.89 mg/L 0.19 lbs	1	
8. pH (minimum)	8.4					
	pH (maximum)	8.4				

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(A))¹

List each pollutant that is limited in an effluent limitation guideline (ELG) that the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Ammonia (as N)	3 mg/L 0.04 lbs	3.02 mg/L 0.14 lbs	3 mg/L 0.04 lbs	3.02 mg/L 0.14 lbs	1	
Antimony 7440-36-0	0.000388 mg/L 0.0000045 lbs	0.000346 mg/L 0.000016 lbs	0.000388 mg/L 0.0000045 lbs	0.000346 mg/L 0.000016 lbs	1	
Arsenic 7440-38-2	<0.002 mg/L <0.00002 lbs	<0.002 mg/L <0.0001 lbs	<0.002 mg/L <0.00002 lbs	<0.002 mg/L <0.0001 lbs	1	
Cadmium 7440-43-9	<0.00033 mg/L <0.0000039 lbs	<0.00033 mg/L <0.000016 lbs	<0.00033 mg/L <0.0000039 lbs	<0.00033 mg/L <0.000016 lbs	1	
Chromium 7440-47-3	<0.01 mg/L <0.0001 lbs	<0.01 mg/L <0.0005 lbs	<0.01 mg/L <0.0001 lbs	<0.01 mg/L <0.0005 lbs	1	
Copper 7440-50-8	<0.011 mg/L <0.00013 lbs	<0.011 mg/L <0.00052 lbs	<0.011 mg/L <0.00013 lbs	<0.011 mg/L <0.00052 lbs	1	
Iron 7439-89-6	0.772 mg/L 0.0090 lbs	0.701 mg/L 0.033 lbs	0.772 mg/L 0.0090 lbs	0.701 mg/L 0.033 lbs	1	
Lead 7439-92-1	0.00613 mg/L 0.000072 lbs	0.00588 mg/L 0.00028 lbs	0.00613 mg/L 0.000072 lbs	0.00588 mg/L 0.00028 lbs	1	
Mercury 7439-97-6					0	See Chapter 7
Nickel 7440-02-0	<0.073 mg/L <0.00085 lbs	<0.073 mg/L <0.0035 lbs	<0.073 mg/L <0.00085 lbs	<0.073 mg/L <0.0035 lbs	1	
Nitrogen, Total Organic (as N)	0.445 mg/L 0.0052 lbs	0.645 mg/L 0.031 lbs	0.445 mg/L 0.0052 lbs	0.645 mg/L 0.031 lbs	1	
Selenium 7782-49-2	<0.0031 mg/L <0.000036 lbs	<0.0031 mg/L <0.000015 lbs	<0.0031 mg/L <0.000036 lbs	<0.0031 mg/L <0.000015 lbs	1	
Silver 7440-22-4	<0.00012 mg/L <0.0000014 lbs	<0.00012 mg/L <0.0000057 lbs	<0.00012 mg/L <0.0000014 lbs	<0.00012 mg/L <0.0000057 lbs	1	
Zinc 7440-66-6	0.11 mg/L 0.0013 lbs	0.1 mg/L 0.005 lbs	0.11 mg/L 0.0013 lbs	0.1 mg/L 0.005 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1,1,1-Trichloroethane 71-55-6	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,1,2,2-Tetrachloroethane 79-34-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,1,2-Trichloroethane 79-00-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,1-Dichloroethane 75-34-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,1-Dichloroethene 75-35-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2,4,5-Tetrachlorobenzene 95-94-3	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
1,2,4-Trichlorobenzene 120-82-1	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
1,2-Dibromoethane 106-93-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2-Dichlorobenzene 95-50-1	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2-Dichloroethane 107-06-2	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2-Dichloroethene 540-59-0	<2 ug/L <0.00002 lbs		<2 ug/L <0.00002 lbs		1	
1,2-Dichloropropane 78-87-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,2-Diphenylhydrazine 122-66-7	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
1,3-Dichlorobenzene 541-73-1	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
1,3-Dichloropropylene 542-75-6	<2 ug/L <0.00002 lbs		<2 ug/L <0.00002 lbs		1	
1,4-Dichlorobenzene 106-46-7	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
2,4,5-Trichlorophenol 95-95-4	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
2,4,6-Trichlorophenol 88-06-2	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
2,4-Dichlorophenol 120-83-2	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
2,4-Dimethylphenol 105-67-9	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
2,4-Dinitrophenol 51-28-5	<109 ug/L <0.0013 lbs	<21.8 ug/L <0.0010 lbs	<109 ug/L <0.0013 lbs	<21.8 ug/L <0.0010 lbs	1	
2,4-Dinitrotoluene 121-14-2	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
2,6-Dinitrotoluene 606-20-2	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
2-Butanone 78-93-3	<5 ug/L <0.00006 lbs		<5 ug/L <0.00006 lbs		1	
2-Chloroethylvinyl ether 110-75-8	<5 ug/L <0.00006 lbs		<5 ug/L <0.00006 lbs		1	
2-Chloronaphthalene 91-58-7	<5.45 ug/L <0.00064 lbs	<1.09 ug/L <0.00052 lbs	<5.45 ug/L <0.00064 lbs	<1.09 ug/L <0.00052 lbs	1	
2-Chlorophenol 95-57-8	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
2-Hexanone 591-78-6	<5 ug/L <0.00006 lbs		<5 ug/L <0.00006 lbs		1	
2-Methylphenol 95-48-7	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
2-Nitrophenol 88-75-5	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
3,3'-Dichlorobenzidine 91-94-1	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
4,6-Dinitro-O-Cresol 534-52-1	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory	Outfall Number 304
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Form Approved 03/05/19
OMB No. 2040-0004

TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
4-Bromophenylphenyl ether 101-55-3	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
4-Chlorophenylphenyl ether 7005-72-3	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
4-Methyl-2-pentanone 108-10-1	<5 ug/L <0.00006 lbs		<5 ug/L <0.00006 lbs		1	
4-Nitrophenol 100-02-7	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Acenaphthene 83-32-9	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Acenaphthylene 208-96-8	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Acetone 67-64-1	J4.92 ug/L J0.000057 lbs		J4.92 ug/L J0.000057 lbs		1	
Acrolein 107-02-8	<5 ug/L <0.00006 lbs		<5 ug/L <0.00006 lbs		1	
Acrylonitrile 107-13-1	<5 ug/L <0.00006 lbs		<5 ug/L <0.00006 lbs		1	
Allyl chloride 107-05-1	<5 ug/L <0.00006 lbs		<5 ug/L <0.00006 lbs		1	
Aluminum 7429-90-5	1.1 mg/L 0.013 lbs	0.781 mg/L 0.037 lbs	1.1 mg/L 0.013 lbs	0.781 mg/L 0.037 lbs	1	
Aniline 62-53-3	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Anthracene 120-12-7	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Barium 7440-39-3	0.0221 mg/L 0.00026 lbs	0.0202 mg/L 0.00096 lbs	0.0221 mg/L 0.00026 lbs	0.0202 mg/L 0.00096 lbs	1	
Benzene 71-43-2	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Benzidine 92-87-5	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	

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EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory	304	Outfall Number
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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

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Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Benzo(a)anthracene 56-55-3	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Benzo(a)pyrene 50-32-8	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Benzo(b)fluoranthene 205-99-2	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Benzo(ghi)perylene 191-24-2	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Benzo(k)fluoranthene 207-08-9	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Benzyl chloride 100-44-7	<5 ug/L <0.00006 lbs		<5 ug/L <0.00006 lbs		1	
Beryllium 7440-41-7	<0.00014 mg/L <0.0000016 lbs	<0.00014 mg/L <0.0000067 lbs	<0.00014 mg/L <0.0000016 lbs	<0.00014 mg/L <0.0000067 lbs	1	
Bis(2-chloroethoxy)methane 111-91-1	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Bis(2-chloroethyl) ether 111-44-4	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Bis(2-chloroisopropyl) ether 108-60-1	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Bis(2-ethylhexyl)phthalate 117-81-7	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Boron 7440-42-8	0.00744 mg/L 0.000087 lbs	0.0073 mg/L 0.00035 lbs	0.00744 mg/L 0.000087 lbs	0.0073 mg/L 0.00035 lbs	1	
Bromodichloromethane 75-27-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Bromoform 75-25-2	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Bromomethane 74-83-9	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Butylbenzylphthalate 85-68-7	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	

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EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory	Outfall Number 304
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Form Approved 03/05/19
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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

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Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Calcium 7440-70-2	11.1 mg/L 0.13 lbs	10.2 mg/L 0.49 lbs	11.1 mg/L 0.13 lbs	10.2 mg/L 0.49 lbs	1	
Carbon Disulfide 75-15-0	<5 ug/L <0.00006 lbs		<5 ug/L <0.00006 lbs		1	
Carbon tetrachloride 56-23-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Cesium 7440-46-2	0.0000982 mg/L 0.0000011 lbs	0.0000846 mg/L 0.0000040 lbs	0.0000982 mg/L 0.0000011 lbs	0.0000846 mg/L 0.0000040 lbs	1	
Chlorobenzene 108-90-7	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Chloroethane 75-00-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Chloroform 67-66-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Chloromethane 74-87-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Chrysene 218-01-9	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
cis-1,2-Dichloroethene 156-59-2	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
cis-1,3-Dichloropropene 10061-01-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Cobalt 7440-48-4	0.000539 mg/L 0.0000063 lbs	0.000478 mg/L 0.000023 lbs	0.000539 mg/L 0.0000063 lbs	0.000478 mg/L 0.000023 lbs	1	
Cyclohexane 110-82-7	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Dibenzo(a,h)anthracene 53-70-3	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Dibromochloromethane 124-48-1	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Diethylphthalate 84-66-2	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	

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Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Dimethylphthalate 131-11-3	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Di-n-butylphthalate 84-74-2	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Di-n-octylphthalate 117-84-0	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Diphenylamine 122-39-4	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Disulfoton 298-04-4	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Ethylbenzene 100-41-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Fluoranthene 206-44-0	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Fluorene 86-73-7	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Hexachlorobenzene 118-74-1	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Hexachlorobutadiene 87-68-3	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Hexachlorocyclopentadiene 77-47-4	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Hexachloroethane 67-72-1	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Indeno(1,2,3-cd)pyrene 193-39-5	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Isophorone 78-59-1	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Kepone 143-50-0	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
m+p Methylphenol 65794-96-9	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	

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Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Magnesium 7439-95-4	2.47 mg/L 0.029 lbs	2.14 mg/L 0.10 lbs	2.47 mg/L 0.029 lbs	2.14 mg/L 0.10 lbs	1	
Manganese 7439-96-5	0.0402 mg/L 0.00047 lbs	0.0337 mg/L 0.0016 lbs	0.0402 mg/L 0.00047 lbs	0.0337 mg/L 0.0016 lbs	1	
Methyl methacrylate 80-62-6	<5 ug/L <0.00006 lbs		<5 ug/L <0.00006 lbs		1	
Methyl parathion 298-00-0	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Methylene chloride 75-09-2	<2 ug/L <0.00002 lbs		<2 ug/L <0.00002 lbs		1	
Molybdenum 7439-98-7	<0.0032 mg/L <0.000037 lbs	<0.0032 mg/L <0.00015 lbs	<0.0032 mg/L <0.000037 lbs	<0.0032 mg/L <0.00015 lbs	1	
Naphthalene 91-20-3	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Nitrobenzene 98-95-3	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
N-Nitrosodiethylamine 55-18-5	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
N-Nitrosodimethylamine 62-75-9	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
N-Nitroso-di-n-propylamine 621-64-7	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
N-Nitrosopyrrolidine 930-55-2	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Parathion 56-38-2	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
PCB-1016 12674-11-2					0	See Chapter 7
PCB-1221 11104-28-2					0	See Chapter 7
PCB-1232 11141-16-5					0	See Chapter 7

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
PCB-1242 53469-21-9					0	See Chapter 7
PCB-1248 12672-29-6					0	See Chapter 7
PCB-1254 11097-69-1					0	See Chapter 7
PCB-1260 11096-82-5					0	See Chapter 7
P-Chloro-M-Cresol 59-50-7	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Pentachlorobenzene 608-93-5	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Pentachlorophenol 87-86-5	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Phenanthrene 85-01-8	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Phenol 108-95-2	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	<54.5 ug/L <0.00064 lbs	<10.9 ug/L <0.00052 lbs	1	
Potassium 7440-09-7	0.753 mg/L 0.0088 lbs	0.646 mg/L 0.031 lbs	0.753 mg/L 0.0088 lbs	0.646 mg/L 0.031 lbs	1	
Pyrene 129-00-0	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	<5.45 ug/L <0.000064 lbs	<1.09 ug/L <0.000052 lbs	1	
Sodium 7440-23-5	4.58 mg/L 0.054 lbs	4.55 mg/L 0.22 lbs	4.58 mg/L 0.054 lbs	4.55 mg/L 0.22 lbs	1	
Strontium 7440-24-6	0.0187 mg/L 0.00022 lbs	0.0179 mg/L 0.00085 lbs	0.0187 mg/L 0.00022 lbs	0.0179 mg/L 0.00085 lbs	1	
Styrene 100-42-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Tetrachloroethene 127-18-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Thallium 7440-28-0	<0.0000400 mg/L <4.70E-07 lbs	<0.0000400 mg/L <0.0000019 lbs	<0.0000400 mg/L <4.70E-07 lbs	<0.0000400 mg/L <0.0000019 lbs	1	

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Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Tin 7440-31-5	<0.002 mg/L <0.00002 lbs	<0.002 mg/L <0.0001 lbs	<0.002 mg/L <0.00002 lbs	<0.002 mg/L <0.0001 lbs	1	
Titanium 7440-32-6	0.0721 mg/L 0.00084 lbs	0.0582 mg/L 0.0028 lbs	0.0721 mg/L 0.00084 lbs	0.0582 mg/L 0.0028 lbs	1	
Toluene 108-88-3	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Total Cresols 1319-77-3	<109 ug/L <0.0013 lbs	<21.8 ug/L <0.0010 lbs	<109 ug/L <0.0013 lbs	<21.8 ug/L <0.0010 lbs	1	
trans-1,2-Dichloroethene 156-60-5	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
trans-1,3-Dichloropropene 10061-02-6	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Trichloroethene 79-01-6	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Trichlorofluoromethane 75-69-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Uranium 7440-61-1	<0.0012 mg/L <0.000014 lbs	<0.0012 mg/L <0.000057 lbs	<0.0012 mg/L <0.000014 lbs	<0.0012 mg/L <0.000057 lbs	1	
Vanadium 7440-62-2	0.00334 mg/L 0.000039 lbs	0.00329 mg/L 0.00016 lbs	0.00334 mg/L 0.000039 lbs	0.00329 mg/L 0.00016 lbs	1	
Vinyl acetate 108-05-4	<5 ug/L <0.00006 lbs		<5 ug/L <0.00006 lbs		1	
Vinyl chloride 75-01-4	<1 ug/L <0.00001 lbs		<1 ug/L <0.00001 lbs		1	
Xylene 1330-20-7	<3 ug/L <0.00004 lbs		<3 ug/L <0.00004 lbs		1	
Zirconium 7440-67-7	<0.0031 mg/L <0.000036 lbs	<0.0031 mg/L <0.00015 lbs	<0.0031 mg/L <0.000036 lbs	<0.0031 mg/L <0.00015 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE D. STORM EVENT INFORMATION (40 CFR 122.26(c)(1)(i)(E)(6))

Provide data for the storm event(s) that resulted in the maximum daily discharges for the flow-weighted composite sample.

Date of Storm Event	Duration of Storm Event (in hours)	Total Rainfall During Storm Event (in inches)	Number of Hours Between Beginning of Storm Measured and End of Previous Measurable Rain Event	Maximum Flow Rate During Rain Event (in gpm or specify units)	Total Flow from Rain Event (in gallons or specify units)
3/23/2022	11.8 hrs	.66 in	158.5 hrs	75 gpm	5700 gal

Provide a description of the method of flow measurement or estimate.

All flow rates were measured or estimated by measuring the time required for the stormwater discharge to fill a container of a known volume.

Stormwater Group B2


Low Imperviousness with Dry-Weather Discharge

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Form 2F NPDES  **U.S Environmental Protection Agency**
Application for NPDES Permit to Discharge Wastewater
STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		234	White Oak Creek	35 ° 56 ' 3.68 " N	84 ° 18 ' 5.31 " W
	<p><i>Storm Water:</i> Group B2 Low Imperviousness with Dry-Weather Discharge</p> <p><i>Other Outfalls Included:</i> 191; 223; 230; 235; 264; 267; 341; 365; 367; 436; 482; 583</p>				

SECTION 2. IMPROVEMENTS (40 CFR 122.21(g)(6))

Improvements	2.1	Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application?			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 3.			
	2.2	Briefly identify each applicable project in the table below.			
		Brief Identification and Description of Project	Affected Outfalls (list outfall numbers)	Source(s) of Discharge	Final Compliance Dates
					Required Projected
	See Appendix K - Improvements				
2.3	Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? (Optional Item)				
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

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SECTION 3. SITE DRAINAGE MAP (40 CFR 122.26(c)(1)(i)(A))

Site Drainage Map	3.1	Have you attached a site drainage map containing all required information to this application? (See instructions for specific guidance.)
	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

SECTION 4. POLLUTANT SOURCES (40 CFR 122.26(c)(1)(i)(B))

Pollutant Sources	4.1	Provide information on the facility's pollutant sources in the table below.																								
		<table border="1"> <thead> <tr> <th style="text-align: center;">Outfall Number</th> <th style="text-align: center;">Impervious Surface Area (within a mile radius of the facility)</th> <th style="text-align: center;">Total Surface Area Drained (within a mile radius of the facility)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">234</td> <td style="text-align: center;">14.654</td> <td style="text-align: center;">24.709</td> </tr> <tr> <td></td> <td style="text-align: center;"><i>specify units</i> acres</td> <td style="text-align: center;"><i>specify units</i> acres</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>specify units</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>specify units</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>specify units</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>specify units</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>specify units</i></td> </tr> </tbody> </table>	Outfall Number	Impervious Surface Area (within a mile radius of the facility)	Total Surface Area Drained (within a mile radius of the facility)	234	14.654	24.709		<i>specify units</i> acres	<i>specify units</i> acres			<i>specify units</i>			<i>specify units</i>			<i>specify units</i>			<i>specify units</i>			<i>specify units</i>
	Outfall Number	Impervious Surface Area (within a mile radius of the facility)	Total Surface Area Drained (within a mile radius of the facility)																							
	234	14.654	24.709																							
		<i>specify units</i> acres	<i>specify units</i> acres																							
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			<i>specify units</i>																							
			<i>specify units</i>																							
			<i>specify units</i>																							
4.2	<p>Provide a narrative description of the facility's significant material in the space below. (See instructions for content requirements.)</p> <p>Outfall 234 represents Stormwater Group B2 Outfalls on the ORNL campus that have less than 50% impervious surface within their drainage areas and include a dry-weather component (e.g. other non-process wastewaters) that may be present at the time of the stormwater sample collection. Legacy CERCLA contamination can exist in the drainage areas. Outfall 234 drainage area is typical of an industrial research park with impervious surfaces such as roads, sidewalks, and buildings, and grassed or graveled areas. There are loading docks on many of the buildings with some outdoor storage of metal pipes or containers, utilities such as transformers, generator equipment, cooling systems, and steam lines are located throughout campus, and some outdoor areas are used as material delivery drop points. The Outfall 234 drainage area includes an onsite fueling station with tanks that hold up to 8,500 gallons of ethanol, 15,000 gallons of gasoline, 6,000 gallons of diesel, and outdoor staging areas for various chemicals, petroleum products, equipment, or material awaiting disposition. During the growing season, herbicides are applied in turf and landscaped areas for weed control and to remove invasive plants. When needed, pesticides are used to control nuisance insects. Fertilizers are primarily applied to re-establish vegetation in areas where soil has been disturbed by construction excavation but are also occasionally utilized by landscape contractors in turf grass areas and along roadways. See Chapter 7- EPA Form 2F for more detail.</p>																									
4.3	<p>Provide the location and a description of existing structural and non-structural control measures to reduce pollutants in stormwater runoff. (See instructions for specific guidance.)</p> <table border="1"> <thead> <tr> <th colspan="3" style="text-align: center;">Stormwater Treatment</th> </tr> <tr> <th style="text-align: center;">Outfall Number</th> <th style="text-align: center;">Control Measures and Treatment</th> <th style="text-align: center;">Codes from Exhibit 2F-1 (list)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">234</td> <td>Outfall 234 drainage is moderated by a runoff diversion ditch located on the south side. Two SW quality devices are in place to separate particulates/floatables in runoff prior to discharge through the outfall pipe</td> <td style="text-align: center;">N/A</td> </tr> <tr> <td></td> <td>Outfall 230 includes pervious pavement in the Hillside Pkg lot draining to the SW detention basin</td> <td style="text-align: center;">N/A</td> </tr> <tr> <td></td> <td>Outfall 365 consists of several drop ponds to control runoff around the parking garage; a wetland was installed to preserve hydrology; an oil/water separator filters runoff from the parking garage</td> <td style="text-align: center;">N/A</td> </tr> <tr> <td></td> <td>Outfall 191 drainage from the western portion of this area is directed to a retention basin prior to discharge through the outfall pipe</td> <td style="text-align: center;">N/A</td> </tr> <tr> <td></td> <td>Outfall 436 has a stormwater detention pond from a soil stockpile area</td> <td style="text-align: center;">N/A</td> </tr> <tr> <td></td> <td>See Chapter 7 - EPA Form 2F for additional detail.</td> <td></td> </tr> </tbody> </table>	Stormwater Treatment			Outfall Number	Control Measures and Treatment	Codes from Exhibit 2F-1 (list)	234	Outfall 234 drainage is moderated by a runoff diversion ditch located on the south side. Two SW quality devices are in place to separate particulates/floatables in runoff prior to discharge through the outfall pipe	N/A		Outfall 230 includes pervious pavement in the Hillside Pkg lot draining to the SW detention basin	N/A		Outfall 365 consists of several drop ponds to control runoff around the parking garage; a wetland was installed to preserve hydrology; an oil/water separator filters runoff from the parking garage	N/A		Outfall 191 drainage from the western portion of this area is directed to a retention basin prior to discharge through the outfall pipe	N/A		Outfall 436 has a stormwater detention pond from a soil stockpile area	N/A		See Chapter 7 - EPA Form 2F for additional detail.		
Stormwater Treatment																										
Outfall Number	Control Measures and Treatment	Codes from Exhibit 2F-1 (list)																								
234	Outfall 234 drainage is moderated by a runoff diversion ditch located on the south side. Two SW quality devices are in place to separate particulates/floatables in runoff prior to discharge through the outfall pipe	N/A																								
	Outfall 230 includes pervious pavement in the Hillside Pkg lot draining to the SW detention basin	N/A																								
	Outfall 365 consists of several drop ponds to control runoff around the parking garage; a wetland was installed to preserve hydrology; an oil/water separator filters runoff from the parking garage	N/A																								
	Outfall 191 drainage from the western portion of this area is directed to a retention basin prior to discharge through the outfall pipe	N/A																								
	Outfall 436 has a stormwater detention pond from a soil stockpile area	N/A																								
	See Chapter 7 - EPA Form 2F for additional detail.																									

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SECTION 5. NON STORMWATER DISCHARGES (40 CFR 122.26(c)(1)(i)(C))

Non-Stormwater Discharges	5.1	<i>I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of non-stormwater discharges. Moreover, I certify that the outfalls identified as having non-stormwater discharges are described in either an accompanying NPDES Form 2C, 2D, or 2E application.</i>			
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office		
		Signature	Date signed		
	5.2	Provide the testing information requested in the table below.			
		Outfall Number	Description of Testing Method Used	Date(s) of Testing	Onsite Drainage Points Directly Observed During Test
		234	See Chapter 7 - EPA Form 2F for information.		

SECTION 6. SIGNIFICANT LEAKS OR SPILLS (40 CFR 122.26(c)(1)(i)(D))

Significant Leaks or Spills	6.1	Describe any significant leaks or spills of toxic or hazardous pollutants in the last three years. A water line break resulting in release of chlorinated water through Outfall 234 to White Oak Creek caused aquatic species mortality in Oct 2022. This incident was reported as required by the NPDES permit. ORNL maintains an aggressive spill prevention and control program through the ORNL SPCC Plan, which stresses awareness of spill prevention to both ORNL employees and subcontractor employees on site. As part of the Spill Contingency Plan, a subpart of the ORNL SPCC, ORNL has an experienced spill response team that is available around-the-clock for spill control and cleanup operations, and that maintains a database of spills and record of clean-up. In addition, spill materials; consisting of spreadable granular absorbents, absorbent booms, containment containers, containment curtain and oil skimmer; are available for use by the spill response team. Additionally, construction sites are required to maintain spill kits during the duration of the construction project. Over the past three years between (2019-2022), ORNL has experienced minor spills or leaks, most of which were heavy equipment- or vehicle-related, and generally involved several ounces to several gallons of ethylene glycol or petroleum-based fuels, lubricants, and/or hydraulic fluids. In every instance the spill response team enacted clean-up. None of these were reportable-quantity spills of oil or hazardous substances as defined within the ORNL NPDES Permit TN0002941, 40 CFR 117 or 40 CFR 403 .
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SECTION 7. DISCHARGE INFORMATION (40 CFR 122.26(c)(1)(i)(E))

Discharge Information	See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.	
	7.1	Is this a new source or new discharge? <input type="checkbox"/> Yes → See instructions regarding submission of <i>estimated</i> data. <input checked="" type="checkbox"/> No → See instructions regarding submission of <i>actual</i> data.
	Tables A, B, C, and D	
	7.2	Have you completed Table A for each outfall? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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Discharge Information Continued

7.3	Is the facility subject to an effluent limitation guideline (ELG) or effluent limitations in an NPDES permit for its process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.5.
7.4	Have you completed Table B by providing quantitative data for those pollutants that are (1) limited either directly or indirectly in an ELG and/or (2) subject to effluent limitations in an NPDES permit for the facility's process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7.5	Do you know or have reason to believe any pollutants in Exhibit 2F-2 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.7.
7.6	Have you listed all pollutants in Exhibit 2F-2 that you know or have reason to believe are present in the discharge and provided quantitative data or an explanation for those pollutants in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7.7	Do you qualify for a small business exemption under the criteria specified in the Instructions? <input type="checkbox"/> Yes → SKIP to Item 7.18. <input checked="" type="checkbox"/> No
7.8	Do you know or have reason to believe any pollutants in Exhibit 2F-3 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.10.
7.9	Have you listed all pollutants in Exhibit 2F-3 that you know or have reason to believe are present in the discharge in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7.10	Do you expect any of the pollutants in Exhibit 2F-3 to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.12.
7.11	Have you provided quantitative data in Table C for those pollutants in Exhibit 2F-3 that you expect to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
7.12	Do you expect acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6-dinitrophenol to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.14.
7.13	Have you provided quantitative data in Table C for the pollutants identified in Item 7.12 that you expect to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
7.14	Have you provided quantitative data or an explanation in Table C for pollutants you expect to be present in the discharge at concentrations less than 10 ppb (or less than 100 ppb for the pollutants identified in Item 7.12)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7.15	Do you know or have reason to believe any pollutants in Exhibit 2F-4 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.17.
7.16	Have you listed pollutants in Exhibit 2F-4 that you know or believe to be present in the discharge and provided an explanation in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7.17	Have you provided information for the storm event(s) sampled in Table D? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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Discharge Information Continued	Used or Manufactured Toxics		
	7.18	Is any pollutant listed on Exhibits 2F-2 through 2F-4 a substance or a component of a substance used or manufactured as an intermediate or final product or byproduct?	
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 8.
	7.19	List the pollutants below, including TCDD if applicable.	
	1.	4.	7.
	2.	5.	8.
	3.	6.	9.

SECTION 8. BIOLOGICAL TOXICITY TESTING DATA (40 CFR 122.21(g)(11))

Biological Toxicity Testing Data	8.1	Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last three years?		
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 9.	
	8.2	Identify the tests and their purposes below.		
		Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	

SECTION 9. CONTRACT ANALYSIS INFORMATION (40 CFR 122.21(g)(12))

Contract Analysis Information	9.1	Were any of the analyses reported in Section 7 (on Tables A through C) performed by a contract laboratory or consulting firm?			
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No → SKIP to Section 10.		
	9.2	Provide information for each contract laboratory or consulting firm below.			
			Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
		Name of laboratory/firm	GEL Laboratories, LLC		
		Laboratory address	2040 Savage Road Charleston, SC (USA) 29407		
	Phone number	(843) 556-8171			
	Pollutant(s) analyzed	Ammonia, BOD, COD, Nitrogen, Nitrate/nitrite, Oil & Grease, VOCs/SVOCs, Phosphorus, TSS			

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SECTION 10. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	10.1	In Column 1 below, mark the sections of Form 2F that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1	<input checked="" type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3	<input checked="" type="checkbox"/> w/ site drainage map
		<input checked="" type="checkbox"/> Section 4	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7	<input checked="" type="checkbox"/> Table A <input type="checkbox"/> w/ small business exemption request <input checked="" type="checkbox"/> Table B <input type="checkbox"/> w/ analytical results as an attachment <input checked="" type="checkbox"/> Table C <input checked="" type="checkbox"/> Table D
		<input checked="" type="checkbox"/> Section 8	<input type="checkbox"/> w/attachments
		<input checked="" type="checkbox"/> Section 9	<input type="checkbox"/> w/attachments (e.g., responses for additional contact laboratories or firms)
		<input checked="" type="checkbox"/> Section 10	
	10.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

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TABLE A. CONVENTIONAL AND NON CONVENTIONAL PARAMETERS (40 CFR 122.26(c)(1)(i)(E)(3))¹

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 and requirements.

Pollutant or Parameter	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1. Oil and grease	<1.54 mg/L <0.00030 lbs		<1.54 mg/L <0.00030 lbs		1	
2. Biochemical oxygen demand (BOD ₅)	<4 mg/L <0.0008 lbs	<4 mg/L <0.9 lbs	<4 mg/L <0.0008 lbs	<4 mg/L <0.9 lbs	1	
3. Chemical oxygen demand (COD)	48.8 mg/L 0.0094 lbs	35.5 mg/L 8.0 lbs	48.8 mg/L 0.0094 lbs	35.5 mg/L 8.0 lbs	1	
4. Total suspended solids (TSS)	3.7 mg/L 0.00071 lbs	278 mg/L 63 lbs	3.7 mg/L 0.00071 lbs	278 mg/L 63 lbs	1	
5. Total phosphorus	<0.02 mg/L <0.000004 lbs	0.0869 mg/L 0.020 lbs	<0.02 mg/L <0.000004 lbs	0.0869 mg/L 0.020 lbs	1	
6. Total Kjeldahl nitrogen (TKN)	<0.033 mg/L <0.0000063 lbs	0.661 mg/L 0.15 lbs	<0.033 mg/L <0.0000063 lbs	0.661 mg/L 0.15 lbs	1	
7. Total nitrogen (as N)	0.892 mg/L 0.00017 lbs	1.08 mg/L 0.24 lbs	0.892 mg/L 0.00017 lbs	1.08 mg/L 0.24 lbs	1	
8. pH (minimum)	7.5					
	pH (maximum)	7.5				

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(A))¹

List each pollutant that is limited in an effluent limitation guideline (ELG) that the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Ammonia (as N)	0.0589 mg/L 0.000011 lbs	0.241 mg/L 0.054 lbs	0.0589 mg/L 0.000011 lbs	0.241 mg/L 0.054 lbs	1	
Antimony 7440-36-0	0.00031 mg/L 6.00E-08 lbs	0.00072 mg/L 0.00016 lbs	0.00031 mg/L 6.00E-08 lbs	0.00072 mg/L 0.00016 lbs	1	
Arsenic 7440-38-2	<0.002 mg/L <4.00E-07 lbs	<0.004 mg/L <0.0009 lbs	<0.002 mg/L <4.00E-07 lbs	<0.004 mg/L <0.0009 lbs	1	
Cadmium 7440-43-9	<0.00033 mg/L <6.30E-08 lbs	<0.00066 mg/L <0.00015 lbs	<0.00033 mg/L <6.00E-08 lbs	<0.00066 mg/L <0.00015 lbs	1	
Chromium 7440-47-3	<0.01 mg/L <0.000002 lbs	<0.02 mg/L <0.005 lbs	<0.01 mg/L <0.000002 lbs	<0.02 mg/L <0.005 lbs	1	
Copper 7440-50-8	<0.011 mg/L <0.0000021 lbs	<0.022 mg/L <0.0050 lbs	<0.011 mg/L <0.0000021 lbs	<0.022 mg/L <0.0050 lbs	1	
Iron 7439-89-6	<0.22 mg/L <0.000042 lbs	5.61 mg/L 1.3 lbs	<0.22 mg/L <0.000042 lbs	5.61 mg/L 1.3 lbs	1	
Lead 7439-92-1	<0.0015 mg/L <2.90E-07 lbs	0.00971 mg/L 0.0022 lbs	<0.0015 mg/L <2.90E-07 lbs	0.00971 mg/L 0.0022 lbs	1	
Mercury 7439-97-6					0	See Chapter 7
Nickel 7440-02-0	<0.073 mg/L <0.000014 lbs	<0.146 mg/L <0.033 lbs	<0.073 mg/L <0.000014 lbs	<0.146 mg/L <0.033 lbs	1	
Nitrogen, Total Organic (as N)	<0.033 mg/L <0.0000063 lbs	0.42 mg/L 0.095 lbs	<0.033 mg/L <0.0000063 lbs	0.42 mg/L 0.095 lbs	1	
Selenium 7782-49-2	<0.0209 mg/L <0.0000040 lbs	<0.0418 mg/L <0.0094 lbs	<0.0209 mg/L <0.0000040 lbs	<0.0418 mg/L <0.0094 lbs	1	
Silver 7440-22-4	<0.00012 mg/L <2.30E-08 lbs	<0.00024 mg/L <0.000054 lbs	<0.00012 mg/L <2.00E-08 lbs	<0.00024 mg/L <0.000054 lbs	1	
Zinc 7440-66-6	<0.04 mg/L <0.000008 lbs	<0.08 mg/L <0.02 lbs	<0.04 mg/L <0.000008 lbs	<0.08 mg/L <0.02 lbs	1	

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1,1,1-Trichloroethane 71-55-6	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
1,1,2,2-Tetrachloroethane 79-34-5	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
1,1,2-Trichloroethane 79-00-5	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
1,1-Dichloroethane 75-34-3	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
1,1-Dichloroethene 75-35-4	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
1,2,4,5-Tetrachlorobenzene 95-94-3	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
1,2,4-Trichlorobenzene 120-82-1	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
1,2-Dibromoethane 106-93-4	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
1,2-Dichlorobenzene 95-50-1	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
1,2-Dichloroethane 107-06-2	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
1,2-Dichloroethene 540-59-0	2.01 ug/L 3.90E-07 lbs		2.01 ug/L 3.90E-07 lbs		1	
1,2-Dichloropropane 78-87-5	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
1,2-Diphenylhydrazine 122-66-7	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
1,3-Dichlorobenzene 541-73-1	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
1,3-Dichloropropylene 542-75-6	<2 ug/L <4.00E-07 lbs		<2 ug/L <4.00E-07 lbs		1	
1,4-Dichlorobenzene 106-46-7	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
2,4,5-Trichlorophenol 95-95-4	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
2,4,6-Trichlorophenol 88-06-2	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
2,4-Dichlorophenol 120-83-2	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
2,4-Dimethylphenol 105-67-9	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
2,4-Dinitrophenol 51-28-5	<20.3 ug/L <0.0000039 lbs	<20 ug/L <0.005 lbs	<20.3 ug/L <0.0000039 lbs	<20 ug/L <0.005 lbs	1	
2,4-Dinitrotoluene 121-14-2	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
2,6-Dinitrotoluene 606-20-2	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
2-Butanone 78-93-3	<5 ug/L <0.000001 lbs		<5 ug/L <0.000001 lbs		1	
2-Chloroethylvinyl ether 110-75-8	<5 ug/L <0.000001 lbs		<5 ug/L <0.000001 lbs		1	
2-Chloronaphthalene 91-58-7	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
2-Chlorophenol 95-57-8	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
2-Hexanone 591-78-6	<5 ug/L <0.000001 lbs		<5 ug/L <0.000001 lbs		1	
2-Methylphenol 95-48-7	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
2-Nitrophenol 88-75-5	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
3,3'-Dichlorobenzidine 91-94-1	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
4,6-Dinitro-O-Cresol 534-52-1	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
4-Bromophenylphenyl ether 101-55-3	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
4-Chlorophenylphenyl ether 7005-72-3	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
4-Methyl-2-pentanone 108-10-1	<5 ug/L <0.000001 lbs		<5 ug/L <0.000001 lbs		1	
4-Nitrophenol 100-02-7	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Acenaphthene 83-32-9	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Acenaphthylene 208-96-8	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Acetone 67-64-1	<5 ug/L <0.000001 lbs		<5 ug/L <0.000001 lbs		1	
Acrolein 107-02-8	<5 ug/L <0.000001 lbs		<5 ug/L <0.000001 lbs		1	
Acrylonitrile 107-13-1	<5 ug/L <0.000001 lbs		<5 ug/L <0.000001 lbs		1	
Allyl chloride 107-05-1	<5 ug/L <0.000001 lbs		<5 ug/L <0.000001 lbs		1	
Aluminum 7429-90-5	0.0766 mg/L 0.000015 lbs	8.49 mg/L 1.9 lbs	0.0766 mg/L 0.000015 lbs	8.49 mg/L 1.9 lbs	1	
Aniline 62-53-3	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Anthracene 120-12-7	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Barium 7440-39-3	0.159 mg/L 0.000031 lbs	0.101 mg/L 0.023 lbs	0.159 mg/L 0.000031 lbs	0.101 mg/L 0.023 lbs	1	
Benzene 71-43-2	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Benzidine 92-87-5	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Benzo(a)anthracene 56-55-3	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Benzo(a)pyrene 50-32-8	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Benzo(b)fluoranthene 205-99-2	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Benzo(ghi)perylene 191-24-2	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Benzo(k)fluoranthene 207-08-9	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Benzyl chloride 100-44-7	<5 ug/L <0.000001 lbs		<5 ug/L <0.000001 lbs		1	
Beryllium 7440-41-7	<0.00014 mg/L <2.70E-08 lbs	<0.00028 mg/L <0.000063 lbs	<0.00014 mg/L <3.00E-08 lbs	<0.00028 mg/L <0.000063 lbs	1	
Bis(2-chloroethoxy)methane 111-91-1	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Bis(2-chloroethyl) ether 111-44-4	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Bis(2-chloroisopropyl) ether 108-60-1	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Bis(2-ethylhexyl)phthalate 117-81-7	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Boron 7440-42-8	0.021 mg/L 0.0000040 lbs	0.012 mg/L 0.0027 lbs	0.021 mg/L 0.0000040 lbs	0.012 mg/L 0.0027 lbs	1	
Bromodichloromethane 75-27-4	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Bromoform 75-25-2	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Bromomethane 74-83-9	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Butylbenzylphthalate 85-68-7	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	

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Calcium 7440-70-2	106 mg/L 0.020 lbs	46.6 mg/L 11 lbs	106 mg/L 0.020 lbs	46.6 mg/L 11 lbs	1	
Carbon Disulfide 75-15-0	<5 ug/L <0.000001 lbs		<5 ug/L <0.000001 lbs		1	
Carbon tetrachloride 56-23-5	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Cesium 7440-46-2	<0.0000400 mg/L <8.00E-09 lbs	0.000735 mg/L 0.00017 lbs	<0.0000400 mg/L <1.00E-08 lbs	0.000735 mg/L 0.00017 lbs	1	
Chlorobenzene 108-90-7	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Chloroethane 75-00-3	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Chloroform 67-66-3	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Chloromethane 74-87-3	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Chrysene 218-01-9	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
cis-1,2-Dichloroethene 156-59-2	2.01 ug/L 3.90E-07 lbs		2.01 ug/L 3.90E-07 lbs		1	
cis-1,3-Dichloropropene 10061-01-5	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Cobalt 7440-48-4	0.000348 mg/L 6.70E-08 lbs	0.00362 mg/L 0.00082 lbs	0.000348 mg/L 7.00E-08 lbs	0.00362 mg/L 0.00082 lbs	1	
Cyclohexane 110-82-7	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Dibenzo(a,h)anthracene 53-70-3	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Dibromochloromethane 124-48-1	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Dichlorodifluoromethane 75-71-8	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Diethylphthalate 84-66-2	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Dimethylphthalate 131-11-3	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Di-n-butylphthalate 84-74-2	J5.11 ug/L J9.80E-07 lbs	J3.68 ug/L J0.00083 lbs	J5.11 ug/L J9.80E-07 lbs	J3.68 ug/L J0.00083 lbs	1	
Di-n-octylphthalate 117-84-0	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Disulfoton 298-04-4	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Ethylbenzene 100-41-4	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Fluoranthene 206-44-0	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Fluorene 86-73-7	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Hexachlorobenzene 118-74-1	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Hexachlorobutadiene 87-68-3	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Hexachlorocyclopentadiene 77-47-4	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Hexachloroethane 67-72-1	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Indeno(1,2,3-cd)pyrene 193-39-5	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Isophorone 78-59-1	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Kepone 143-50-0	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
m+p Methylphenol 65794-96-9	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Magnesium 7439-95-4	16.3 mg/L 0.0031 lbs	11.2 mg/L 2.5 lbs	16.3 mg/L 0.0031 lbs	11.2 mg/L 2.5 lbs	1	
Manganese 7439-96-5	0.0105 mg/L 0.0000020 lbs	0.151 mg/L 0.034 lbs	0.0105 mg/L 0.0000020 lbs	0.151 mg/L 0.034 lbs	1	
Methyl methacrylate 80-62-6	<5 ug/L <0.000001 lbs		<5 ug/L <0.000001 lbs		1	
Methyl parathion 298-00-0	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Methylene chloride 75-09-2	<2 ug/L <4.00E-07 lbs		<2 ug/L <4.00E-07 lbs		1	
Molybdenum 7439-98-7	0.0034 mg/L 6.50E-07 lbs	<0.0064 mg/L <0.0014 lbs	0.0034 mg/L 6.50E-07 lbs	<0.0064 mg/L <0.0014 lbs	1	
Naphthalene 91-20-3	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Nitrobenzene 98-95-3	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
N-Nitrosodiethylamine 55-18-5	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
N-Nitrosodimethylamine 62-75-9	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
N-Nitroso-di-n-propylamine 621-64-7	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
N-Nitrosodiphenylamine 86-30-6	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
N-Nitrosopyrrolidine 930-55-2	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Parathion 56-38-2	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
PCB-1016 12674-11-2					0	See Chapter 7
PCB-1221 11104-28-2					0	See Chapter 7

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
PCB-1232 11141-16-5					0	See Chapter 7
PCB-1242 53469-21-9					0	See Chapter 7
PCB-1248 12672-29-6					0	See Chapter 7
PCB-1254 11097-69-1					0	See Chapter 7
PCB-1260 11096-82-5					0	See Chapter 7
P-Chloro-M-Cresol 59-50-7	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Pentachlorobenzene 608-93-5	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Pentachlorophenol 87-86-5	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Phenanthrene 85-01-8	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Phenol 108-95-2	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	<10.1 ug/L <0.0000019 lbs	<10 ug/L <0.002 lbs	1	
Potassium 7440-09-7	3.35 mg/L 0.00064 lbs	3.59 mg/L 0.81 lbs	3.35 mg/L 0.00064 lbs	3.59 mg/L 0.81 lbs	1	
Pyrene 129-00-0	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	<1.01 ug/L <1.90E-07 lbs	<1 ug/L <0.0002 lbs	1	
Sodium 7440-23-5	208 mg/L 0.040 lbs	31 mg/L 7.0 lbs	208 mg/L 0.040 lbs	31 mg/L 7.0 lbs	1	
Strontium 7440-24-6	0.28 mg/L 0.000054 lbs	0.0619 mg/L 0.014 lbs	0.28 mg/L 0.000054 lbs	0.0619 mg/L 0.014 lbs	1	
Styrene 100-42-5	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Tetrachloroethene 127-18-4	J0.44 ug/L J8.40E-08 lbs		J0.44 ug/L J8.00E-08 lbs		1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Thallium 7440-28-0	<0.0000400 mg/L <8.00E-09 lbs	0.0000984 mg/L 0.000022 lbs	<0.0000400 mg/L <1.00E-08 lbs	0.0000984 mg/L 0.000022 lbs	1	
Tin 7440-31-5	<0.002 mg/L <4.00E-07 lbs	<0.004 mg/L <0.0009 lbs	<0.002 mg/L <4.00E-07 lbs	<0.004 mg/L <0.0009 lbs	1	
Titanium 7440-32-6	0.0694 mg/L 0.000013 lbs	0.203 mg/L 0.046 lbs	0.0694 mg/L 0.000013 lbs	0.203 mg/L 0.046 lbs	1	
Toluene 108-88-3	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Total Cresols 1319-77-3	<20.3 ug/L <0.0000039 lbs	<20 ug/L <0.005 lbs	<20.3 ug/L <0.0000039 lbs	<20 ug/L <0.005 lbs	1	
trans-1,2-Dichloroethene 156-60-5	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
trans-1,3-Dichloropropene 10061-02-6	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Trichloroethene 79-01-6	J1.22 ug/L J2.30E-07 lbs		J1.22 ug/L J2.30E-07 lbs		1	
Trichlorofluoromethane 75-69-4	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Uranium 7440-61-1	0.00232 mg/L 4.50E-07 lbs	<0.0024 mg/L <0.00054 lbs	0.00232 mg/L 4.50E-07 lbs	<0.0024 mg/L <0.00054 lbs	1	
Vanadium 7440-62-2	<0.00245 mg/L <4.70E-07 lbs	0.0133 mg/L 0.0030 lbs	<0.00245 mg/L <4.70E-07 lbs	0.0133 mg/L 0.0030 lbs	1	
Vinyl acetate 108-05-4	<5 ug/L <0.000001 lbs		<5 ug/L <0.000001 lbs		1	
Vinyl chloride 75-01-4	<1 ug/L <2.00E-07 lbs		<1 ug/L <2.00E-07 lbs		1	
Xylene 1330-20-7	<3 ug/L <6.00E-07 lbs		<3 ug/L <6.00E-07 lbs		1	
Zirconium 7440-67-7	<0.0031 mg/L <6.00E-07 lbs	<0.0062 mg/L <0.0014 lbs	<0.0031 mg/L <6.00E-07 lbs	<0.0062 mg/L <0.0014 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE D. STORM EVENT INFORMATION (40 CFR 122.26(c)(1)(i)(E)(6))

Provide data for the storm event(s) that resulted in the maximum daily discharges for the flow-weighted composite sample.

Date of Storm Event	Duration of Storm Event (in hours)	Total Rainfall During Storm Event (in inches)	Number of Hours Between Beginning of Storm Measured and End of Previous Measurable Rain Event	Maximum Flow Rate During Rain Event (in gpm or specify units)	Total Flow from Rain Event (in gallons or specify units)
1/12/2023	9.8 hrs	.99 in	92.5 hrs	450 gpm	27000 gal

Provide a description of the method of flow measurement or estimate.

All flow rates were measured or estimated by measuring the time required for the stormwater discharge to fill a container of a known volume.

Outfall: 234

Group B2 Low impervious w/dry-weather discharge

EPA ID Number

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Outfall Number	Latitude			Longitude			ReceivingWater
	Deg	Min	Sec	Deg	Min	Sec	
191	35	56	07	84	16	36	Tributary to Clinch River
223	35	55	42	84	18	36	White Oak Creek
230	35	55	44	84	18	35	White Oak Creek
234	35	56	04	84	18	05	White Oak Creek
235	35	55	24	84	19	03	White Oak Creek
264	35	55	40	84	18	53	Fifth Creek
267	35	55	47	84	18	59	Fifth Creek
341	35	55	27	84	19	14	First Creek
365	35	55	41	84	18	54	Fifth Creek
367	35	55	42	84	18	55	Fifth Creek
436	35	57	11	84	17	42	White Oak Creek
482	35	55	08	84	18	12	Tributary to Melton Branch
583	35	54	34	84	18	57	White Oak Creek

Outfall: 234

Group B2 Low impervious w/dry-weather discharge

EPA ID Number

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Outfall Number	Area of Impervious Surface (acres)	Total Area Drained (acres)
191	2.89	6.43
223	0.461	1.335
230	2.374	36.839
234	14.654	24.709
235	3.824	7.54
264	0.051	0.099
267	4.624	10.759
341	1.904	3.209
365	5.452	13.574
367	0.552	0.714
436	11.018	37.175
482	0.257	4.452
583	0.604	29.176

Stormwater Group C1


High Imperviousness - Stormwater Only

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Form 2F NPDES  **U.S Environmental Protection Agency**
Application for NPDES Permit to Discharge Wastewater
STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		403	White Oak Creek	35 ° 55 ' 27.2 " N	84 ° 18 ' 56.77 " W
	<p><i>Storm Water:</i> Group C1 High Imperviousness - Stormwater Only</p> <p><i>Other Outfalls Included:</i> 006; 016; 043; 064; 065; 070; 081; 113; 141; 142; 161; 162; 164; 165; 166; 209; 221; 226; 232; 241; 243; 262; 266; 269; 301; 342; 343; 361; 362; 364; 460; 461; 462; 463; 466; 467; 469; 470; 472; 485; 486; 487; 490; 581; 582; 590; 591; 592; 674; 701; 791; 792</p>				

SECTION 2. IMPROVEMENTS (40 CFR 122.21(g)(6))

Improvements	2.1	Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application?			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 3.			
	2.2	Briefly identify each applicable project in the table below.			
		Brief Identification and Description of Project	Affected Outfalls (list outfall numbers)	Source(s) of Discharge	Final Compliance Dates
					Required Projected
	See Appendix K - Improvements				
2.3	Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? (Optional Item)				
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

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SECTION 3. SITE DRAINAGE MAP (40 CFR 122.26(c)(1)(i)(A))

Site Drainage Map	3.1	Have you attached a site drainage map containing all required information to this application? (See instructions for specific guidance.)
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

SECTION 4. POLLUTANT SOURCES (40 CFR 122.26(c)(1)(i)(B))

Pollutant Sources	4.1	Provide information on the facility's pollutant sources in the table below.			
		Outfall Number	Impervious Surface Area (within a mile radius of the facility)		Total Surface Area Drained (within a mile radius of the facility)
			<i>specify units</i>		<i>specify units</i>
		403	0.525	acres	0.935 acres
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
	4.2	Provide a narrative description of the facility's significant material in the space below. (See instructions for content requirements.) Outfall 403 was selected to represent Stormwater Group C1 outfalls that have greater than 50% impervious surface in their drainage areas and are stormwater-only outfalls. Legacy CERCLA contamination can exist in the drainage areas - especially those in the central part of the ORNL campus. Outfall 403 drains stormwater from paved parking lots around the Process Waste Treatment Complex Bldg 3608. The drainage areas included in this group are typical of an industrial research park with impervious surfaces and grassed or graveled areas. Loading docks exist on several buildings and utilities such as transformers, generator equipment, cooling systems, and steam lines are located throughout the ORNL campus. Storm drainage from the Tru Waste Processing Center (TWPC) is included in this Outfall 403 drainage which is a waste treatment facility located in Melton Valley that receives, treats, packages, and stores low-level and TRU waste for eventual off-site disposal at various DOE sites and commercial facilities around the country. The TWPC is considered a Non-Reactor, Hazard Category 2 Nuclear Facility. Across ORNL, herbicides are applied in turf and landscaped areas for weed control and to remove invasive plants. When needed, pesticides are used to control nuisance insects. Fertilizers are primarily applied to re-establish vegetation in areas where soil has been disturbed by construction excavation but are also occasionally applied by landscape contractors in turf grass areas and along roadways. Refer to Chapter 7 - EPA Form 2F for more detail.			
	4.3	Provide the location and a description of existing structural and non-structural control measures to reduce pollutants in stormwater runoff. (See instructions for specific guidance.)			
		Stormwater Treatment			
		Outfall Number	Control Measures and Treatment		Codes from Exhibit 2F-1 (list)
		403	A hazardous waste storage area is located SE of the ORNL campus. SW runoff is routed through Outfalls 590, 591, and 592. This area has RCRA-permitted hazardous chemical and hazardous waste buildings.		N/A
			See Chapter 7 - EPA Form 2F for additional detail.		

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SECTION 5. NON STORMWATER DISCHARGES (40 CFR 122.26(c)(1)(i)(C))

Non-Stormwater Discharges	5.1	<i>I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of non-stormwater discharges. Moreover, I certify that the outfalls identified as having non-stormwater discharges are described in either an accompanying NPDES Form 2C, 2D, or 2E application.</i>			
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office		
		Signature	Date signed		
	5.2	Provide the testing information requested in the table below.			
		Outfall Number	Description of Testing Method Used	Date(s) of Testing	Onsite Drainage Points Directly Observed During Test
		403	See Chapter 7 - EPA Form 2F for information.		

SECTION 6. SIGNIFICANT LEAKS OR SPILLS (40 CFR 122.26(c)(1)(i)(D))

Significant Leaks or Spills	6.1	Describe any significant leaks or spills of toxic or hazardous pollutants in the last three years. None. ORNL maintains an aggressive spill prevention and control program through the ORNL SPCC Plan, which stresses awareness of spill prevention to both ORNL employees and subcontractor employees on site. As part of the Spill Contingency Plan, a subpart of the ORNL SPCC, ORNL has an experienced spill response team that is available around-the-clock for spill control and cleanup operations, and that maintains a database of spills and record of clean-up. In addition, spill materials; consisting of spreadable granular absorbents, absorbent booms, containment containers, containment curtain and oil skimmer; are available for use by the spill response team. Additionally, construction sites are required to maintain spill kits during the duration of the construction project. Over the past three years between (2019-2022), ORNL has experienced minor spills or leaks, most of which were heavy equipment- or vehicle-related, and generally involved several ounces to several gallons of ethylene glycol or petroleum-based fuels, lubricants, and/or hydraulic fluids. In every instance the spill response team enacted clean-up. None of these were reportable-quantity spills of oil or hazardous substances as defined within the ORNL NPDES Permit TN0002941, 40 CFR 117 or 40 CFR 403 .
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SECTION 7. DISCHARGE INFORMATION (40 CFR 122.26(c)(1)(i)(E))

Discharge Information	See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.	
	7.1	Is this a new source or new discharge? <input type="checkbox"/> Yes → See instructions regarding submission of <i>estimated</i> data. <input checked="" type="checkbox"/> No → See instructions regarding submission of <i>actual</i> data.
	Tables A, B, C, and D	
7.2	Have you completed Table A for each outfall? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Discharge Information - Continued	7.3	Is the facility subject to an effluent limitation guideline (ELG) or effluent limitations in an NPDES permit for its process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.5.
	7.4	Have you completed Table B by providing quantitative data for those pollutants that are (1) limited either directly or indirectly in an ELG and/or (2) subject to effluent limitations in an NPDES permit for the facility's process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.5	Do you know or have reason to believe any pollutants in Exhibit 2F-2 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.7.
	7.6	Have you listed all pollutants in Exhibit 2F-2 that you know or have reason to believe are present in the discharge and provided quantitative data or an explanation for those pollutants in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.7	Do you qualify for a small business exemption under the criteria specified in the Instructions? <input type="checkbox"/> Yes → SKIP to Item 7.18. <input checked="" type="checkbox"/> No
	7.8	Do you know or have reason to believe any pollutants in Exhibit 2F-3 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.10.
	7.9	Have you listed all pollutants in Exhibit 2F-3 that you know or have reason to believe are present in the discharge in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.10	Do you expect any of the pollutants in Exhibit 2F-3 to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.12.
	7.11	Have you provided quantitative data in Table C for those pollutants in Exhibit 2F-3 that you expect to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
	7.12	Do you expect acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6-dinitrophenol to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.14.
	7.13	Have you provided quantitative data in Table C for the pollutants identified in Item 7.12 that you expect to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
	7.14	Have you provided quantitative data or an explanation in Table C for pollutants you expect to be present in the discharge at concentrations less than 10 ppb (or less than 100 ppb for the pollutants identified in Item 7.12)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	7.15	Do you know or have reason to believe any pollutants in Exhibit 2F-4 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.17.
	7.16	Have you listed pollutants in Exhibit 2F-4 that you know or believe to be present in the discharge and provided an explanation in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7.17	Have you provided information for the storm event(s) sampled in Table D? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Discharge Information Continued	Used or Manufactured Toxics		
	7.18	Is any pollutant listed on Exhibits 2F-2 through 2F-4 a substance or a component of a substance used or manufactured as an intermediate or final product or byproduct?	
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 8.
	7.19	List the pollutants below, including TCDD if applicable.	
	1.	4.	7.
	2.	5.	8.
	3.	6.	9.

SECTION 8. BIOLOGICAL TOXICITY TESTING DATA (40 CFR 122.21(g)(11))

Biological Toxicity Testing Data	8.1	Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last three years?		
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 9.	
	8.2	Identify the tests and their purposes below.		
		Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	

SECTION 9. CONTRACT ANALYSIS INFORMATION (40 CFR 122.21(g)(12))

Contract Analysis Information	9.1	Were any of the analyses reported in Section 7 (on Tables A through C) performed by a contract laboratory or consulting firm?			
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No → SKIP to Section 10.		
	9.2	Provide information for each contract laboratory or consulting firm below.			
			Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
		Name of laboratory/firm	GEL Laboratories, LLC		
		Laboratory address	2040 Savage Road Charleston, SC (USA) 29407		
	Phone number	(843) 556-8171			
	Pollutant(s) analyzed	Ammonia, BOD, COD, Nitrogen, Nitrate/nitrite, Oil & Grease, VOCs/SVOCs, Phosphorus, TSS			

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SECTION 10. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	10.1	In Column 1 below, mark the sections of Form 2F that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1	<input checked="" type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3	<input checked="" type="checkbox"/> w/ site drainage map
		<input checked="" type="checkbox"/> Section 4	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7	<input checked="" type="checkbox"/> Table A <input type="checkbox"/> w/ small business exemption request <input checked="" type="checkbox"/> Table B <input type="checkbox"/> w/ analytical results as an attachment <input checked="" type="checkbox"/> Table C <input checked="" type="checkbox"/> Table D
		<input checked="" type="checkbox"/> Section 8	<input type="checkbox"/> w/attachments
		<input checked="" type="checkbox"/> Section 9	<input type="checkbox"/> w/attachments (e.g., responses for additional contact laboratories or firms)
		<input checked="" type="checkbox"/> Section 10	
	10.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

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TABLE A. CONVENTIONAL AND NON CONVENTIONAL PARAMETERS (40 CFR 122.26(c)(1)(i)(E)(3))¹

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 and requirements.

Pollutant or Parameter	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <i>(new source/new dischargers only; use codes in instructions)</i>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1. Oil and grease	<1.56 mg/L <0.00004 lbs		<1.56 mg/L <0.00004 lbs		1	
2. Biochemical oxygen demand (BOD ₅)					0	Pollutant not expected to be present
3. Chemical oxygen demand (COD)					0	Pollutant not expected to be present
4. Total suspended solids (TSS)	10.3 mg/L 0.0003 lbs	52.1 mg/L 1.3 lbs	10.3 mg/L 0.0003 lbs	52.1 mg/L 1.3 lbs	1	
5. Total phosphorus	0.129 mg/L 0.000003 lbs	0.0462 mg/L 0.0011 lbs	0.129 mg/L 0.000003 lbs	0.0462 mg/L 0.0011 lbs	1	
6. Total Kjeldahl nitrogen (TKN)	<0.033 mg/L <8.00E-07 lbs	0.309 mg/L 0.0075 lbs	<0.033 mg/L <8.00E-07 lbs	0.309 mg/L 0.0075 lbs	1	
7. Total nitrogen (as N)	1.68 mg/L 0.00004 lbs	0.665 mg/L 0.016 lbs	1.68 mg/L 0.00004 lbs	0.665 mg/L 0.016 lbs	1	
8.	pH (minimum)	7.2				
	pH (maximum)	7.2				

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(A))¹

List each pollutant that is limited in an effluent limitation guideline (ELG) that the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Ammonia (as N)	0.0588 mg/L 0.000001 lbs	0.241 mg/L 0.0058 lbs	0.0588 mg/L 0.000001 lbs	0.241 mg/L 0.0058 lbs	1	
Antimony 7440-36-0	<0.00026 mg/L <7.00E-09 lbs	0.000302 mg/L 0.0000073 lbs	<0.00026 mg/L <1.00E-08 lbs	0.000302 mg/L 0.0000073 lbs	1	
Arsenic 7440-38-2	<0.002 mg/L <5.00E-08 lbs	<0.002 mg/L <0.00005 lbs	<0.002 mg/L <5.00E-08 lbs	<0.002 mg/L <0.00005 lbs	1	
Cadmium 7440-43-9	<0.00033 mg/L <8.00E-09 lbs	<0.00033 mg/L <0.0000080 lbs	<0.00033 mg/L <1.00E-08 lbs	<0.00033 mg/L <0.0000080 lbs	1	
Chromium 7440-47-3	<0.01 mg/L <3.00E-07 lbs	<0.01 mg/L <0.0002 lbs	<0.01 mg/L <3.00E-07 lbs	<0.01 mg/L <0.0002 lbs	1	
Copper 7440-50-8	<0.011 mg/L <3.00E-07 lbs	<0.011 mg/L <0.00027 lbs	<0.011 mg/L <3.00E-07 lbs	<0.011 mg/L <0.00027 lbs	1	
Iron 7439-89-6	<0.22 mg/L <0.000006 lbs	0.904 mg/L 0.022 lbs	<0.22 mg/L <0.000006 lbs	0.904 mg/L 0.022 lbs	1	
Lead 7439-92-1	<0.0015 mg/L <4.00E-08 lbs	0.00396 mg/L 0.000096 lbs	<0.0015 mg/L <4.00E-08 lbs	0.00396 mg/L 0.000096 lbs	1	
Mercury 7439-97-6					0	See Chapter 7
Nickel 7440-02-0	<0.073 mg/L <0.000002 lbs	<0.073 mg/L <0.0018 lbs	<0.073 mg/L <0.000002 lbs	<0.073 mg/L <0.0018 lbs	1	
Nitrogen, Total Organic (as N)	<0.033 mg/L <8.00E-07 lbs	0.068 mg/L 0.0016 lbs	<0.033 mg/L <8.00E-07 lbs	0.068 mg/L 0.0016 lbs	1	
Selenium 7782-49-2	<0.0209 mg/L <5.00E-07 lbs	<0.0209 mg/L <0.00051 lbs	<0.0209 mg/L <5.00E-07 lbs	<0.0209 mg/L <0.00051 lbs	1	
Silver 7440-22-4	<0.00012 mg/L <3.00E-09 lbs	<0.00012 mg/L <0.0000029 lbs	<0.00012 mg/L <0.00E+00 lbs	<0.00012 mg/L <0.0000029 lbs	1	
Zinc 7440-66-6	0.0848 mg/L 0.000002 lbs	0.237 mg/L 0.0057 lbs	0.0848 mg/L 0.000002 lbs	0.237 mg/L 0.0057 lbs	1	

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1,1,1-Trichloroethane 71-55-6	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
1,1,2,2-Tetrachloroethane 79-34-5	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
1,1,2-Trichloroethane 79-00-5	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
1,1-Dichloroethane 75-34-3	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
1,1-Dichloroethene 75-35-4	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
1,2,4,5-Tetrachlorobenzene 95-94-3	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
1,2,4-Trichlorobenzene 120-82-1	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
1,2-Dibromoethane 106-93-4	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
1,2-Dichlorobenzene 95-50-1	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
1,2-Dichloroethane 107-06-2	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
1,2-Dichloroethene 540-59-0	<2 ug/L <5.00E-08 lbs		<2 ug/L <5.00E-08 lbs		1	
1,2-Dichloropropane 78-87-5	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
1,2-Diphenylhydrazine 122-66-7	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
1,3-Dichlorobenzene 541-73-1	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
1,3-Dichloropropylene 542-75-6	<2 ug/L <5.00E-08 lbs		<2 ug/L <5.00E-08 lbs		1	
1,4-Dichlorobenzene 106-46-7	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
2,4,5-Trichlorophenol 95-95-4	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
2,4,6-Trichlorophenol 88-06-2	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
2,4-Dichlorophenol 120-83-2	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
2,4-Dimethylphenol 105-67-9	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
2,4-Dinitrophenol 51-28-5	<20.4 ug/L <5.00E-07 lbs	<110 ug/L <0.0027 lbs	<20.4 ug/L <5.00E-07 lbs	<110 ug/L <0.0027 lbs	1	
2,4-Dinitrotoluene 121-14-2	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
2,6-Dinitrotoluene 606-20-2	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
2-Butanone 78-93-3	<5 ug/L <1.00E-07 lbs		<5 ug/L <1.00E-07 lbs		1	
2-Chloroethylvinyl ether 110-75-8	<5 ug/L <1.00E-07 lbs		<5 ug/L <1.00E-07 lbs		1	
2-Chloronaphthalene 91-58-7	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
2-Chlorophenol 95-57-8	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
2-Hexanone 591-78-6	<5 ug/L <1.00E-07 lbs		<5 ug/L <1.00E-07 lbs		1	
2-Methylphenol 95-48-7	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
2-Nitrophenol 88-75-5	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
3,3'-Dichlorobenzidine 91-94-1	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
4,6-Dinitro-O-Cresol 534-52-1	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <small>(new source/new dischargers only; use codes in instructions)</small>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
4-Bromophenylphenyl ether 101-55-3	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
4-Chlorophenylphenyl ether 7005-72-3	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
4-Methyl-2-pentanone 108-10-1	<5 ug/L <1.00E-07 lbs		<5 ug/L <1.00E-07 lbs		1	
4-Nitrophenol 100-02-7	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Acenaphthene 83-32-9	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Acenaphthylene 208-96-8	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Acetone 67-64-1	<5 ug/L <1.00E-07 lbs		<5 ug/L <1.00E-07 lbs		1	
Acrolein 107-02-8	<5 ug/L <1.00E-07 lbs		<5 ug/L <1.00E-07 lbs		1	
Acrylonitrile 107-13-1	<5 ug/L <1.00E-07 lbs		<5 ug/L <1.00E-07 lbs		1	
Allyl chloride 107-05-1	<5 ug/L <1.00E-07 lbs		<5 ug/L <1.00E-07 lbs		1	
Aluminum 7429-90-5	<0.075 mg/L <0.000002 lbs	0.788 mg/L 0.019 lbs	<0.075 mg/L <0.000002 lbs	0.788 mg/L 0.019 lbs	1	
Aniline 62-53-3	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Anthracene 120-12-7	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Barium 7440-39-3	0.0499 mg/L 0.000001 lbs	0.0257 mg/L 0.00062 lbs	0.0499 mg/L 0.000001 lbs	0.0257 mg/L 0.00062 lbs	1	
Benzene 71-43-2	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Benzidine 92-87-5	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Benzo(a)anthracene 56-55-3	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Benzo(a)pyrene 50-32-8	J0.602 ug/L J2.00E-08 lbs	<5.52 ug/L <0.00013 lbs	J0.602 ug/L J2.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Benzo(b)fluoranthene 205-99-2	J0.541 ug/L J1.00E-08 lbs	<5.52 ug/L <0.00013 lbs	J0.541 ug/L J1.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Benzo(ghi)perylene 191-24-2	J1.04 ug/L J3.00E-08 lbs	J3.36 ug/L J0.000081 lbs	J1.04 ug/L J3.00E-08 lbs	J3.36 ug/L J0.000081 lbs	1	
Benzo(k)fluoranthene 207-08-9	J0.439 ug/L J1.00E-08 lbs	<5.52 ug/L <0.00013 lbs	J0.439 ug/L J1.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Benzyl chloride 100-44-7	<5 ug/L <1.00E-07 lbs		<5 ug/L <1.00E-07 lbs		1	
Beryllium 7440-41-7	<0.00014 mg/L <4.00E-09 lbs	<0.00014 mg/L <0.0000034 lbs	<0.00014 mg/L <0.00E+00 lbs	<0.00014 mg/L <0.0000034 lbs	1	
Bis(2-chloroethoxy)methane 111-91-1	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Bis(2-chloroethyl) ether 111-44-4	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Bis(2-chloroisopropyl) ether 108-60-1	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Bis(2-ethylhexyl)phthalate 117-81-7	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Boron 7440-42-8	0.0413 mg/L 0.000001 lbs	0.00831 mg/L 0.00020 lbs	0.0413 mg/L 0.000001 lbs	0.00831 mg/L 0.00020 lbs	1	
Bromodichloromethane 75-27-4	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Bromoform 75-25-2	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Bromomethane 74-83-9	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Butylbenzylphthalate 85-68-7	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	

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EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory	Outfall Number 403
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List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Calcium 7440-70-2	87.7 mg/L 0.002 lbs	24.3 mg/L 0.59 lbs	87.7 mg/L 0.002 lbs	24.3 mg/L 0.59 lbs	1	
Carbon Disulfide 75-15-0	<5 ug/L <1.00E-07 lbs		<5 ug/L <1.00E-07 lbs		1	
Carbon tetrachloride 56-23-5	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Cesium 7440-46-2	<0.0000400 mg/L <1.00E-09 lbs	0.00011 mg/L 0.0000027 lbs	<0.0000400 mg/L <0.00E+00 lbs	0.00011 mg/L 0.0000027 lbs	1	
Chlorobenzene 108-90-7	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Chloroethane 75-00-3	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Chloroform 67-66-3	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Chloromethane 74-87-3	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Chrysene 218-01-9	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
cis-1,2-Dichloroethene 156-59-2	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
cis-1,3-Dichloropropene 10061-01-5	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Cobalt 7440-48-4	0.000268 mg/L 7.00E-09 lbs	0.000504 mg/L 0.000012 lbs	0.000268 mg/L 1.00E-08 lbs	0.000504 mg/L 0.000012 lbs	1	
Cyclohexane 110-82-7	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Dibenzo(a,h)anthracene 53-70-3	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Dibromochloromethane 124-48-1	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Dichlorodifluoromethane 75-71-8	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	

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Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Diethylphthalate 84-66-2	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Dimethylphthalate 131-11-3	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Di-n-butylphthalate 84-74-2	J5.43 ug/L J1.00E-07 lbs	J3.53 ug/L J0.000085 lbs	J5.43 ug/L J1.00E-07 lbs	J3.53 ug/L J0.000085 lbs	1	
Di-n-octylphthalate 117-84-0	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Disulfoton 298-04-4	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Ethylbenzene 100-41-4	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Fluoranthene 206-44-0	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Fluorene 86-73-7	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Hexachlorobenzene 118-74-1	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Hexachlorobutadiene 87-68-3	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Hexachlorocyclopentadiene 77-47-4	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Hexachloroethane 67-72-1	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Indeno(1,2,3-cd)pyrene 193-39-5	J1 ug/L J3.00E-08 lbs	J2.98 ug/L J0.000072 lbs	J1 ug/L J3.00E-08 lbs	J2.98 ug/L J0.000072 lbs	1	
Isophorone 78-59-1	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Kepone 143-50-0	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
m+p Methylphenol 65794-96-9	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	

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Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Magnesium 7439-95-4	7.81 mg/L 0.0002 lbs	3.12 mg/L 0.076 lbs	7.81 mg/L 0.0002 lbs	3.12 mg/L 0.076 lbs	1	
Manganese 7439-96-5	0.00706 mg/L 2.00E-07 lbs	0.0294 mg/L 0.00071 lbs	0.00706 mg/L 2.00E-07 lbs	0.0294 mg/L 0.00071 lbs	1	
Methyl methacrylate 80-62-6	<5 ug/L <1.00E-07 lbs		<5 ug/L <1.00E-07 lbs		1	
Methyl parathion 298-00-0	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Methylene chloride 75-09-2	<2 ug/L <5.00E-08 lbs		<2 ug/L <5.00E-08 lbs		1	
Molybdenum 7439-98-7	<0.0032 mg/L <8.00E-08 lbs	<0.0032 mg/L <0.000077 lbs	<0.0032 mg/L <8.00E-08 lbs	<0.0032 mg/L <0.000077 lbs	1	
Naphthalene 91-20-3	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Nitrobenzene 98-95-3	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
N-Nitrosodiethylamine 55-18-5	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
N-Nitrosodimethylamine 62-75-9	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
N-Nitroso-di-n-propylamine 621-64-7	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
N-Nitrosodiphenylamine 86-30-6	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
N-Nitrosopyrrolidine 930-55-2	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Parathion 56-38-2	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
PCB-1016 12674-11-2					0	See Chapter 7
PCB-1221 11104-28-2					0	See Chapter 7

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
PCB-1232 11141-16-5					0	See Chapter 7
PCB-1242 53469-21-9					0	See Chapter 7
PCB-1248 12672-29-6					0	See Chapter 7
PCB-1254 11097-69-1					0	See Chapter 7
PCB-1260 11096-82-5					0	See Chapter 7
P-Chloro-M-Cresol 59-50-7	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Pentachlorobenzene 608-93-5	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Pentachlorophenol 87-86-5	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Phenanthrene 85-01-8	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Phenol 108-95-2	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	<10.2 ug/L <3.00E-07 lbs	<55.2 ug/L <0.0013 lbs	1	
Potassium 7440-09-7	1.81 mg/L 0.00005 lbs	0.973 mg/L 0.024 lbs	1.81 mg/L 0.00005 lbs	0.973 mg/L 0.024 lbs	1	
Pyrene 129-00-0	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	<1.02 ug/L <3.00E-08 lbs	<5.52 ug/L <0.00013 lbs	1	
Sodium 7440-23-5	55 mg/L 0.001 lbs	6.08 mg/L 0.15 lbs	55 mg/L 0.001 lbs	6.08 mg/L 0.15 lbs	1	
Strontium 7440-24-6	0.163 mg/L 0.000004 lbs	0.0338 mg/L 0.00082 lbs	0.163 mg/L 0.000004 lbs	0.0338 mg/L 0.00082 lbs	1	
Styrene 100-42-5	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Tetrachloroethene 127-18-4	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	

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	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Thallium 7440-28-0	<0.0000400 mg/L <1.00E-09 lbs	<0.0000400 mg/L <9.70E-07 lbs	<0.0000400 mg/L <0.00E+00 lbs	<0.0000400 mg/L <9.70E-07 lbs	1	
Tin 7440-31-5	<0.002 mg/L <5.00E-08 lbs	<0.002 mg/L <0.00005 lbs	<0.002 mg/L <5.00E-08 lbs	<0.002 mg/L <0.00005 lbs	1	
Titanium 7440-32-6	0.0629 mg/L 0.000002 lbs	0.18 mg/L 0.0044 lbs	0.0629 mg/L 0.000002 lbs	0.18 mg/L 0.0044 lbs	1	
Toluene 108-88-3	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Total Cresols 1319-77-3	<20.4 ug/L <5.00E-07 lbs	<110 ug/L <0.0027 lbs	<20.4 ug/L <5.00E-07 lbs	<110 ug/L <0.0027 lbs	1	
trans-1,2-Dichloroethene 156-60-5	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
trans-1,3-Dichloropropene 10061-02-6	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Trichloroethene 79-01-6	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Trichlorofluoromethane 75-69-4	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Uranium 7440-61-1	<0.0012 mg/L <3.00E-08 lbs	<0.0012 mg/L <0.000029 lbs	<0.0012 mg/L <3.00E-08 lbs	<0.0012 mg/L <0.000029 lbs	1	
Vanadium 7440-62-2	<0.0009 mg/L <2.00E-08 lbs	<0.00245 mg/L <0.000059 lbs	<0.0009 mg/L <2.00E-08 lbs	<0.00245 mg/L <0.000059 lbs	1	
Vinyl acetate 108-05-4	<5 ug/L <1.00E-07 lbs		<5 ug/L <1.00E-07 lbs		1	
Vinyl chloride 75-01-4	<1 ug/L <3.00E-08 lbs		<1 ug/L <3.00E-08 lbs		1	
Xylene 1330-20-7	<3 ug/L <8.00E-08 lbs		<3 ug/L <8.00E-08 lbs		1	
Zirconium 7440-67-7	<0.0031 mg/L <8.00E-08 lbs	<0.0031 mg/L <0.000075 lbs	<0.0031 mg/L <8.00E-08 lbs	<0.0031 mg/L <0.000075 lbs	1	

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TABLE D. STORM EVENT INFORMATION (40 CFR 122.26(c)(1)(i)(E)(6))

Provide data for the storm event(s) that resulted in the maximum daily discharges for the flow-weighted composite sample.

Date of Storm Event	Duration of Storm Event (in hours)	Total Rainfall During Storm Event (in inches)	Number of Hours Between Beginning of Storm Measured and End of Previous Measurable Rain Event	Maximum Flow Rate During Rain Event (in gpm or specify units)	Total Flow from Rain Event (in gallons or specify units)
1/12/2023	9.8 hrs	.99 in	92.5 hrs	60 gpm	2900 gal

Provide a description of the method of flow measurement or estimate.

All flow rates were measured or estimated by measuring the time required for the stormwater discharge to fill a container of a known volume.

Outfall: 403

Group C1 High impervious - SW only

EPA ID Number

TN0002941

Outfall Number	Latitude			Longitude			ReceivingWater
	Deg	Min	Sec	Deg	Min	Sec	
006	35	55	35	84	18	47	White Oak Creek
016	35	55	48	84	18	29	White Oak Creek
043	35	55	28	84	19	16	First Creek
064	35	55	41	84	18	54	Fifth Creek
065	35	55	43	84	18	56	Fifth Creek
070	35	55	48	84	18	59	Fifth Creek
081	35	55	03	84	18	19	Tributary to Melton Branch
113	35	55	45	84	18	35	White Oak Creek
141	35	55	24	84	19	12	First Creek
142	35	55	26	84	19	13	First Creek
161	35	55	39	84	18	51	Fifth Creek
162	35	55	38	84	18	52	Fifth Creek
164	35	55	41	84	18	53	Fifth Creek
165	35	55	42	84	18	54	Fifth Creek
166	35	55	44	84	18	56	Fifth Creek
209	35	55	35	84	18	47	White Oak Creek
221	35	55	42	84	18	36	White Oak Creek
226	35	55	43	84	18	35	White Oak Creek
232	35	55	54	84	18	21	White Oak Creek
241	35	55	25	84	19	13	First Creek
243	35	55	26	84	19	13	First Creek
262	35	55	40	84	18	53	Fifth Creek
266	35	55	44	84	18	57	Fifth Creek
269	35	55	48	84	19	00	Fifth Creek
301	35	55	28	84	18	57	White Oak Creek
342	35	55	28	84	19	15	First Creek
343	35	55	34	84	19	21	First Creek
361	35	55	38	84	18	52	Fifth Creek
362	35	55	39	84	18	52	Fifth Creek
364	35	55	41	84	18	53	Fifth Creek
403	35	55	27	84	18	57	White Oak Creek
460	35	55	35	84	18	49	Fifth Creek
461	35	55	35	84	18	49	Fifth Creek

Outfall: 403

Group C1 High impervious - SW only

EPA ID Number

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Outfall Number	Latitude			Longitude			ReceivingWater
	Deg	Min	Sec	Deg	Min	Sec	
462	35	55	35	84	18	49	Fifth Creek
463	35	55	37	84	18	50	Fifth Creek
466	35	55	38	84	18	51	Fifth Creek
467	35	55	41	84	18	53	Fifth Creek
469	35	55	43	84	18	55	Fifth Creek
470	35	55	43	84	18	55	Fifth Creek
472	35	55	43	84	18	56	Fifth Creek
485	35	55	02	84	18	49	White Oak Creek
486	35	54	60	84	18	51	White Oak Creek
487	35	54	59	84	18	52	White Oak Creek
490	35	56	04	84	16	45	Tributary to Clinch River
581	35	54	59	84	18	20	Tributary to Melton Branch
582	35	55	03	84	18	19	Melton Branch
590	35	55	18	84	17	19	Tributary to Clinch River
591	35	55	18	84	17	19	Tributary to Clinch River
592	35	55	20	84	17	19	Tributary to Clinch River
674	35	55	50	84	19	02	Fifth Creek
701	35	55	20	84	19	04	White Oak Creek
791	35	56	10	84	16	39	Tributary to Clinch River
792	35	56	16	84	16	26	Clinch River

Outfall: 403

Group C1 High impervious - SW only

EPA ID Number

TN0002941

Outfall Number	Area of Impervious Surface (acres)	Total Area Drained (acres)
006	0.316	0.335
016	2.475	2.983
043	0.172	0.302
064	0.365	0.436
065	0.754	1.04
070	0.021	0.027
081	2.918	6.973
113	0.175	0.215
141	0.378	0.42
142	0.192	0.324
161	0.183	0.249
162	0.292	0.322
164	0.159	0.201
165	0.007	0.007
166	0.035	0.041
209	1.063	1.315
221	0.049	0.071
226	0.068	0.145
232	0.976	1.214
241	0.097	0.196
243	0.085	0.085
262	0.442	0.442
266	0.494	0.557
269	0.036	0.042
301	0.169	0.18
342	0.305	0.682
343	1.91	3.247
361	0.0005	0.002
362	0.528	0.671
364	0.075	0.087
403	0.525	0.935
460	0.354	0.495
461	0.026	0.069

Outfall: 403

Group C1 High impervious - SW only

EPA ID Number

TN0002941

Outfall Number	Area of Impervious Surface (acres)	Total Area Drained (acres)
462	0.457	0.658
463	0.033	0.1
466	0.035	0.053
467	0.059	0.084
469	0.05	0.05
470	0.248	0.617
472	0.065	0.068
485	0.285	0.548
486	0.465	0.692
487	0.122	0.272
490	0.068	0.109
581	1.314	2.204
582	0.697	1.304
590	0.566	0.579
591	0.327	0.327
592	0.82	1.607
674	0.904	1.456
701	0.474	1.071
791	0.324	0.389
792	0.98	1.382

Stormwater Group C2


Low Imperviousness - Stormwater Only

EPA Identification Number
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Facility Name
Oak Ridge National Laboratory

Form Approved 03/05/19
OMB No. 2040-0004

Form 2F NPDES  **U.S Environmental Protection Agency**
Application for NPDES Permit to Discharge Wastewater
STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		434	White Oak Creek	35 ° 56 ' 5.18 " N	84 ° 18 ' 9.07 " W
	<p><i>Storm Water:</i> Group C2 Low Imperviousness - Stormwater Only</p> <p><i>Other Outfalls Included:</i> 004; 010; 011; 017; 033; 084; 091; 102; 104; 107; 108; 111; 114; 168; 169; 170; 203; 208; 214; 216; 245; 247; 268; 313; 431; 432; 433; 464; 468; 473; 484; 488; 588; 675</p>				

SECTION 2. IMPROVEMENTS (40 CFR 122.21(g)(6))

Improvements	2.1	Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application?			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 3.			
	2.2	Briefly identify each applicable project in the table below.			
		Brief Identification and Description of Project	Affected Outfalls (list outfall numbers)	Source(s) of Discharge	Final Compliance Dates
					Required Projected
	See Appendix K - Improvements				
2.3	Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? (Optional Item)				
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

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SECTION 3. SITE DRAINAGE MAP (40 CFR 122.26(c)(1)(i)(A))

Site Drainage Map	3.1	Have you attached a site drainage map containing all required information to this application? (See instructions for specific guidance.)
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

SECTION 4. POLLUTANT SOURCES (40 CFR 122.26(c)(1)(i)(B))

Pollutant Sources	4.1	Provide information on the facility's pollutant sources in the table below.			
		Outfall Number	Impervious Surface Area (within a mile radius of the facility)		Total Surface Area Drained (within a mile radius of the facility)
		434	6.569	<i>specify units</i> acres	19.23 <i>specify units</i> acres
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
				<i>specify units</i>	<i>specify units</i>
	4.2	Provide a narrative description of the facility's significant material in the space below. (See instructions for content requirements.) Outfall 434 was chosen to represent grouped stormwater outfalls in Group C2 throughout the ORNL campus that have less than 50% impervious surface within their drainage areas and are stormwater-only discharge pipes. Legacy CERCLA contamination can exist in the drainage areas - especially those in the central part of the ORNL campus. Outfall 434 drainage area is typical of an industrial research park with impervious surfaces such as roads, sidewalks, and buildings, and grassed or graveled areas. There are loading docks on many of the buildings with some outdoor storage of metal pipes or containers, utilities such as transformers, generator equipment, cooling systems, and steam lines are located throughout the ORNL campus, and some outdoor areas are used as material delivery drop points. The Outfall 434 drainage area includes provisional outdoor staging areas for various chemicals, petroleum products, equipment, or material awaiting disposition. During the growing season, herbicides are applied in turf and landscaped areas for weed control and to remove invasive plants. When needed, pesticides are used to control nuisance insects. Fertilizers are primarily applied to re-establish vegetation in areas where soil has been disturbed by construction excavation but are also occasionally utilized by landscape contractors in turf grass areas and along roadways. Refer to Chapter 7 - EPA Form 2F for more detail.			
	4.3	Provide the location and a description of existing structural and non-structural control measures to reduce pollutants in stormwater runoff. (See instructions for specific guidance.)			
		Stormwater Treatment			
		Outfall Number	Control Measures and Treatment		Codes from Exhibit 2F-1 (list)
		434	See Section 7 - EPA Form 2F for additional detail. A SW retention basin is located at Bethel Valley Rd with special media to percolate runoff. This is located in the Outfall 434 drainage area.		N/A
			Runoff from electrical substation 0901 is partially routed through an O/W separator. A concrete storage pad has containment and an O/W separator that is routed to Outfall 091.		N/A
			Two SW detention ponds are located around the Copper Ridge Spoil Pile and drain to Outfall 010		N/A
			A 5000-gal rain harvest tank is located at Bldg 4020 which is located in the Outfall 675 drainage area.		N/A
			A runoff diversion ditch and a parking area runoff retention basin are located in the Outfall 433 drainage area		N/A
			OF 313 drains a wetland pond serving as a retention basin;a SW infiltration system is located under the parking area near Bldg 5200; and a retention basin was also constructed with pervious asphalt.		N/A

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SECTION 5. NON STORMWATER DISCHARGES (40 CFR 122.26(c)(1)(i)(C))

Non-Stormwater Discharges	5.1	<i>I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of non-stormwater discharges. Moreover, I certify that the outfalls identified as having non-stormwater discharges are described in either an accompanying NPDES Form 2C, 2D, or 2E application.</i>			
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office		
		Signature	Date signed		
	5.2	Provide the testing information requested in the table below.			
		Outfall Number	Description of Testing Method Used	Date(s) of Testing	Onsite Drainage Points Directly Observed During Test
		434	See Chapter 7 - EPA Form 2F for information.		

SECTION 6. SIGNIFICANT LEAKS OR SPILLS (40 CFR 122.26(c)(1)(i)(D))

Significant Leaks or Spills	6.1	Describe any significant leaks or spills of toxic or hazardous pollutants in the last three years. A water line break resulting in release of chlorinated water through Outfall 434 to White Oak Creek caused aquatic species mortality in Oct 2022. This incident was reported as required by the NPDES permit. ORNL maintains an aggressive spill prevention and control program through the ORNL SPCC Plan, which stresses awareness of spill prevention to both ORNL employees and subcontractor employees on site. As part of the Spill Contingency Plan, a subpart of the ORNL SPCC, ORNL has an experienced spill response team that is available around-the-clock for spill control and cleanup operations, and that maintains a database of spills and record of clean-up. In addition, spill materials; consisting of spreadable granular absorbents, absorbent booms, containment containers, containment curtain and oil skimmer; are available for use by the spill response team. Additionally, construction sites are required to maintain spill kits during the duration of the construction project. Over the past three years between (2019-2022), ORNL has experienced minor spills or leaks, most of which were heavy equipment- or vehicle-related, and generally involved several ounces to several gallons of ethylene glycol or petroleum-based fuels, lubricants, and/or hydraulic fluids. In every instance the spill response team enacted clean-up. None of these were reportable-quantity spills of oil or hazardous substances as defined within the ORNL NPDES Permit TN0002941, 40 CFR 117 or 40 CFR 403 .
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SECTION 7. DISCHARGE INFORMATION (40 CFR 122.26(c)(1)(i)(E))

Discharge Information	See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.	
	7.1	Is this a new source or new discharge? <input type="checkbox"/> Yes → See instructions regarding submission of <i>estimated</i> data. <input checked="" type="checkbox"/> No → See instructions regarding submission of <i>actual</i> data.
	Tables A, B, C, and D	
	7.2	Have you completed Table A for each outfall? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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Discharge Information - Continued	7.3	Is the facility subject to an effluent limitation guideline (ELG) or effluent limitations in an NPDES permit for its process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.5.
	7.4	Have you completed Table B by providing quantitative data for those pollutants that are (1) limited either directly or indirectly in an ELG and/or (2) subject to effluent limitations in an NPDES permit for the facility's process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.5	Do you know or have reason to believe any pollutants in Exhibit 2F-2 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.7.
	7.6	Have you listed all pollutants in Exhibit 2F-2 that you know or have reason to believe are present in the discharge and provided quantitative data or an explanation for those pollutants in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.7	Do you qualify for a small business exemption under the criteria specified in the Instructions? <input type="checkbox"/> Yes → SKIP to Item 7.18. <input checked="" type="checkbox"/> No
	7.8	Do you know or have reason to believe any pollutants in Exhibit 2F-3 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.10.
	7.9	Have you listed all pollutants in Exhibit 2F-3 that you know or have reason to believe are present in the discharge in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.10	Do you expect any of the pollutants in Exhibit 2F-3 to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.12.
	7.11	Have you provided quantitative data in Table C for those pollutants in Exhibit 2F-3 that you expect to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
	7.12	Do you expect acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6-dinitrophenol to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.14.
	7.13	Have you provided quantitative data in Table C for the pollutants identified in Item 7.12 that you expect to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No
	7.14	Have you provided quantitative data or an explanation in Table C for pollutants you expect to be present in the discharge at concentrations less than 10 ppb (or less than 100 ppb for the pollutants identified in Item 7.12)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	7.15	Do you know or have reason to believe any pollutants in Exhibit 2F-4 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.17.
	7.16	Have you listed pollutants in Exhibit 2F-4 that you know or believe to be present in the discharge and provided an explanation in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7.17	Have you provided information for the storm event(s) sampled in Table D? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Discharge Information Continued	Used or Manufactured Toxics		
	7.18	Is any pollutant listed on Exhibits 2F-2 through 2F-4 a substance or a component of a substance used or manufactured as an intermediate or final product or byproduct?	
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 8.
	7.19	List the pollutants below, including TCDD if applicable.	
	1.	4.	7.
	2.	5.	8.
	3.	6.	9.

SECTION 8. BIOLOGICAL TOXICITY TESTING DATA (40 CFR 122.21(g)(11))

Biological Toxicity Testing Data	8.1	Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last three years?															
		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No → SKIP to Section 9.														
	8.2	Identify the tests and their purposes below.															
		<table border="1"> <thead> <tr> <th>Test(s)</th> <th>Purpose of Test(s)</th> <th>Submitted to NPDES Permitting Authority?</th> <th>Date Submitted</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td></td> </tr> <tr> <td></td> <td></td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td></td> </tr> <tr> <td></td> <td></td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td></td> </tr> </tbody> </table>	Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?	Date Submitted			<input type="checkbox"/> Yes <input type="checkbox"/> No				<input type="checkbox"/> Yes <input type="checkbox"/> No				<input type="checkbox"/> Yes <input type="checkbox"/> No
Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?	Date Submitted														
		<input type="checkbox"/> Yes <input type="checkbox"/> No															
		<input type="checkbox"/> Yes <input type="checkbox"/> No															
		<input type="checkbox"/> Yes <input type="checkbox"/> No															

SECTION 9. CONTRACT ANALYSIS INFORMATION (40 CFR 122.21(g)(12))

Contract Analysis Information	9.1	Were any of the analyses reported in Section 7 (on Tables A through C) performed by a contract laboratory or consulting firm?																				
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No → SKIP to Section 10.																			
	9.2	Provide information for each contract laboratory or consulting firm below.																				
		<table border="1"> <thead> <tr> <th></th> <th>Laboratory Number 1</th> <th>Laboratory Number 2</th> <th>Laboratory Number 3</th> </tr> </thead> <tbody> <tr> <td>Name of laboratory/firm</td> <td>GEL Laboratories, LLC</td> <td></td> <td></td> </tr> <tr> <td>Laboratory address</td> <td>2040 Savage Road Charleston, SC 29407</td> <td></td> <td></td> </tr> <tr> <td>Phone number</td> <td>(843) 556-8171</td> <td></td> <td></td> </tr> <tr> <td>Pollutant(s) analyzed</td> <td>Ammonia, BOD, COD, Nitrogen, Nitrate/nitrite, Oil & Grease, VOCs/SVOCs, Phosphorus, TSS</td> <td></td> <td></td> </tr> </tbody> </table>		Laboratory Number 1	Laboratory Number 2	Laboratory Number 3	Name of laboratory/firm	GEL Laboratories, LLC			Laboratory address	2040 Savage Road Charleston, SC 29407			Phone number	(843) 556-8171			Pollutant(s) analyzed	Ammonia, BOD, COD, Nitrogen, Nitrate/nitrite, Oil & Grease, VOCs/SVOCs, Phosphorus, TSS		
		Laboratory Number 1	Laboratory Number 2	Laboratory Number 3																		
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Laboratory address	2040 Savage Road Charleston, SC 29407																					
Phone number	(843) 556-8171																					
Pollutant(s) analyzed	Ammonia, BOD, COD, Nitrogen, Nitrate/nitrite, Oil & Grease, VOCs/SVOCs, Phosphorus, TSS																					

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SECTION 10. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	10.1	In Column 1 below, mark the sections of Form 2F that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1	<input checked="" type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3	<input checked="" type="checkbox"/> w/ site drainage map
		<input checked="" type="checkbox"/> Section 4	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5	<input checked="" type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7	<input checked="" type="checkbox"/> Table A <input type="checkbox"/> w/ small business exemption request <input checked="" type="checkbox"/> Table B <input type="checkbox"/> w/ analytical results as an attachment <input checked="" type="checkbox"/> Table C <input checked="" type="checkbox"/> Table D
		<input checked="" type="checkbox"/> Section 8	<input type="checkbox"/> w/attachments
		<input checked="" type="checkbox"/> Section 9	<input type="checkbox"/> w/attachments (e.g., responses for additional contact laboratories or firms)
		<input checked="" type="checkbox"/> Section 10	
	10.2	<p>Certification Statement</p> <p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
		Name (print or type first and last name) Johnny O. Moore	Official title Manager, ORNL Site Office
		Signature	Date signed

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TABLE A. CONVENTIONAL AND NON CONVENTIONAL PARAMETERS (40 CFR 122.26(c)(1)(i)(E)(3))¹

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 and requirements.

Pollutant or Parameter	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information <i>(new source/new dischargers only; use codes in instructions)</i>
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1. Oil and grease	5.75 mg/L 0.03 lbs		5.75 mg/L 0.03 lbs		1	
2. Biochemical oxygen demand (BOD ₅)					0	Pollutant not expected to be present
3. Chemical oxygen demand (COD)					0	Pollutant not expected to be present
4. Total suspended solids (TSS)	82 mg/L 0.4 lbs	35.4 mg/L 0.29 lbs	82 mg/L 0.4 lbs	35.4 mg/L 0.29 lbs	1	
5. Total phosphorus	0.138 mg/L 0.0007 lbs	0.0967 mg/L 0.00079 lbs	0.138 mg/L 0.0007 lbs	0.0967 mg/L 0.00079 lbs	1	
6. Total Kjeldahl nitrogen (TKN)	1.83 mg/L 0.009 lbs	1.61 mg/L 0.013 lbs	1.83 mg/L 0.009 lbs	1.61 mg/L 0.013 lbs	1	
7. Total nitrogen (as N)	2.5 mg/L 0.01 lbs	2.21 mg/L 0.018 lbs	2.5 mg/L 0.01 lbs	2.21 mg/L 0.018 lbs	1	
8.	pH (minimum)	8.3				
	pH (maximum)	8.3				

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(A))¹

List each pollutant that is limited in an effluent limitation guideline (ELG) that the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Ammonia (as N)	0.491 mg/L 0.002 lbs	0.459 mg/L 0.0038 lbs	0.491 mg/L 0.002 lbs	0.459 mg/L 0.0038 lbs	1	
Antimony 7440-36-0	0.0188 mg/L 0.00009 lbs	0.014 mg/L 0.00011 lbs	0.0188 mg/L 0.00009 lbs	0.014 mg/L 0.00011 lbs	1	
Arsenic 7440-38-2	0.0175 mg/L 0.00009 lbs	0.0189 mg/L 0.00015 lbs	0.0175 mg/L 0.00009 lbs	0.0189 mg/L 0.00015 lbs	1	
Cadmium 7440-43-9	<0.00033 mg/L <0.000002 lbs	<0.00033 mg/L <0.0000027 lbs	<0.00033 mg/L <0.000002 lbs	<0.00033 mg/L <0.0000027 lbs	1	
Chromium 7440-47-3	<0.01 mg/L <0.00005 lbs	<0.01 mg/L <0.00008 lbs	<0.01 mg/L <0.00005 lbs	<0.01 mg/L <0.00008 lbs	1	
Copper 7440-50-8	0.0399 mg/L 0.0002 lbs	0.0159 mg/L 0.00013 lbs	0.0399 mg/L 0.0002 lbs	0.0159 mg/L 0.00013 lbs	1	
Iron 7439-89-6	1.06 mg/L 0.005 lbs	0.349 mg/L 0.0029 lbs	1.06 mg/L 0.005 lbs	0.349 mg/L 0.0029 lbs	1	
Lead 7439-92-1	0.00737 mg/L 0.00004 lbs	0.00203 mg/L 0.000017 lbs	0.00737 mg/L 0.00004 lbs	0.00203 mg/L 0.000017 lbs	1	
Nickel 7440-02-0	<0.073 mg/L <0.0004 lbs	<0.073 mg/L <0.00060 lbs	<0.073 mg/L <0.0004 lbs	<0.073 mg/L <0.00060 lbs	1	
Nitrogen, Total Organic (as N)	1.34 mg/L 0.007 lbs	1.15 mg/L 0.0094 lbs	1.34 mg/L 0.007 lbs	1.15 mg/L 0.0094 lbs	1	
Selenium 7782-49-2	<0.0031 mg/L <0.00002 lbs	<0.0031 mg/L <0.000025 lbs	<0.0031 mg/L <0.00002 lbs	<0.0031 mg/L <0.000025 lbs	1	
Silver 7440-22-4	0.000213 mg/L 0.000001 lbs	<0.00012 mg/L <9.80E-07 lbs	0.000213 mg/L 0.000001 lbs	<0.00012 mg/L <9.80E-07 lbs	1	
Zinc 7440-66-6	0.0748 mg/L 0.0004 lbs	<0.04 mg/L <0.0003 lbs	0.0748 mg/L 0.0004 lbs	<0.04 mg/L <0.0003 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory	Outfall Number 434
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Form Approved 03/05/19
OMB No. 2040-0004

TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Aluminum 7429-90-5	0.895 mg/L 0.004 lbs	0.399 mg/L 0.0033 lbs	0.895 mg/L 0.004 lbs	0.399 mg/L 0.0033 lbs	1	
Barium 7440-39-3	0.0343 mg/L 0.0002 lbs	0.017 mg/L 0.00014 lbs	0.0343 mg/L 0.0002 lbs	0.017 mg/L 0.00014 lbs	1	
Beryllium 7440-41-7	<0.00014 mg/L <7.00E-07 lbs	<0.00014 mg/L <0.0000011 lbs	<0.00014 mg/L <7.00E-07 lbs	<0.00014 mg/L <0.0000011 lbs	1	
Boron 7440-42-8	0.0126 mg/L 0.00006 lbs	0.0131 mg/L 0.00011 lbs	0.0126 mg/L 0.00006 lbs	0.0131 mg/L 0.00011 lbs	1	
Calcium 7440-70-2	17.5 mg/L 0.09 lbs	13.6 mg/L 0.11 lbs	17.5 mg/L 0.09 lbs	13.6 mg/L 0.11 lbs	1	
Cesium 7440-46-2	0.000185 mg/L 9.00E-07 lbs	0.0000856 mg/L 7.00E-07 lbs	0.000185 mg/L 9.00E-07 lbs	0.0000856 mg/L 7.00E-07 lbs	1	
Cobalt 7440-48-4	0.00068 mg/L 0.000003 lbs	0.00031 mg/L 0.0000025 lbs	0.00068 mg/L 0.000003 lbs	0.00031 mg/L 0.0000025 lbs	1	
Magnesium 7439-95-4	2.94 mg/L 0.01 lbs	2.09 mg/L 0.017 lbs	2.94 mg/L 0.01 lbs	2.09 mg/L 0.017 lbs	1	
Manganese 7439-96-5	0.104 mg/L 0.0005 lbs	0.0414 mg/L 0.00034 lbs	0.104 mg/L 0.0005 lbs	0.0414 mg/L 0.00034 lbs	1	
Molybdenum 7439-98-7	<0.0032 mg/L <0.00002 lbs	<0.0032 mg/L <0.000026 lbs	<0.0032 mg/L <0.00002 lbs	<0.0032 mg/L <0.000026 lbs	1	
Potassium 7440-09-7	2.09 mg/L 0.01 lbs	1.38 mg/L 0.011 lbs	2.09 mg/L 0.01 lbs	1.38 mg/L 0.011 lbs	1	
Sodium 7440-23-5	1.79 mg/L 0.009 lbs	2.89 mg/L 0.024 lbs	1.79 mg/L 0.009 lbs	2.89 mg/L 0.024 lbs	1	
Strontium 7440-24-6	0.0276 mg/L 0.0001 lbs	0.0357 mg/L 0.00029 lbs	0.0276 mg/L 0.0001 lbs	0.0357 mg/L 0.00029 lbs	1	
Thallium 7440-28-0	0.0000860 mg/L 4.00E-07 lbs	<0.0000400 mg/L <3.30E-07 lbs	0.0000860 mg/L 4.00E-07 lbs	<0.0000400 mg/L <3.30E-07 lbs	1	
Tin 7440-31-5	0.00424 mg/L 0.00002 lbs	<0.002 mg/L <0.00002 lbs	0.00424 mg/L 0.00002 lbs	<0.002 mg/L <0.00002 lbs	1	
Titanium 7440-32-6	0.043 mg/L 0.0002 lbs	0.0188 mg/L 0.00015 lbs	0.043 mg/L 0.0002 lbs	0.0188 mg/L 0.00015 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility Name Oak Ridge National Laboratory	Outfall Number 434
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Form Approved 03/05/19
OMB No. 2040-0004

TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Uranium 7440-61-1	<0.0012 mg/L <0.000006 lbs	<0.0012 mg/L <0.0000098 lbs	<0.0012 mg/L <0.000006 lbs	<0.0012 mg/L <0.0000098 lbs	1	
Vanadium 7440-62-2	<0.0009 mg/L <0.000005 lbs	<0.0009 mg/L <0.000007 lbs	<0.0009 mg/L <0.000005 lbs	<0.0009 mg/L <0.000007 lbs	1	
Zirconium 7440-67-7	<0.0031 mg/L <0.00002 lbs	<0.0031 mg/L <0.000025 lbs	<0.0031 mg/L <0.00002 lbs	<0.0031 mg/L <0.000025 lbs	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

EPA Identification Number TN1890090003	NPDES Permit Number TN0002941	Facility name Oak Ridge National Laboratory	Outfall Number 434
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TABLE D. STORM EVENT INFORMATION (40 CFR 122.26(c)(1)(i)(E)(6))

Provide data for the storm event(s) that resulted in the maximum daily discharges for the flow-weighted composite sample.

Date of Storm Event	Duration of Storm Event (in hours)	Total Rainfall During Storm Event (in inches)	Number of Hours Between Beginning of Storm Measured and End of Previous Measurable Rain Event	Maximum Flow Rate During Rain Event (in gpm or specify units)	Total Flow from Rain Event (in gallons or specify units)
10/12/2022	16 hrs	0.14 in	726.5 hrs	30 gpm	980 gal

Provide a description of the method of flow measurement or estimate.

All flow rates were measured or estimated by measuring the time required for the stormwater discharge to fill a container of a known volume.

Outfall: 434

Group C2 Low impervious - SW only

EPA ID Number

TN0002941

Outfall Number	Latitude			Longitude			ReceivingWater
	Deg	Min	Sec	Deg	Min	Sec	
004	35	55	28	84	18	56	White Oak Creek
010	35	54	38	84	16	54	Tributary to Clinch River
011	35	53	54	84	18	07	Tributary to Clinch River
017	35	55	49	84	18	28	White Oak Creek
033	35	55	56	84	18	08	White Oak Creek
084	35	54	36	84	18	55	Melton Branch
091	35	56	01	84	19	03	Fifth Creek
102	35	55	31	84	18	51	White Oak Creek
104	35	55	34	84	18	49	White Oak Creek
107	35	55	37	84	18	45	White Oak Creek
108	35	55	37	84	18	44	White Oak Creek
111	35	55	40	84	18	38	White Oak Creek
114	35	55	45	84	18	34	White Oak Creek
168	35	55	46	84	18	58	Fifth Creek
169	35	55	46	84	18	58	Fifth Creek
170	35	55	47	84	18	59	Fifth Creek
203	35	55	26	84	18	59	White Oak Creek
208	35	55	34	84	18	50	White Oak Creek
214	35	55	38	84	18	42	White Oak Creek
216	35	55	39	84	18	41	White Oak Creek
245	35	55	26	84	19	14	First Creek
247	35	55	30	84	19	17	First Creek
268	35	55	48	84	18	60	Fifth Creek
313	35	55	47	84	18	31	White Oak Creek
431	35	55	58	84	18	14	White Oak Creek
432	35	56	01	84	18	10	White Oak Creek
433	35	56	02	84	18	08	White Oak Creek
434	35	56	05	84	18	09	White Oak Creek
464	35	55	37	84	18	51	Fifth Creek
468	35	55	43	84	18	55	Fifth Creek
473	35	55	45	84	18	57	Fifth Creek
484	35	54	38	84	18	53	Melton Branch
488	35	54	29	84	19	01	White Oak Creek

Outfall: 434

Group C2 Low impervious - SW only

EPA ID Number

TN0002941

Outfall Number	Latitude			Longitude			ReceivingWater
	Deg	Min	Sec	Deg	Min	Sec	
588	35	54	26	84	19	06	White Oak Creek
675	35	55	50	84	19	02	Fifth Creek

Outfall: 434

Group C2 Low impervious - SW only

EPA ID Number

TN0002941

Outfall Number	Area of Impervious Surface (acres)	Total Area Drained (acres)
004	0.005	0.021
010	1.607	53.949
011	0.886	7.238
017	0.016	0.16
033	2.971	48.148
084	0.172	0.507
091	1.419	39.144
102	0.787	3.691
104	0.412	4.206
107	0.274	0.47
108	0.069	1.389
111	0.114	0.195
114	0.103	0.572
168	0.032	0.068
169	Not defined	Not defined
170	0.108	0.334
203	0.117	30.612
208	0.124	0.275
214	0.272	0.597
216	0.179	2.738
245	4.376	10.049
247	Not defined	Not defined
268	0.73	3.219
313	16.102	77.465
431	0.784	3.398
432	0.475	1.362
433	2.565	27.42
434	6.569	19.23
464	0.129	0.485
468	0.069	0.219
473	0.081	0.409
484	0.661	2.066
488	1.611	22.651

Outfall: 434

Group C2 Low impervious - SW only

EPA ID Number

TN0002941

Outfall Number	Area of Impervious Surface (acres)	Total Area Drained (acres)
588	3.555	35.966
675	1.407	7.765

DOE NPDES Permit No. 0002941

Application Appendices

Appendix A – Outfalls Summary

Appendix A – Outfalls Summary

Table A-1 provides a list of the outfalls included in this NPDES permit application package along with their corresponding EPA NPDES Permit Application Forms that are being submitted.

Table A-1					
Outfalls Summary - Corresponding 2023 Permit Application Forms					
Outfall ID	Receiving Stream	Forms Submitted			
		Form 1	Form 2C	Form 2E	Form 2F
N/A	N/A General Information	X			
X01	White Oak Creek		X		
X12	White Oak Creek		X		
001	White Oak Creek			X	X
004	White Oak Creek				X
005	White Oak Creek			X	
006	White Oak Creek				X
010	Clinch River				X
011	Clinch River				X
014	White Oak Creek			X	
016	White Oak Creek				X
017	White Oak Creek				X
021	White Oak Creek			X	
031	White Oak Creek			X	
033	White Oak Creek				X
041	First Creek			X	X
043	First Creek				X
051	Northwest Tributary			X	X
052	Northwest Tributary			X	
053	Northwest Tributary			X	
054	Northwest Tributary			X	
055	Northwest Tributary			X	
056	Northwest Tributary			X	
057	Northwest Tributary			X	
058	Northwest Tributary			X	X
064	Fifth Creek				X
065	Fifth Creek				X
070	Fifth Creek				X
081	Melton Branch			X	X
084	Melton Branch				X
085	Melton Branch			X	
091	Fifth Creek				X
102	White Oak Creek			X	X

Table A-1**Outfalls Summary - Corresponding 2023 Permit Application Forms**

Outfall ID	Receiving Stream	Forms Submitted			
		Form 1	Form 2C	Form 2E	Form 2F
104	White Oak Creek				X
107	White Oak Creek				X
108	White Oak Creek				X
111	White Oak Creek				X
113	White Oak Creek				X
114	White Oak Creek				X
141	First Creek				X
142	First Creek				X
161	Fifth Creek				X
162	Fifth Creek				X
164	Fifth Creek				X
165	Fifth Creek				X
166	Fifth Creek				X
168	Fifth Creek				X
169	Fifth Creek				X
170	Fifth Creek				X
191	Clinch River			X	X
203	White Oak Creek				X
204	White Oak Creek			X	X
207	White Oak Creek			X	X
208	White Oak Creek				X
209	White Oak Creek				X
210	White Oak Creek			X	X
211	White Oak Creek			X	X
212	White Oak Creek			X	
213	White Oak Creek			X	
214	White Oak Creek			X	X
216	White Oak Creek				X
217	White Oak Creek			X	X
218	White Oak Creek			X	X
219	White Oak Creek			X	X
220	White Oak Creek			X	
221	White Oak Creek				X
223	White Oak Creek			X	X
224	White Oak Creek			X	X
226	White Oak Creek				X
227	White Oak Creek			X	X
230	White Oak Creek			X	X
231	White Oak Creek			X	X

Table A-1					
Outfalls Summary - Corresponding 2023 Permit Application Forms					
Outfall ID	Receiving Stream	Forms Submitted			
		Form 1	Form 2C	Form 2E	Form 2F
232	White Oak Creek				X
234	White Oak Creek			X	X
235	White Oak Creek			X	X
241	First Creek				X
243	First Creek			X	X
245	First Creek				X
247	First Creek				X
249	First Creek			X	X
250	First Creek			X	X
261	Fifth Creek			X	
262	Fifth Creek				X
263	Fifth Creek			X	
264	Fifth Creek			X	X
265	Fifth Creek			X	X
266	Fifth Creek				X
267	Fifth Creek			X	X
268	Fifth Creek				X
269	Fifth Creek				X
281	Melton Branch			X	X
291	Clinch River			X	X
301	White Oak Creek				X
302	White Oak Creek			X	X
304	White Oak Creek			X	X
310	White Oak Creek			X	
312	White Oak Creek			X	X
313	White Oak Creek			X	X
314	White Oak Creek			X	X
341	First Creek			X	X
342	First Creek				X
343	First Creek				X
361	Fifth Creek				X
362	Fifth Creek				X
363	Fifth Creek			X	X
364	Fifth Creek				X
365	Fifth Creek			X	X
367	Fifth Creek			X	X
368	Fifth Creek			X	X
383	Melton Branch			X	X
403	White Oak Creek				X

Table A-1					
Outfalls Summary - Corresponding 2023 Permit Application Forms					
Outfall ID	Receiving Stream	Forms Submitted			
		Form 1	Form 2C	Form 2E	Form 2F
431	White Oak Creek				X
432	White Oak Creek				X
433	White Oak Creek				X
434	White Oak Creek				X
435	White Oak Creek			X	X
436	White Oak Creek			X	X
437	White Oak Creek			X	X
443	First Creek			X	
447	First Creek			X	
460	Fifth Creek				X
461	Fifth Creek				X
462	Fifth Creek				X
463	Fifth Creek				X
464	Fifth Creek				X
466	Fifth Creek				X
467	Fifth Creek				X
468	Fifth Creek				X
469	Fifth Creek				X
470	Fifth Creek				X
472	Fifth Creek				X
473	Fifth Creek				X
481	Melton Branch			X	X
482	Melton Branch			X	X
484	Melton Branch				X
485	White Oak Creek				X
486	White Oak Creek				X
487	White Oak Creek				X
488	White Oak Creek				X
490	Unnamed tributary to BC Embayment				X
506	White Oak Creek			X	X
581	Melton Branch				X
582	Melton Branch				X
583	White Oak Creek			X	X
585	Melton Branch			X	
588	White Oak Creek -new outfall				X
590	Unnamed tributary to BC Embayment				X
591	Unnamed tributary to BC				X

Table A-1					
Outfalls Summary - Corresponding 2023 Permit Application Forms					
Outfall ID	Receiving Stream	Forms Submitted			
		Form 1	Form 2C	Form 2E	Form 2F
	Embayment				
592	Unnamed tributary to BC Embayment				X
630	White Oak Creek			X	
674	Fifth Creek				X
675	Fifth Creek				X
701	New outfall - old X01 (when new STP online)			X	X
732	New Outfall - SIPRC			X	X
791	New outfall near 6725				X
792	New outfall draining area north in 7608				X

**Appendix B –
Antidegradation Statement**

Appendix B - Antidegradation Statement

Summary

The ORNL NPDES permit is under application for renewal in 2023. ORNL has discharged wastewaters to its receiving streams since the mid-1940s, therefore the wastewater and receiving-stream data and corresponding information contained in the permit renewal application package reflect not only wastewater constituents that are being discharged under current conditions, or those that are planned for discharge from future ORNL facilities and programs, but also encompass legacy pollutants that were discharged prior to modern environmental regulations. This NPDES permit renewal application is not intended to seek permitting or account for such legacy pollutants, however, their continued presence in the ORNL environment makes it probable that the data in this application package reflect that presence. Therefore, over time it is reasonable that water quality has been degraded by legacy contamination, authorized discharges, and other natural conditions at levels more than de minimis for some water quality parameters. This permit application proposes to continue all of the authorized wastewater discharges, in addition to potentially three (3) new discharge streams/outfalls which would possibly be measurable at the discharge points, though none of the discharges are believed to individually cause more than de minimis degradation to the receiving streams.

Even though ORNL has been making significant efforts to improve overall water quality of the receiving streams on-site over time, there are currently two (2) ORNL receiving streams (White Oak Creek and Melton Branch), that exhibit impairment defined by TN as “cause unknown”. ORNL has been implementing investigative measures of this impairment through the NPDES Permit Water Quality Protection Plan (WQPP) and as a result of these efforts has determined stream locations/reaches where specific Tennessee water quality criteria (WQC) have at times been exceeded for copper, temperature, and mercury. As these locations are identified, on-site operations controls/remediation can be implemented to attempt to control these occasional exceedances.

For the past 40 years ORNL has pursued continuous improvement with its wastewater discharges and continues to plan for this in the future. ORNL has spent, and continues to spend a significant amount of time, energy, and resources on capital environmental advancements and upgrades throughout ORNL campus. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process has attempted to remove, isolate, or otherwise remediate many significant sources of water pollution on the Oak Ridge Reservation (ORR), including at ORNL. Many of these CERCLA cleanup efforts are ongoing and others are also planned throughout ORNL campus. In addition, upgrades to onsite wastewater treatment facilities (such as the new sewage treatment plant) have also been constructed and brought into operation, underground piping infrastructure has been characterized and remediated where necessary, and extensive internal programs have been implemented at ORNL in order to facilitate regulatory compliance through environmental awareness and oversight. Meanwhile, significant growth has taken place both on and off campus and as new facilities have been planned/built on-site, considerations have been made to incorporate, where possible, improvements to existing wastewater facilities. In addition, a few new research facilities, such as the National Transportation Research Center and the Carbon Fiber Technology Facility, have been chosen to be located off-site in other parts of Knoxville, Tennessee (TN) and Oak Ridge, TN respectively which thereby, relieves the on-site wastewater treatment facilities from treating these additional wastewaters (since most of the wastewater discharges from these facilities are being treated at offsite municipal wastewater treatment facilities, rather than onsite at ORNL).

While ORNL strives to incorporate continuous improvement and environmental protection and restoration where possible throughout campus, circumstances including extensive growth/expansion, revised environmental rules/regulations, and new Department of Energy (DOE) mission changes and challenges will continue to result in discharges that contribute to conditions that are potentially above de minimis levels as defined in the WQC. Types of future ORNL initiatives with this potential include new or increased cooling system discharges, wastewater-treatment-facility discharges that may vary

based on mission requirements and/or system upgrades or expansions, and other design, operational, and mission needs that would not be short-term or episodic, that may present themselves over time.

At this time, there are three (3) facility projects planned at ORNL that will result in potentially three (3) new non-process wastewater outfalls, which are included in this NPDES permit renewal application package. The projects are the Translational Research Capability (TRC) project, the Second Target Station (STS) project, and the Stable Isotope Production and Research Center (SIPRC) project. All of these projects will directly or indirectly support research/development activities at ORNL in support of DOE missions, which provide national and international scientific and technological benefit. While the TRC and SIPRC are currently under construction, the other new STS facility is in the design/planning stages. The wastewater effluents from these three (3) facilities are anticipated to include cooling-system blowdown and condensate discharges in amounts and with effluent-quality characteristics typical of these types of facilities. For the TRC project, anticipated peak cooling tower blowdown and condensate discharge rates are 15 and 6 gpm, respectively. For the SIPRC project, these are anticipated to be 10.8 and 3.8 gpm. The preliminary design for the STS is still in progress; therefore, meaningful discharge-rate estimates are not yet available for this facility. None of these facilities are anticipated to discharge pollutant constituents in greater-than-de minimis amounts; however, since many of these projects are in their early stages of design/construction this cannot be known with certainty. As designs mature and the facilities are completed, commissioned, brought online, and effluent characterizations can be made, any impacts on the de-minimis requirements of the TN antidegradation standards that may become apparent will be appropriately addressed with TDEC.

Beyond this general acknowledgement of future potential of incremental degradation, specific instances where it is anticipated that degradation may, or will occur will be individually addressed as appropriate. If or when increases have occurred or will occur, they are typically transient/short-lived, due to efforts to control and reduce them. Additionally, the overall trend over time is that there has been decreases in concentrations of pollutants in ORNL receiving streams, resulting in gradual increases in their respective “available assimilative capacities.” However, this antidegradation statement will include an alternatives analysis and socio-economic justification for the mission and activities of ORNL that result in the subject discharges and will also address any current or future discharges above de minimis levels that may occur. The antidegradation statement for ORNL will discuss both the current state and anticipated future state of its receiving stream the White Oak Creek (WOC) watershed which has been, is, and will continue to be influenced by ORNL discharges.

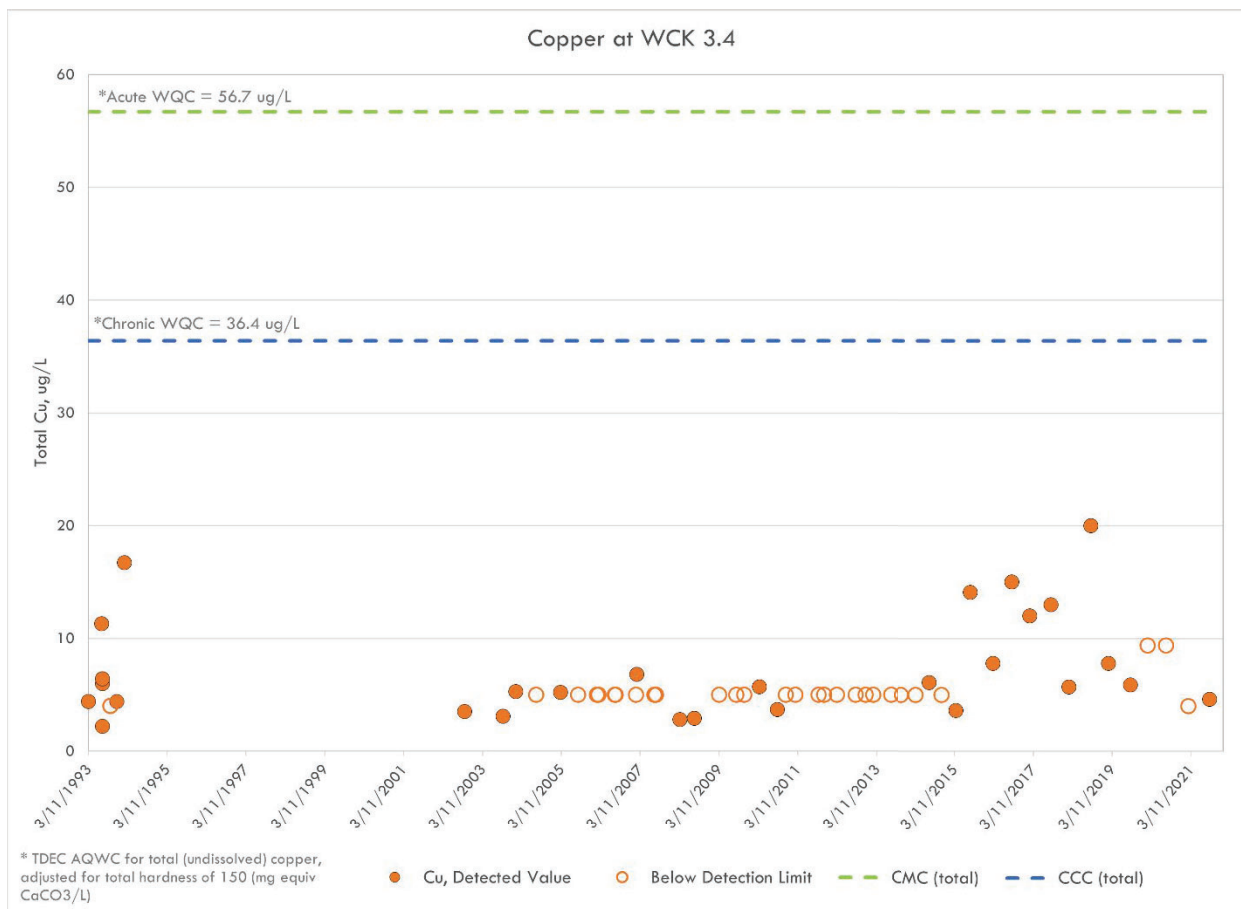
Overview of ORNL (ORNL Wastewater Discharges, and Receiving Streams)

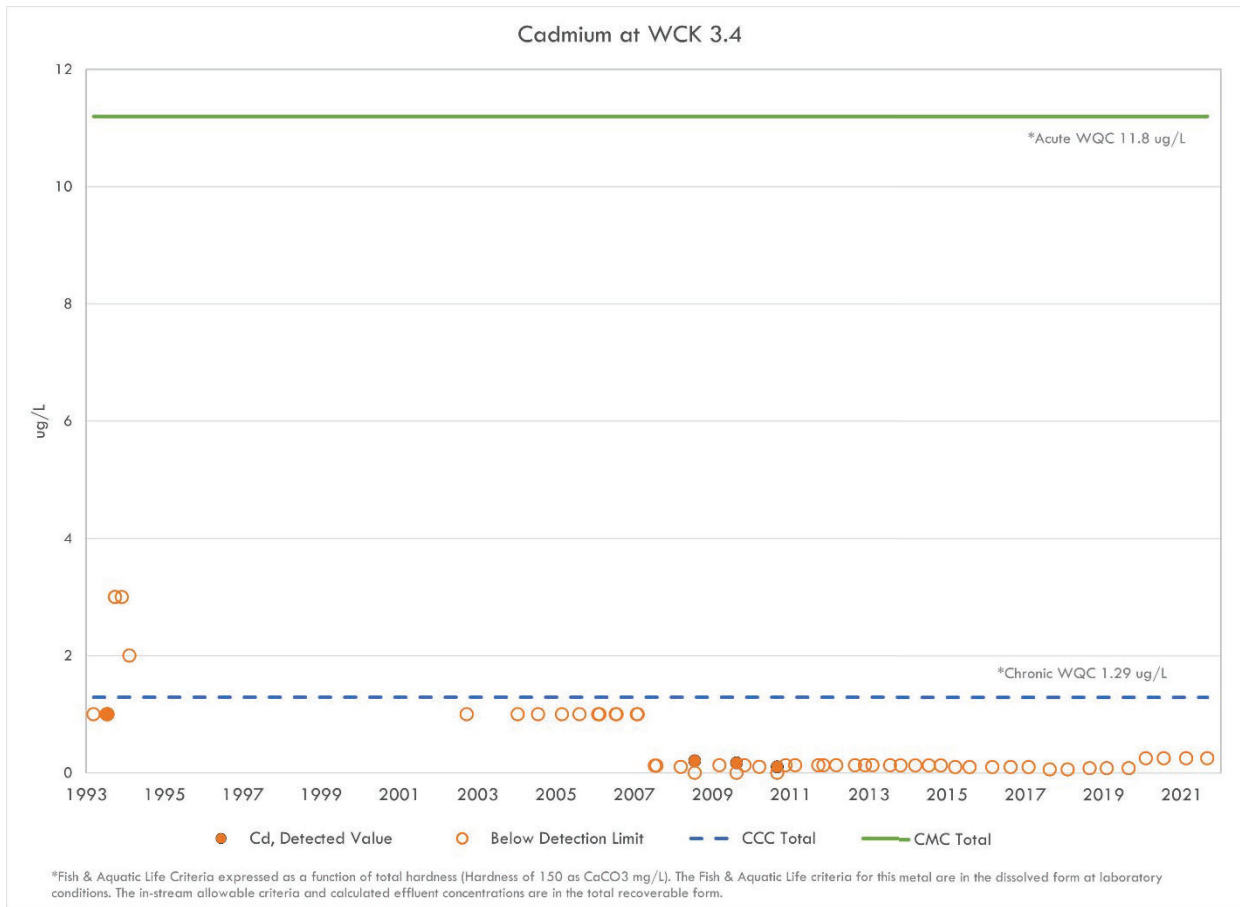
ORNL is the DOE’s largest multiprogram science and energy national laboratory. It was constructed beginning in 1943 within the White Oak Creek watershed of the Lower Clinch River basin, established first as a part of the secret World War II Manhattan Project to pioneer a method for producing plutonium. Since that time, ORNL’s mission has evolved from wartime weapons-development support to the creation of the Department of Energy in the 1970s which led to an expansion of ORNL’s research and development programs into areas of energy production, transmission, and conservation. The current mission of ORNL is to facilitate scientific discoveries and technical breakthroughs that will accelerate the development and deployment of solutions in clean energy and global security, providing benefit and economic opportunity for the United States. ORNL is an international leader in a range of scientific areas that support DOE missions. The laboratory’s major missions today include research and development in materials science and engineering; computer and computational science; neutron scattering; neutron science and technology; biological and environmental research; nuclear physics and engineering; nuclear energy technologies; fusion science and technology; enhanced national security; and energy efficiency and renewable energy.

Various DOE missions at ORNL over the years have resulted in the release of environmental pollutants (including radionuclides, organics, and metals). Since the 1970s, pollutants released from ongoing activities at ORNL have been monitored and controlled under environmental regulations and permits including those based in the Clean Air Act, the

Clean Water Act, the Resource Conservation and Recovery Act, and the Toxic Substances Control Act. Since the 1980s, legacy pollutants from past activities at ORNL have been being characterized and remediated in cooperation with Tennessee Department of Environment and Conservation (TDEC) and the Environmental Protection Agency (EPA), under CERCLA. Today, ORNL operations and discharges are compliant with the applicable regulations and permits. The WOC watershed, while not yet free from impairment as determined by TN regulations, has seen significant recovery in recent years in terms of reductions in concentrations of pollutants present (see Figures 1-6), and in the improved health and diversity of resident aquatic species populations as reported under ORNL's NPDES WQPP.

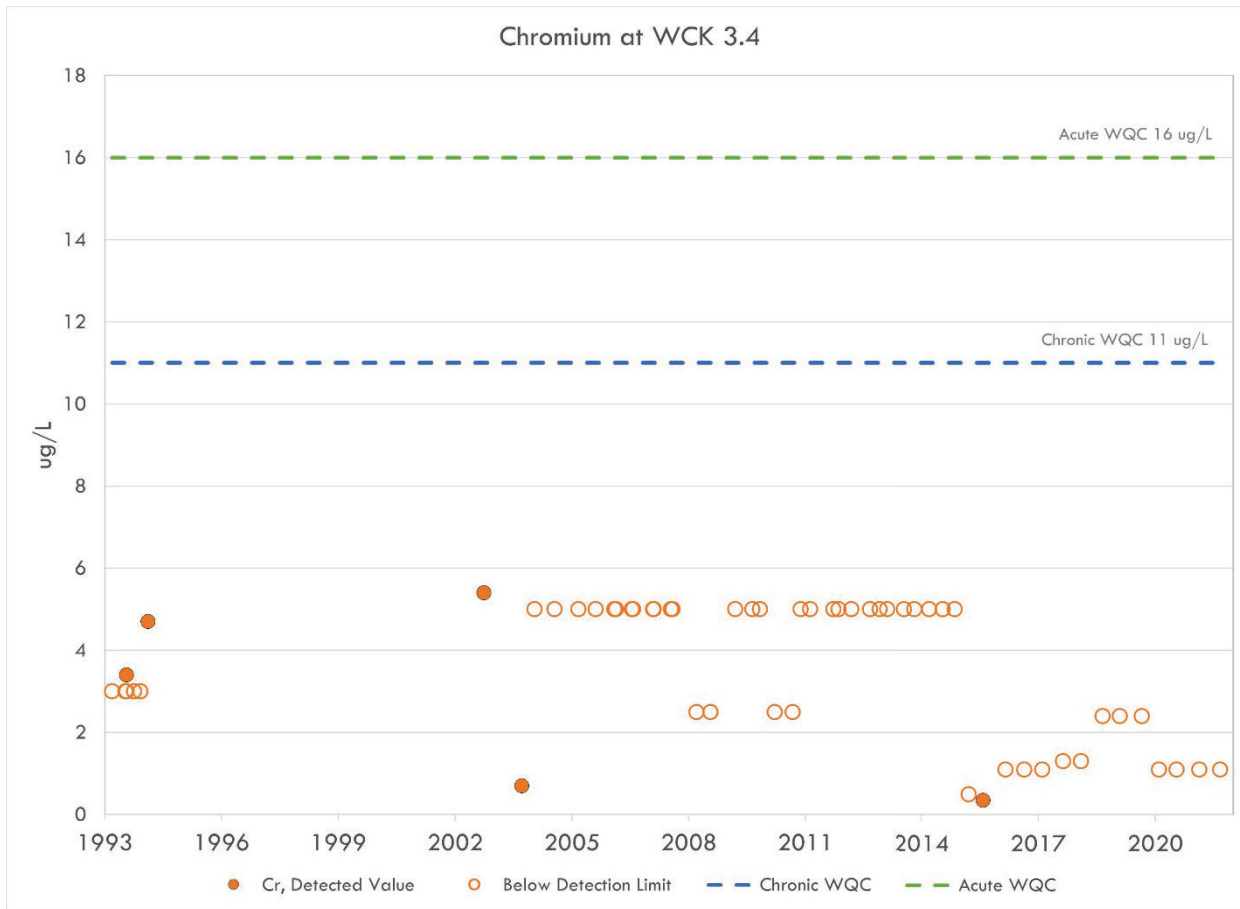
Figures 1-6 indicate, for several pollutants-of-interest, the successes of DOE on-site efforts to control and reduce the presence of pollutants in the watershed. Compliance with WQC has been achieved at monitored locations. While changes occur over time in ORNL configuration, conditions, and operations, any of which can potentially result in changes in pollutant fluxes to the environment, the overall trends of decreasing pollutant concentrations in the aquatic environment are consistent with the antidegradation concept and goals.





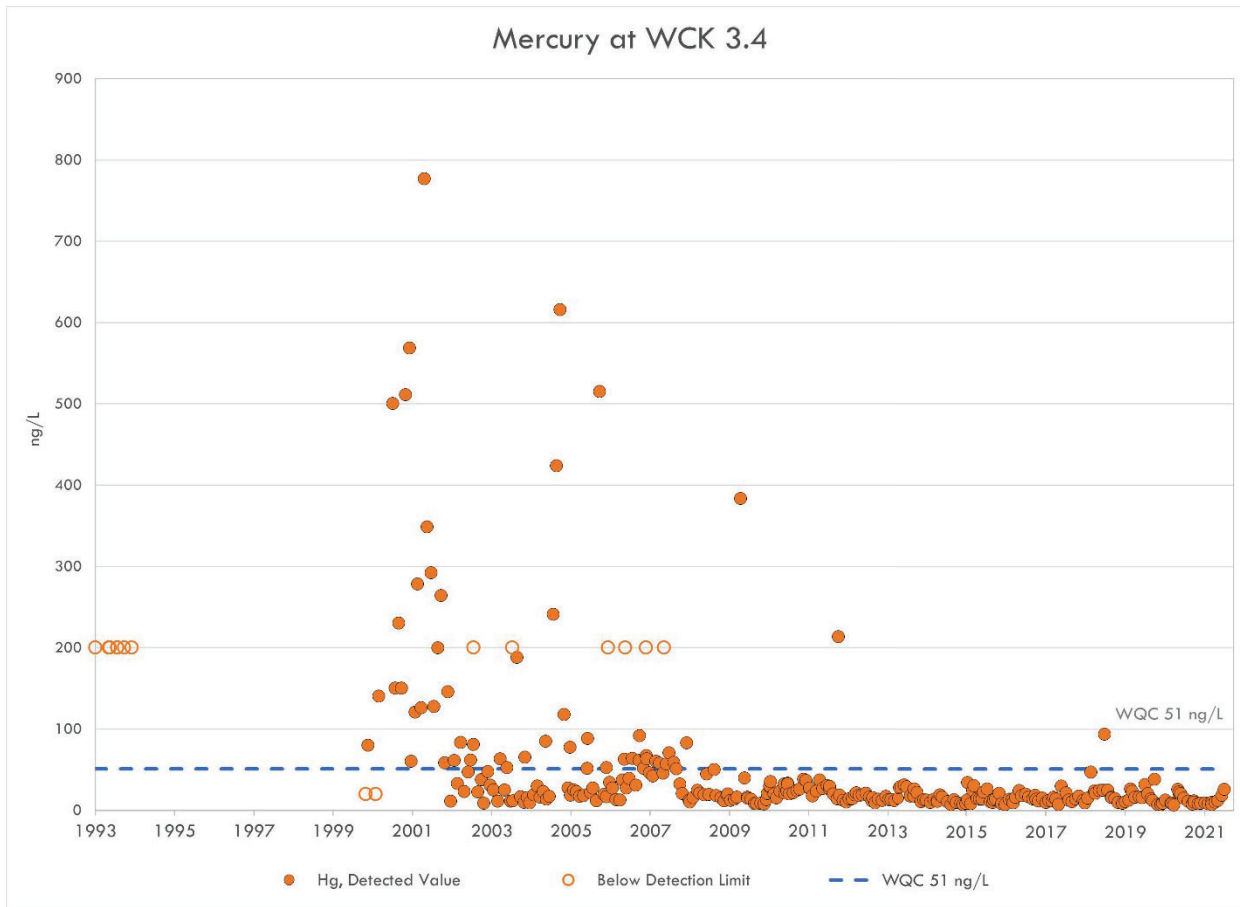
Acronyms: AWQC = Aquatic Water Quality Criteria, CCC = Criterion Continuous Criteria, CMC = Criterion Maximum Criteria, WCK = White Oak Creek Kilometer

Figure 2. Total (unfiltered) Cadmium concentrations from grab samples at WCK 3.4/7500 Road Bridge, 1993 to 2021.



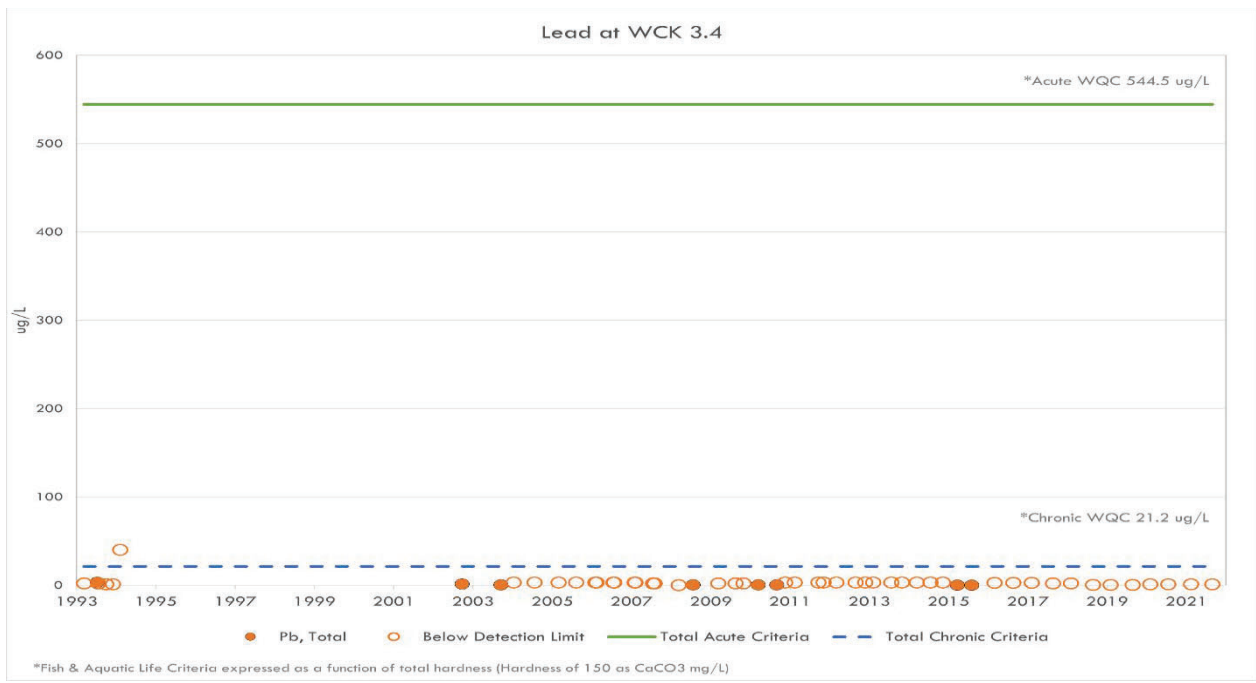
Acronyms: AWQC = Aquatic Water Quality Criteria, CCC = Criterion Continuous Criteria, CMC = Criterion Maximum Criteria, WCK = White Oak Creek Kilometer

Figure 3. Total (unfiltered) Chromium concentrations from grab samples at WCK 3.4/7500 Road Bridge, 1993 to 2021.



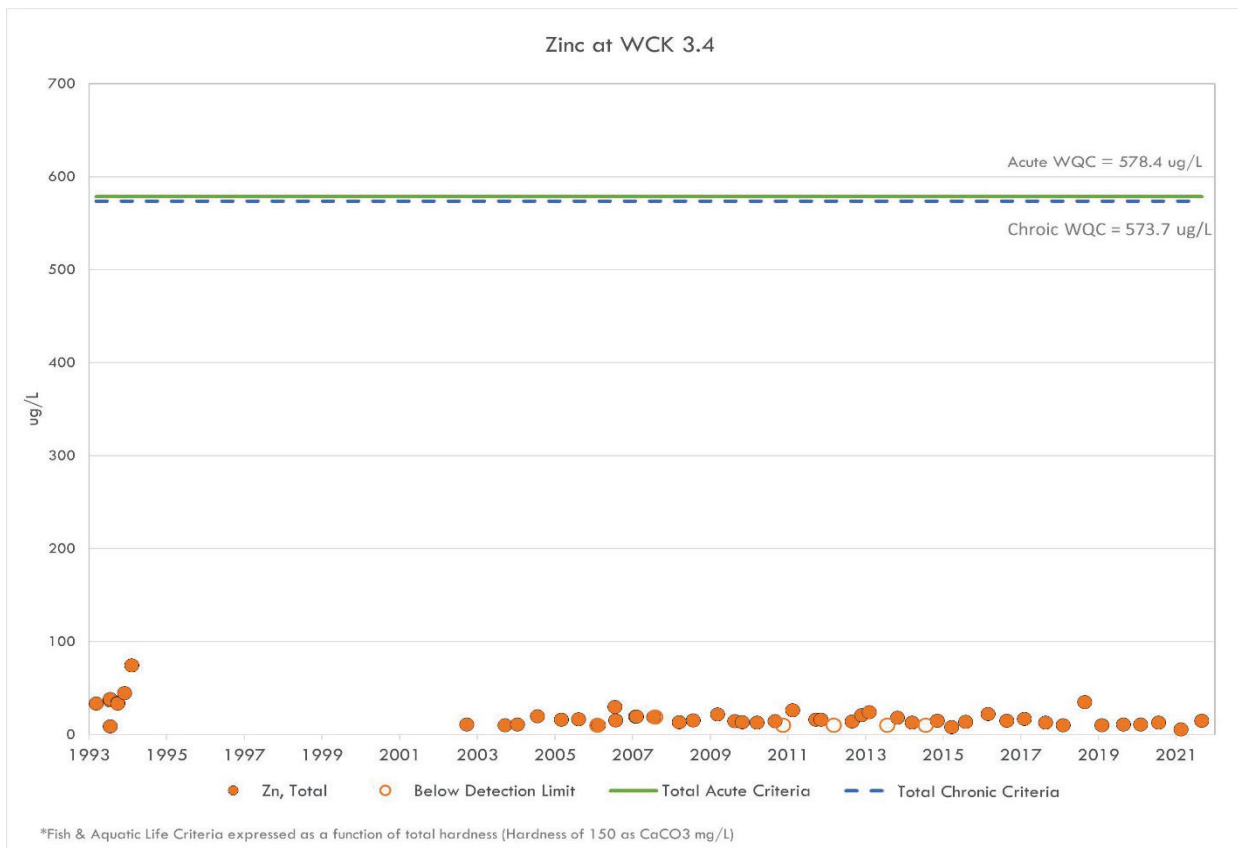
Acronyms: AWQC = Aquatic Water Quality Criteria, CCC = Criterion Continuous Criteria, CMC = Criterion Maximum Criteria, WCK = White Oak Creek Kilometer

Figure 4. Mercury concentrations from grab samples at WCK 3.4/7500 Road Bridge, 1993 to 2021.



Acronyms: AWQC = Aquatic Water Quality Criteria, CCC = Criterion Continuous Criteria, CMC = Criterion Maximum Criteria, WCK = White Oak Creek Kilometer

Figure 5. Total (unfiltered) Lead concentrations from grab samples at WCK 3.4/7500 Road Bridge, 1993 to 2021.



Acronyms: AWQC = Aquatic Water Quality Criteria, CCC = Criterion Continuous Criteria, CMC = Criterion Maximum Criteria, WCK = White Oak Creek Kilometer

Figure 6. Total (unfiltered) Zinc concentrations from grab samples at WCK 3.4/7500 Road Bridge, 1993 to 2021.

ORNL has two (2) onsite wastewater treatment facilities -- a Sewage Treatment Plant (STP) and a Process Wastewater Treatment Complex (PWTC). Treated wastewaters may include sanitary wastewaters; process wastewaters; storm water runoff; and wastewater from remediation of legacy contamination which is managed under CERCLA. For over 30 years, DOE has used an internal waste acceptance criteria/variance process as an internal process review in order to assure that wastewater treatment discharges meet applicable regulations. In addition, ORNL has many non-process operational wastewater discharges (outfalls) that include wastewaters such as: cooling tower blowdown, once thru cooling waters, boiler blowdown, reverse osmosis reject water, steam condensate, heating ventilation and air conditioning (HVAC) condensate, groundwater, and some may contain stormwater runoff. Some of these discharges may receive dechlorination prior to discharge, as needed. Where appropriate, ORNL discharges are permitted either under the Clean Water Act/ORNL NPDES permit, or under CERCLA records of decision (ROD).

ORNL discharges and runoff enter WOC and its minor tributaries, all of which are within the Lower Clinch River watershed. WOC, originating in Bethel Valley, and Melton Branch (a tributary of WOC), originating in the Melton Valley, both flow in and around the industrialized areas of ORNL and receive discharges from current-day and legacy operations. WOC and Melton Branch are currently designated by TN to support uses including fish and aquatic life and recreation. While efforts are ongoing to treat wastewater from research processes, to remove and/or isolate legacy contaminants from previous activities, to reroute discharge pipes, and to minimize solids transport in storm water, discharges from ORNL influence water quality and quantity in this watershed. Surface water contaminants may include biodegradable material, residual chlorine, volatile organic compounds (VOCs), suspended solids, metals such as copper,

mercury, and iron, PCBs, and radionuclides. Many of these contaminants are from legacy sources which continue to be addressed by the DOE under CERCLA.

The State of TN's 2022 303(d) List describes WOC as impaired due to the presence of cesium and strontium (although no specific water quality standards exist for either contaminant), as well as also being listed as "cause unknown" (loss of biological integrity due to undetermined cause). Melton Branch is listed as impaired due to the presence of strontium and "cause unknown". In addition, the 303(d) list describes the Potential Impairment Sources for both WOC and Melton Branch to be "CERCLA NPL (Superfund) Sites."

Alternatives Analysis

Over the years, various alternatives have been selected and implemented in cases where these discharges needed improvements to make them environmentally acceptable. Programmatic alternatives include the CERCLA investigative and remedial process, under which actions are determined, planned, and taken when remediation of legacy pollution is warranted, and the NPDES WQPP process, which determines situations, sources, and potential corrective actions of pollution caused by NPDES-permitted discharges. Selected situation- or source-specific alternatives have included eliminating discharges and/or constituents, treating discharges in-place to remove certain constituents, rerouting discharges to onsite wastewater treatment facilities for treatment prior to discharge, upgrading onsite wastewater treatment facilities, and constructing new onsite wastewater treatment facilities. The investment DOE has made and continues to make at ORNL for projects like the PWTC upgrades, as well as the new STP (construction ongoing) shows DOE's commitment to improving the environment.

Alternatives that have been evaluated but not implemented due to feasibility/cost constraints include rerouting discharges to larger receiving streams (e.g., WOC downstream of the ORNL campus, or the Clinch River). In addition to alternatives analyses conducted to evaluate a proposed project against budget and operational criteria, National Environmental Policy Act (NEPA) assessments are required for federal projects with potential environmental impacts. NEPA evaluations are routinely conducted for proposed ORNL projects, to ensure that environmental impacts of alternatives are considered and minimized. Alternatives that have been selected to mitigate specific constituents in current and anticipated future ORNL discharges will be discussed in later sections of this statement which are specific to each constituent.

Socio-Economic Aspects of ORNL

ORNL operations have a favorable socio-economic impact on local, state, national, and international entities and their associated workforces. ORNL employs over 6,000 full-time staff most of whom reside in Anderson County, Knox County, and other surrounding counties, and annually hosts approximately 1,500 visiting scientists as well as hundreds of undergraduate, graduate, and post-doctoral interns and researchers. The annual operating budget for ORNL exceeds \$2 billion. ORNL activities are conducted in 265 separate, operational buildings on the main campus, and in 16 offsite leased facilities, as well as the National Transportation Research Center in Hardin Valley, and the Carbon Fiber Technology Facility in the Horizon Center in Oak Ridge. ORNL also provides leadership and regional and national support for innovation, including regional economic development organizations and DOE Energy Efficiency and Renewable Energy Tech2Market initiatives.¹

In recent years, ORNL has added several new facilities to enhance capabilities for neutron science, genomics, nanomaterials, and computational research. ORNL has been selected as the site of the DOE Office of Science's National Leadership Computing Facility for unclassified high-performance computing. ORNL has established research-and-development partnership facilities with universities and the private sector, including the Joint Institute for Computational Sciences, the Joint Institute for Biological Sciences, the Center for Nanophase Materials Sciences, the Manufacturing Demonstration Facility, and the Carbon Fiber Technology Facility. Approximately 20% of the ORNL operating budget is

¹ FY 2022 ORNL Annual Plan, (ORNL Office of Institutional Planning)

the result of Strategic Partnership Projects (SPP), where ORNL's core capabilities serve the needs of non-DOE sponsors. By providing private sector partners with timely access to ORNL's unique expertise and resources, the SPP program allows ORNL and partner institutions to enhance their research and development programs and, in the case of business partners, accelerate the delivery of new technologies to the marketplace. ORNL has SPP agreements with more than 300 companies, collaborates with over 200 universities, and has joint faculty agreements with 20 universities.²

Basis for Determination

One of the key tools for fostering improvement of surface-water impairment/degradation at ORNL is the NPDES WQPP. Since 2008, ORNL NPDES permits have required ORNL to develop and continue the WQPP to adaptively monitor, evaluate, and develop management actions for improvement in areas including storm water runoff, chlorine control, biological communities, radioactivity, PCBs and mercury. Data from monitoring ORNL outfalls since 1986 has established a clearer understanding of outfalls where there may be constituents of concern. These data also indicate outfalls that are of limited concern, where repetition of current monitoring and reporting is not fruitful, and where a more flexible approach is warranted whereby the WQPP is maintained and annually updated to most effectively assess all outfalls and to focus on outfalls associated with significant findings. The WQPP also provides ORNL staff with Best Management Practices for activities such as construction, facility and vehicle maintenance, painting, and the management and use of environmentally controlled substances such as fuels, solvents, and pesticides. The WQPP report is updated annually, to facilitate adaptive monitoring/planning based on knowledge gained from previous years' monitoring. The WQPP process also includes a requirement to provide an annual report of findings and future plans to TDEC, which typically include adjustments to the outfall monitoring approaches based on the findings.

Since the WQPP was begun in 2008, WQPP investigations and reporting have shown improvements in mercury and PCB concentrations at the WOC watershed monitoring points, with TN water quality criteria for mercury being substantially met at all points in the ORNL main campus area (there are still occasional mercury WQC exceedances at White Oak Dam, though those are becoming less frequent). The WQPP commitment is for ORNL to gain understanding of issues within the watershed and then develop methods/proposals to control those issues. Ideally, potential stream impairment issues can be identified and corrected before they require formalization in the TN 303(d) listing of impaired waters. The following sections discuss various investigations of potential impairment of WOC undertaken by ORNL in the WQPP, and alternatives that are either being implemented or considered to mitigate potential impairment sources.

WQPP – Biological Integrity Investigation

There has been substantial ecological recovery has been documented since the 1980s, when species richness and other community metrics were initially found to be quite low. This recovery is attributed to such ORNL efforts as treating or removing chlorinated water and other toxic process-based discharges, controlling site storm water runoff pollution, and remediating sources of legacy contamination. Still, WOC is listed as impaired for "cause unknown" (loss of biological integrity due to unknown cause) in the current and proposed Tennessee 303(d) lists of impaired waters, and the NPDES-required studies of fish and macroinvertebrate communities have confirmed ecological impairment downstream of ORNL discharges, including in White Oak Creek, First Creek, and Fifth Creek. The 2021 WQPP report results suggest that the rate of biological recovery has slowed in the watershed in recent WQPP³ studies are underway to evaluate the remaining causes of biological impairment.

The condition of biological communities is typically measured using "biometrics" which interpret existing narrative biological criteria based on regional reference data. Biological criteria are based on macroinvertebrate monitoring at reference streams grouped into bioregions for assessment purposes. Numeric biocriteria are based on a multi-metric index

² FY 2022 ORNL Annual Plan, (ORNL Office of Institutional Planning)

³ Oak Ridge National Laboratory NPDES Water Quality Protection Plan 2021 Biannual Progress Report
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compared to historic targeted and probabilistic monitoring. Tennessee biocriteria are described in TDEC's Water Pollution Control Quality System Standard Operating Procedures for Macroinvertebrate Stream Surveys. Areas are identified as ecoregions, which have relatively similar soil, hydrology, vegetation, and related characteristics. ORNL is situated within the ecoregion known as Bioregion 67f, Southern Limestone/Dolomite Valleys and Low Rolling Hills, which includes the Lower Clinch River watershed and White Oak Creek. Scores for White Oak Creek watershed from the 2021 WQPP report indicate that with few exceptions, conditions at all but the upstream-most site in White Oak Creek (WCK 6.8) are "Partially Supporting – Slightly Impaired" for use by fish and aquatic life, while results for WCK 6.8 have consistently indicated that this site is "Fully Supporting – Non-impaired."

As specific causes of biological integrity loss in the WOC watershed have not yet been determined with certainty by TN or by ORNL, comprehensive corrective-action alternatives are not yet available. The preferred course of action is to further investigate biological integrity loss under the WQPP, while simultaneously developing and implementing corrective actions for any specific constituents that are determined to be potential contributors to that loss.

WQPP – Copper Investigation

In 2014, the upper reach of WOC in the ORNL main campus area was found to occasionally exceed state fish-and-aquatic life concentration-based water quality criteria for copper (Cu), based on instream monitoring conducted under the ORNL WQPP (Figure 7). WQPP investigations indicated that discharges of blowdown water from ORNL cooling towers to WOC could be significant contributors to the instream Cu concentrations. ORNL considered alternatives to mitigate the amount of Cu in its cooling-tower discharges (ex. For existing cooling tower blowdown - use of alternate cooling-tower water treatment chemicals). Ion-exchange treatment is also being evaluated at ORNL, as a possible means to physically remove copper from cooling-tower-blowdown prior to discharge.

By 2018, Cu concentrations in the WOC reach of interest had declined and remain below WQC, as a result of investigations and changes made to cooling tower additives under WQPP. The relationship between actions taken and instream Cu concentrations are currently undergoing evaluation, and Cu remains a main study component of the WQPP. For new cooling towers, where it meets operational criteria, a copper-mitigating measure has been implemented: procuring new cooling towers whose heat exchangers do not contain copper piping. New cooling towers have been installed to provide adequate cooling to Building 5600, home to ORNL's new Leadership supercomputer. One new 5600 cooling tower is equipped with stainless-steel heat-exchanger piping rather than Cu heat-exchanger piping. Alternatives that were considered but not selected for Cu control, due to cost and/or programmatic impacts, include diverting the cooling tower blowdown from the larger, copper-bearing towers into underground piping for discharge farther downstream in the watershed, thus relieving the upstream reaches of WOC from some of the Cu loading that they had been experiencing, and discharging the blowdown water instead in a reach of WOC having a greater baseflow rate and thus a greater dilution factor. This scenario could further enhance compliance with TN water quality standards for Cu, if needed.

Farther downstream in WOC the water quality criteria for Cu are currently met. One of the main water sources to WOC is Outfall 210, whose effluent consists mainly of once-through, noncontact cooling water supplied to ORNL by the City of Oak Ridge's water filtration plant. Outfall 210 effluent has been monitored and found to contain low Cu concentrations, which suggests that the city water does not contain an appreciable concentration of Cu. This finding reduces the concern associated with city water being used for once-through cooling followed by dechlorination and discharge, since the city water has not been found to be a significant source of Cu to ORNL receiving streams.

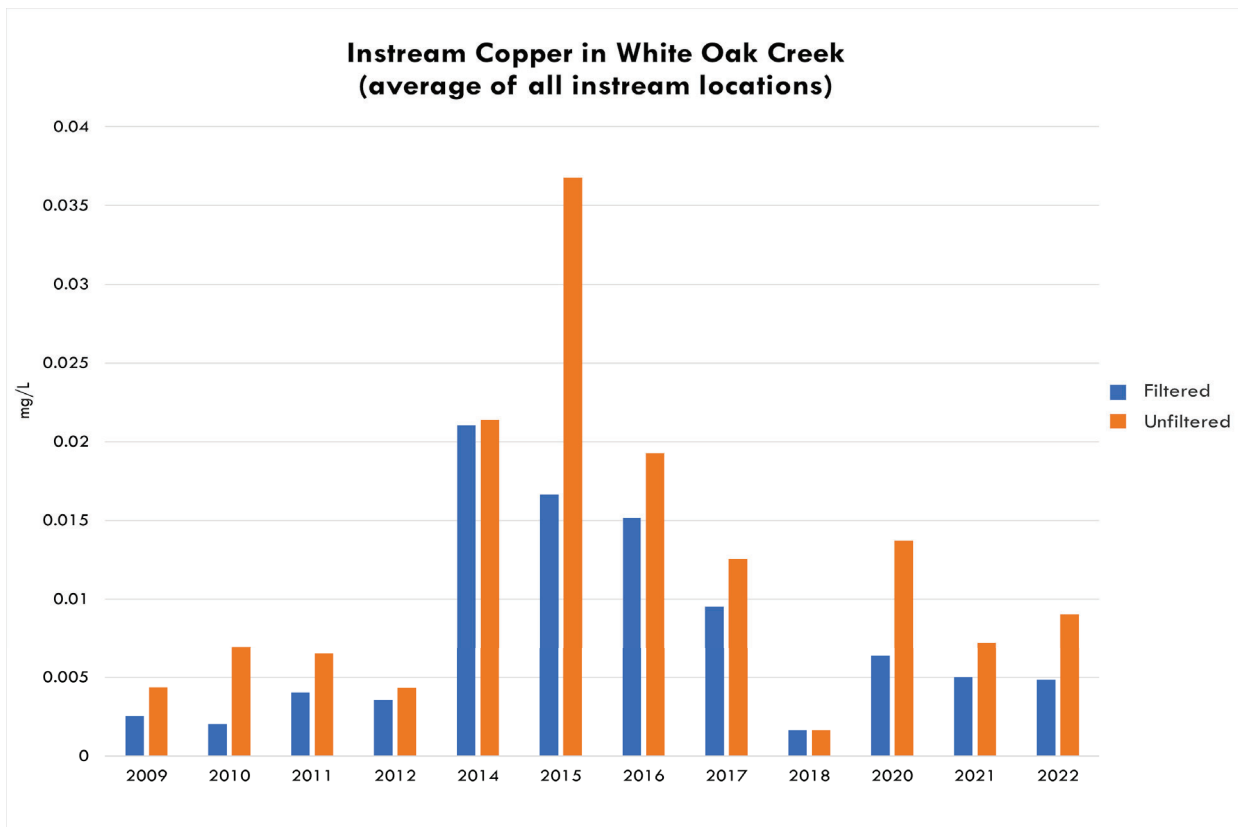


Figure 7. Evaluation of all instream copper in White Oak Creek from annual concentration averages. Samples included grabs and 24-hour composites at all White Oak Creek Instream Locations, 2009-2022.

WQPP – Temperature Investigation

Under WQPP and other previous water-quality monitoring at numerous instream locations on ORNL receiving streams, including over 20 years of NPDES permit-required temperature profile monitoring, TN stream temperature criteria have been found to occasionally be exceeded in some areas throughout ORNL campus. However, almost all these readings, upon closer investigation, were found to be caused by storm water runoff that occurred during a time when pavement had become heated by sunlight. Hence, the excursions of temperature criteria were almost all due to ambient conditions rather than to any particular ORNL activity.

There has been one ORNL monitoring location where temperature-criteria exceedance has been noted more than just infrequently/sporadically and not caused by storm runoff from sun-heated pavement is at Outfall 281, which includes blowdown water from the 7900 Area cooling tower. Measures have been taken in the past to help regulate the temperature from this outfall, including rerouting the discharge pathway to provide more overland flow prior to reaching the receiving stream (a tributary to Melton Branch), modifying the operations of the cooling-tower, and finding-and-fixing leaks in the 7900 cooling-water system.

Temperature considerations and controls are very much a part of the planning process for the new data center needs upcoming in Building 5600, which will introduce requirements for additional cooling capacity. Although the reach of WOC that would receive cooling-tower blowdown from a new 5600 area tower(s) is not currently impaired by temperature change, as a selected temperature-control alternative, one or more physical chillers will be installed to treat the cooling-tower blowdown, in order to ensure that the discharge’s temperature is held to acceptable levels that will not negatively impact the receiving stream.

WQPP - Chlorine Control investigation

ORNL water balance data suggests that approximately 0.17 million gallons per day (mgd) of once-through cooling water is discharged from ORNL facilities to White Oak Creek and its tributaries. This flow represents over 50% of the total water volume discharged from the facility and, without proper management, can create adverse water quality impacts. The source of the chlorine is the chlorinated water which ORNL obtains from the City of Oak Ridge's water treatment plant to supply process, cooling, and drinking water.

The NPDES permit, since 2008, requires ORNL to maintain a Chlorine Control Strategy (CCS), which utilizes residual oxidant-load monitoring at several outfalls having the potential to discharge chlorinated/brominated water, combined with scheduled monitoring at instream compliance points, to monitor and control total residual oxidant (chlorine/bromine) in ORNL receiving streams. Total residual oxidant (TRO) is monitored and controlled in effluents from several cooling towers that discharge blowdown to receiving streams; chlorine- and bromine-based formulations are used to control bio-growth in cooling towers. Several instream chlorine monitoring points were designated in the 2008 permit, located in receiving streams in close downstream proximity to outfalls with the potential to discharge chlorinated water, as part of the CCS requirement of that permit and where chlorine is monitored for NPDES-permit-compliance purposes. Frequent monitoring of these instream points since 2008 has rarely resulted in detection of chlorine in ORNL receiving streams, and in the few cases where chlorine was detected, a cause and corrective action were always able to be determined. To facilitate compliance with NPDES Permit chlorine limits and TN WQC, several alternatives have been implemented, including constant dechlorination of (chlorinated) cooling water and cooling tower discharges, an ongoing program to find and fix leaks in underground (chlorinated) water supply piping, and dechlorination of discharges from fire hydrants when hydrants are being field-tested.

The CCS has now been in effect for approximately 14 years at ORNL and is considered to have been largely effective in controlling discharges of chlorinated water from ORNL sources. These effects are evidenced in part by the gradual recovery trend of aquatic species in ORNL receiving streams.

WQPP – Other Investigations

As new issues of concern are discovered in the receiving streams at ORNL through WQPP sampling and analysis, further investigation and monitoring of those parameters will be continued under WQPP in order to attempt to determine a root cause and for possible mitigation. For example, total selenium was recently detected at instream monitoring locations within WOC watershed at concentrations that were sometimes above chronic WQC. However, the sources of selenium have not yet been identified and will be investigated further under WQPP.

WQPP – Operational Best Management Practices

The ORNL WQPP stipulates management-practice measures to be taken at ORNL to minimize the effects of site activities on the WOC Watershed. Key examples include:

Sediment control in storm water runoff: Measures including stormwater pollution prevention plans (SWPPPs) are instituted for all activities involving soil excavation or other surface-soil disturbance, whether or not the activity is subject to permitting under the Tennessee General NPDES Permit for Construction Site Runoff.

Pesticide and fertilizer usage: ORNL applies pesticides and fertilizers only as needed. ORNL maintains an Integrated Pest Management contract with a local company. There are associated management guidelines to minimize chemical use, personnel exposure, and release to the environment. Fertilizers are applied to re-establish vegetation in erosional areas and especially where soil has been disturbed by construction excavation. Fertilizer is also applied periodically to turf areas, on an as-needed basis typically during the growing season months (April – September). Herbicides are applied for security, safety, maintenance, and housekeeping purposes, in the minimal amounts necessary to meet site needs. Herbicides and potentially fungicides are applied in turf landscaped areas for weed control. Invasive plant species are often physically

removed. Herbicides approved for aquatic use are used to remove invasive or other undesirable plants growing in riparian zones.

Riparian zone protection: Throughout the main ORNL campus, the creek riparian zone predominantly consists of trees, shrubs, and understory vegetation. Riparian mitigation zones have been established at ORNL since 1995, allowing the zone's vegetation to grow and mature. Native vegetation has been encouraged on the creek banks since 1999, providing canopy habitat for the stream. There have been efforts to eradicate invasive plant species throughout the WOC watershed and to encourage native species. These measures support ORNL aquatic environments by providing canopy shade and food sources for creek fauna, stabilizing creekbanks against erosion, and providing filtration of nonpoint-source storm water runoff.

WQPP – Legacy (CERCLA) Contaminants

Both WOC and Melton Branch are influenced not only by ORNL's current operations, but also past and ongoing releases from CERCLA-regulated legacy areas. In the mid-1990s, the major contaminants of concern identified by CERCLA investigation in Melton Valley were three radionuclides: strontium (^{90}Sr), tritium (^3H), and sediment-bound cesium (^{137}Cs). Since then, a number of remedial actions have been taken or will be taken with the primary goal of significantly reducing or eliminating inputs of these contaminants into surface waters and ground waters. For years, ^3H and ^{90}Sr had migrated from legacy Melton Valley waste burial areas. ^{137}Cs was present primarily in soils of the WOC floodplain, having been deposited in the creek bed and in overbank flooding areas through years of process releases from ORNL. CERCLA remedial actions stipulated in the Record of Decision for Melton Valley were completed in 2006, and the site is currently being monitored to verify the effectiveness of the actions. Included in those actions were the removal of highly contaminated floodplain soils, hydrologic isolation of waste burial grounds, removal or closure-in-place of several former wastewater holding ponds, and construction and operation of shallow groundwater collection systems to capture waste-burial-ground leachate for treatment. Since completion of the CERCLA remediation of Melton Valley, the discharges of contaminants from the waste areas to White Oak Creek have significantly diminished. The CERCLA risk-based goals laid out in the Record of Decision are largely met for radiological discharges at White Oak Dam on an annual average basis.

Another CERCLA legacy pollutant of concern has been mercury. Surface water sampling and analysis for TDEC Ambient Water Quality Criteria shows that mercury is the principal residual contaminant that occasionally exceeds criteria in surface water in Melton Valley, specifically in White Oak Lake and at the White Oak Dam discharge point. Although mercury continues to emanate from legacy sources in Bethel Valley, several successful corrective actions related to mercury have been completed since 2007, and the instream mercury concentration is generally less than the ambient water quality criterion of 51 ng/L at locations including the 7500 Bridge (WCK 3.4) where White Oak Creek enters Melton Valley, a point where mercury is monitored for CERCLA compliance purposes. Corrective actions for mercury have included rerouting and pretreating building sumps that collected groundwater containing mercury to wastewater treatment facilities and optimizing Process Waste Treatment Complex carbon filtration systems to maximize mercury removal. Mercury concentrations in fish tissue have declined in most monitoring locations in the WOC Watershed, with values generally falling below the 0.3 mg/kg TN fish-tissue consumption advisory limit. Residual mercury in stream channel sediment and in the sediment in the White Oak Lakebed deposits is thought to be the main source of elevated mercury concentrations in water and fish tissue in White Oak Lake.

Conclusions

ORNL receiving streams have, in the past, exceeded de minimis concentrations of some water quality criteria, and, given the nature of ORNL operations, in spite of infrastructure and operational mitigation measures, the potential for similar exceedance exists in the future. Of the pollutants discussed in this antidegradation statement, the primary ones which studies show may contribute to White Oak Creek's 303(d)-listed biological integrity impairment are Cu and temperature. Cu concentrations have largely met water quality criteria but have been of note in a single reach of WOC; and temperature

criteria are largely met other than in cases where storm water runoff is warmed by rain falling on pavement heated by the sun. As shown in Figures 1-6, concentrations of key pollutants have generally declined (improved) in ORNL receiving streams compared to 5 - 20 years ago and continue to do so. Instances where increases have or may occur are typically transient or of short duration. As such, it is not straightforward to determine exactly what pollutant background concentrations de minimis percentages are or will be in the future. As these improvement trends are recognized, it should also be acknowledged that depending on mission priorities, successes of control measures, and specific future revisions of specific environmental rules and criteria, there will continue to be the potential for ORNL discharges to temporarily contribute to de minimis exceedances. It should also be acknowledged that the nature and function of ORNL are expected to continue providing strong socio-economic justification for potential future degradation, and that ORNL, through programs including the WQPP, will continue to work toward understandings and corrective actions where de minimis exceedances have the potential to occur.

Appendix C – CERCLA Outfalls

Appendix C – CERCLA Outfalls

The outfalls listed in Table B-1 below were removed from ORNL’s NPDES permit when it was reissued in 2008 primarily because the effluents that are being discharged through them are solely associated with CERCLA activities. Therefore, no 2023 NPDES permit applications are being submitted for these outfalls.

Table C-1 – CERCLA Only Outfalls	
Outfall Number	
	080
	082
	092
	181
	282
	283
	285
	286
	287
	288
	290
	292
	293
	384
	682

Appendix D – Outfalls No Longer Needing a NPDES Permit

Appendix D – Outfalls Not Needing a NPDES Permit

The outfalls listed in Table D-1 below were either never permitted since they were never outfalls needing an NPDES permit, or were previously NPDES permitted in past permit cycles, but for various reasons (ex. physical removal, source eliminated, plugging, etc.) are no longer needing an NPDES permit. Therefore, no 2023 NPDES permit applications are being submitted for these outfalls.

Table D-1 – Outfalls Not Needing a NPDES Permit	
Outfall Number	Reasoning
009	No longer an Outfall: Source eliminated by construction project
X13	Not an Outfall: Instream Flow Data Collection, Melton Branch
X14	Not an Outfall: Instream Flow Data Collection, White Oak Creek
X15	Not an Outfall: Instream Flow Data Collection, White Oak Dam
X16	Not an Outfall: Instream CI Monitoring Point, First Creek
X17	Not an Outfall: Instream CI Monitoring Point, First Creek
X18	Not an Outfall: Instream CI Monitoring Point, Fifth Creek
X19	Not an Outfall: Instream CI Monitoring Point, Fifth Creek
X20	Not an Outfall: Instream CI Monitoring Point, Fifth Creek
X21	Not an Outfall: Instream CI Monitoring Point, White Oak Creek
X22	Not an Outfall: Instream CI Monitoring Point, White Oak Creek
X23	Not an Outfall: Instream CI Monitoring Point, White Oak Creek
X24	Not an Outfall: Instream CI Monitoring Point, White Oak Creek
X25	Not an Outfall: Instream CI Monitoring Point, White Oak Creek
X26	Not an Outfall: Instream CI Monitoring Point, White Oak Creek
X27	Not an Outfall: Instream CI Monitoring Point, Melton Branch
X28	Not an Outfall: Instream PAA Monitoring Point, White Oak Creek

Table D-1 – Outfalls Not Needing a NPDES Permit	
Outfall Number	Reasoning
X29	Not an Outfall: Instream PAA Monitoring Point, White Oak Creek
086	Outfall physically removed
087	Outfall physically removed
101	No flow - source eliminated
103	Outfall plugged
106	Source eliminated
171	Source eliminated from demolition of Building 3084
202	Outfall physically removed
205	Not an outfall - abandoned potable water line
206	Only conveys groundwater - does not need permit
222	Source eliminated
303	Outfall physically removed
309	Outfall physically removed
311	Steam pit re-routed to OF 217 - outfall plugged
381	Outfall physically removed
382	Outfall physically removed
385	Source eliminated
386	Source eliminated
465	Source eliminated
471	Outfall Does Not Exist -- Mistakenly Permitted in Previous Permits
483	Source eliminated - replaced by OF 583
489	Source eliminated - replaced by OF 583

**Appendix E –
Background Stream Data**

Appendix E - Background Stream Data

Sampling at instream locations on White Oak Creek commenced in 2021 through 2022 to acquire background data upstream of the Sewage Treatment Plant (Outfall X01) at WCK 3.9 and upstream of the Process Waste Treatment Complex (Outfall X12) at WCK 4.1. Refer to the topographic map in Appendix G for the WCK locations.

Background Data for STP from WCK 3.9					
Parameter	Units	Minimum Concentration	Average Concentration	Maximum Concentration	Number of Data Points
Antimony, total	mg/L	7.64E-05	<1.82E-04	<2.60E-04	7
Arsenic, total	mg/L	<4.00E-04	<1.11E-03	<2.00E-03	7
Cadmium, total	mg/L	<2.55E-05	<4.17E-04	1.85E-03	7
Chromium, total	mg/L	<1.55E-03	<5.17E-03	<1.00E-02	7
Copper, total	mg/L	<4.12E-03	<7.37E-03	<1.10E-02	7
Lead, total	mg/L	2.06E-04	<7.67E-04	<1.50E-03	7
Mercury, total	mg/L	8.3E-06	1.6E-05	2.9E-05	7
Nickel, total	mg/L	<6.19E-03	<3.48E-02	<7.30E-02	7
Selenium, total	mg/L	<2.00E-03	<2.77E-03	4.93E-03	7
Silver, total	mg/L	<1.20E-04	<2.03E-04	<2.66E-04	7
Thallium, total	mg/L	<8.35E-06	<2.70E-05	6.18E-05	7
Zinc, total	mg/L	<8.09E-03	<2.26E-02	<4.00E-02	7
Conductivity	mS/cm	0.288	0.386	0.471	7
Dissolved Oxygen	mg/L	8.1	9.1	9.9	7
pH	StdUnit	7.8		8.3	7
Temperature	degC	4.5	14.6	19	7
Turbidity	NTU	1	3	5	7
Hardness (as CaCO3)	mg/L	145		217	7

Background Data for PWTC from WCK 4.1					
Parameter	Units	Minimum Concentration	Average Concentration	Maximum Concentration	Number of Data Points
Antimony, total	mg/L	9.76E-05	<2.09E-04	<2.60E-04	7
Arsenic, total	mg/L	<4.00E-04	<1.09E-03	<2.00E-03	7
Cadmium, total	mg/L	<2.55E-05	<1.56E-04	<3.30E-04	7
Chromium, total	mg/L	<1.55E-03	<5.17E-03	<1.00E-02	7
Copper, total	mg/L	<4.12E-03	<7.46E-03	<1.10E-02	7
Lead, total	mg/L	2.10E-04	<8.18E-04	<1.50E-03	7
Mercury, total	mg/L	6.2E-06	1.5E-05	2.7E-05	7
Nickel, total	mg/L	<6.19E-03	<3.48E-02	<7.30E-02	7
Selenium, total	mg/L	<2.00E-03	<2.87E-03	5.22E-03	7
Silver, total	mg/L	<1.20E-04	<2.03E-04	<2.66E-04	7
Thallium, total	mg/L	<8.35E-06	<4.67E-05	1.87E-04	7

Background Data for PWTC from WCK 4.1					
Parameter	Units	Minimum Concentration	Average Concentration	Maximum Concentration	Number of Data Points
Zinc, total	mg/L	1.08E-02	<2.50E-02	<4.00E-02	7
Conductivity	mS/cm	0.204	0.330	0.458	7
Dissolved Oxygen	mg/L	8.3	9.3	11	7
pH	StdUnit	7.4		8.5	7
Temperature	degC	3.5	13.7	18.8	7
Turbidity	NTU	2	4	9	7
Hardness (as CaCO3)	mg/L	166		211	7

**Appendix F –
EPA Form 1 Table F-1 Existing
Environmental Permits**

**Appendix F – Existing Environmental Permits/EPA Form 1 Section 6.
40 CFR 122.21(f)(6)**

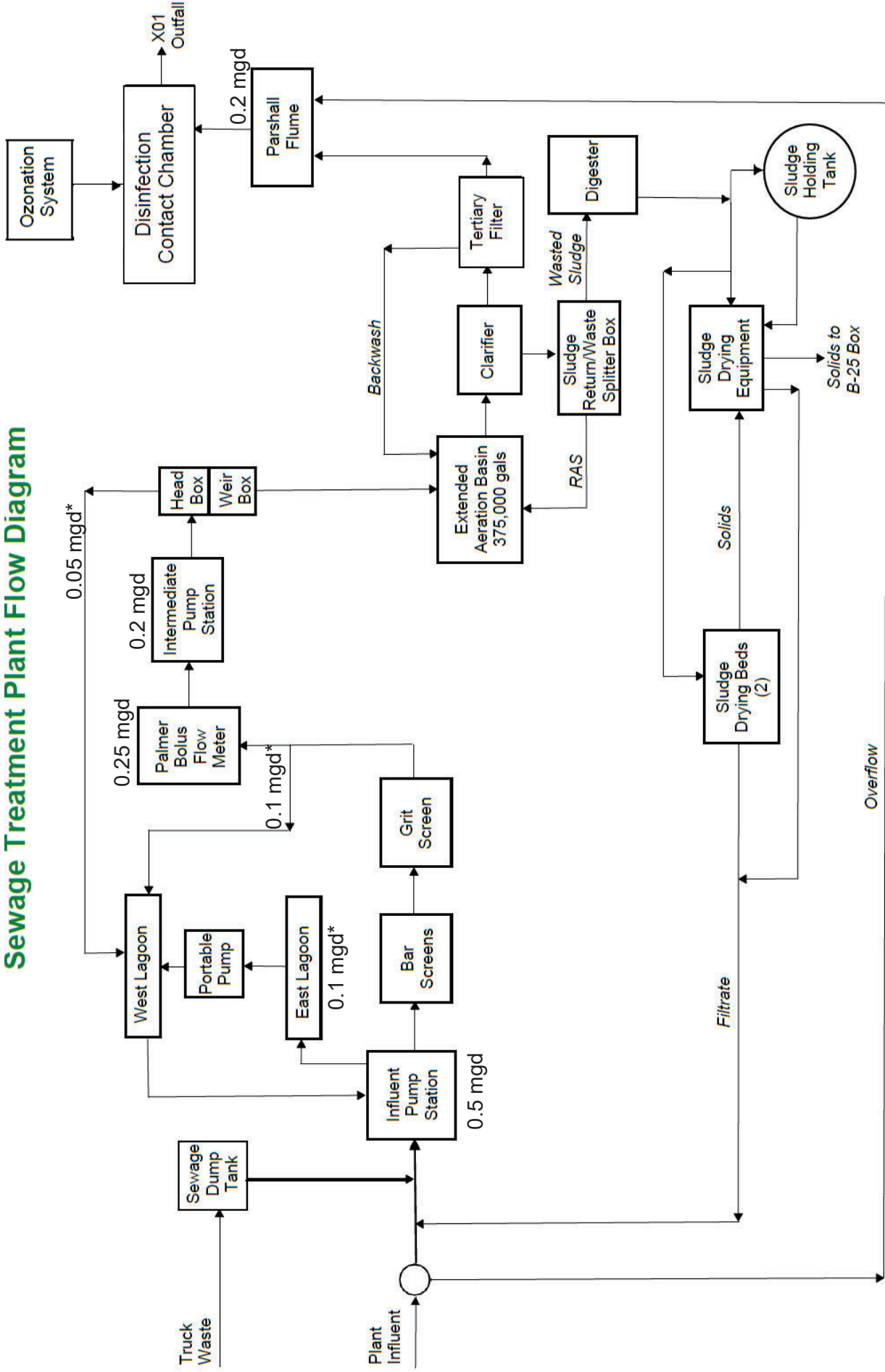
Table F-1 – Existing Environmental Permits	
ORNL Clean Water Act Permits	
Permit Number	Permit Description
TN0002941	ORNL Site NPDES Permit
City of Oak Ridge Permit No. 1-12	Industrial and Commercial User Wastewater Discharge Permit (Carbon Fiber Technology Facility) with the City of Oak Ridge (04/01/2021)
TNR136470	Notice of Coverage Under the General NPDES Permit for Stormwater for ORNL EGCR Parking Lot
TNR136285	Notice of Coverage Under the General NPDES Permit for Stormwater for TRC Project
TNR136355	General NPDES Permit for Storm Water Discharges Associated with Craft Resources Support Facility Construction Activities
ARAP-NR2203.208	NR2203.208 ARAP - Construction of a New Outfall Consisting of a Headwall and Riprap Apron
ARAP-NR2203.188	NR2203.188 ARAP - Installation of a New Effluent Flow Monitoring Station with a Parshall Flume and New Outfall Line (STP Modernization Project)
SOP-22033	State Operating Permit (Pump and Haul Permit) for No-Discharge Wastewater Collection System (New GEARS Facility)
ORNL Groundwater Protection Permits	
Permit Number	Permit Description
SOP-02056	State Operating Permit (Pump and Haul Permit) for Western Advantage
SOP-07014	State Operating Permit (Pump and Haul Permit) for UCOR (09/01/2021-08/31/2026)
ORNL Resource Conservation and Recovery Act (RCRA) Permits	
Permit Number	Permit Description
TNHW-145 Class 1 Mod: 34 (A-1133)	Hazardous Waste Storage and Treatment Permit - NOTE: Permit remains active beyond expiration date until an operating permit has been issued
EPA I.D. No. TN1890090003	PCB Risk Based Agreement Between UT Battelle and EPA
TNHW-178 Class 1 Mod	Hazardous and mixed waste storage permit (11/18/20)
TN1890090003	2023 ORNL Hazardous Waste Transporter Permit

Table F-1 – Existing Environmental Permits	
TNHW-164 Class 1 Mod 5 (A-1123)	TNHW-164 Class 1 Mod 4 (A-1118) Mod. Date 10/18/2022
ORNL Clean Air Act (CAA) Permits	
Permit Number	Permit Description
071009P	Air Quality Permit UCOR (TRU Operations)
576448	Clean Air Act Title V Operating Permit for Isotek operations at ORNL Administrative Amendment #1
C-21-0941-02-01	Hardin Valley NTRC Natural Gas Generator Construction Permit
571359	(Minor Mod #6) Clean Air Act Title V Operating Permit, UT Battelle Operations Permit # 571359
474951	Carbon Fiber Technology Facility CAA Operating Permit (Conditional Major Amendment #1)
578132	Clean Air Act Title V Operating Permit for UCOR Operations at ORNL
971543P	CAA Construction Permit - 3525 Area Off Gas System Amendment #3
980167	CAA Major Construction Permit - Carbon Fiber Technology Facility Thermal Oxidizer
980182	CAA Major Construction Permit ORNL Main Site
22-0941	Permit to Operate NTRC 503hP and 1490hP Emergency Generators
ORNL Sampling Permits	
Permit Number	Permit Description
MB836291, Rev. 1	U.S. Fish & Wildlife Service Permit # MB836291, Rev. 1 (Canada Goose)
TWRA 1630	TWRA Scientific Collection Permit # 1630 (Sunfish and Catfish)
TWRA 1631	TWRA Scientific Collection Permit # 1631 (Canada Geese)

**Appendix G –
EPA Form 1 Topographic Map**

**Appendix H –
EPA Form 2C Line Drawing STP**

Sewage Treatment Plant Flow Diagram



*Estimated flow, not metered

December 2022

**Appendix I –
EPA Form 2C Line Drawing PWTC**

Appendix J – Permit By Rule

Appendix J - Form 2C – Permit By Rule

NPDES-Related Facilities with Resource Conservation and Recovery Act (RCRA) Wastewater Treatment Unit Exemption

ORNL generates some wastewaters that can be classified as hazardous under RCRA. These hazardous wastewaters that meet the PWTC internal wastewater acceptance criteria (WAC) may be sent to the PWTC for treatment and discharged through Outfall X12 within NPDES permit limits. All PWTC wastewaters and associated waste streams are managed in compliance with RCRA and NPDES permit requirements. The PWTC comprises the following RCRA Wastewater Treatment Units (WWTUs):

- The PWTC, Building 3608, for chemical treatment of process wastewaters;
- The Low-Level Liquid Wastes (LLLW) Evaporator System in Building 2531 and LLLW tanks for storage and volume reduction of liquid low-level waste, including the Melton Valley Storage Tanks (MVSTs) and associated facilities; and
- The Transuranic Waste Processing Center (TWPC), Building 7880 and associated facilities for treating and packaging concentrated LLLW and sludges for transport to offsite waste disposal facilities.

These facilities are interconnected by permanent piping (except for some generator accumulation tanks) and ultimately discharged treated effluent through one discharge point, which is NPDES Outfall X12 at the PWTC. Both federal and state RCRA regulators have recognized the potential conflicts of dual regulations, as well as the importance of allowing these wastewaters to be treated and discharged by facilities that operate under CWA standards. RCRA regulations provide a special form of permitting called “Wastewater Treatment Unit Exemption.” Formerly called permit-by-rule (PBR), the Wastewater Treatment Unit Exemption offers exemptions from some RCRA requirements for facilities operating under CWA standards.

Prior to 1992, DOE submitted PBR notifications for changes or additions to ORNL wastewater treatment facilities. In 1992, a PBR change caused the ORNL WWTUs to be classified as exempt WWTUs for receipt of on-site wastewaters. This means that DOE was exempt from RCRA permitting and no longer had to submit PBR notifications for changes or additions to the systems. The WWTU exemption applies since the ORNL systems (1) receive only on-site RCRA wastewaters or off-site wastewaters from the same corporation, (2) are part of a wastewater treatment facility that is subject to regulation under the CWA, (3) receive and treat or store an influent wastewater that is a hazardous waste or wastewater treatment sludge, and (4) meet the definition of a tank or tank system.

In 2003, a facility was constructed at ORNL called the Transuranic Waste Remediation Facility (TWRF), now known as the TWPC. The TWPC is directly connected (hard-piped) to the MVSTs, which are a group of doubly contained stainless steel underground tanks located at the Melton Valley 7830 Area for storage of LLLW. The wastes in the MVSTs, which typically consist of liquid underlain by a sludge layer, are the residual LLWs that have been treated by evaporation at Building 2531, the ORNL LLLW Evaporator, and piped to the MVSTs. Prior to 1992, the MVSTs and ancillary wastewater

treatment/storage tanks were compliant with RCRA via the Tennessee requirements for PBR. Based on the 1992 revisions to the Tennessee RCRA regulations, the MVSTs are exempted from RCRA permitting under the on-site WWTU exemption. The TWPC treats and packages the concentrated radioactive liquids and sludges contained in the MVSTs that have resulted from the treatment and evaporation of ORNL's LLW wastewaters. While there are no direct discharges of liquid effluents to the environment from the TWPC, there are infrequent pumped exchanges of wastewater and wastewater sludges between the MVSTs themselves and the TWPC's treatment units. The TWPC provides stabilization, solidification, and packaging of LLLW to facilitate shipment to out-of-state repositories.

The TWPC has been determined to be subject to regulation under CWA section 401 (see the three attached letters here in **Appendix J – Permit-By-Rule References** for details). Therefore, the TWPC wastewater treatment units are included in this ORNL NPDES permit application. An actual effluent discharge is not required under RCRA for the WWTU exemption to apply; however, regulatory oversight or permitting under CWA is required for the WWTU to be covered by the WWTU exemption.

REFERENCES

Letter from M. Apple to L. O. Wilkerson, "Point of Generation' for the Proposed Sludge Project at the Transuranic Waste Processing Center," January 27, 2012.



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
5th Floor, L & C Tower
401 Church Street
Nashville, Tennessee 37243-1535

January 27, 2012

Ms. Laura O. Wilkerson,
Portfolio Federal Project Director
Oak Ridge National Laboratory (ORNL) Projects
Department of Energy (DOE)
Oak Ridge Office
P.O. Box 2001
Oak Ridge, Tennessee 37831

RE: Regulatory Review of "Point of Generation" for the
Proposed Sludge Project at the Transuranic Waste Processing Center

Dear Ms. Wilkerson:

The Division of Solid Waste Management (DSWM or "the Division) has reviewed your July 18, 2011, request and the additional requested supporting information and documentation provided in that letter and subsequent meetings with your staff, and conditionally agrees with the DOE-ORNL decision that the point of generation for the sludge to be treated at the Transuranic Waste Processing Center is when the sludge is removed from the wastewater treatment unit. In accordance with Tennessee Rule 1200-01-11-.02 & .03, it is ultimately the responsibility of the generator to make the correct hazardous waste determination, including the point of generation. However, this letter does respond to a case-specific request for guidance and is limited to these particular facts and circumstances. As currently proposed the sludge leaves the wastewater treatment facility when it exits the in-line mixer. It should be noted that should the described sludge treatment process design change to the degree where the extent of coverage by the wastewater treatment unit (WWTU) exemption provided by Rule 1200-01-11-.07(1)(b)4 is questionable, the point of generation determination should be re-examined.

The waste that exits the wastewater treatment unit loses its WWTU exemption, and a hazardous waste determination must be made at that point. Depending upon the outcome of the hazardous waste determination – the waste may be subject to regulation under Chapter 1200-01-11. Due to the uncertainty of the identity and concentration of hazardous constituents in the sludges and the unproven treatment technology proposed, the waste must be fully characterized at the point of generation by representative sampling and established regulatory analytical methods to support a hazardous waste determination per Rule 1200-01-11-.02 & .03, and the final disposal path. DOE-ORNL is cautioned not to create a waste with no disposal options.

Letter to Ms. Laura O. Wilkerson
January 27, 2012
Page 2

DOE-ORNL should not in any manner interpret that our concurrence with the point of generation determination affects the status of these sludges with respect to inclusion in the Site Treatment Plan (STP) (Site MWIR number M2344, BVEST-MTRU Sludge and Site MWIR number M2345, MVST-MTRU Sludge). Our concurrence merely provides a path forward for the safe and environmentally protective treatment and disposal of these hazardous wastes such as would occur in a permitted Treatment, Storage, and Disposal facility (TSDF) per Rule 1200-01-11-.07.

Per Rule 1200-01-11-.07(1)(b)4, operations in on-site wastewater treatment units are not normally subject to regulation under Tennessee's Hazardous Waste Management Regulations. However, as noted above, the sludge and other solid wastes that exit those units are subject to full regulation, to include a waste determination. It is our present opinion that the described units and processes fall under your wastewater treatment permit, TN0002941, issued by the State of Tennessee on August 1, 2008, that expires on July 30, 2013.

It should be noted that the wastewater treatment unit exemption is clearly linked to being associated with a valid wastewater treatment unit. Units that have no routine demonstrated throughput and/or routine on-going use as an active wastewater treatment unit and/or that are storing hazardous waste for extended periods could be considered as evidence of the units not being bona fide wastewater treatment units. We do recognize that the conditions and challenges at ORNL are unique and not typical of a standard industrial operation, so the criteria for "routine" must accommodate those realities. It is the Division's position that while we concur with your point of generation finding, if the present sludges are not processed and shipped, or the project is not clearly in-process towards that goal, by February 1, 2013, it would be prudent for the Department to consider re-evaluating these issues. We request that you keep our Knoxville office updated on the status of this project.

The findings in this letter are strictly limited to the circumstances, facts, and challenges that are unique to this specific facility at this time and cannot necessarily be applied to any other facilities or future situations. Should you have any questions or comments on this letter or issue, please contact Revendra Awasthi at (865) 594-5468 or Revendra.Awasthi@tn.gov or Mr. Dave Jarrett (David.Jarrett@tn.gov, 615-532-0295), or Mr. Joe Putnam (Joe.Putnam@tn.gov, 615-532-0882) of our staff.

Sincerely,



Mike Apple
Director

cc: Steve Stout, Environmental Legal Counsel, Office of General Counsel, TDEC
John Owsley, Director, TDEC DOE Oversight Division
Robert Benfield, Waste Management, TDEC DOE Oversight Division
Garey Mabry, Manager, DSWM Hazardous Waste Management Program
Revendra Awasthi, Manager, DSWM Knoxville Field Office
Robert S. Nakamoto, Manager, DSWM Regulatory Compliance Section
Joe Putnam, DSWM Regulatory Compliance Section
Dave Jarrett, DSWM Regulatory Compliance Section

Letter from D. L. Buhaly to L. C. Bunting, "Foster Wheeler Transuranic Waste Remediation Facility Connected to the Melton Valley Storage Tanks," November 18, 2002.

11/19/2002 10:23 615-532-8686

WATER POLLUTION

PAGE 02

NOV-19-2002 10:39

P.02/03



Department of Energy

Oak Ridge Operations Office
P.O. Box 2001
Oak Ridge, Tennessee 37831—

November 18, 2002

Mr. Larry Bunting
TDEC Division of Water Pollution Control
6th Floor, L&C Annex
401 Church Street
Nashville, Tennessee 37243-1534

Dear Mr. Bunting:

**FOSTER WHEELER TRANSURANIC WASTE REMEDIATION FACILITY
CONNECTED TO THE MELTON VALLEY STORAGE TANKS**

To confirm our conversation of November 15, 2002, we agreed that the Foster Wheeler Transuranic Waste Remediation Facility (TWRP), which is connected to the Process Waste Water Treatment Facility (Outfall X12) via the Melton Valley Storage Tanks, is subject to Permit-By-Rule regulation under the Clean Water Act Section 401. There will be no direct discharges of liquid effluents to the environment from the TWRP when it becomes operational but there will be pumped exchanges of wastewater and wastewater sludges between the Melton Valley Storage Tanks and the TWRP treatment units. The TWRP will be a terminal process for the low-temperature thermal evaporation, stabilization and packaging of sludges to facilitate eventual shipment to an out-of-state repository. This was noted in the supplemental information for Outfall X-12 in the Oak Ridge National Laboratory (ORNL) National Pollutant Discharge Elimination System (NPDES) Permit Application submitted in June of 2001.

A letter from David C. Graham with the Tennessee Department of Environment and Conservation Division of Solid Waste Management to Mr. Robert C. Sleeman further states the Transuranic Waste Remediation Facility should be regulated under the provisions of the ORNL NPDES Permit.

According to our discussion, no further notification or documentation is necessary for the facility to be covered by either the Waste Water Treatment Units Exemption or Permit-by-Rule.

PRINTED ON RECYCLED PAPER

11/19/2002 10:23 615-532-0686
NOV-19-2002 10:39

WATER POLLUTION

PAGE 03
P.03/03


Mr. Larry Bunting

-2-

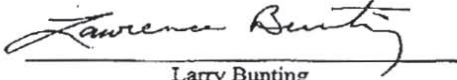
November 18, 2002

If you are in agreement with this, please sign and fax confirmation to me at (865) 574-9275.

Sincerely,


David L. Buhaly
Laboratory Support Team
ORNL Site Office

Enclosures


Larry Bunting

19 November 2002
Date

TOTAL P.03

Letter from D. C. Graham to R. C. Sleeman, "Re: Transuranic Waste Remediation Facility, Permit Number TNHW-100, Requested Policy Guidance," March 22, 2001.

ENVIRONMENTAL ASSISTANCE CENTER
TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2700 MIDDLEBROOK PIKE, SUITE 220
KNOXVILLE, TENNESSEE 37921-5602
PHONE (865) 594-6035 STATEWIDE 1-888-891-8332 FAX (865) 594-6105

March 22, 2001

Mr. Robert C. Sleeman, Group Leader
Environmental Services Group
United States Department of Energy
Oak Ridge Operations Office,
P.O. Box 2001
Oak Ridge, Tennessee 37831

Re: Letter to David C. Graham, Division of Solid Waste Management (DSWM), Tennessee Department of Environment and Conservation (TDEC), from Robert C. Sleeman, United States Department of Energy (DOE) dated November 16, 2000.

Transuranic (TRU) Waste Remediation Facility

Permit Number TNHW-100

Requested Policy Guidance

Dear Mr. Sleeman:

In your November 16, 2000 letter you requested policy guidance concerning the TRU Remediation Facility. The following analysis and recommendations are offered in response to your request.

The Tennessee Hazardous Waste Management Regulations state in relevant part(s):

Rule 1200-1-11-.06 STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

(1) General [40 CFR 264 Subpart A]

(a) Purpose

1. The purpose of this Rule is to establish standards, which define the acceptable management of hazardous wastes in Tennessee. These standards provide a basis upon which permit applications for facilities will be evaluated.

(b) Applicability

1. The standards in this Rule apply to owners and operators of all facilities which treat, store, or dispose of hazardous wastes, except as specifically provided otherwise in this Rule of Rule 1200-1-11-.02.
2. The requirements of this Rule do not apply to:
 - (v) The owner or operator of an elementary neutralization unit or an on-site wastewater treatment unit as defined in Rule 1200-1-11.01(2)(a), provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory defined in Rule 1200-1-11-.10(3)(a), Table Treatment Standards for Hazardous Wastes), or reactive (D003) waste, to remove the characteristic before land disposal, the owner/operator must comply with the requirements set out in part (2)(h)2 of this Rule.
 - (vi) The addition of absorbent material to waste in a container (as defined in Rule 1200-1-11-.01(2)) or the addition of waste to absorbent material in a container, provided that these actions occur at the time waste is first placed in the container, and the owners or operators are in compliance with part (2)(h)2 of this Rule and subparagraphs (9)(b) and (c) of this Rule.

Rule 1200-1-11-.01(2)(a) "Wastewater treatment unit" means a device which:

1. Is part of a wastewater treatment facility that is subject to regulation under either section 402 or 307(b) of the Clean Water Act; and
2. Receives and treats or stores an influent wastewater that is a hazardous waste as defined in Rule 1200-1-11-.02(1)(c) or generates and accumulates a wastewater treatment sludge which is a hazardous waste as defined in Rule 1200-1-11-.02(1)(c), or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in Rule 1200-1-11-.02(1)(c); and
3. Meets the definition of tank or tank system in this subparagraph.

“Tank” means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed, primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

“Tank system” means a hazardous waste storage or treatment tank and its associated ancillary equipment and containment system.

- Rule 1200-1-11-.06(2)(h) 2. Where specifically required by other sections of this part, the owner or operator of a facility that treats, stores or disposes ignitable or reactive waste, or mixes incompatible waste of incompatible wastes and other materials, must take precautions to prevent reactions which:
- (i) Generate extreme heat or pressure, fire or explosions, or violent reactions;
 - (ii) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;
 - (iii) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;
 - (iv) Damage the structural integrity of the device or facility;
 - (v) Through other like means threaten human health or the environment.

If the wastewater treatment unit of the Transuranic (TRU) Waste Remediation Facility conforms to the above Rules and Definitions (present and future), it qualifies for exemption/exclusion from Tennessee’s Hazardous Waste Management Regulations (Tennessee Rule Chapter 1200-1-11) – Revision u-1.

The “wastewater treatment unit” consists of a tank system. A tank system is a hazardous waste storage or treatment tank(s), its associated ancillary equipment, and its containment system. Ancillary equipment means any device including, but not limited to, such devices as piping, fittings, flanges, valves and pumps that are used to distribute, meter, or control the flow of hazardous waste from the point of generation to a storage or treatment tank(s) between hazardous waste storage and treatment tanks to the point of shipment for disposal off-site.

Mr. Robert C. Sleeman, Group Leader
United States Department of Energy
March 22, 2001
Page 4

The sludge dehydration equipment that is part of a wastewater treatment system is excluded from permitting requirements provided that the equipment meets the definition of wastewater treatment unit as defined in Rule 1200-1-11-.01(2)(a), and is actually used to evaporate water from the sludge.

Further, the United States Environmental Protection Agency (EPA) made it clear in the Federal Register/Vol. 53, No. 171/Friday, September 2, 1988/Rules and Regulations that "any hazardous waste tank system that is used to store or treat the wastewater that is managed as an on-site wastewater treatment facility with a National Pollution Discharge Elimination System (NPDES) permit or that discharges to a Publicly Owned Treatment Works (POTW), is exempt from the RCRA Regulations."

In order to avoid conflicting language between permit number TNHW-100 and the wastewater treatment unit exemption, the permit should be modified to remove the tank system. Also, Foster Wheeler Environmental Corporation should insure that the necessary NPDES permit(s) are secured and in effect.

This letter in no way intends to interfere with other regulatory agencies which includes:

The Division of Air Pollution Control;
The Division of Water Pollution Control; and
The Division of Radiological Health.

If further guidance or clarification is needed, please contact the undersigned at (865) 594-5463.

Sincerely,



David C. Graham, P.E.
Coordinator, Oak Ridge Operations
Division of Solid Waste Management
DCG/bmh tru.doc

cc: Gary Riner, DOE
Mona Johnson, Foster Wheeler Environmental Corporation (FWENC)
Bryan Roy, FWENC
W.H. Childress, DOE-O
Jamie Burroughs, TDEC, DSWM-NCO
Angela Ivory, TDEC, DSWM-NCO
Bill Zulliger, BJC
Paul Schmierbach, DWPC-EAC-K
Vick Malichis, DAPC-EAC-K
Billy Freeman, DRH-EAC-K

Appendix K – Improvements
EPA Form 2C Section 6 and EPA Form 2F Section 2

Appendix K – Improvements
EPA Form 2C Section 6 and EPA Form 2F Section 2
(40 CFR 122.21(g)(6))

NPDES EPA Form 2C Sections 6.1 and 6.2, and EPA Form 2F Section 2.1 and 2.2 instructions say to briefly identify and describe any compliance projects that would affect your discharge described in the application. EPA Form 2C/2F Section 6.3/2.3 are Optional Sections, where one can describe any additional improvement projects that may affect your discharge. Therefore, this appendix is intended to fulfill the requirements for Sections 6.1, 6.2, and 6.3 for EPA Form 2C and Sections 2.1, 2.2, and 2.3 for EPA Form 2F.

Comprehensive Environmental Response, Compensation, and Liability Action (CERCLA) Remedial Actions

ORNL has been undertaking numerous environmental cleanup and restoration activities conducted under the CERCLA regulatory process (remedial actions) for decades to help address legacy contamination throughout the ORR. A Federal Facility Agreement was developed between EPA, TDEC, and DOE in the early 1990's to help oversee the remedial actions taking place on the ORR, including ORNL. Several records of decision (RODs) pertaining to ORNL watersheds (Bethel Valley and Melton Valley RODs) have already been implemented and there may be more on the horizon. Demolition of legacy contaminated facilities has begun and is on-going. Implementation of these watershed-scale RODs though initially completed, still require long-term stewardship and are regularly being reviewed/monitored to make sure the remedial action objectives are being met and they are protecting human health and the environment.

Court Order 1996 – Tennessee Civil Lawsuit No. 3:92-CV-0036

Initial requirements of the order have been completed within the compliance schedule, though the order has other requirements that are long-term and more permanent. The order requires that any inappropriate connection to the stormwater/storm-drain system be immediately administratively controlled and physically discontinued, or properly rerouted within 10 days of the discovery. Therefore, as ORNL encounters this type of scenario, these situations are addressed per requirements of the order.

Energy Independence and Security Act (EISA)

EISA Section 438 requires federal facilities, such as DOE's ORNL, to restore "predevelopment hydrology" where practicable. Since 2010, ORNL has incorporated compliance with EISA Section 438 as a goal within the ORNL Site Sustainability Plan. Also, to help facilitate Section 438 compliance, the applicability of Section 438 to new ORNL construction projects and other ground-disturbing activities is considered through the ORNL NEPA review, work planning, and design/construction subcontract processes.

New Sanitary Wastewater Treatment Plant (STP) Modernization Project

During the past few years, a new STP has been designed and is currently under construction at ORNL. This new STP was needed due to the age and condition of much of the existing treatment plant and will predominantly be providing new secondary treatment processes at the facility. A new outfall is being constructed as a part of this project and compliance discharge monitoring/reporting from this outfall will be closely coordinated with TDEC as the new STP comes on-line. The construction of the new STP is expected to be completed sometime in 2024. TDEC has been involved since the beginning of this project and provided review/input/approvals where required.

**Appendix L –
EPA Form 2E Section 3.3 Cooling Water Additives**

2022 Cooling Tower Chemical Dosing

Outfall Number	Tower Location	Chemical Name & Use	Parameters of Concern (SDS listed)
014	4510	CL49 Biocide	5-10% Sodium chlorosulfamate, 7-13% Sodium bromosulfamate, and 5-10% Sodium hydroxide; pH 13.6 at 20 C.
014	4510	CL2062 Biocide	20% 2-2-Dibromo 3 nitrilopropionamide
014	4510	Quadrasperse CL5898	3-7% of 2-Phosphono-1,2,4- butane tricarboxylic acid; 1-5 % of Benzotriazole; pH 3.8 at 20 C. Decomposes to oxides of phosphorus and sulfur.
014	4510	CL401 biosurfactant	no hazardous components listed; oxides of carbon upon decomposition
014	4510	BL1254 Dechlorination	30-60 % Potassium Sulfite
014	4510	De Nora D- CHLOR, Dechlorination	92.3% Na2SO3
014	4521	CL49 Biocide	5-10% Sodium chlorosulfamate, 7-13% Sodium bromosulfamate, and 5-10% Sodium hydroxide; pH 13.6 at 20C
014	4521	CL2062 Biocide	20% 2-2-Dibromo 3- nitrilopropionamide
014	4521	Quadrasperse CL5898	3-7% of 2-Phosphono-1,2,4- butane tricarboxylic acid; 1-5 % of Benzotriazole; pH 3.8 at 20 C. Decomposes to oxides of phosphorus and sulfur.
014	4521	CL401 biosurfactant	no hazardous components listed; oxides of carbon upon decomposition
014	4521	De Nora D- CHLOR, Dechlorination	92.3% Na2SO3
58	1505 (power failure/emergency only)	CL49 Biocide	5-10% Sodiumchlorosulfamate, 7-13% Sodium bromosulfamate, and 5-10% Sodium hydroxide; pH 13.6 at 20 C.
58	1505 (power failure/emergency only)	Quadrasperse CL5898	3-7% of 2-Phosphono-1,2,4- butane tricarboxylic acid; 1-5% of Benzotriazole; pH 3.8 at 20 C. Decomposes to oxides of phosphorus and sulfur.
191	7626	TBD	when cooling tower is upgraded, should be typical chemicals for cooling towers similar to those listed here
204	2535	GN-8143 Corrosion Inhibitor	<= 5%: sodium 4-chloro-5-alkylbenzotriazolide, sodium 5-chloro-4-alkylbenzotriazolide, sodium 4-chloro-7-alkylbenzotriazolide, and sodium 5-chloro-6-alkylbenzotriazolide
204	2535	Bleach, biocide	12.5-15% Sodium hypochlorite, 0.67-0.95% Sodium Hydroxide
204	2535	USA BlueBook Sodium Sulfite Tablets, Dechlorination	35% Sodium sulfite, 65% Inert Ingredients
227	5600	CL49 Biocide	5-10% Sodium chlorosulfamate, 7-13% Sodium bromosulfamate, and 5-10% Sodium hydroxide; pH 13.6 at 20 C.
227	5600	CL2062 Biocide	20% 2-2-Dibromo-3-nitrilopropionamide
227	5600	Quadrasperse CL5898	3-7% of 2-Phosphono-1,2,4- butane tricarboxylic acid; 1-5 % of Benzotriazole; pH 3.8 at 20 C. Decomposes to oxides of phosphorus and sulfur.
227	5600	CL401 biosurfactant	no hazardous components listed; oxides of carbon upon decomposition
227	5600	De Nora D- CHLOR, Dechlorination	92.3% Na2SO3
227	5511	CL49 Biocide	5-10% Sodium chlorosulfamate, 7-13% Sodium bromosulfamate, and 5-10% Sodium hydroxide; pH 13.6 at 20 C.
227	5511	CL2062 Biocide	20% 2-2-Dibromo-3-nitrilopropionamide
227	5511	Quadrasperse CL5898	3-7% of 2-Phosphono-1,2,4- butane tricarboxylic acid; 1-5 % of Benzotriazole; pH 3.8 at 20 C. Decomposes to oxides of phosphorus and sulfur.
227	5511	CL401 biosurfactant	no hazardous components listed; oxides of carbon upon decomposition
227	5511	De Nora D- CHLOR, Dechlorination	92.3% Na2SO3
231	5800	CL49 Biocide	5-10% Sodiumchlorosulfamate, 7-13% Sodium bromosulfamate, and 5-10% Sodium hydroxide; pH 13.6 at 20C.
231	5800	CL2062 Biocide	20% 2-2-Dibromo-3- nitrilopropionamide
231	5800	Quadrasperse CL5898	3-7% of 2-Phosphono-1,2,4- butane tricarboxylic acid; 1-5 % of Benzotriazole; pH 3.8 at 20 C. Decomposes to oxides of phosphorus and sulfur.
231	5800	CL401 biosurfactant	no hazardous components listed; oxides of carbon upon decomposition
231	5800	De Nora D- CHLOR, Dechlorination	92.3% Na2SO3
231	OLCF5	CL5660 Passivation	10-30% Sulfuric Acid; 1-5% 2-Phosphono-1-2,4-butane tricarboxylic acid
231	OLCF5	CL1495	10-30% Potassium phosphate, tribasic; 5-10 % Tetrapotassium pyrophosphate
231	OLCF5	CL49 Biocide	5-10% Sodiumchlorosulfamate; 7-13% Sodium bromosulfamate; 5-10% Sodium hydroxide
231	OLCF5	CL2062 Microbiocide	20% 2-2- Dibromo-3- nitrilopropionamide
231	OLCF5	BL1254 Dechlorination	30-60 % Potassium Sulfite
231	OLCF5	CL49 Biocide	5-10% Sodiumchlorosulfamate, 7-13% Sodium bromosulfamate, and 5-10% Sodium hydroxide; pH 13.6 at 20 C.
231	OLCF5	CL2062 Biocide	20% 2-2-Dibromo-3- nitrilopropionamide
231	OLCF5	Quadrasperse CL5898	3-7% of 2-Phosphono-1,2,4- butane tricarboxylic acid; 1-5 % of Benzotriazole; pH 3.8 at 20 C. Decomposes to oxides of phosphorus and sulfur.
231	OLCF5	CL401 biosurfactant	no hazardous components listed; oxides of carbon upon decomposition
231	OLCF5	BL1254 Dechlorination	30-60 % Potassium Sulfite
249*	2026	CL5898 corrosion inhibitor	3-7% of 2-Phosphono-1,2,4-butane tricarboxylic acid; 7-13% of Benzotriazole
249*	2026	CL49 Microbiocide	5-10% Sodiumchlorosulfamate; 7-13% Sodium bromosulfamate; 5-10% Sodium hydroxide
249*	2026	CL2062 Microbiocide	20% 2-2-Dibromo-3- nitrilopropionamide
265	TRC	CL5660 Passivation	10-30% Sulfuric Acid; 1-5% 2-Phosphono-1-2,4-butane tricarboxylic acid
265	TRC	CL1495	10-30% Potassium phosphate, tribasic; 5-10 % Tetrapotassium pyrophosphate
265	TRC	CL49 Biocide	5-10% Sodiumchlorosulfamate; 7-13% Sodium bromosulfamate; 5-10% Sodium hydroxide
265	TRC	CL2062 Microbiocide	20% 2-2- Dibromo-3- nitrilopropionamide
265	TRC	CL49 Biocide	5-10% Sodiumchlorosulfamate, 7-13% Sodium bromosulfamate, and 5-10% Sodium hydroxide; pH 13.6 at 20 C.

WOC = White Oak Creek, 435INT1: Integrated Sampling Point Upstream of SNS Pond
 MB = Melton Branch
 FFK = Fifth Creek

2022 Cooling Tower Chemical Dosing

Outfall Number	Tower Location	Chemical Name & Use	Parameters of Concern (SDS listed)
265	TRC	CL2062 Biocide	20% 2-2-Dibromo-3- nitrilopropionamide
265	TRC	Quadrasperse CL5898	3-7% of 2-Phosphono-1,2,4- butane tricarboxylic acid; 1-5 % of Benzotriazole; pH 3.8 at 20 C. Decomposes to oxides of phosphorus and sulfur.
265	TRC	CL401 biosurfactant	no hazardous components listed; oxides of carbon upon decomposition
265	TRC	De Nora D- CHLOR Tablets, Dechlorination	92.3% Na2SO3
265	TRC	BL1254 Dechlorination	30-60 % Potassium Sulfite
281	HFIR 7902	NALCO 3DT461: CW treatment, corrosion, scale inhibitor	10-30% Tripotassium phosphate; 1-5% Sodium Tolytriazole; 1-1% Potassium hydroxide. pH 11.5-13. TOC 86,000 mg/L, COD 180,000 mg/L
281	HFIR 7902	Sulfuric acid: pH adjustment	pH <1 at 25 C
281	HFIR 7902	NALCO 7346: Biocide	54.2% 1-Bromo-3-Chloro-5,5-Dimethyl-Hydantoin; 28.9% 1,3-Dichloro-5-5-Dimethylhydantoin; 15.9% 1,3-Dichloro-5-Ethyl-5-Methylhydantoin
281	HFIR 7902	NALCO 7408: dechlorination	30-60% sodium bisulfite, corrosive, pH 4.1
281	HFIR 7902	Sodium sulfite tablets dechlorination	92 % sodium sulfite
281	HFIR 7902	Nalsperse 7348.11: Bio Dispersant	decomposition to oxides of carbon
281	HFIR 7902	Nalclean Inhibited HCL 8940.11; tower walls only	30-60 % hydrochloric acid; corrosive; pH 1.5
281	HFIR 7902	Bleach: annual cleaning for algal growth, tower walls only	12.5% NaClO, sodium hypochlorite; corrosive, very toxic
281	HFIR 7902	Biodispersant 73551; dispersant and detergent	10-30% Polyalkylene glycol
281	HFIR 7902	Anti-foam, Nalco 71D5 Plus	30-60% Straight Run Middle Distillate; 10-30% Hydrotreated Light Distillate (petroleum);10-30% Polypropylene Glycol; 1-5% Stearic Acid; 1-5% 1-Octanol; 1-5% Fatty Alkyl Polyglycol; 1-5% Aliphatic alcohol
281	HFIR 7902	Towebrom 960; microbiocide alternative to bleach for algae	60-100% Sodium Dichloroisocyanurate; 5-10% Sodium Bromide; 1-5% Inorganic salt
314	6018	CL49 Biocide	5-10% Sodiumchlorosulfamate, 7-13% Sodium bromosulfamate, and 5-10% Sodium hydroxide; pH 13.6 at 20C.
314	6018	Quadrasperse CL5898	3-7% of 2-Phosphono-1,2,4- butane tricarboxylic acid; 1-5 % of Benzotriazole; pH 3.8 at 20 C. Decomposes to oxides of phosphorus and sulfur.
314	6018	De Nora D- CHLOR, Dechlorination	92.3% Na2SO3
363	5300	CL49 Biocide	5-10% Sodium chlorosulfamate, 7-13% Sodium bromosulfamate, and 5-10% Sodium hydroxide; pH 13.6 at 20 C.
363	5300	CL2062 Biocide	20% 2-2-Dibromo-3- nitrilopropionamide
363	5300	Quadrasperse CL5898	3-7% of 2-Phosphono-1,2,4- butane tricarboxylic acid; 1-5 % of Benzotriazole; pH 3.8 at 20 C. Decomposes to oxides of phosphorus and sulfur.
363	5300	CL401 biosurfactant	no hazardous components listed; oxides of carbon upon decomposition = acute health hazard
363	5300	De Nora D- CHLOR Dechlorination	92.3% Na2SO3
363	5309	CL49 Biocide	5-10% Sodium chlorosulfamate, 7-13% Sodium bromosulfamate, and 5-10% Sodium hydroxide; pH 13.6 at 20 C.
363	5309	CL2062 Biocide	20% 2-2-Dibromo-3- nitrilopropionamide
363	5309	Quadrasperse CL5898	3-7% of 2-Phosphono-1,2,4- butane tricarboxylic acid; 1-5 % of Benzotriazole; pH 3.8 at 20 C. Decomposes to oxides of phosphorus and sulfur.
363	5309	CL401 biosurfactant	no hazardous components listed; oxides of carbon upon decomposition
363	5309	De Nora D- CHLOR, Dechlorination	92.3% Na2SO3
367	3047 (Only seasonally drains to this Outfall)	CL49 Biocide	5-10% Sodiumchlorosulfamate, 7-13% Sodium bromosulfamate, and 5-10% Sodium hydroxide; pH 13.6 at 20 C.
367	3047 (Only seasonally drains to this Outfall)	Quadrasperse CL5898	3-7% of 2-Phosphono-1,2,4- butane tricarboxylic acid; 1-5% of Benzotriazole; pH 3.8 at 20 C. Decomposes to oxides of phosphorus and sulfur.
435	SNS 8913 (TW)	Sulfuric acid: pH adjustment	93-98 % sulfuric acid: pH <1 at 25 C
435	SNS 8913 (TW)	NALCO 7346: biocide	54.2 % 1 Bromo-3-Chloro-5,5-Dimethyl-Hydantoin; 28.9% 1,3-Dichloro-5,5-Dimethylhydantoin; 15.9% 1,3-Dichloro-5-Ethyl-5-Methylhydantoin
435	SNS 8913 (TW)	NALCO Towerbrom 960: biocide	60-100% Sodium Dichloroisocyanurate; 5-10% Sodium Bromide; 1-5% Inorganic salt
435	SNS 8913 (TW)	NALCO 3DT231: corrosion and deposit inhibitor	1-5% Phosphoric acid; 1-5% Sulfuric Acid; 1-5 % Substituted aromatic amine. Evolves oxides of carbon.
435	SNS 8913 (TW)	NALCO 7408: dechlorination	30-60% Sodium Bisulfite, corrosive
435	SNS 8913 (TW)	NALCO 71D5 Plus: foam control	30-60% Straight Run Middle Distillate; 10-30% Hydrotreated Light Distillate (petroleum);10-30% Polypropylene Glycol; 1-5% Stearic Acid; 1-5% 1-Octanol; 1-5% Fatty Alkyl Polyglycol; 1-5% Aliphatic alcohol
435	8913 (CNDW)	Sulfuric acid: pH adjustment	93-98 % sulfuric acid: pH <1 at 25 C
435	8913 (CNDW)	NALCO 7346: biocide	54.2 % 1 Bromo-3-Chloro-5,5-Dimethyl-Hydantoin; 28.9% 1,3-Dichloro-5,5-Dimethylhydantoin; 15.9% 1,3-Dichloro-5-Ethyl-5-Methylhydantoin
435	8913 (CNDW)	NALCO Towerbrom 960: biocide	60-100% Sodium Dichloroisocyanurate; 5-10% Sodium Bromide; 1-5% Inorganic salt
435	8913 (CNDW)	NALCO 3DT231: corrosion and deposit inhibitor	1-5% Phosphoric acid; 1-5% Sulfuric Acid; 1-5 % Substituted aromatic amine. Evolves oxides of carbon.
435	8913 (CNDW)	NALCO 7408: dechlorination	30-60% Sodium Bisulfite, corrosive
435	8913 (CNDW)	NALCO 71D5 Plus: foam control	30-60% Straight Run Middle Distillate; 10-30% Hydrotreated Light Distillate (petroleum);10-30% Polypropylene Glycol; 1-5% Stearic Acid; 1-5% 1-Octanol; 1-5% Fatty Alkyl Polyglycol; 1-5% Aliphatic alcohol
437	SNS 8913 (TW)	Sulfuric acid: pH adjustment	93-98 % sulfuric acid: pH <1 at 25 C

WOC = White Oak Creek, 435INT1: Integrated Sampling Point Upstream of SNS Pond
 MB = Melton Branch
 FFK = Fifth Creek

2022 Cooling Tower Chemical Dosing

Outfall Number	Tower Location	Chemical Name & Use	Parameters of Concern (SDS listed)
437	SNS 8913 (TW)	NALCO 7346: biocide	54.2 % 1-Bromo-3-Chloro-5,5-Dimethyl-Hydantoin; 28.9% 1,3-Dichloro-5,5-Dimethylhydantoin; 15.9% 1,3-Dichloro-5-Ethyl-5-Methylhydantoin
437	SNS 8913 (TW)	NALCO Towerbrom 960: biocide	60-100% Sodium Dichloroisocyanurate; 5-10% Sodium Bromide; 1-5% Inorganic salt
437	SNS 8913 (TW)	NALCO 3DT231: corrosion and deposit inhibitor	1-5% Phosphoric acid; 1-5% Sulfuric Acid; 1-5 % Substituted aromatic amine. Evolves oxides of carbon.
437	SNS 8913 (TW)	NALCO 7408: dechlorination	30-60% Sodium Bisulfite, corrosive
437	SNS 8913 (TW)	NALCO 71D5 Plus: foam control	30-60% Straight Run Middle Distillate; 10-30% Hydrotreated Light Distillate (petroleum); 10-30% Polypropylene Glycol; 1-5% Stearic Acid; 1-5% 1-Octanol; 1-5% Fatty Alkyl Polyglycol; 1-5% Aliphatic alcohol
437	8913 (CNDW)	Sulfuric acid: pH adjustment	93-98 % sulfuric acid: pH <1 at 25 C
437	8913 (CNDW)	NALCO 7346: biocide	54.2 % 1-Bromo-3-Chloro-5,5-Dimethyl-Hydantoin; 28.9% 1,3-Dichloro-5,5-Dimethylhydantoin; 15.9% 1,3-Dichloro-5-Ethyl-5-Methylhydantoin
437	8913 (CNDW)	NALCO Towerbrom 960: biocide	60-100% Sodium Dichloroisocyanurate; 5-10% Sodium Bromide; 1-5% Inorganic salt
437	8913 (CNDW)	NALCO 3DT231: corrosion and deposit inhibitor	1-5% Phosphoric acid; 1-5% Sulfuric Acid; 1-5 % Substituted aromatic amine. Evolves oxides of carbon.
437	8913 (CNDW)	NALCO 7408: dechlorination	30-60% Sodium Bisulfite, corrosive
437	8913 (CNDW)	NALCO 71D5 Plus: foam control	30-60% Straight Run Middle Distillate; 10-30% Hydrotreated Light Distillate (petroleum); 10-30% Polypropylene Glycol; 1-5% Stearic Acid; 1-5% 1-Octanol; 1-5% Fatty Alkyl Polyglycol; 1-5% Aliphatic alcohol
481*	7923	NALCO 3DTRASAR 3DT260	2-Phosphono-1,2,4-Butanetricarboxylic Acid; Phosphonic Acid Ester; aromatic amine
481*	7923	NALCO 7346: biocide	54.2 % 1-Bromo-3-Chloro-5,5-Dimethyl-Hydantoin; 28.9% 1,3-Dichloro-5,5-Dimethylhydantoin; 15.9% 1,3-Dichloro-5-Ethyl-5-Methylhydantoin
481*	7923	NALCO Towerbrom 960: supplemental oxidant	60-100% Sodium Dichloroisocyanurate; 5-10% Sodium Bromide
481*	7923	NALCO 7355: biodegreaser	85,000 mg/L TOC and 250,000 mg/L COD
481*	7923	NALCO 71D5: foam control	paraffin wax, distillates, polypropylene glycol, aliphatic alcohol
NOTE	Data for the cooling towers that drain to these outfalls starred () here was taken from 2019		

**Appendix M –
EPA Form 2F Stormwater Outfall Groups**

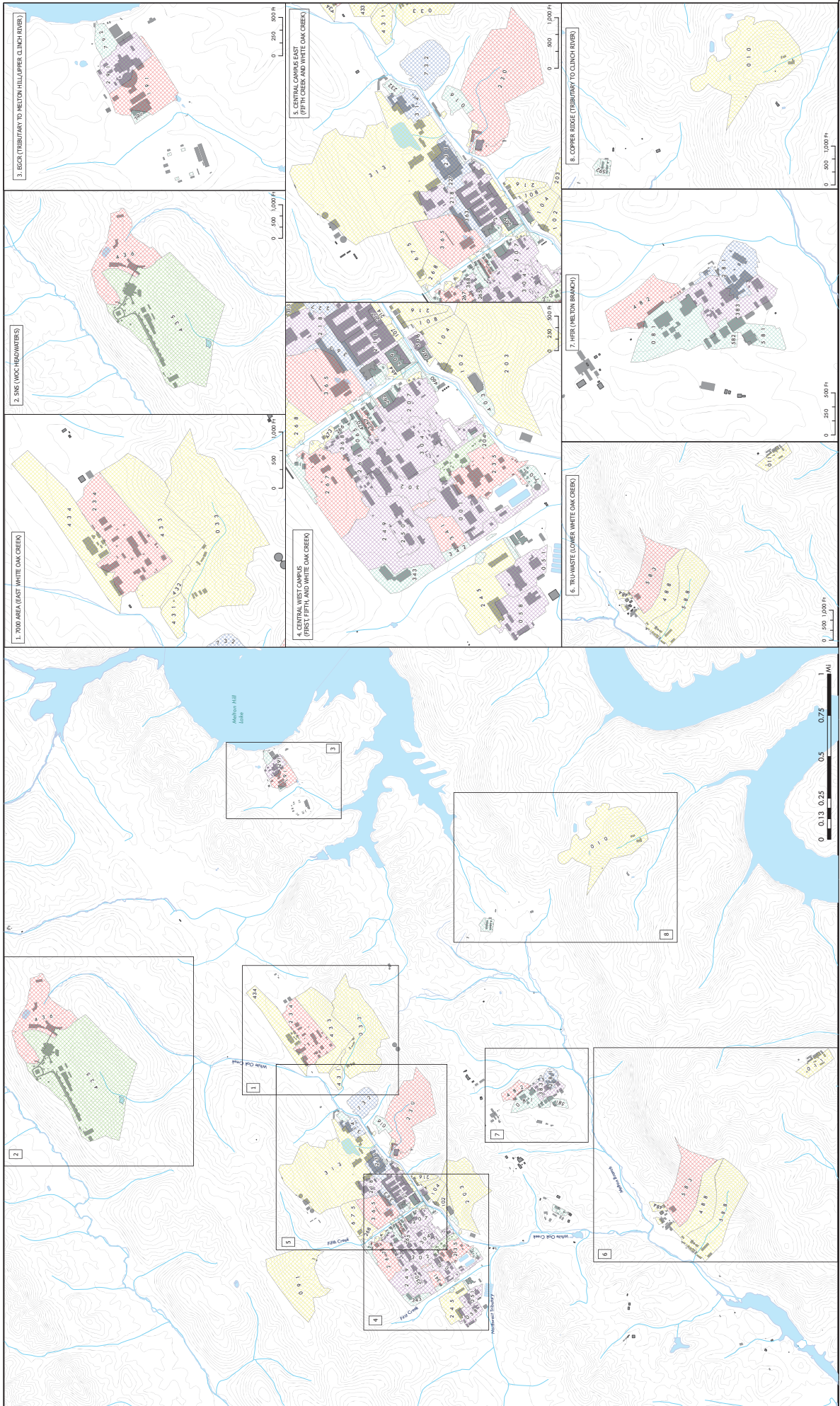
Appendix M – EPA Form 2F Stormwater Outfall Groups

Storm Water Outfalls Subgrouped for 2023 NPDES Application					
Group A1: High impervious w/CT Blowdown	Group A2: Low impervious w/CT Blowdown	Group B1: High impervious w/dry-weather discharge	Group B2: Low impervious w/dry-weather discharge	Group C1: High impervious - SW only	Group C2: Low impervious - SW only
227	204	1	191	6	4
231	435	41	223	16	10
281	437	51	230	43	11
314		58	234	64	17
363		207	235	65	33
481		210	264	70	84
732		211	267	81	91
		217	341	113	102
		218	365	141	104
		219	436	142	107
		224	482	161	108
		249	583	162	111
		250	367	164	114
		265		165	168
		291		166	169
		302		209	170
		304		221	203
		312		226	208
		368		232	214
		383		241	216
		506		243	245
				262	247
				266	268
				269	313
				301	431
				342	432
				343	433
				361	434
				362	464
				364	468
				403	473
				460	484
				461	488
				462	588
				463	675
				466	
				467	
Black: WOC				469	
Green Font: Fifth Creek				470	
Orange Font: First Creek				472	
Blue Font: Melton Branch				485	
Purple Font: NWT				486	
Red Font: Clinch R				487	
Rep Outfalls/Group				490	
				581	
				582	
				590	
				591	
				592	
				674	
				701	
				791	
				792	

**Appendix N –
EPA Form 2F Section 3 Maps**

Appendix N – EPA Form 2F Section 3.1 Maps

General ORNL Site Stormwater Map



OAK RIDGE NATIONAL LABORATORY

Title: Appendix N-1
ORNL STORMWATER DRAINAGE MAP

Appendix N-2

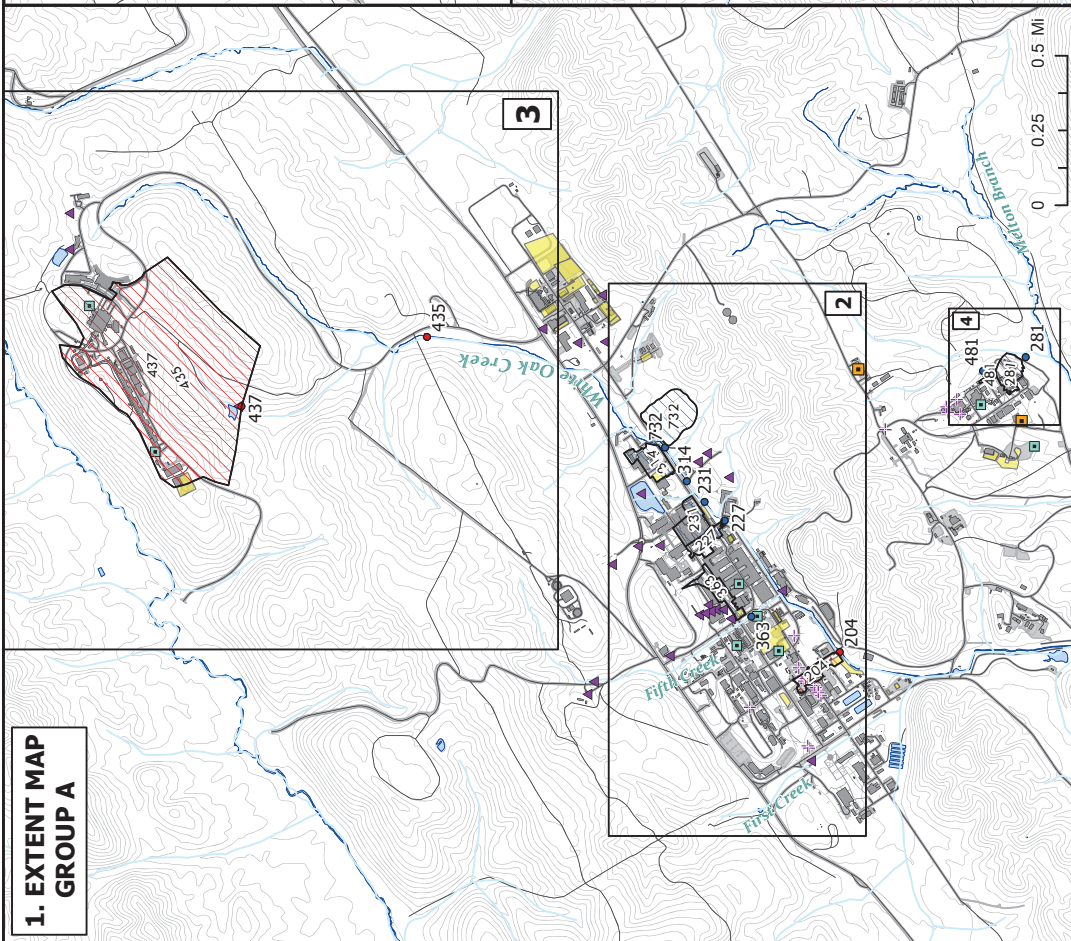
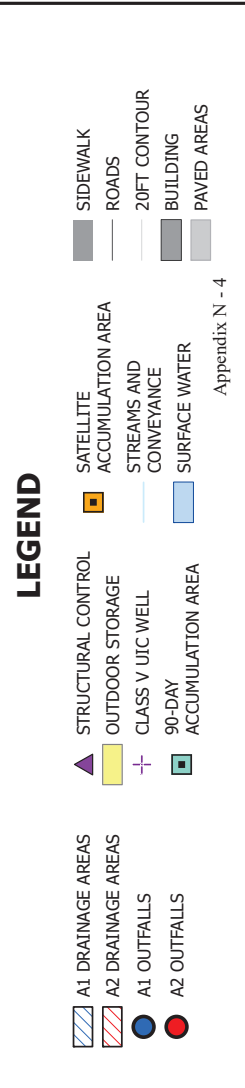
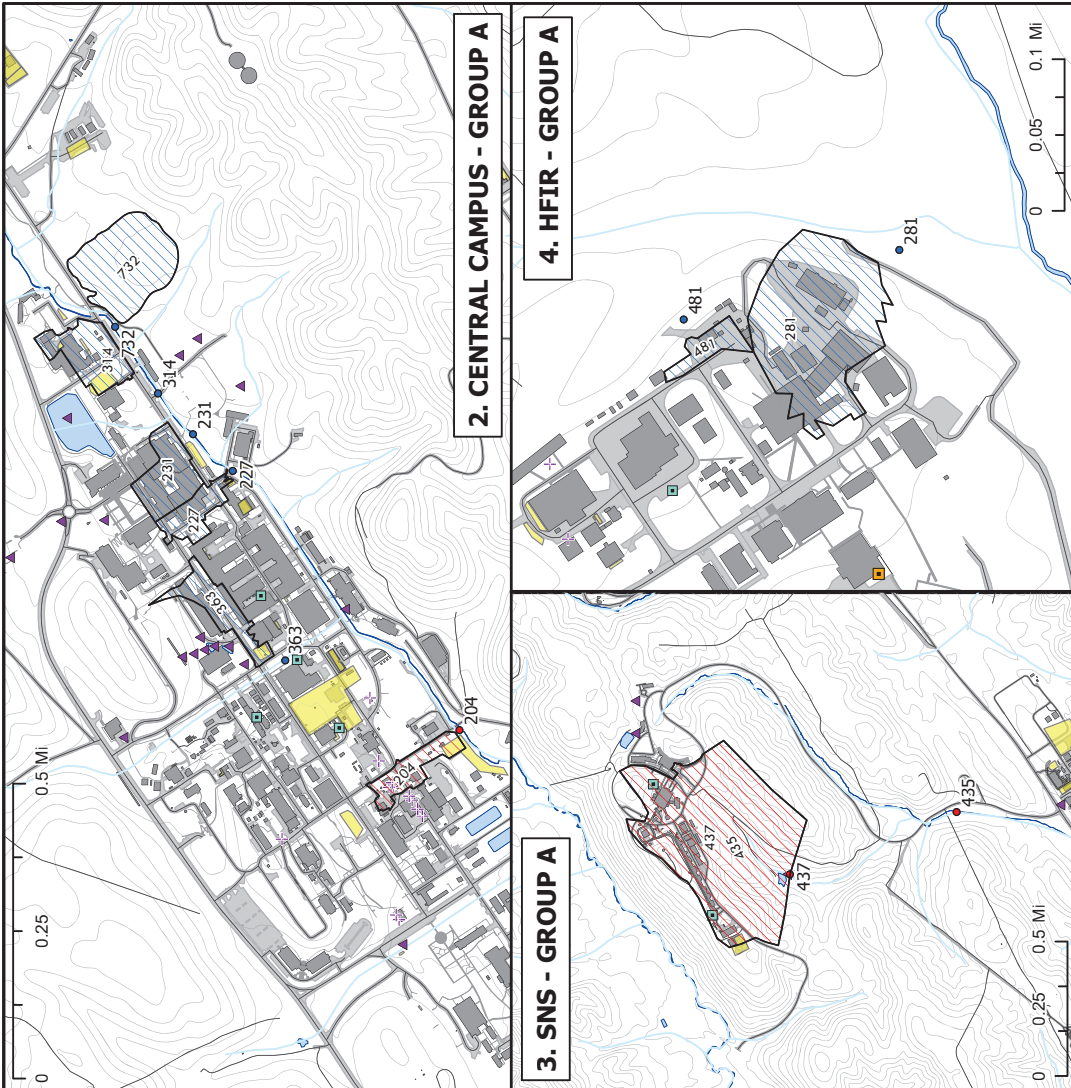
MAP NUMBER: EPSSD-M041-T1FS

Legend

OUTFALL DRAINAGE AREA	B1	20FT CONTOUR
STORMWATER GROUP	B2	LINE
A1	C1	NHD FLOW LINES
A2	C2	ORNL WATER FEATURES
		BUILDING

Appendix N – EPA Form 2F Section 3.1 Maps

**Group A1 (high impervious with cooling tower
blowdown)
and Group A2 (low impervious with cooling tower
blowdown)**



OAK RIDGE NATIONAL LABORATORY

TITLE: 2F OUTFALL STORMWATER DRAINAGE MAP
 GROUP A: STORMWATER WITH COOLING TOWER BLOWDOWN
 A1: HIGH IMPERVIOUS; A2: LOW IMPERVIOUS

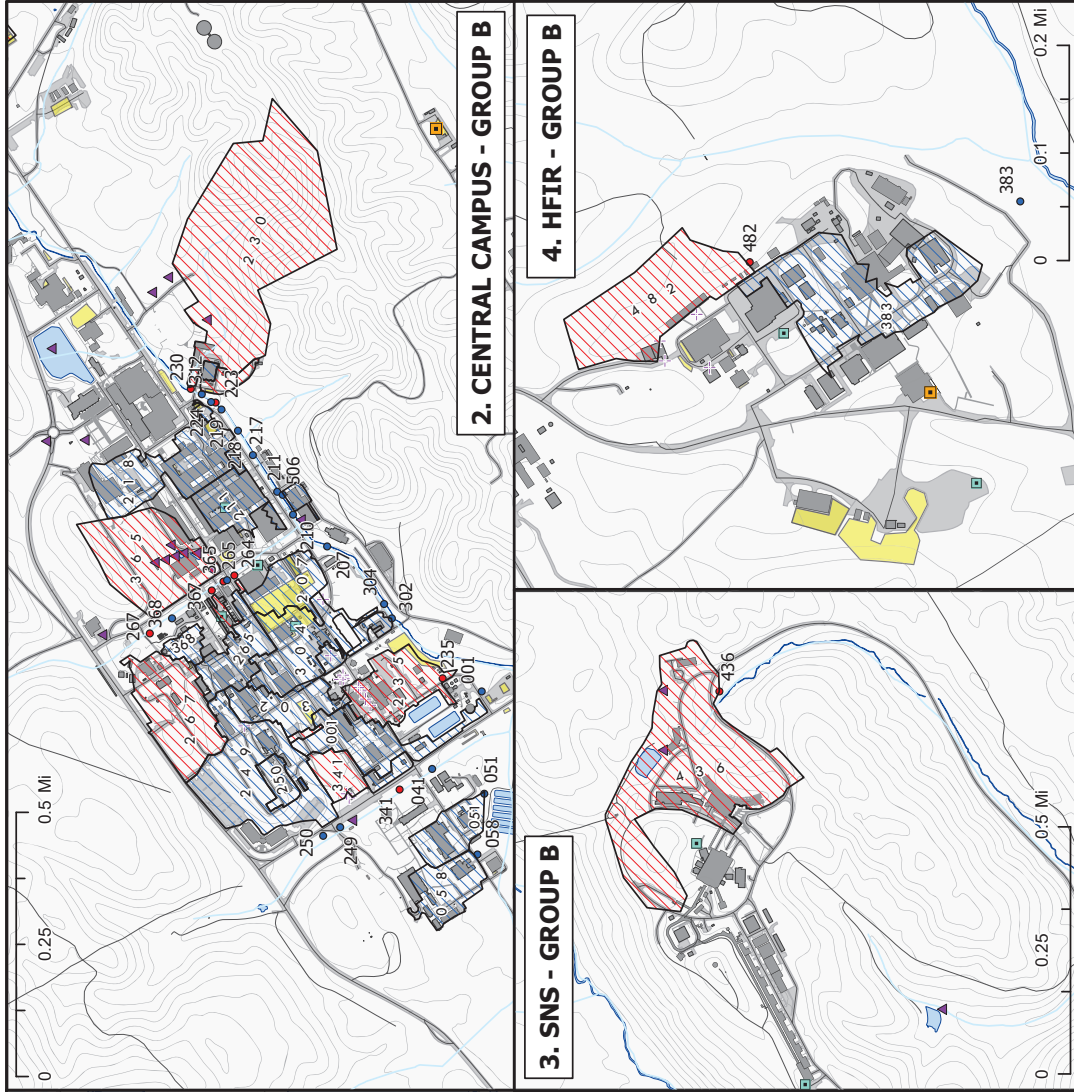
DRAWN BY: if9
 DATE: 4/27/2023

FIGURE NUMBER: Appendix N-2
 SW Group A1 and Group A2 Map
 NPDES-M043-tf9

Appendix N – EPA Form 2F Section 3.1 Maps

**Group B1 (high impervious with dry weather
discharge) and**

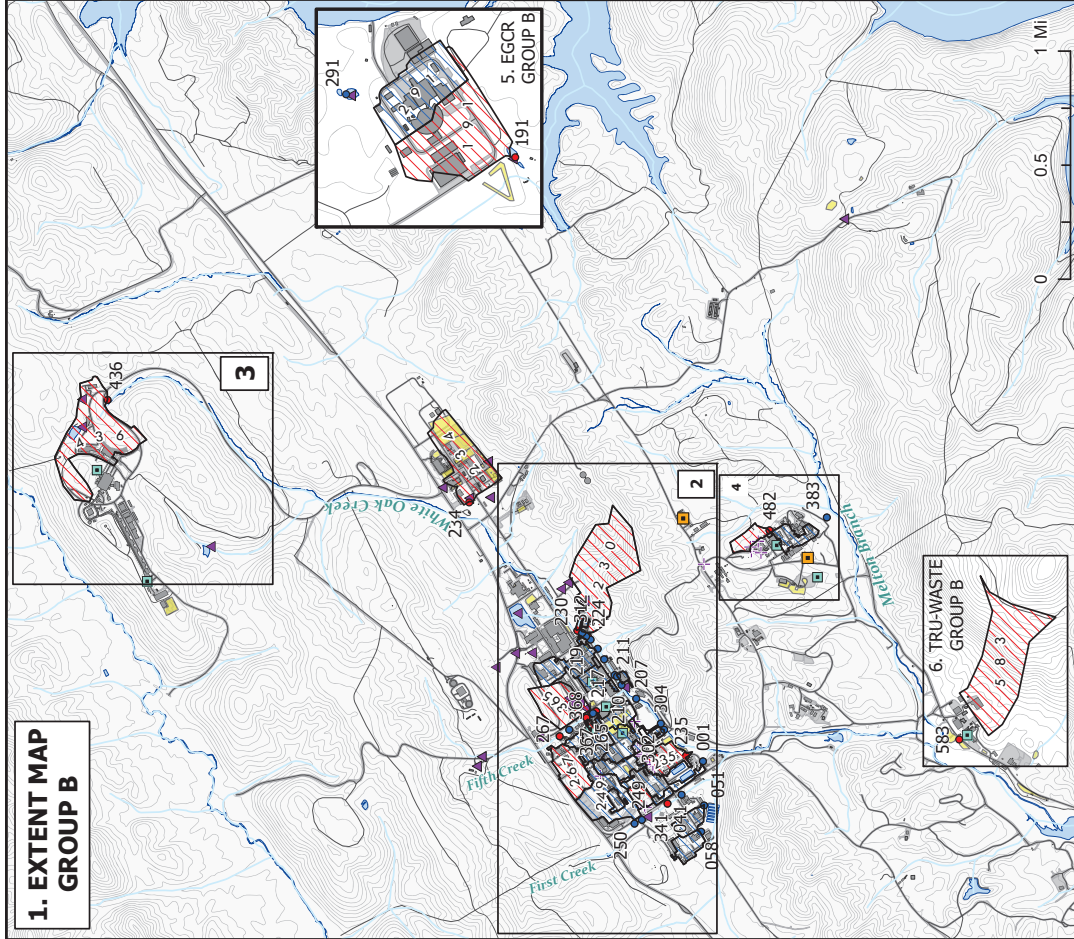
**Group B2 (low impervious with dry weather
discharge)**



LEGEND

- B1 DRAINAGE AREAS
- B2 DRAINAGE AREAS
- B1 OUTFALLS
- B2 OUTFALLS
- STRUCTURAL CONTROL
- OUTDOOR STORAGE
- CLASS V UTC WELL
- 90-DAY ACCUMULATION AREA
- SATELLITE ACCUMULATION AREA
- STREAMS AND CONVEYANCE
- SURFACE WATER
- SIDEWALK
- ROADS
- 20FT CONTOUR
- BUILDING
- PAVED AREAS

Appendix N - 6



OAK RIDGE NATIONAL LABORATORY

TITLE: 2F OUTFALL STORMWATER DRAINAGE MAP

GROUP B: STORMWATER WITH DRY-WEATHER FLOW

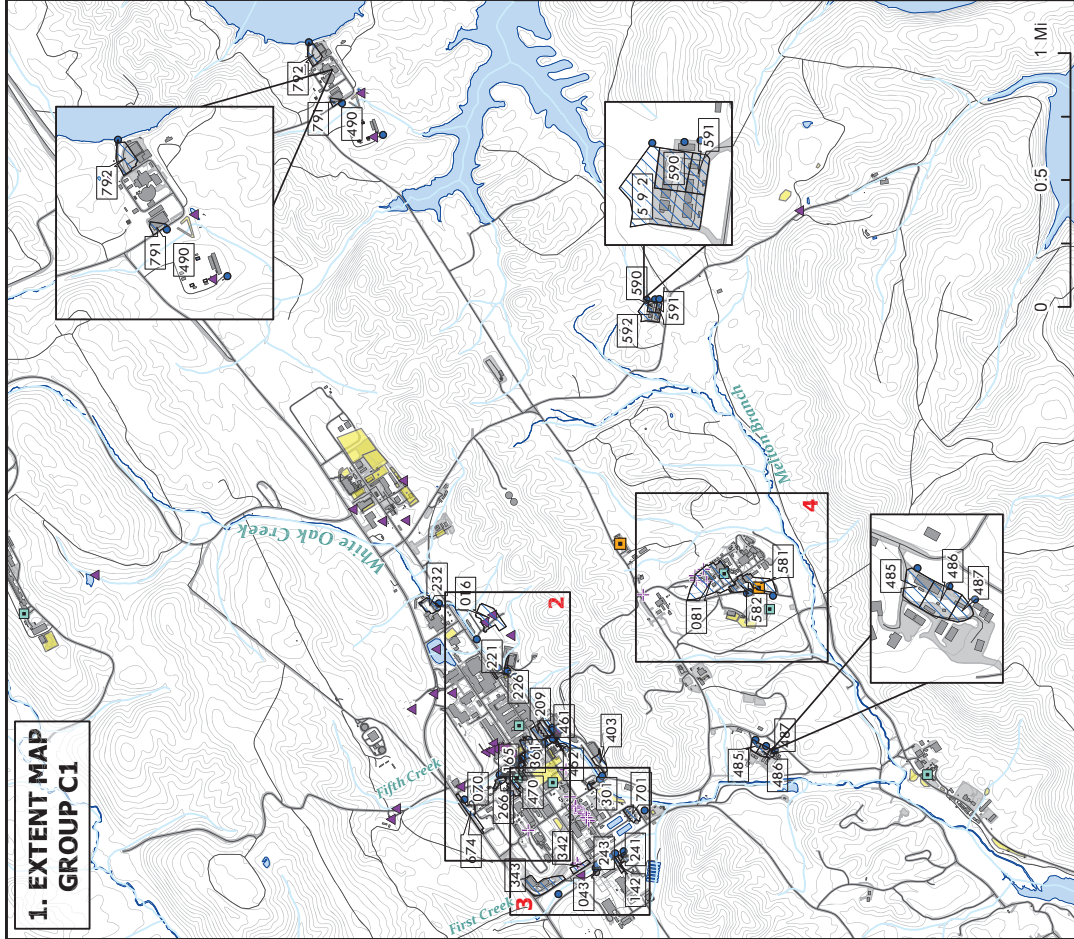
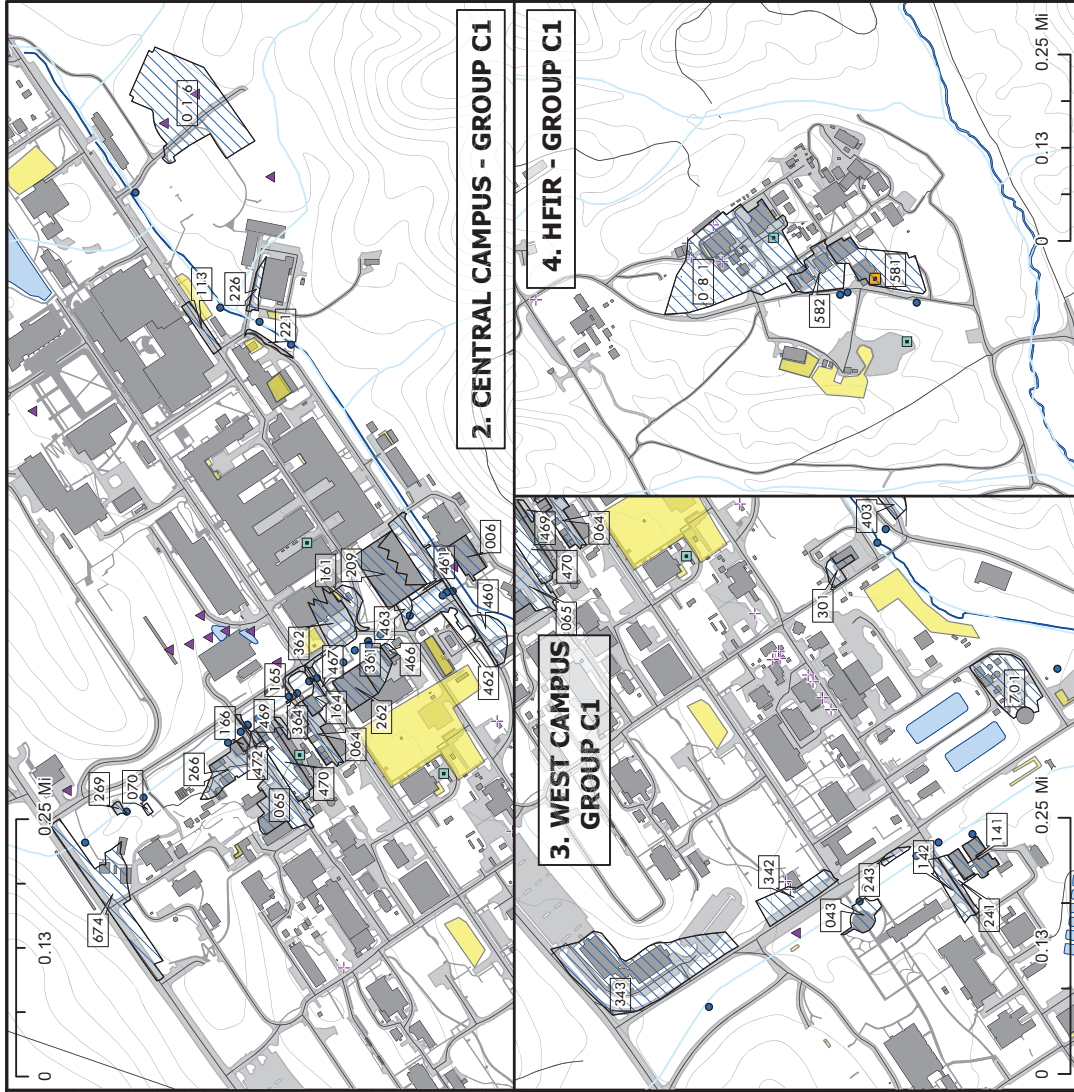
A1: HIGH IMPERVIOUS; A2: LOW IMPERVIOUS



DRAWN BY:	tf9	FIGURE NUMBER: Appendix N-3
DATE:	4/27/2023	SW Group B1 and Group B2 Map NPDES-M044-tf9

Appendix N – EPA Form 2F Section 3.1 Maps

Group C1 – High Impervious/Stormwater Only



LEGEND

- ROADS
- STREAMS AND CONVEYANCE
- CLASS V UIC WELL
- C1 DRAINAGE AREAS
- C1 OUTFALLS
- STRUCTURAL CONTROL
- OUTDOOR STORAGE
- 20FT CONTOUR
- BUILDING
- PAVED AREAS
- SURFACE WATER
- SIDEWALK
- 90-DAY ACCUMULATION AREA
- SATELLITE ACCUMULATION AREA
- ACCUMULATION AREA

OAK RIDGE NATIONAL LABORATORY

TITLE: 2F OUTFALL STORMWATER DRAINAGE MAP
 GROUP C1: STORMWATER ONLY, HIGH IMPERVIOUS

DRAWN BY: if9
 DATE: 4/27/2023

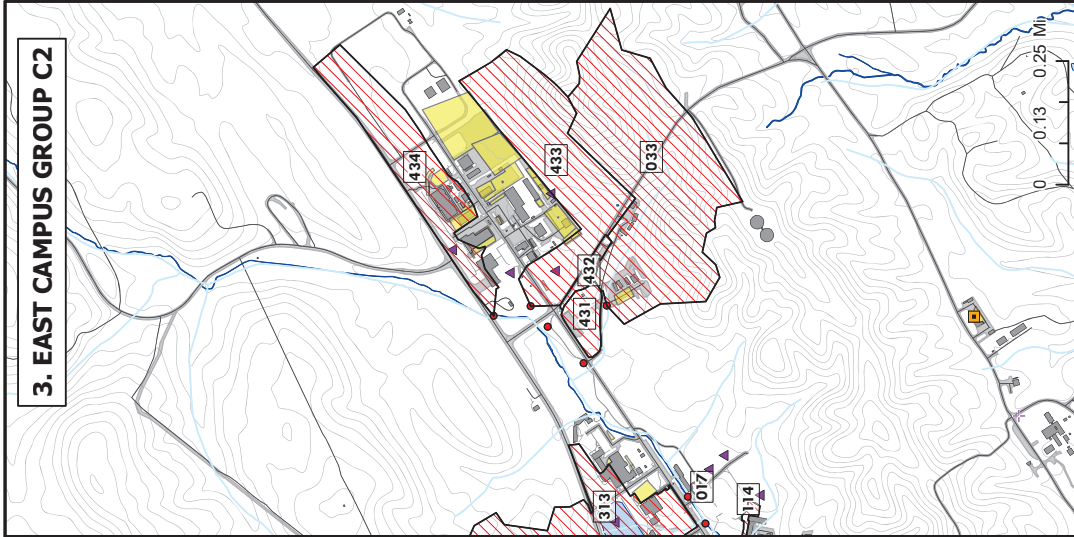
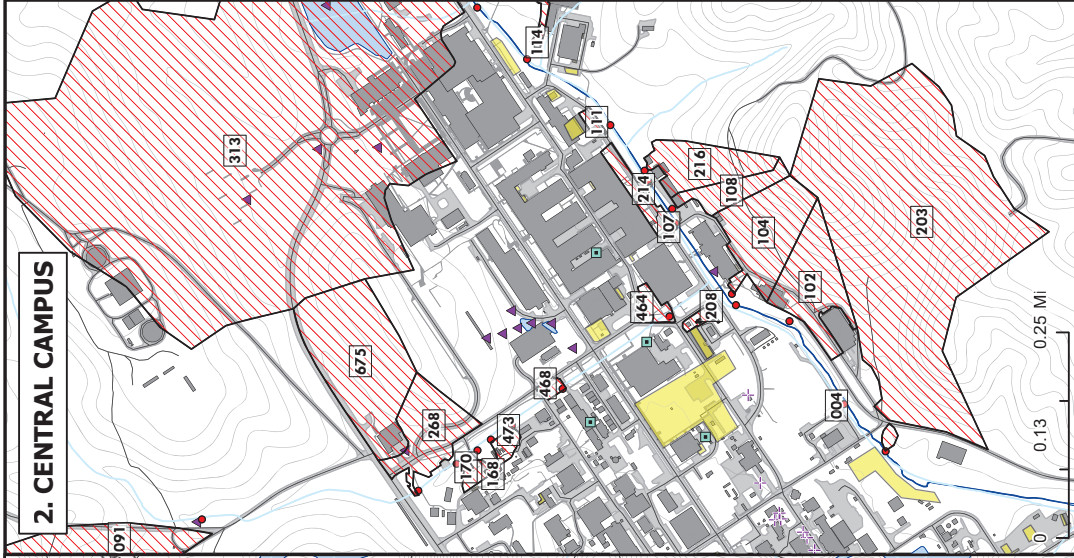
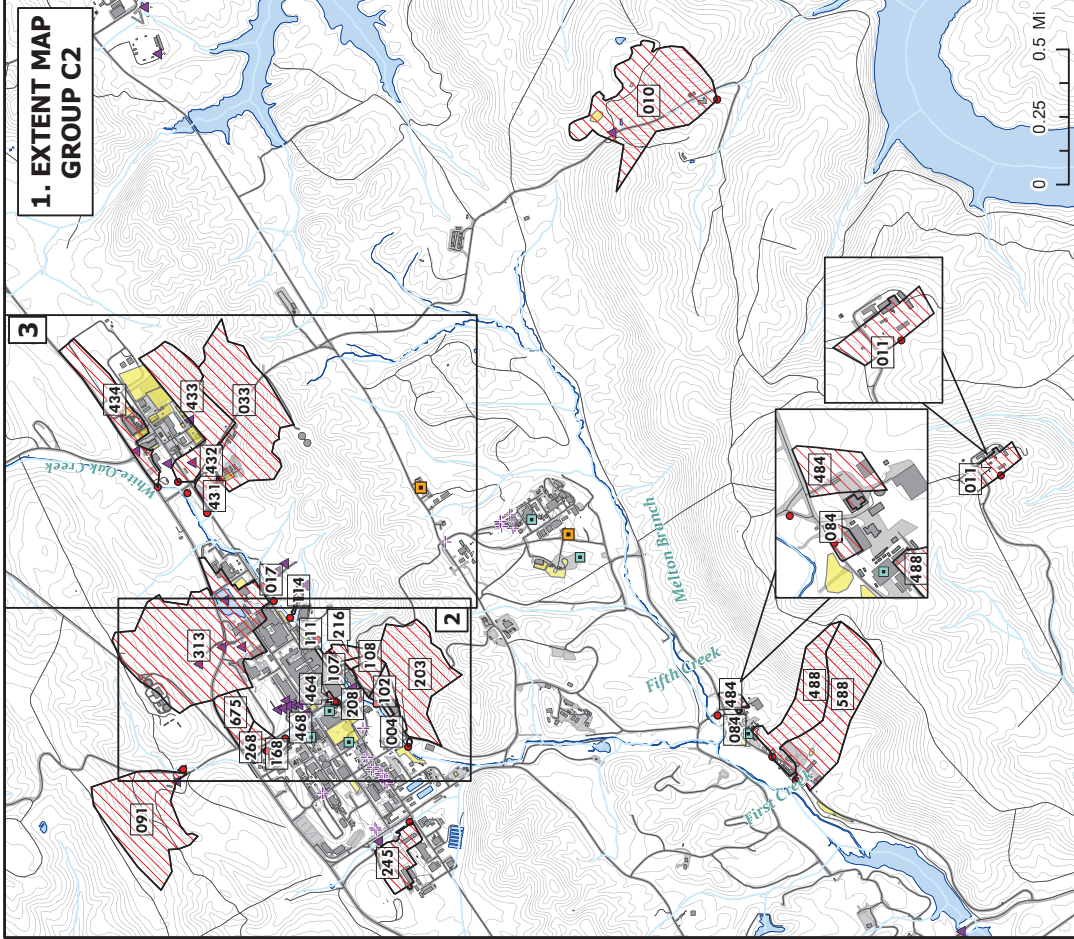
FIGURE NUMBER: Appendix N-4
 SW Group C1 Map

NPDES-M045-tf9

Appendix N - 8

Appendix N – EPA Form 2F Section 3.1 Maps

Group C2 – Low Impervious/Stormwater Only



OAK RIDGE NATIONAL LABORATORY

TITLE: 2F OUTFALL STORMWATER DRAINAGE MAP
 GROUP C2: STORMWATER ONLY, LOW IMPERVIOUS

LEGEND

- C2 DRAINAGE AREAS
- C2 OUTFALLS
- STRUCTURAL CONTROL
- OUTDOOR STORAGE
- STREAMS AND CONVEYANCE
- SURFACE WATER
- SIDEWALK
- ROADS
- 20FT CONTOUR
- BUILDING
- PAVED AREAS
- CLASS V UIC WELL
- 90-DAY ACCUMULATION AREA
- SATELLITE ACCUMULATION AREA

DRAWN BY:
 DATE:

if9
 4/27/2023
 NPDES-M042-ff9

**Appendix O –
EPA Form 2F Structural Controls**

Appendix O – EPA Form 2F Section 4.3 Structural Controls

Stormwater Structural Controls			
SW Group	Representative Outfall	Outfall with Structural Control	Description of Structural Control
A1	227	363	A 5000-gallon rain harvest tank was installed at Bldg 4100 for use in landscaped areas.
A2	204	435	Stormwater detention pond retaining runoff from SNS area
B1	207, 302, 304	291	Drainage from the eastern portion of the 7600 area is directed to a retention basin prior to discharge through the outfall pipes.
B2	234	436	Stormwater detention pond from soil stockpile area in SNS
		230	Pervious pavement in Hillside Pkg lots west draining to SW detention basin
		365	Several drop ponds to control runoff are located around the parking garage Bldg 4015; a reconstructed wetland was installed to preserve hydrology; an oil/water separator filters runoff from the parking garage; a storm retention ditch controls velocity of runoff from this drainage area prior to discharge through the outfall pipe.
		191	Drainage from the western portion of the 7600 area is directed to a retention basin prior to discharge through the outfall pipes.
		234	Runon diversion ditch is located on the south side of this DA; two SW quality devices are in place to separate particulates and floatables in runoff prior to discharge.
C1	403	016	Pervious pavement in Hillside Pkg lots east draining to SW detention basin
		590, 591, 592	The Hazardous Waste Storage Area is located southeast of the ORNL main facilities. It is a fenced area with a gated entrance and exit. Buildings here consist of RCRA-permitted hazardous chemicals and hazardous wastes. There is an associated septic field located off the southeast corner outside the fence. The area has an epoxy coated cement pad and metal roofs. There are no discharges to any storm drains except for roof and paved asphalt sheet-flow runoff. Structural controls in this area are included in the DOE ORNL Hazardous Waste Management Permit TNHW-178 (8/15/2019), EPA ID number TN1890090003. All units, except Building 7651, are enclosed with walls and roofs that prevent precipitation from entering the epoxy coated containment area. All the units are designed and constructed such that the elevation of the curbing, door, and/or foundation is elevated above the surrounding terrain; therefore, run-on from precipitation events will not occur at these units. Building 7651 is the only unit not totally enclosed, but it does have a metal roof and a continuous concrete dike (6-in. high) around the perimeter of the containment area, which minimizes run-on and the accumulation of precipitation in the containment area. Stored waste containers are self-elevated by forklift pockets or stored on approximately 4-in. high pallets, which prevent contact with any accumulated rainwater. The floor of the unit is sloped slightly to one corner to facilitate removal of accumulated rainwater. If no unmitigated spill/release has occurred, the water will be removed from the unit and managed as nonhazardous. If the water contains a sheen or if a spill/release has occurred with no documented decontamination, the water will be containerized, sampled, and analyzed for indicator parameters as appropriate for the contents of the storage unit and managed accordingly. In addition, waste containers with free liquids are not allowed to be stored in Building 7651.
C2	434	313	East Campus Pond (a.k.a., Swan Pond) is a wetland pond serving as a retention basin for SW runoff; a SW infiltration system is located under the parking area west of Bldg 5200; a retention basin is located NO of the roundabout on Bethel Valley Rd. to retain runoff from Conference Center Pkg lot which was also constructed with pervious asphalt to limit sheet flow runoff.
		091	Runoff from electrical substation 0901 is partially routed through an oil/water separator prior to discharge through the outfall pipe. The rest of the runoff would pond in the gravel sink; a concrete storage pad has containment to prevent oil releases. This pad drains to the oil/water separator.
		675	A 5000-gallon rain harvest tank is located at Bldg 4020 under the parking area on the west side of the building.
		010	Two SW retention ponds are located around the Copper Ridge Spoil Pile
		433	Runon diversion dits and a retention basin collects runoff from parking areas
		434	A SW retention basin is located at BV road with special media to percolate runoff