

From: Mehinagic, Denis <dmehinagic@energy-northwest.com>
Sent: Wednesday, February 28, 2024 4:34 PM
To: ritchie.graves@noaa.gov
Cc: Briana Arlene; EndangeredSpecies Resource; Ramos, Mary Joy.; Hildman, Cynthia M.; Pierson, Amanda M.
Subject: [External_Sender] Energy Northwest Columbia Generating Station 2023 Biological Monitoring Report
Attachments: GO2-24-028 Energy Northwest Columbia Generating Station 2023 Biological Monitoring Report.pdf

Mr. Graves,

Please find attached the 2023 Biological Monitoring Report for Columbia Generating Station, submitted pursuant to Condition 2.9.4(4)(a) of the Endangered Species Act 7(a)(2) Biological Opinion and copied to the Nuclear Regulatory Commission (NRC). This letter is being provided as an electronic transmittal only.

The Biological Monitoring Report contains a post-season report describing biological monitoring activities and a summary of any plant changes that affect effluent discharge. It also contains a copy of all National Pollutant Discharge Elimination System (NPDES) submissions that were transmitted to EFSEC in the year.

Denis Mehinagic, M.S.
Environmental & Regulatory Programs Lead
Energy Northwest
509-372-5768 | dmehinagic@energy-northwest.com

Hearing Identifier: NRR_DRMA
Email Number: 2415

Mail Envelope Properties (CO6PR09MB7704B8002C53DACD939E4286EF582)

Subject: [External_Sender] Energy Northwest Columbia Generating Station 2023
Biological Monitoring Report
Sent Date: 2/28/2024 4:33:49 PM
Received Date: 2/28/2024 4:34:19 PM
From: Mehinagic, Denis

Created By: dmehinagic@energy-northwest.com

Recipients:

"Briana Arlene" <briana.arlene@nrc.gov>
Tracking Status: None
"EndangeredSpecies Resource" <EndangeredSpecies.Resource@nrc.gov>
Tracking Status: None
"Ramos, Mary Joy." <mjoyramos@energy-northwest.com>
Tracking Status: None
"Hildman, Cynthia M." <cmhildman@energy-northwest.com>
Tracking Status: None
"Pierson, Amanda M." <ampierson@energy-northwest.com>
Tracking Status: None
"ritchie.graves@noaa.gov" <ritchie.graves@noaa.gov>
Tracking Status: None

Post Office: CO6PR09MB7704.namprd09.prod.outlook.com

Files	Size	Date & Time
MESSAGE	832	2/28/2024 4:34:19 PM
GO2-24-028 Energy Northwest Columbia Generating Station 2023 Biological Monitoring Report.pdf		
4599030		

Options

Priority: Normal
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:



Mary Joy C. Ramos
Columbia Generating Station
P.O. Box 968, MD PE03
Richland, WA 99352-0968
Ph. 509-377-8534
mjoyramos@energy-northwest.com

February 28th, 2024
GO2-24-028
DIC 404.1

Ritchie Graves
Branch Chief Columbia Hydropower
National Marine Fisheries Service
1201 NE Lloyd Blvd, Suite 1100
Portland, OR 97232

ELECTRONIC SUBMITTAL ONLY

Dear Mr. Graves:

Subject: 2023 BIOLOGICAL MONITORING REPORT

Reference: Letter, GI2-17-061, March 10, 2017, from Barry A. Thorn (National Marine Fisheries Service) to Jeffery J. Rikhoff (Division of License Renewal, Office of Nuclear Regulation) "Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for Renewing the Operating License for the Columbia Generating Station, Washington, Condition 2.9.4(4)(a)."

Condition 2.9.4(4)(a) of the Endangered Species Act 7(a)(2) Biological Opinion requires Energy Northwest to submit an annual summary of biological monitoring data and reports submitted pursuant to National Pollutant Discharge Elimination System (NPDES) Permit WA0025151. Attached is the 2023 Biological Monitoring Report, which consists of the Post Season Fish Collection Report, 2023 NPDES Permit Discharge Monitoring Reports (DMRs), and Whole Effluent Toxicity (WET) Reports.

Respectfully,

Signed By:
Ramos, Mary Joy. - DOMAIN1\mramos
2/28/2024 1:06 PM
Final Approver

Mary Joy C. Ramos
Environmental and Regulatory Programs Manager

Enclosure: 2023 Post Season Fish Collection Report
2023 NPDES DMRs

2023 NPDES WET Reports

cc: Briana.Grange@nrc.gov
EndangeredSpecies.Resource@nrc.gov

INTERNAL DISTRIBUTION:		FILE COPY	
		Document Control	APW
		Docket File	PE20

Energy Northwest

Columbia Generating Station

2023 Post Season Fish Collection Report

The purpose of this report is to document fish collection activities on the part of Energy Northwest (EN) during the 2023 calendar year and to verify that the activities were following the Endangered Species Act section 7(a)(2) Biological Opinion for the Columbia Generating Station (NMFS No: NWR/2011/05286) issued March 10, 2017.

Fish Collection

Columbia Generating Station (CGS) is required to collect and analyze fish samples from locations near the CGS effluent discharge in the Columbia River and from a control location, typically the Snake River. The samples are analyzed for radioactive content with the purpose of determining what impact, if any, CGS operation may have on Columbia River fish. The requirements specify collection of one anadromous and two resident fish species from both locations. The fish collection activities are to be performed in accordance with the Endangered Species Act section 7(a)(2) Biological Opinion for the Columbia Generating Station.

Resident Species Collection

Columbia River

The requirement for resident fish species collected from the Columbia River was satisfied with the capture of two smallmouth bass.

EN personnel collected two small mouth bass on 11/16/2023 from shoreline near CGS and TMU pumphouse. GPS coordinates were recorded as 46.472584°, -119.265403°, water temperature at 11.9 degrees Celsius. The fish was caught using hook and line techniques that targeted bass. Fishing techniques used to collect the resident species were in accordance with the Washington Dept. of Fish and Wildlife (WDFW) freshwater fishing rules for the resident species of interest.

At least six attempts to catch resident fish from the Columbia River were made. The small mouth bass were the only resident fish collected for 2023.

Snake River

No resident fish from the Snake River were obtained by local fisherman this year. Snake river samples are used for control samples.

Anadromous Species Collection

The anadromous species collected from the Snake and Columbia Rivers was Chinook salmon. Authorization to obtain the fish from local hatcheries was provided by the State of Washington Dept. of Fish and Wildlife in a letter dated 8/2/2023.

One Chinook Salmon from Ringold Springs Hatchery was collected by hatchery personnel on 10/11/2023. The location is at Station 46.513°, -119.259° and the water temperature was 19.3 degrees Celsius. A net was used to retrieve the Salmon.

A Chinook Salmon was provided by Snake River Lyons Ferry Hatchery on 10/19/2023, GPS coordinates 46.599639°, -118.229556° and the river temperature was 19.0 degrees Celsius. The salmon was caught by net using hatchery personnel.

Fish Collection Summary

Reasonable and prudent measures were utilized to minimize the impact of biological monitoring activities during 2023. Fish collection was performed using hook and line techniques that targeted the species of interest; electroshock fishing was not performed. No capture or handling of Upper Columbia River (UCR) spring-run Chinook salmon occurred during the year.

Offsite Dose Calculation Manual (ODCM) table 6.3.1-1 4B specifies collection of three fish species in the vicinity of the plant discharge and collection the same three species at a control location not influenced by plant discharge (usually the SNAKE river). Energy Facility Site Evaluation Council (EFSEC) Resolution 332 Monitoring Program A. Program Elements Section 4, Section C. Sample Types and Media - General Discussion #10, Table 1 discusses sampling requirements for one sample from 3 species one anadromous and two resident in the vicinity of the plant discharge area and one sample from the same or similar species from areas not influenced by plant discharge. The Radiological Environmental Monitoring Program (REMP) is dependent on fish donations from local fisherman as it is illegal to purchase fish from local fisherman. There were two chinook donations one from the CGS discharge area and one donation from the snake river. One type of resident fish (smallmouth bass) was donated which came from the plant discharge area. We did not obtain 3 fish species from the plant discharge area, only two were obtained. We also did not obtain three species from a control location, only one was obtained. Several hours were dedicated by REMP program individuals in attempts to capture fish using rod and hook method without success. Electroshock methods cannot be employed by CGS due to concerns about possibly violating Federal endangered species act regulations.

Summary of Changes to CGS Aqueous Effluent Discharges

During the 2023 calendar year, the National Pollutant Discharge Elimination System (NPDES) effluent monitoring as reported on the monthly discharge monitoring reports indicated that all parameters were within permit specifications with no issues or violations. Additionally, whole effluent toxicity testing performed in the first and second quarter of 2023 showed no statistically significant difference in survival between the control and the acute critical effluent concentration (ACEC, 11% effluent). Under the new NPDES permit effective July 1, 2023, quarterly whole effluent toxicity testing is not required and was not performed in the third and fourth quarters of 2023. Continuous halogenation of circulating water with dehalogenation of the blowdown water was implemented on November 6, 2019. This process involves the discharge of additional dehalogenation chemicals as approved by an amendment to the CGS NPDES permit dated 3/19/2019. Implementation of this process has not resulted in any permit violations to date.



Mary Joy C. Ramos
Columbia Generating Station
P.O. Box 968, MD PE03
Richland, WA 99352-0968
Ph. 509-377-8534
mjoyramos@energy-northwest.com

February 28, 2024
GO2-24-021
DIC 409

Amy Moon
Siting and Compliance Lead
Energy Facility Site Evaluation Council
PO Box 43172
Olympia, WA 98504-3172

ELECTRONIC SUBMITTAL ONLY

Dear Ms. Moon:

Subject: 2023 ANNUAL FISH COLLECTION REPORT

Reference: Letter dated April 23, 2021 GI2-21-044 Columbia Generating Station, Energy Northwest Resolution 347, Amendment No. 1 (Authorizing Fish for REMP)

Pursuant to the requirements of Energy Facility Site Evaluation Council (EFSEC) Resolution 347, Section (8) a – e, please see the attached annual report on fish collection activities at Columbia Generating Station (CGS) for 2023. Per the resolution, the report was completed on the EFSEC-provided Resolution 347 Annual Report Form.

If you have any questions about this report, please contact Denis Mehinagic (509) 372-5768.

Respectfully,

Signed By:
Ramos, Mary Joy. - DOMAIN1\mramos
2/28/2024 9:21 AM
Final Approver

Mary Joy C. Ramos
Environmental and Regulatory Programs Manager

Enclosure: 2023 Fish Collection Report

cc: peggy.miller@dfw.wa.gov
Paul.Hoffarth@dfw.wa.gov
Bruce.Baker@dfw.wa.gov

INTERNAL DISTRIBUTION:		FILE COPY	
		Document Control	APW
		Docket File	PE20

ENERGY FACILITY SITE EVALUATION and WASHINGTON DEPARTMENT OF FISH & WILDLIFE RESOLUTION 347 ANNUAL REPORT FORM

Please submit this report at the end of the permit period:

Project Start Date	6/30/2023	EFSEC	WDFW
Permittee Name	Mary Ramos	ATTN: AMY MOON	ATTN: LICENSING DIVISION
Agency/Institution	Energy Northwest	PO Box 43172	EMAIL: peggy.miller@dfw.wa.gov
email address	ampierson@energy-north	Olympia, WA 98504-3172	Paul.Hoffarth@dfw.wa.gov
Permit No.	Resolution 347	EMAIL: amy.moon@utc.wa.gov	Bruce.Baker@dfw.wa.gov
		PHONE: 360-664-1362	PHONE: 360-902-2464, option 4

Please provide the WRIA (and stream name) or Marine Area and also provide the GPS coordinates. If sampling more than one location, report data by location.

*Disposition codes - please select carefully; more than one code may be used

- | | |
|-------------------------------------------|---------------------------------------------------|
| 1. Survey/observation/non-handling "take" | 8. Release at capture site, dead |
| 2. Captive for research, live | 9. Tag/mark and release |
| 3. Euthanize/mortality, hold for analysis | 10. Move and release, live |
| 4. Euthanize/mortality, waste disposal | 11. Sub-lethal tissue collection, release at site |
| 5. Display, live | 12. Lethal tissue collection |
| 6. Display, dead | 13. Other (describe) |
| 7. Release at capture site, live | |

Life Stage (for salmonids only) = A (adult), J (Juvenile), F (Fry), E (Egg)

Origin (for salmonids only) = W (wild), H (hatchery)

Methods/Actions = collection method

GPS Coordinates should be in WGS84 decimal degrees format

For tissue sampling, please state the type of tissue collected

Date of Collection	Species - Common and Scientific name	Life Stage	Origin	Number Encountered	Water Name	Specific Location (e.g., reach location, reservoir name, etc.)	GPS Coordinates (WGS84 decimal degrees format)	Disposition Code(s)*	Methods/Actions	Genetic Sampling Y/N	Comments
10/11/2023	Chinook Salmon (Oncorhynchus tshawytscha)	J	H	1	Columbia River	Ringold Springs Hatchery	46.513°, -119.259°	12	Donated by Hatchery	N	Tissue collected - fillet
10/19/2023	Chinook Salmon (Oncorhynchus tshawytscha)	A	H	1	Snake River	Lyons Ferry Hatchery	46.599639°, -118.229556°	12	Donated by Hatchery	N	Tissue collected - fillet
11/16/2023	Smallmouth bass (Micropterus dolomieu)			2	Columbia River	near CGS TMU pumphouse	46.472584°, -119.265403°	12	Hook and line fishing	N	Tissue collected - fillet



INTEROFFICE MEMO

GO2-23-024

DIC: 1316.20

DATE: February 14, 2023
TO: Columbia Generating Station, (CGS)
FROM: Kris Byers, Environmental Scientist (1025)
SUBJECT: **Columbia Generating Station January 2023
NPDES Discharge Monitoring Report**
REFERENCE: NPDES Permit No. WA 002515-1 Condition S3.A

Please find attached the NPDES Discharge Monitoring Report (DMR) for January 2023. All monitoring parameters were within permit specifications for the month. Because of equipment issues, a temporary tanker truck continues to be used for sulfuric acid additions to the circulating water system to control the pH. This method results in greater variation of the blowdown pH than is typical.

The report will be submitted electronically to the State of Washington Department of Ecology (Ecology) via Ecology's online reporting system. If you have any questions concerning this information, please contact Marshall Schmitt at (509) 372-5334.

Attachment: NPDES Discharge Monitoring Report, January 2023

KRB

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:	
M Schmitt (via email)	Docket File PE20
K Byers (via email)	Regulatory (via email)
A Mowery (via email)	Document Control (via APW)

Columbia Generating Station

Page 2 of 2

February 14, 2023

January 2023 DMR

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 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.

Prepared by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Ashley Mowery, Environmental Technician, Environmental Services

Reviewed by: Marshall Schmitt, Environmental Scientist, E&RP

Reviewed by: Devon Van Alyne, Manager, Laboratory Services

Approved by: Mary Joy C. Ramos, Manager, Environmental & Regulatory Programs



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 01/01/2023 - 01/31/2023

Outfall: 001

Version: 1

Week	Monitoring Point	Flow	pH Daily Min	pH Daily Max	Duration	Temperature	Turbidity (NTU)	Copper	Chromium	Zinc	Halogens, Total Combined, Total Residual	CWB2
		Million Gallons/Day Continuous Metered/Recorded	Standard Units Continuous Metered/Recorded	Standard Units Continuous Metered/Recorded	pH excursion Minutes Once per defined event Metered/Recorded	Measured Degrees C Continuous Metered/Recorded	Measured NTU Monthly Grab	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Residual Milligrams/L (mg/L) Once per defined event Grab	
		CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	
1-Su	1/1/23	2.7	7.8	8.1		25.8						0.00
1-M	1/2/23	2.7	7.8	7.9		26.0						0.00
1-T	1/3/23	2.7	7.8	8.1		26.1						0.00
1-W	1/4/23	2.7	7.7	7.9		26.5	4.3*	19.9*	2.3*	16.9*		0.00
1-Th	1/5/23	2.7	7.7	8.1		27.6						0.00
1-F	1/6/23	2.7	7.7	8.0		26.0						0.00
1-Sa	1/7/23	2.7	7.8	8.0		26.3						0.00
2-Su	1/8/23	2.7	7.8	8.0		26.9						0.00
2-M	1/9/23	2.7	7.8	8.1		27.3						0.00
2-T	1/10/23	2.7	7.8	8.0		27.2						0.00
2-W	1/11/23	2.7	7.8	8.0		27.1						0.00
2-Th	1/12/23	2.4	7.7	8.1		27.0						0.00
2-F	1/13/23	2.4	7.6	7.9		24.3						0.06
2-Sa	1/14/23	2.6	7.8	8.0		27.3						0.00
3-Su	1/15/23	2.7	7.8	8.1		27.5						0.00
3-M	1/16/23	2.6	7.9	8.0		27.1						0.00
3-T	1/17/23	2.7	7.8	7.9		26.4						0.00
3-W	1/18/23	2.7	7.6	7.9		25.7						0.00
3-Th	1/19/23	2.7	7.6	7.9		26.0						0.00
3-F	1/20/23	2.7	7.6	8.1		25.5						0.00
3-Sa	1/21/23	2.7	7.6	7.9		25.0						0.00
4-Su	1/22/23	2.7	7.8	7.9		24.9						0.00
4-M	1/23/23	2.7	7.8	7.9		25.3						0.00
4-T	1/24/23	2.7	7.7	7.8		25.0						0.00
4-W	1/25/23	2.7	7.6	7.8		25.3						0.00
4-Th	1/26/23	2.7	7.5	7.9		25.0						0.00
4-F	1/27/23	2.7	7.8	8.1		27.4						0.00
4-Sa	1/28/23	2.7	7.6	7.9		27.1						0.00
5-Su	1/29/23	2.7	7.9	8.1		30.1						0.00
5-M	1/30/23	2.7	7.6	7.9		28.4						0.00
5-T	1/31/23	2.7	7.6	8.1	M	26.9					M	0.00
Instantaneous Minimum			7.5									
			>= 6.5 (RO)									
Average Monthly		2.7							2.3	16.9		
		<= 5.6							<= 8.2	<= 53		
Instantaneous Maximum			8.1									
			<= 9.0 (RO)									
Monthly Total					M							
					<= 446							

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP



Week	Monitoring Point	Halogens, Total Combined, Total Residual	BPH	Volume
		Total Residual Milligrams/L (mg/L) Once per defined event Grab		
		CWB2	SSWD	SSWD
1-Su	1/1/23			
1-M	1/2/23			
1-T	1/3/23			
1-W	1/4/23			
1-Th	1/5/23			
1-F	1/6/23			
1-Sa	1/7/23			
2-Su	1/8/23			
2-M	1/9/23			
2-T	1/10/23			
2-W	1/11/23			
2-Th	1/12/23			
2-F	1/13/23			
2-Sa	1/14/23			
3-Su	1/15/23			
3-M	1/16/23			
3-T	1/17/23			
3-W	1/18/23			
3-Th	1/19/23			
3-F	1/20/23			
3-Sa	1/21/23			
4-Su	1/22/23			
4-M	1/23/23			
4-T	1/24/23			
4-W	1/25/23			
4-Th	1/26/23			
4-F	1/27/23			
4-Sa	1/28/23			
5-Su	1/29/23			
5-M	1/30/23			
5-T	1/31/23	M		
Instantaneous Minimum				
Average Monthly				
Instantaneous Maximum				
Monthly Total				



Outfall: 001 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
CWB	Turbidity (Nephelometric) Measured NTU	1/4/2023	4.3	Results from grab sample collected 1/4/23
CWB	Copper Total Micrograms/L (ug/L)	1/4/2023	19.9	Results from a 24-hr composite sample collected 1/3/23- 1/4/23
CWB	Chromium Total Micrograms/L (ug/L)	1/4/2023	2.3	Results from a 24-hr composite sample collected 1/3/23- 1/4/23
CWB	Zinc Total Micrograms/L (ug/L)	1/4/2023	16.9	Results from a 24-hr composite sample collected 1/3/23- 1/4/23
CWB2	All Parameters			Maximum daily total residual halogen from continuous TRH analyzer reported.
SSWD	All Parameters		C	



Washington State Department of Ecology Discharge Monitoring Report (DMR)

Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 01/01/2023 - 01/31/2023

Outfall: 002

Version: 1

Week	Monitoring Point	Volume Monthly Gallons 1/Day - recorded but not reported Calculated Pnd
1-Su	1/1/23	42465
1-M	1/2/23	42365
1-T	1/3/23	57765
1-W	1/4/23	27265
1-Th	1/5/23	53565
1-F	1/6/23	27265
1-Sa	1/7/23	40465
2-Su	1/8/23	40265
2-M	1/9/23	40365
2-T	1/10/23	69365
2-W	1/11/23	27265
2-Th	1/12/23	52765
2-F	1/13/23	39565
2-Sa	1/14/23	52065
3-Su	1/15/23	39465
3-M	1/16/23	39465
3-T	1/17/23	52265
3-W	1/18/23	39365
3-Th	1/19/23	27265
3-F	1/20/23	40865
3-Sa	1/21/23	38465
4-Su	1/22/23	39865
4-M	1/23/23	27265
4-T	1/24/23	39665
4-W	1/25/23	27265
4-Th	1/26/23	64865
4-F	1/27/23	27265
4-Sa	1/28/23	27265
5-Su	1/29/23	39965
5-M	1/30/23	27265
5-T	1/31/23	39665
Monthly Total		1250315

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 01/01/2023 - 01/31/2023

Outfall: Intk - Cooling water intake structure

Version: 1

Week	Monitoring Point	Flow
		Million Gallons/Day Continuous Metered/Recorded
		Intk
1-Su	1/1/23	19.9
1-M	1/2/23	20.1
1-T	1/3/23	20.3
1-W	1/4/23	20.3
1-Th	1/5/23	21.1
1-F	1/6/23	20.5
1-Sa	1/7/23	20.6
2-Su	1/8/23	21.0
2-M	1/9/23	20.9
2-T	1/10/23	20.7
2-W	1/11/23	18.3
2-Th	1/12/23	11.2
2-F	1/13/23	13.1
2-Sa	1/14/23	20.2
3-Su	1/15/23	21.3
3-M	1/16/23	22.1
3-T	1/17/23	20.2
3-W	1/18/23	20.4
3-Th	1/19/23	21.4
3-F	1/20/23	20.4
3-Sa	1/21/23	20.3
4-Su	1/22/23	20.2
4-M	1/23/23	20.3
4-T	1/24/23	20.2
4-W	1/25/23	20.3
4-Th	1/26/23	20.3
4-F	1/27/23	23.2
4-Sa	1/28/23	20.8
5-Su	1/29/23	20.0
5-M	1/30/23	20.1
5-T	1/31/23	20.0

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP

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 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.

Mary Joy Ramos

2/14/2023 8:44:29 AM

Signature

Date



INTEROFFICE MEMO

GO2-23-037

DIC: 1316.20

DATE: March 14, 2023
TO: Columbia Generating Station, (CGS)
FROM: Kris Byers, Environmental Scientist (1025)
SUBJECT: **Columbia Generating Station February 2023
NPDES Discharge Monitoring Report**
REFERENCE: NPDES Permit No. WA 002515-1 Condition S3.A

Please find attached the National Pollutant Discharge Elimination System (NPDES) Discharge Monitoring Report (DMR) for February 2023. All monitoring parameters were within permit specifications for the month. Because of equipment issues, a temporary tanker truck continues to be used for sulfuric acid additions to the circulating water system to control the pH. This method results in greater variation of the blowdown pH than is typical.

On February 21, 2023 Potable Water Cold Flow Indicator 6 (PWC-FI-6) was found to have exceeded the allowable annual calibration window due to an incorrect retirement of the recurring Preventative Maintenance (PM) task. See Condition Report (CR) 441818. NPDES permit section S2.C.5. states: "Calibrate flow-monitoring devices at a minimum frequency of at least one calibration per year" and the last calibration of the instrument was on November 19, 2021 under WO 02158845. Therefore, the NPDES required calibration frequency of once per year was exceeded when the instrument was not calibrated in 2022.

PWC-FI-6 was calibrated on March 2, 2023 and the as-found condition of the flowmeter was within calibration tolerance. No adjustment was required. The exceeded annual calibration is reportable under S3.E.e of the NPDES permit and is to be submitted with the February 2023 DMR.

Energy Northwest provided an informal notice to the Energy Facility Site Evaluation Council (EFSEC) of this event on February 28, 2023 during a scheduled phone call. EFSEC requested the noncompliance report also be transmitted to them directly in addition to the submission on WQWebPortal.

The report will be submitted electronically to the State of Washington Department of Ecology (Ecology) via Ecology's online reporting system. The report required by NPDES permit section S3.E.e will be transmitted electronically to Amy Moon, Siting and Compliance Lead at the Energy Facility Site Evaluation Council. If you have any questions concerning this information, please contact Marshall Schmitt at (509) 372-5334.

Attachments: NPDES Discharge Monitoring Report, February 2023
Noncompliance Report PWC-FI-6 Calibration

KRB

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:	
M Schmitt (via email)	Docket File PE20
K Byers (via email)	Regulatory (via email)
A Mowery (via email)	Document Control (via APW)

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 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.

Prepared by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Ashley Mowery, Environmental Technician, Environmental Services

Reviewed by: Marshall Schmitt, Environmental Scientist, E&RP

Reviewed by: Matthew Turner, Manager, Environmental Services

Approved by: Mary Joy C. Ramos, Manager, Environmental & Regulatory Programs



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 02/01/2023 - 02/28/2023

Outfall: 001

Version: 1

Week	Monitoring Point	Flow	pH Daily Min	pH Daily Max	Duration	Temperature	Turbidity (NTU)	Copper	Chromium	Zinc	Halogens, Total Combined, Total Residual	CWB2
		Million Gallons/Day Continuous Metered/Recorded	Standard Units Continuous Metered/Recorded	Standard Units Continuous Metered/Recorded	pH excursion Minutes Once per defined event Metered/Recorded	Measured Degrees C Continuous Metered/Recorded	Measured NTU Monthly Grab	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Residual Milligrams/L (mg/L) Once per defined event Grab	
		CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	
1-W	2/1/23	2.7	7.9	8.0		26.7						0.00
1-Th	2/2/23	2.7	7.9	8.0		25.7						0.00
1-F	2/3/23	2.7	7.9	8.1		26.4						0.00
1-Sa	2/4/23	2.7	8.0	8.1		26.6						0.00
2-Su	2/5/23	2.7	8.1	8.1		25.8						0.00
2-M	2/6/23	2.7	8.1	8.3		26.3						0.00
2-T	2/7/23	2.6	8.1	8.3		27.6	3.4*	10.5*	<1*	12*		0.00
2-W	2/8/23	2.6	7.9	8.2		27.6						0.01
2-Th	2/9/23	2.7	7.8	8.1		26.3						0.00
2-F	2/10/23	2.7	7.9	8.0		26.1						0.00
2-Sa	2/11/23	2.7	7.9	8.0		26.1						0.00
3-Su	2/12/23	2.6	7.9	8.1		26.4						0.00
3-M	2/13/23	2.6	7.9	8.1		27.2						0.00
3-T	2/14/23	2.6	7.7	8.1		26.6						0.00
3-W	2/15/23	2.7	7.7	8.1		25.9						0.00
3-Th	2/16/23	2.7	7.9	8.0		25.2						0.00
3-F	2/17/23	2.7	7.7	8.1		26.5						0.00
3-Sa	2/18/23	2.7	7.9	8.1		27.2						0.00
4-Su	2/19/23	2.7	7.9	8.1		27.9						0.00
4-M	2/20/23	2.6	8.0	8.1		29.4						0.00
4-T	2/21/23	2.6	7.9	8.2		30.0						0.00
4-W	2/22/23	2.7	7.6	8.0		27.1						0.00
4-Th	2/23/23	2.7	7.7	7.9		29.2						0.00
4-F	2/24/23	2.7	7.7	8.0		29.0						0.00
4-Sa	2/25/23	2.7	7.9	8.2		28.5						0.00
5-Su	2/26/23	2.7	7.9	8.2		27.9						0.00
5-M	2/27/23	2.7	7.9	8.0		27.1						0.00
5-T	2/28/23	2.7	7.7	8.0	M	26.6					M	0.00
Instantaneous Minimum			7.6									
			>= 6.5 (RO)									
Average Monthly		2.7							<1	12		
		<= 5.6							<= 8.2	<= 53		
Instantaneous Maximum			8.3									
			<= 9.0 (RO)									
Monthly Total					M							
					<= 446							

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge, M - Monitoring Is Conditional/Not Req This MP



Week	Monitoring Point	Halogens, Total Combined, Total Residual	BPH	Volume
		Total Residual Milligrams/L (mg/L) Once per defined event Grab		
		CWB2	SSWD	SSWD
1-W	2/1/23			
1-Th	2/2/23			
1-F	2/3/23			
1-Sa	2/4/23			
2-Su	2/5/23			
2-M	2/6/23			
2-T	2/7/23			
2-W	2/8/23			
2-Th	2/9/23			
2-F	2/10/23			
2-Sa	2/11/23			
3-Su	2/12/23			
3-M	2/13/23			
3-T	2/14/23			
3-W	2/15/23			
3-Th	2/16/23			
3-F	2/17/23			
3-Sa	2/18/23			
4-Su	2/19/23			
4-M	2/20/23			
4-T	2/21/23			
4-W	2/22/23			
4-Th	2/23/23			
4-F	2/24/23			
4-Sa	2/25/23			
5-Su	2/26/23			
5-M	2/27/23			
5-T	2/28/23	M		
Instantaneous Minimum				
Average Monthly				
Instantaneous Maximum				
Monthly Total				



Outfall: 001 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
CWB	Turbidity (Nephelometric) Measured NTU	2/7/2023	3.4	Results from grab sample collected 2/7/23
CWB	Copper Total Micrograms/L (ug/L)	2/7/2023	10.5	Results from a 24-hr composite sample collected 2/6/23- 2/7/23
CWB	Chromium Total Micrograms/L (ug/L)	2/7/2023	B <1	Results from a 24-hr composite sample collected 2/6/23- 2/7/23
CWB	Zinc Total Micrograms/L (ug/L)	2/7/2023	12	Results from a 24-hr composite sample collected 2/6/23- 2/7/23
CWB2	All Parameters			Maximum daily total residual halogen from continuous TRH analyzer reported.
SSWD	All Parameters		C	



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 02/01/2023 - 02/28/2023

Outfall: 002

Version: 1

Week	Monitoring Point	Volume Monthly Gallons 1/Day - recorded but not reported Calculated Pnd
1-W	2/1/23	26178
1-Th	2/2/23	38778
1-F	2/3/23	38778
1-Sa	2/4/23	26178
2-Su	2/5/23	50978
2-M	2/6/23	38778
2-T	2/7/23	26178
2-W	2/8/23	38478
2-Th	2/9/23	26178
2-F	2/10/23	63878
2-Sa	2/11/23	38778
3-Su	2/12/23	38478
3-M	2/13/23	38678
3-T	2/14/23	38678
3-W	2/15/23	26178
3-Th	2/16/23	38778
3-F	2/17/23	26178
3-Sa	2/18/23	48578
4-Su	2/19/23	38578
4-M	2/20/23	26178
4-T	2/21/23	26178
4-W	2/22/23	38578
4-Th	2/23/23	38778
4-F	2/24/23	38878
4-Sa	2/25/23	38578
5-Su	2/26/23	38578
5-M	2/27/23	38478
5-T	2/28/23	38378
Monthly Total		1029884

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge, M - Monitoring Is Conditional/Not Req This MP



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 02/01/2023 - 02/28/2023

Outfall: Intk - Cooling water intake structure

Version: 1

Week	Monitoring Point	Flow
		Million Gallons/Day Continuous Metered/Recorded
		Intk
1-W	2/1/23	19.9
1-Th	2/2/23	20.1
1-F	2/3/23	20.0
1-Sa	2/4/23	22.5
2-Su	2/5/23	21.5
2-M	2/6/23	22.2
2-T	2/7/23	22.2
2-W	2/8/23	22.0
2-Th	2/9/23	21.3
2-F	2/10/23	21.3
2-Sa	2/11/23	21.2
3-Su	2/12/23	21.4
3-M	2/13/23	22.5
3-T	2/14/23	22.1
3-W	2/15/23	21.4
3-Th	2/16/23	20.8
3-F	2/17/23	22.1
3-Sa	2/18/23	21.8
4-Su	2/19/23	22.6
4-M	2/20/23	23.4
4-T	2/21/23	23.1
4-W	2/22/23	20.7
4-Th	2/23/23	20.6
4-F	2/24/23	20.2
4-Sa	2/25/23	20.5
5-Su	2/26/23	20.6
5-M	2/27/23	19.8
5-T	2/28/23	21.1

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge, M - Monitoring Is Conditional/Not Req This MP

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 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.

Mary Joy Ramos

3/14/2023 3:21:44 PM

Signature

Date

National Pollutant Discharge Elimination System Noncompliance Report

A description of the noncompliance and its cause

Columbia Generating Station (Columbia), operated by Energy Northwest, maintains a National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit (No. WA002515-1) issued by the Washington State Energy Facility Site Evaluation Council (EFSEC). The NPDES permit authorizes the discharge of treated wastewater at permitted locations and establishes specific discharge limits. Per NPDES WA002515-1 S2.A(4) Columbia is required to monitor influent flows to the Evaporation Ponds and per S2.C.5 flow monitoring devices are required to be calibrated at least once per year.

On February 21, 2023, the Maintenance Services department discovered that the Preventative Maintenance (PM) task for annual calibration of PWC-FI-6, flowmeter for flocculator backwash to Evaporation Ponds 1 and 2, was inadvertently retired in a recent optimization effort. The PM was not approved for retirement during the optimization, but due to an error in verifying the proposed changes, it was retired anyway. Environmental and Regulatory Programs (E&RP) was notified at approximately 12:42 PM on the same day.

Based on the previous calibration work order (WO), WO 02158845, the internal annual calibration of PWC-FI-6 expired on November 19, 2022. NPDES permit section S2.C.5. states: "Calibrate flow-monitoring devices at a minimum frequency of at least one calibration per year" and the last calibration of the instrument was on November 19, 2021 under WO 02158845. Therefore, the NPDES required calibration frequency of once per year was exceeded when the instrument was not calibrated in 2022.

The PM was immediately reactivated and a new WO created. PWC-FI-6 was calibrated on March 2, 2023 under WO 02204506 and the flowmeter as-found was within tolerance. No calibration nor adjustment was required.

Energy Northwest provided an informal notice to EFSEC of this event on February 28, 2023 during a scheduled phone call. EFSEC requested the noncompliance report also be transmitted directly to the Siting and Compliance Lead in addition to the submission on WQWebPortal.

The period of noncompliance, including exact dates and times

The period of noncompliance was from December 31, 2022 11:59 PM to March 2, 2023 12:47 AM.

The estimated time the Permittee expects the noncompliance to continue if not yet corrected

N/A; The noncompliance was corrected on March 2, 2023.

Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance

The annual PM was reinstated and a review of all recently retired PMs for potential impacts to permit compliance is in progress. To date, no additional impacts have been identified. Evaluation of additional actions to prevent recurrence of human performance errors is in progress.

If the noncompliance involves an overflow prior to the treatment works, an estimate of the quantity (in gallons) of untreated overflow

This noncompliance did not involve an overflow.



INTEROFFICE MEMO

GO2-23-051
DIC: 1316.20

DATE: April 13, 2023
TO: Columbia Generating Station, (CGS)
FROM: Ashley Mowery, Environmental Technician (1025)
SUBJECT: **Columbia Generating Station March 2023
NPDES Discharge Monitoring Report**
REFERENCE: NPDES Permit No. WA 002515-1 Condition S3.A

Please find attached the National Pollutant Discharge Elimination System (NPDES) Discharge Monitoring Report (DMR) for March 2023. All monitoring parameters were within permit specifications for the month. Because of equipment issues, a temporary tanker truck continues to be used for sulfuric acid additions to the circulating water system to control the pH. This method results in greater variation of the blowdown pH than is typical.

The report will be submitted electronically to the State of Washington Department of Ecology (Ecology) via Ecology's online reporting system. If you have any questions concerning this information, please contact Marshall Schmitt at (509) 372-5334.

Attachments: NPDES Discharge Monitoring Report, March 2023

AJM

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:	
M Schmitt (via email)	Docket File PE20
K Byers (via email)	Regulatory (via email)
A Mowery (via email)	Document Control (via APW)

Columbia Generating Station

Page 2 of 2

April 13, 2023

March 2023 DMR

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 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.

Prepared by: Ashley Mowery, Environmental Technician, Environmental Services

Reviewed by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Marshall Schmitt, Environmental Scientist, E&RP

Reviewed by: Matthew Turner, Manager, Environmental Services

Approved by: Mary Joy C. Ramos, Manager, Environmental & Regulatory Programs



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 03/01/2023 - 03/31/2023

Outfall: 001

Version: 1

Week	Monitoring Point	Flow	pH Daily Min	pH Daily Max	Duration	Temperature	Turbidity (NTU)	Copper	Chromium	Zinc	Halogens, Total Residual	CWB2
		Million Gallons/Day Continuous Metered/Recorded	Standard Units Continuous Metered/Recorded	Standard Units Continuous Metered/Recorded	pH excursion Minutes Once per defined event Metered/Recorded	Measured Degrees C Continuous Metered/Recorded	Measured NTU Monthly Grab	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Residual Milligrams/L (mg/L) Once per defined event Grab	
		CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	
1-W	3/1/23	2.7	7.7	8.0		27.3						0.00
1-Th	3/2/23	1.4	7.8	7.9		26.2						0.00
1-F	3/3/23	1.8	7.8	8.0	0	27.2					<0.1	0.02
1-Sa	3/4/23	2.8	7.9	8.1		26.4						0.02
2-Su	3/5/23	2.8	7.9	8.1		26.6						0.01
2-M	3/6/23	2.8	7.6	7.9		26.5						0.01
2-T	3/7/23	2.8	7.6	7.9		28.1	3.6*	12.0*	1.22*	14.4*		0.01
2-W	3/8/23	2.8	7.8	7.9		28.6						0.02
2-Th	3/9/23	2.8	7.6	7.9		29.5						0.02
2-F	3/10/23	2.8	7.7	8.0		29.7						0.03
2-Sa	3/11/23	2.8	7.6	7.7		27.9						0.02
3-Su	3/12/23	2.8	7.6	7.7		28.1						0.02
3-M	3/13/23	2.7	7.6	7.9		30.4						0.02
3-T	3/14/23	2.7	7.7	8.0		28.8						0.00
3-W	3/15/23	2.7	7.7	8.0		30.0						0.00
3-Th	3/16/23	2.7	7.8	8.1		29.9						0.00
3-F	3/17/23	2.7	7.7	8.0		28.9						0.01
3-Sa	3/18/23	2.7	7.9	8.1		27.2						0.01
4-Su	3/19/23	2.7	8.0	8.1		27.2						0.02
4-M	3/20/23	2.7	8.1	8.2		27.6						0.01
4-T	3/21/23	2.7	8.1	8.2		26.3						0.02
4-W	3/22/23	2.7	8.0	8.2		26.0						0.01
4-Th	3/23/23	2.7	8.0	8.1		27.2						0.01
4-F	3/24/23	2.7	8.1	8.1		26.9						0.00
4-Sa	3/25/23	2.7	8.0	8.1		24.3						0.00
5-Su	3/26/23	2.7	8.0	8.1		24.6						0.01
5-M	3/27/23	2.7	8.0	8.1		23.9						0.01
5-T	3/28/23	2.7	8.0	8.1		27.3						0.00
5-W	3/29/23	2.7	8.0	8.1		25.5						0.00
5-Th	3/30/23	0.6	8.0	8.0	0	24.5					<0.1	0.00
5-F	3/31/23	1.5	7.8	8.0		25.4						0.08
Instantaneous Minimum			7.6									
			>= 6.5 (RO)									
Average Monthly		2.6							1.22	14.4		
		<= 5.6							<= 8.2	<= 53		
Instantaneous Maximum			8.2									
			<= 9.0 (RO)									
Monthly Total					0							
					<= 446							

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge



Week	Monitoring Point	Halogens, Total Combined, Total Residual	SSWD	SSWD
		Total Residual Milligrams/L (mg/L) Once per defined event Grab		
		CWB2	SSWD	SSWD
1-W	3/1/23			
1-Th	3/2/23			
1-F	3/3/23	<0.1		
1-Sa	3/4/23			
2-Su	3/5/23			
2-M	3/6/23			
2-T	3/7/23			
2-W	3/8/23			
2-Th	3/9/23			
2-F	3/10/23			
2-Sa	3/11/23			
3-Su	3/12/23			
3-M	3/13/23			
3-T	3/14/23			
3-W	3/15/23			
3-Th	3/16/23			
3-F	3/17/23			
3-Sa	3/18/23			
4-Su	3/19/23			
4-M	3/20/23			
4-T	3/21/23			
4-W	3/22/23			
4-Th	3/23/23			
4-F	3/24/23			
4-Sa	3/25/23			
5-Su	3/26/23			
5-M	3/27/23			
5-T	3/28/23			
5-W	3/29/23			
5-Th	3/30/23	<0.1		
5-F	3/31/23			
Instantaneous Minimum				
Average Monthly				
Instantaneous Maximum				
Monthly Total				



Outfall: 001 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
CWB	Turbidity (Nephelometric) Measured NTU	3/7/2023	3.6	Results from grab sample collected 3/7/2023
CWB	Copper Total Micrograms/L (ug/L)	3/7/2023	12.0	Results from a 24-hr composite sample collected 3/6/2023-3/7/2023
CWB	Chromium Total Micrograms/L (ug/L)	3/7/2023	1.22	Results from a 24-hr composite sample collected 3/6/2023-3/7/2023
CWB	Zinc Total Micrograms/L (ug/L)	3/7/2023	14.4	Results from a 24-hr composite sample collected 3/6/2023-3/7/2023
CWB2	All Parameters			Maximum daily total residual halogen from continuous TRH analyzer reported.
SSWD	All Parameters		C	



Washington State Department of Ecology Discharge Monitoring Report (DMR)

Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 03/01/2023 - 03/31/2023

Outfall: 002

Version: 1

Week	Monitoring Point	Volume Monthly Gallons 1/Day - recorded but not reported Calculated Pnd
1-W	3/1/23	37073
1-Th	3/2/23	43273
1-F	3/3/23	37073
1-Sa	3/4/23	24573
2-Su	3/5/23	36973
2-M	3/6/23	24573
2-T	3/7/23	24573
2-W	3/8/23	37273
2-Th	3/9/23	24573
2-F	3/10/23	37273
2-Sa	3/11/23	36773
3-Su	3/12/23	24573
3-M	3/13/23	37073
3-T	3/14/23	37073
3-W	3/15/23	36973
3-Th	3/16/23	30573
3-F	3/17/23	43573
3-Sa	3/18/23	24573
4-Su	3/19/23	24573
4-M	3/20/23	37073
4-T	3/21/23	24573
4-W	3/22/23	36973
4-Th	3/23/23	24573
4-F	3/24/23	24573
4-Sa	3/25/23	36973
5-Su	3/26/23	24573
5-M	3/27/23	36873
5-T	3/28/23	24573
5-W	3/29/23	37273
5-Th	3/30/23	36873
5-F	3/31/23	24573
Monthly Total		992463

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 03/01/2023 - 03/31/2023

Outfall: Intk - Cooling water intake structure

Version: 1

Week	Monitoring Point	Flow
		Million Gallons/Day Continuous Metered/Recorded
		Intk
1-W	3/1/23	21.9
1-Th	3/2/23	21.3
1-F	3/3/23	21.2
1-Sa	3/4/23	21.6
2-Su	3/5/23	22.0
2-M	3/6/23	21.6
2-T	3/7/23	22.0
2-W	3/8/23	21.9
2-Th	3/9/23	22.0
2-F	3/10/23	22.4
2-Sa	3/11/23	22.6
3-Su	3/12/23	21.9
3-M	3/13/23	22.7
3-T	3/14/23	22.7
3-W	3/15/23	22.7
3-Th	3/16/23	22.4
3-F	3/17/23	22.4
3-Sa	3/18/23	22.6
4-Su	3/19/23	22.6
4-M	3/20/23	22.3
4-T	3/21/23	22.5
4-W	3/22/23	23.1
4-Th	3/23/23	23.4
4-F	3/24/23	22.5
4-Sa	3/25/23	22.2
5-Su	3/26/23	21.2
5-M	3/27/23	20.7
5-T	3/28/23	22.2
5-W	3/29/23	20.8
5-Th	3/30/23	19.5
5-F	3/31/23	19.5

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge

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 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.

Mary Joy Ramos

4/13/2023 7:32:34 AM

Signature

Date



INTEROFFICE MEMO

GO2-23-062

DIC: 1316.20

DATE: May 11, 2023
TO: Columbia Generating Station, (CGS)
FROM: Kris Byers, Environmental Scientist (1025)
SUBJECT: Columbia Generating Station April 2023
NPDES Discharge Monitoring Report
REFERENCE: NPDES Permit No. WA 002515-1 Condition S3.A

Please find attached the NPDES Discharge Monitoring Report (DMR) for April 2023. All monitoring parameters were within permit specifications for the month. Because of equipment issues, a temporary tanker truck continues to be used for sulfuric acid additions to the circulating water system to control the pH. This method results in greater variation of the blowdown pH than is typical.

The report will be submitted electronically to the State of Washington Department of Ecology (Ecology) via Ecology's online reporting system. If you have any questions concerning this information, please contact Marshall Schmitt at (509) 372-5334.

Attachment: NPDES Discharge Monitoring Report, April 2023

KRB

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:	
D Mehinagic (via email)	Docket File PE20
K Byers (via email)	Regulatory (via email)
A Mowery (via email)	Document Control (via APW)

Columbia Generating Station

Page 2 of 2

May 15, 2023

April 2023 DMR

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 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.

Prepared by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Ashley Mowery, Environmental Technician, Environmental Services

Reviewed by: Denis Mehinagic, Environmental Scientist, E&RP

Reviewed by: Matthew Turner, Manager, Environmental Services

Approved by: Mary Joy C. Ramos, Manager, Environmental & Regulatory Programs

Washington Department of Ecology
Electronic Submission Cover Letter



**WQWebDMR - Permit# WA0025151 - DMR Submission Id: 1874758 - 5/11/2023
10:37:37 AM**

Company Name	Signer Name	System Name
Energy Northwest	Mary Joy C. Ramos	WQWebPortal

Attachments:

Document Name Or Description	Document Name
Submitted Copy of Record for Energy Northwest	Copy of Record EnergyNorthwest Thursday May 11 2023

Attestation Agreed to at Signing:

I certify I personally signed and submitted to the Department of Ecology an Electronic Signature Agreement. I understand that use of my electronic signature account/password to submit this information is equal to my written signature. I have read and followed all the rules of use in my Electronic Signature Agreement. I believe no one but me has had access to my password and other account information.

I further certify: I had the opportunity to review the content or meaning of the submittal before signing it; and to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I intend to submit this information as part of the implementation, oversight, and enforcement of a federal environmental program. I am aware there are significant penalties for submitting false information, including possible fines and imprisonment.

For Ecology Use Only



O7dsLCqPA+XBp
+craaiJNQZ9F11bY3NWPgM09WX1RKhNWUOWbDUoFvviWd0zMRMh0zdkgSi2LFoE1b5tg/GU8URnxBMW2iQhgrPz
UCkg+k=



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 04/01/2023 - 04/30/2023

Outfall: 001

Version: 1

Week	Monitoring Point	Flow	pH Daily Min	pH Daily Max	Duration	Temperature	Turbidity (NTU)	Copper	Chromium	Zinc	Halogens, Total Residual	Halogens, Total Residual
		Million Gallons/Day Continuous Metered/Recorded	Standard Units Continuous Metered/Recorded	Standard Units Continuous Metered/Recorded	pH excursion Minutes Once per defined event Metered/Recorded	Measured Degrees C Continuous Metered/Recorded	Measured NTU Monthly Grab	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Residual Milligrams/L (mg/L) Once per defined event Grab	Total Residual Milligrams/L (mg/L) Continuous Metered/Recorded
		CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB2
1-Sa	4/1/23	C	C	C	0	C					<0.1	C
2-Su	4/2/23	2.5	7.6	8.1		24.8						0.01
2-M	4/3/23	2.6	7.8	8.0		24.9						0.00
2-T	4/4/23	2.6	7.9	8.1		25.6	4.9*	13.5*	1.6*	18.4*		0.00
2-W	4/5/23	2.6	8.0	8.1		26.3						0.00
2-Th	4/6/23	1.9	7.7	8.5	0	26.5					<0.1	0.03
2-F	4/7/23	3.0	7.7	7.9		27.3						0.01
2-Sa	4/8/23	3.1	7.6	7.9		27.3						0.01
3-Su	4/9/23	3.0	7.6	7.9		27.7						0.01
3-M	4/10/23	3.0	7.6	7.9		27.2						0.01
3-T	4/11/23	3.1	7.7	7.8		24.8						0.00
3-W	4/12/23	3.0	7.6	7.9		24.1						0.00
3-Th	4/13/23	1.5	7.8	8.2	0	22.9					<0.1	0.04
3-F	4/14/23	3.1	7.7	8.3		23.0						0.03
3-Sa	4/15/23	3.1	7.7	7.8		24.0						0.02
4-Su	4/16/23	3.1	7.7	7.9		25.1						0.02
4-M	4/17/23	3.1	7.7	8.0		25.0						0.02
4-T	4/18/23	3.1	7.6	7.9		23.5						0.02
4-W	4/19/23	3.1	7.5	7.7		22.9						0.01
4-Th	4/20/23	3.1	7.6	8.1		23.0						0.01
4-F	4/21/23	3.1	8.1	8.3		25.3						0.01
4-Sa	4/22/23	3.1	8.0	8.4		25.4						0.01
5-Su	4/23/23	3.1	8.1	8.3		26.0						0.01
5-M	4/24/23	3.1	8.1	8.3		25.8						0.01
5-T	4/25/23	2.9	8.1	8.2		24.4						0.02
5-W	4/26/23	2.8	8.0	8.2		26.4						0.02
5-Th	4/27/23	2.7	7.8	8.2		26.5						0.02
5-F	4/28/23	2.7	7.9	8.0		26.0						0.01
5-Sa	4/29/23	2.7	7.9	8.1		26.5						0.02
6-Su	4/30/23	2.7	7.9	8.2		27.2						0.03
Instantaneous Minimum			7.5									
			>= 6.5 (RO)									
Average Monthly		2.8							1.6	18.4		
		<= 5.6							<= 8.2	<= 53		
Instantaneous Maximum			8.5									
			<= 9.0 (RO)									
Monthly Total					0							
					<= 446							

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge



Week	Monitoring Point	Halogens, Total Combined, Total Residual	pH	Volume
		Total Residual Milligrams/L (mg/L) Once per defined event Grab		
		CWB2	SSWD	SSWD
1-Sa	4/1/23	<0.1		
2-Su	4/2/23			
2-M	4/3/23			
2-T	4/4/23			
2-W	4/5/23			
2-Th	4/6/23	<0.1		
2-F	4/7/23			
2-Sa	4/8/23			
3-Su	4/9/23			
3-M	4/10/23			
3-T	4/11/23			
3-W	4/12/23			
3-Th	4/13/23	<0.1		
3-F	4/14/23			
3-Sa	4/15/23			
4-Su	4/16/23			
4-M	4/17/23			
4-T	4/18/23			
4-W	4/19/23			
4-Th	4/20/23			
4-F	4/21/23			
4-Sa	4/22/23			
5-Su	4/23/23			
5-M	4/24/23			
5-T	4/25/23			
5-W	4/26/23			
5-Th	4/27/23			
5-F	4/28/23			
5-Sa	4/29/23			
6-Su	4/30/23			
Instantaneous Minimum				
Average Monthly				
Instantaneous Maximum				
Monthly Total				



Outfall: 001 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
CWB	Turbidity (Nephelometric) Measured NTU	4/4/2023	4.9	Results from grab sample collected 4/4/2023
CWB	Copper Total Micrograms/L (ug/L)	4/4/2023	13.5	Results from a 24-hr composite sample collected 4/3/2023-4/4/2023
CWB	Chromium Total Micrograms/L (ug/L)	4/4/2023	1.6	Results from a 24-hr composite sample collected 4/3/2023-4/4/2023
CWB	Zinc Total Micrograms/L (ug/L)	4/4/2023	18.4	Results from a 24-hr composite sample collected 4/3/2023-4/4/2023
CWB2	All Parameters			Maximum daily total residual halogen from continuous TRH analyzer reported.
SSWD	All Parameters		C	



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 04/01/2023 - 04/30/2023

Outfall: 002

Version: 1

Week	Monitoring Point	Volume Monthly Gallons 1/Day - recorded but not reported Calculated Pnd
1-Sa	4/1/23	23509
2-Su	4/2/23	36009
2-M	4/3/23	36109
2-T	4/4/23	36109
2-W	4/5/23	35709
2-Th	4/6/23	23509
2-F	4/7/23	36009
2-Sa	4/8/23	35909
3-Su	4/9/23	35909
3-M	4/10/23	36209
3-T	4/11/23	23509
3-W	4/12/23	36109
3-Th	4/13/23	23509
3-F	4/14/23	35809
3-Sa	4/15/23	44409
4-Su	4/16/23	40009
4-M	4/17/23	35909
4-T	4/18/23	23509
4-W	4/19/23	35709
4-Th	4/20/23	23509
4-F	4/21/23	23509
4-Sa	4/22/23	36209
5-Su	4/23/23	35809
5-M	4/24/23	23509
5-T	4/25/23	37709
5-W	4/26/23	23509
5-Th	4/27/23	53209
5-F	4/28/23	23509
5-Sa	4/29/23	23509
6-Su	4/30/23	38409
Monthly Total		975870

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 04/01/2023 - 04/30/2023

Outfall: Intk - Cooling water intake structure

Version: 1

Week	Monitoring Point	Flow
		Million Gallons/Day Continuous Metered/Recorded
		Intk
1-Sa	4/1/23	17.8
2-Su	4/2/23	20.0
2-M	4/3/23	20.3
2-T	4/4/23	22.3
2-W	4/5/23	22.6
2-Th	4/6/23	21.9
2-F	4/7/23	23.6
2-Sa	4/8/23	23.7
3-Su	4/9/23	23.5
3-M	4/10/23	23.4
3-T	4/11/23	22.3
3-W	4/12/23	22.7
3-Th	4/13/23	21.0
3-F	4/14/23	23.1
3-Sa	4/15/23	23.0
4-Su	4/16/23	23.4
4-M	4/17/23	22.5
4-T	4/18/23	13.8
4-W	4/19/23	13.1
4-Th	4/20/23	12.8
4-F	4/21/23	12.8
4-Sa	4/22/23	21.5
5-Su	4/23/23	23.2
5-M	4/24/23	22.9
5-T	4/25/23	22.5
5-W	4/26/23	23.0
5-Th	4/27/23	23.9
5-F	4/28/23	23.4
5-Sa	4/29/23	23.8
6-Su	4/30/23	23.6

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge

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 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.

Mary Joy Ramos

5/11/2023 10:37:36 AM

Signature

Date



INTEROFFICE MEMO

GO2-23-076

DIC: 1316.20

DATE: June 14, 2023
TO: Columbia Generating Station, (CGS)
FROM: Kris Byers, Environmental Scientist (1025)
SUBJECT: **Columbia Generating Station May 2023
NPDES Discharge Monitoring Report**
REFERENCE: NPDES Permit No. WA 002515-1 Condition S3.A

Please find attached the NPDES Discharge Monitoring Report (DMR) for May 2023. All monitoring parameters were within permit specifications for the month. Because of equipment issues, a temporary tanker truck continues to be used for sulfuric acid additions to the circulating water system to control the pH. This method results in greater variation of the blowdown pH than is typical. Due to refueling outage activities, temporary flow and pH measurements were used for part of the month.

The report will be submitted electronically to the State of Washington Department of Ecology (Ecology) via Ecology's online reporting system. If you have any questions concerning this information, please contact Marshall Schmitt at (509) 372-5334.

Attachment: NPDES Discharge Monitoring Report, May 2023

KRB

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:	
M. Schmitt (via email)	Docket File PE20
K Byers (via email)	Regulatory (via email)
A Mowery (via email)	Document Control (via APW)

Columbia Generating Station

Page 2 of 2

June 14, 2023

May 2023 DMR

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 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.

Prepared by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Ashley Mowery, Environmental Technician, Environmental Services

Reviewed by: Marshall Schmitt, Environmental Scientist, E&RP

Reviewed by: Matthew Turner, Manager, Environmental Services

Approved by: Mary Joy C. Ramos, Manager, Environmental & Regulatory Programs



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 05/01/2023 - 05/31/2023

Outfall: 001

Version: 1

Week	Monitoring Point	Flow	pH Daily Min	pH Daily Max	Duration	Temperature	Turbidity (NTU)	Copper	Chromium	Zinc	Halogens, Total Combined, Total Residual	Halogens, Total Combined, Total Residual
		Million Gallons/Day Continuous Metered/Recorded	Standard Units Continuous Metered/Recorded	Standard Units Continuous Metered/Recorded	pH excursion Minutes Once per defined event Metered/Recorded	Measured Degrees C Continuous Metered/Recorded	Measured NTU Monthly Grab	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Residual Milligrams/L (mg/L) Once per defined event Grab	Total Residual Milligrams/L (mg/L) Once per defined event Grab
		CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB2
1-M	5/1/23	2.8	7.9	8.3		27.0						0.02
1-T	5/2/23	2.8	7.9	8.2		27.3	8.4*	11.3*	1.36*	12.1*		0.02
1-W	5/3/23	2.7	7.6	8.1		30.0						0.03
1-Th	5/4/23	2.6	8.0	8.4		28.4						0.08
1-F	5/5/23	3.5	8.0	8.3		33.3						0.06
1-Sa	5/6/23	4.2	8.1	8.4		33.5						0.07
2-Su	5/7/23	3.1	7.9	8.2		17.4						0.07
2-M	5/8/23	3.4	8.1	8.2		18.0						0.04
2-T	5/9/23	2.1	7.9	8.1		17.2						0.03
2-W	5/10/23	2.1	7.6	8.1		24.5						0.02
2-Th	5/11/23	2.2	7.5	7.7		25.4						0.02
2-F	5/12/23	2.1	7.3	7.6		25.6						0.07
2-Sa	5/13/23	2.3	7.4	7.5		25.7						0.02
3-Su	5/14/23	2.3	7.4	7.7		24.2						0.02
3-M	5/15/23	2.3	7.5	7.6		24.0						0.03
3-T	5/16/23	2.3	7.5	7.6		24.8						0.05
3-W	5/17/23	2.3	7.5	7.6		22.9						0.02
3-Th	5/18/23	2.3	7.5	7.9		22.9						0.03
3-F	5/19/23	2.2	7.7	7.9		23.7						0.05
3-Sa	5/20/23	2.1	7.8	8.0		22.9						0.05
4-Su	5/21/23	2.3	7.8	7.9		22.9						0.05
4-M	5/22/23	2.3	7.8	7.9		23.2						0.05
4-T	5/23/23	2.2	7.7	7.9		22.9						0.04
4-W	5/24/23	2.3	7.7	7.9		23.0						0.01
4-Th	5/25/23	2.3	7.7	7.8		23.2						0.01
4-F	5/26/23	2.2	7.7	7.8		24.1						0.01
4-Sa	5/27/23	2.2	7.7	7.8		24.1						0.01
5-Su	5/28/23	2.2	7.7	7.8		24.5						0.01
5-M	5/29/23	2.2	7.8	7.9		25.0						0.01
5-T	5/30/23	2.2	7.8	7.9		25.0						0.01
5-W	5/31/23	2.2	7.7	7.9	M	30.0					M	0.01
Instantaneous Minimum			7.3									
			>= 6.5 (RO)									
Average Monthly		2.5							1.36	12.1		
		<= 5.6							<= 8.2	<= 53		
Instantaneous Maximum				8.4								
				<= 9.0 (RO)								
Monthly Total					M							
					<= 446							

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP



Week	Monitoring Point	Halogens, Total Combined, Total Residual	BPH	Volume
		Total Residual Milligrams/L (mg/L) Once per defined event Grab		
		CWB2	SSWD	SSWD
1-M	5/1/23			
1-T	5/2/23			
1-W	5/3/23			
1-Th	5/4/23			
1-F	5/5/23			
1-Sa	5/6/23			
2-Su	5/7/23			
2-M	5/8/23			
2-T	5/9/23			
2-W	5/10/23			
2-Th	5/11/23			
2-F	5/12/23			
2-Sa	5/13/23			
3-Su	5/14/23			
3-M	5/15/23			
3-T	5/16/23			
3-W	5/17/23			
3-Th	5/18/23			
3-F	5/19/23			
3-Sa	5/20/23			
4-Su	5/21/23			
4-M	5/22/23			
4-T	5/23/23			
4-W	5/24/23			
4-Th	5/25/23			
4-F	5/26/23			
4-Sa	5/27/23			
5-Su	5/28/23			
5-M	5/29/23			
5-T	5/30/23			
5-W	5/31/23	M		
Instantaneous Minimum				
Average Monthly				
Instantaneous Maximum				
Monthly Total				



Outfall: 001 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
CWB	Turbidity (Nephelometric) Measured NTU	5/2/2023	8.4	Results from grab sample collected 5/2/23
CWB	Copper Total Micrograms/L (ug/L)	5/2/2023	11.3	Results from 24-hr composite sample collected 5/1/2023- 5/2/2023
CWB	Chromium Total Micrograms/L (ug/L)	5/2/2023	1.36	Results from 24-hr composite sample collected 5/1/2023- 5/2/2023
CWB	Zinc Total Micrograms/L (ug/L)	5/2/2023	12.1	Results from 24-hr composite sample collected 5/1/2023- 5/2/2023
CWB2	All Parameters			Maximum daily total residual halogen from continuous TRH analyzer reported.
SSWD	All Parameters		C	



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 05/01/2023 - 05/31/2023

Outfall: 002

Version: 1

Week	Monitoring Point	Volume Monthly Gallons 1/Day - recorded but not reported Calculated Pnd
1-M	5/1/23	25646
1-T	5/2/23	10746
1-W	5/3/23	25646
1-Th	5/4/23	25646
1-F	5/5/23	25746
1-Sa	5/6/23	25546
2-Su	5/7/23	10746
2-M	5/8/23	25746
2-T	5/9/23	10746
2-W	5/10/23	25846
2-Th	5/11/23	10746
2-F	5/12/23	25746
2-Sa	5/13/23	10746
3-Su	5/14/23	25646
3-M	5/15/23	10746
3-T	5/16/23	25946
3-W	5/17/23	10746
3-Th	5/18/23	25946
3-F	5/19/23	25346
3-Sa	5/20/23	25646
4-Su	5/21/23	25746
4-M	5/22/23	26046
4-T	5/23/23	25946
4-W	5/24/23	25946
4-Th	5/25/23	21746
4-F	5/26/23	29646
4-Sa	5/27/23	10746
5-Su	5/28/23	10746
5-M	5/29/23	25646
5-T	5/30/23	25546
5-W	5/31/23	10746
Monthly Total		647826

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 05/01/2023 - 05/31/2023

Outfall: Intk - Cooling water intake structure

Version: 1

Week	Monitoring Point	Flow Million Gallons/Day Continuous Metered/Recorded
1-M	5/1/23	22.8
1-T	5/2/23	22.0
1-W	5/3/23	20.4
1-Th	5/4/23	22.5
1-F	5/5/23	13.3
1-Sa	5/6/23	5.7
2-Su	5/7/23	5.8
2-M	5/8/23	5.8
2-T	5/9/23	5.8
2-W	5/10/23	5.8
2-Th	5/11/23	5.8
2-F	5/12/23	5.8
2-Sa	5/13/23	5.8
3-Su	5/14/23	5.8
3-M	5/15/23	5.8
3-T	5/16/23	5.8
3-W	5/17/23	5.8
3-Th	5/18/23	5.8
3-F	5/19/23	5.8
3-Sa	5/20/23	5.8
4-Su	5/21/23	5.8
4-M	5/22/23	5.8
4-T	5/23/23	5.8
4-W	5/24/23	5.8
4-Th	5/25/23	5.8
4-F	5/26/23	5.8
4-Sa	5/27/23	5.8
5-Su	5/28/23	5.8
5-M	5/29/23	5.8
5-T	5/30/23	5.8
5-W	5/31/23	5.8

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP

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 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.

Mary Joy Ramos

6/14/2023 8:47:05 AM

Signature

Date



INTEROFFICE MEMO

GO2-23-082
DIC: 1316.20

DATE: July 13, 2023
TO: Columbia Generating Station, (CGS)
FROM: Kris Byers, Environmental Scientist (1025)
SUBJECT: **Columbia Generating Station June 2023
NPDES Discharge Monitoring Report**
REFERENCE: NPDES Permit No. WA 002515-1 Condition S3.A

Please find attached the NPDES Discharge Monitoring Report (DMR) for June 2023. All monitoring parameters were within permit specifications for the month. Because of equipment issues, a temporary tanker truck continues to be used for sulfuric acid additions to the circulating water system to control the pH. This method results in greater variation of the blowdown pH than is typical. Due to refueling outage activities, temporary flow and pH measurements were used for part of the month.

The report will be submitted electronically to the State of Washington Department of Ecology (Ecology) via Ecology's online reporting system. If you have any questions concerning this information, please contact Denis Mehinagic at (509) 372-5768.

Attachment: NPDES Discharge Monitoring Report, June 2023

KRB

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:	
D Mehinagic (via email)	Docket File PE20
K Byers (via email)	Regulatory (via email)
A Mowery (via email)	Document Control (via APW)

Columbia Generating Station

Page 2 of 2

January 30, 2024

CGS June 2023 DMR

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 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.

Prepared by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Ashley Mowery, Environmental Technician, Environmental Services

Reviewed by: Denis Mehinagic, Environmental Scientist, E&RP

Reviewed by: Matthew Turner, Manager, Environmental Services

Approved by: Mary Joy C. Ramos, Manager, Environmental & Regulatory Programs



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody: Columbia River

Monitoring Period: 06/01/2023 - 06/30/2023

Outfall: 001

Version: 1

Week	Monitoring Point	Flow	pH Daily Min	pH Daily Max	Duration	Temperature	Turbidity (NTU)	Copper	Chromium	Zinc	Halogens, Total Residual	Halogens, Total Residual
		Million Gallons/Day Continuous Metered/Recorded	Standard Units Continuous Metered/Recorded	Standard Units Continuous Metered/Recorded	pH excursion Minutes Once per defined event Metered/Recorded	Measured Degrees C Continuous Metered/Recorded	Measured NTU Monthly Grab	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Micrograms/L (ug/L) Monthly Composite sample (24 hour)	Total Residual Milligrams/L (mg/L) Once per defined event Grab	Total Residual Milligrams/L (mg/L) Continuous Metered/Recorded
1-Th	6/1/23	2.2	7.8	8.0		24.8						0.01
1-F	6/2/23	2.3	7.8	7.9		25.5						0.01
1-Sa	6/3/23	0.3	7.7	7.9	0	29.9						0.00
2-Su	6/4/23	2.1	7.7	8.3		24.8						0.08
2-M	6/5/23	2.2	8.2	8.2		21.1						0.08
2-T	6/6/23	2.4	7.5	8.3		19.5						0.05
2-W	6/7/23	2.4	7.6	7.7		19.8	10*	14.3*	0.84*	35*		0.03
2-Th	6/8/23	2.6	7.5	7.6		20.7						0.03
2-F	6/9/23	2.6	7.5	7.6		22.6						0.02
2-Sa	6/10/23	2.6	7.5	7.6		21.6						0.01
3-Su	6/11/23	2.6	7.4	7.5		21.1						0.01
3-M	6/12/23	2.6	7.4	7.5		22.6						0.01
3-T	6/13/23	1.4	7.4	7.5		22.9						0.01
3-W	6/14/23	C	C	C	0	C						C
3-Th	6/15/23	C	C	C	0	C						C
3-F	6/16/23	C	C	C	0	C						C
3-Sa	6/17/23	C	C	C	0	C						C
4-Su	6/18/23	C	C	C	0	C						C
4-M	6/19/23	C	C	C	0	C					<0.1	C
4-T	6/20/23	0.7	7.2	8.1		26.3						0.03
4-W	6/21/23	0.6	7.7	8.0	0	27.3					<0.1	0.09
4-Th	6/22/23	1.6	7.8	8.3		28.1						0.04
4-F	6/23/23	3.0	7.8	7.8		30.3						0.04
4-Sa	6/24/23	1.9	7.6	7.8	0	30.4						0.03
5-Su	6/25/23	0.7	8.0	8.4	0	29.4					<0.1	0.07
5-M	6/26/23	5.0	7.6	8.3		31.8						0.06
5-T	6/27/23	3.8	7.6	7.8		31.7						0.04
5-W	6/28/23	2.7	7.5	7.7		32.4						0.04
5-Th	6/29/23	1.6	7.5	7.8	0	32.3					<0.1	0.04
5-F	6/30/23	2.7	7.5	7.6		32.8						0.03
Instantaneous Minimum			7.2									
			>= 6.5 (RO)									
Average Monthly		1.8							0.84	35		
		<= 5.6							<= 8.2	<= 53		
Instantaneous Maximum			8.4									
			<= 9.0 (RO)									
Monthly Total					0							
					<= 446							

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge



Week	Monitoring Point	Halogens, Total Combined, Total Residual	SSWD	SSWD
		Total Residual Milligrams/L (mg/L) Once per defined event Grab		
		CWB2		
1-Th	6/1/23			
1-F	6/2/23			
1-Sa	6/3/23			
2-Su	6/4/23			
2-M	6/5/23			
2-T	6/6/23			
2-W	6/7/23			
2-Th	6/8/23			
2-F	6/9/23			
2-Sa	6/10/23			
3-Su	6/11/23			
3-M	6/12/23			
3-T	6/13/23			
3-W	6/14/23			
3-Th	6/15/23			
3-F	6/16/23			
3-Sa	6/17/23			
4-Su	6/18/23			
4-M	6/19/23	<0.1		
4-T	6/20/23			
4-W	6/21/23	<0.1		
4-Th	6/22/23			
4-F	6/23/23			
4-Sa	6/24/23			
5-Su	6/25/23	<0.1		
5-M	6/26/23			
5-T	6/27/23			
5-W	6/28/23			
5-Th	6/29/23	<0.1		
5-F	6/30/23			
Instantaneous Minimum				
Average Monthly				
Instantaneous Maximum				
Monthly Total				



Outfall: 001 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
CWB	Turbidity (Nephelometric) Measured NTU	6/7/2023	10	Results from grab sample collected 6/7/23
CWB	Copper Total Micrograms/L (ug/L)	6/7/2023	14.3	Results from 24-hr composite sample collected 6/6/2023- 6/7/2023
CWB	Chromium Total Micrograms/L (ug/L)	6/7/2023	0.84	Results from 24-hr composite sample collected 6/6/2023- 6/7/2023
CWB	Zinc Total Micrograms/L (ug/L)	6/7/2023	35	Results from 24-hr composite sample collected 6/6/2023- 6/7/2023
CWB2	All Parameters			Maximum daily total residual halogen from continuous TRH analyzer reported.
SSWD	All Parameters		C	



Washington State Department of Ecology Discharge Monitoring Report (DMR)

Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 06/01/2023 - 06/30/2023

Outfall: 002

Version: 1

Week	Monitoring Point	Volume Monthly Gallons 1/Day - recorded but not reported Calculated
1-Th	6/1/23	9381
1-F	6/2/23	24381
1-Sa	6/3/23	24281
2-Su	6/4/23	9381
2-M	6/5/23	24281
2-T	6/6/23	24181
2-W	6/7/23	24081
2-Th	6/8/23	9381
2-F	6/9/23	9381
2-Sa	6/10/23	39281
3-Su	6/11/23	9381
3-M	6/12/23	9381
3-T	6/13/23	9381
3-W	6/14/23	9381
3-Th	6/15/23	9381
3-F	6/16/23	9381
3-Sa	6/17/23	9381
4-Su	6/18/23	9381
4-M	6/19/23	9381
4-T	6/20/23	9381
4-W	6/21/23	9381
4-Th	6/22/23	9381
4-F	6/23/23	9381
4-Sa	6/24/23	9381
5-Su	6/25/23	9381
5-M	6/26/23	9381
5-T	6/27/23	9381
5-W	6/28/23	9381
5-Th	6/29/23	9381
5-F	6/30/23	9381
Monthly Total		385630

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 06/01/2023 - 06/30/2023

Outfall: Intk - Cooling water intake structure

Version: 1

Week	Monitoring Point	Flow
		Million Gallons/Day Continuous Metered/Recorded
		Intk
1-Th	6/1/23	5.8
1-F	6/2/23	5.8
1-Sa	6/3/23	5.8
2-Su	6/4/23	5.8
2-M	6/5/23	5.8
2-T	6/6/23	5.8
2-W	6/7/23	5.8
2-Th	6/8/23	5.8
2-F	6/9/23	5.8
2-Sa	6/10/23	5.8
3-Su	6/11/23	5.8
3-M	6/12/23	5.8
3-T	6/13/23	5.8
3-W	6/14/23	5.8
3-Th	6/15/23	5.8
3-F	6/16/23	5.8
3-Sa	6/17/23	5.8
4-Su	6/18/23	4.7
4-M	6/19/23	4.5
4-T	6/20/23	8.4
4-W	6/21/23	16.3
4-Th	6/22/23	18.9
4-F	6/23/23	25.6
4-Sa	6/24/23	25.2
5-Su	6/25/23	24.3
5-M	6/26/23	29.7
5-T	6/27/23	27.9
5-W	6/28/23	26.8
5-Th	6/29/23	26.6
5-F	6/30/23	27.6

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge

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 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.

Signature

Date



INTEROFFICE MEMO

GO2-23-096
DIC: 1316.20

DATE: August 15, 2023
TO: Columbia Generating Station, (CGS)
FROM: Kris Byers, Environmental Scientist (1025)
SUBJECT: **Columbia Generating Station July 2023
NPDES Discharge Monitoring Report**
REFERENCE: NPDES Permit No. WA 002515-1 Condition S3.A

Please find attached the NPDES Discharge Monitoring Report (DMR) for July 2023. All monitoring parameters were within permit specifications for the month.

The report will be submitted electronically to the State of Washington Department of Ecology (Ecology) via Ecology’s online reporting system. If you have any questions concerning this information, please contact Denis Mehinagic at (509) 372-5768.

Attachment: NPDES Discharge Monitoring Report, July 2023

KRB

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:	
D Mehinagic (via email)	Docket File PE20
K Byers (via email)	Regulatory (via email)
A Mowery (via email)	Document Control (via APW)

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 information, the information submitted is, to the best of my knowledge and

Columbia Generating Station

Page 2 of 2

August 16, 2023

CGS July 2023 DMR

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.

Prepared by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Ashley Mowery, Environmental Technician, Environmental Services

Reviewed by: Denis Mehinagic, Environmental Scientist, E&RP

Reviewed by: Matthew Turner, Manager, Environmental Services

Approved by: Mary Joy C. Ramos, Manager, Environmental & Regulatory Programs

Washington Department of Ecology
Electronic Submission Cover Letter



**WQWebDMR - Permit# WA0025151 - DMR Submission Id: 1890093 - 8/15/2023
2:54:02 PM**

Company Name	Signer Name	System Name
Energy Northwest	Mary Joy C. Ramos	WQWebPortal

Attachments:

Document Name Or Description	Document Name
Submitted Copy of Record for Energy Northwest	Copy of Record EnergyNorthwest Tuesday August 15 2023

Attestation Agreed to at Signing:

I certify I personally signed and submitted to the Department of Ecology an Electronic Signature Agreement. I understand that use of my electronic signature account/password to submit this information is equal to my written signature. I have read and followed all the rules of use in my Electronic Signature Agreement. I believe no one but me has had access to my password and other account information.

I further certify: I had the opportunity to review the content or meaning of the submittal before signing it; and to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I intend to submit this information as part of the implementation, oversight, and enforcement of a federal environmental program. I am aware there are significant penalties for submitting false information, including possible fines and imprisonment.

For Ecology Use Only



2TIPOB2a0mYy3Kz0hVvC00/nvzY1uFWc6m6ovmB9Uzq3DLBUJDq3uakNWDhep6TWmTRwmXywjbeFw5wWkVKrggD
w00QbOkcQbE8T8gStj0Y=



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody: Columbia River

Monitoring Period: 07/01/2023 - 07/31/2023

Outfall: 001

Version: 1

Week	Monitoring Point	Flow Gallons Once per defined event Metered/Recorded	Flow MGD Continuous Metered/Recorded	pH Daily Min Standard Units Continuous Metered/Recorded	pH Daily Max Standard Units Continuous Metered/Recorded	Duration pH excursion Minutes Once per defined event Metered/Recorded	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L) Continuous Metered/Recorded	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L) Optional Grab	Temperature Calculated Degrees C Continuous Measurement	Heat Load Million Kilocalories Monthly Calculated	Chromium Total Micrograms/L (ug/L) Monthly Composite - 24 HR Flow	Zinc Total Micrograms/L (ug/L) Monthly Composite - 24 HR Flow
		RWTS	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB
1-Sa	7/1/23		5.0	7.5	7.6		0.02		33.1			
2-Su	7/2/23		5.0	7.6	7.7		0.01		31.6			
2-M	7/3/23		4.9	7.7	8.0		0.03		30.3		<1.0*	12.1*
2-T	7/4/23		4.9	7.6	7.8		0.02		31.8			
2-W	7/5/23		4.9	7.6	7.9		0.07		31.9			
2-Th	7/6/23		5.0	7.5	8.0		0.01		32.5			
2-F	7/7/23		5.0	7.3	8.0		0.03		32.5			
2-Sa	7/8/23		5.0	7.7	7.8		0.02		33.2			
3-Su	7/9/23		5.0	7.6	7.7		0.01		33.1			
3-M	7/10/23		5.1	7.6	7.9		0.03		33.1			
3-T	7/11/23		5.1	7.7	8.0		0.03		32.5			
3-W	7/12/23		5.0	7.7	7.9		0.03		32.2			
3-Th	7/13/23		5.0	7.8	8.3		0.03		32.5			
3-F	7/14/23		4.9	8.0	8.3		0.03		32.5			
3-Sa	7/15/23		4.9	7.9	8.0		0.03		33.4			
4-Su	7/16/23		4.9	7.9	7.9		0.05		33.0			
4-M	7/17/23		5.0	7.8	8.1		0.03		32.6			
4-T	7/18/23		5.2	8.0	8.0		0.03		31.8			
4-W	7/19/23		5.2	8.0	8.0		0.03		32.0			
4-Th	7/20/23		5.2	7.9	8.1		0.03		32.9			
4-F	7/21/23		5.2	7.9	8.0		0.03		33.0			
4-Sa	7/22/23		5.1	7.9	8.0		0.03		33.0			
5-Su	7/23/23		5.2	7.8	8.0		0.02		33.1			
5-M	7/24/23		5.2	7.7	7.9		0.03		33.6			
5-T	7/25/23		5.2	7.7	7.9		0.02		31.7			
5-W	7/26/23		5.2	7.8	7.9		0.01		31.0			
5-Th	7/27/23		5.2	7.6	7.9		0.03		31.7			
5-F	7/28/23		5.1	7.9	8.0		0.03		31.9			
5-Sa	7/29/23		5.1	7.9	8.0		0.05		32.5			
6-Su	7/30/23		5.2	7.9	8.0		0.03		31.2			
6-M	7/31/23		5.2	7.9	8.0	M	0.02		31.6	5.87E+08*		
Daily Minimum				7.3					27.4			
				>= 6.5 (RO)					Report Only			
Average Monthly		Report Only	5.1							5.87e+008	<1.0	12.1
			<= 5.6							<= 1.27e+009	<= 8.2	<= 53
Daily Maximum			5.2		8.3		0.07		33.6		<1.0	12.1
			<= 9.4		<= 9.0 (RO)		<= 0.1		Report Only		<= 16.4	<= 107
Monthly Total		Report Only				M						
						Report Only						

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge, M - Monitoring Is Conditional/Not Req This MP



Week	Monitoring Point	Flow	MGD	Continuous	Metered/Recorded
		SSWD			
1-Sa	7/1/23				
2-Su	7/2/23				
2-M	7/3/23				
2-T	7/4/23				
2-W	7/5/23				
2-Th	7/6/23				
2-F	7/7/23				
2-Sa	7/8/23				
3-Su	7/9/23				
3-M	7/10/23				
3-T	7/11/23				
3-W	7/12/23				
3-Th	7/13/23				
3-F	7/14/23				
3-Sa	7/15/23				
4-Su	7/16/23				
4-M	7/17/23				
4-T	7/18/23				
4-W	7/19/23				
4-Th	7/20/23				
4-F	7/21/23				
4-Sa	7/22/23				
5-Su	7/23/23				
5-M	7/24/23				
5-T	7/25/23				
5-W	7/26/23				
5-Th	7/27/23				
5-F	7/28/23				
5-Sa	7/29/23				
6-Su	7/30/23				
6-M	7/31/23				
Daily Minimum					
Average Monthly				Report Only	
Daily Maximum					
Monthly Total				Report Only	



Outfall: 001 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
RWTS	All Parameters		C	
CWB	Heat Load Million Kilocalories	7/31/2023	5.87E+08	Average monthly heat load calculated using the following formula: [average monthly temperature (°C)] x [average monthly flow (MGD)] x [3.78x106].
CWB	Chromium Total Micrograms/L (ug/L)	7/3/2023	B <1.0	Results from 24-hr composite sample collected 07/02/23-07/03/23
CWB	Zinc Total Micrograms/L (ug/L)	7/3/2023	12.1	Results from 24-hr composite sample collected 07/02/23-07/03/23
SSWD	All Parameters		C	



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 07/01/2023 - 07/31/2023

Outfall: Intk - Cooling water intake structure

Version: 1

Week	Monitoring Point	Flow MGD Continuous Metered/Recorded
		Intk
1-Sa	7/1/23	30.2
2-Su	7/2/23	27.9
2-M	7/3/23	27.4
2-T	7/4/23	28.1
2-W	7/5/23	29.8
2-Th	7/6/23	30.3
2-F	7/7/23	30.2
2-Sa	7/8/23	30.1
3-Su	7/9/23	30.4
3-M	7/10/23	27.9
3-T	7/11/23	27.3
3-W	7/12/23	29.5
3-Th	7/13/23	29.8
3-F	7/14/23	29.8
3-Sa	7/15/23	30.4
4-Su	7/16/23	30.6
4-M	7/17/23	29.5
4-T	7/18/23	29.0
4-W	7/19/23	29.6
4-Th	7/20/23	30.6
4-F	7/21/23	30.7
4-Sa	7/22/23	30.5
5-Su	7/23/23	29.8
5-M	7/24/23	30.0
5-T	7/25/23	29.6
5-W	7/26/23	28.7
5-Th	7/27/23	29.9
5-F	7/28/23	29.4
5-Sa	7/29/23	29.7
6-Su	7/30/23	29.9
6-M	7/31/23	29.1
Average Monthly		29.5
		Report Only
Monthly Total		915.9
		Report Only

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge, M - Monitoring Is Conditional/Not Req This MP

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 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.

Mary Joy Ramos

8/15/2023 2:54:01 PM

Signature

Date



INTEROFFICE MEMO

GO2-23-101
DIC: 1316.20

DATE: September 14, 2023
TO: Columbia Generating Station, (CGS)
FROM: Kris Byers, Environmental Scientist (1025)
SUBJECT: **Columbia Generating Station August 2023
NPDES Discharge Monitoring Report**
REFERENCE: NPDES Permit No. WA 002515-1 Condition S3.A

Please find attached the NPDES Discharge Monitoring Report (DMR) for August 2023. All monitoring parameters were within permit specifications for the month.

The report will be submitted electronically to the State of Washington Department of Ecology (Ecology) via Ecology’s online reporting system. If you have any questions concerning this information, please contact Denis Mehinagic at (509) 372-5768.

Attachment: NPDES Discharge Monitoring Report, August 2023

KRB

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:	
D Mehinagic (via email)	Docket File PE20
K Byers (via email)	Regulatory (via email)
A Mowery (via email)	Document Control (via APW)

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 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.

Prepared by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Ashley Mowery, Environmental Technician, Environmental Services

Reviewed by: Denis Mehinagic, Environmental Scientist, E&RP

Reviewed by: Matthew Turner, Manager, Environmental Services

Approved by: Mary Joy C. Ramos, Manager, Environmental & Regulatory Programs



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody: Columbia River

Monitoring Period: 08/01/2023 - 08/31/2023

Outfall: 001

Version: 1

Week	Monitoring Point	Flow Gallons Once per defined event Metered/Recorded	Flow MGD Continuous Metered/Recorded	pH Daily Min Standard Units Continuous Metered/Recorded	pH Daily Max Standard Units Continuous Metered/Recorded	Duration pH excursion Minutes Once per defined event Metered/Recorded	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L) Continuous Metered/Recorded	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L) Optional Grab	Temperature Calculated Degrees C Continuous Measurement	Heat Load Million Kilocalories Monthly Calculated	Chromium Total Micrograms/L (ug/L) Monthly Composite - 24 HR Flow	Zinc Total Micrograms/L (ug/L) Monthly Composite - 24 HR Flow
		RWTS	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB
1-T	8/1/23		5.2	7.9	8.0		0.03		31.6			
1-W	8/2/23		5.2	7.9	8.0		0.03		32.2		1.3*	17.7*
1-Th	8/3/23		5.2	7.9	8.0		0.03		31.9			
1-F	8/4/23		5.2	7.9	8.0		0.02		32.3			
1-Sa	8/5/23		5.1	7.8	7.9		0.03		32.2			
2-Su	8/6/23		5.1	7.8	7.9		0.03		32.9			
2-M	8/7/23		5.1	7.7	7.9		0.02		32.5			
2-T	8/8/23		5.1	7.6	8.0		0.03		32.1			
2-W	8/9/23		5.1	8.0	8.3		0.02		32.2			
2-Th	8/10/23		5.1	8.2	8.4		0.02		31.3			
2-F	8/11/23		5.2	8.3	8.5		0.01		30.2			
2-Sa	8/12/23		5.2	7.8	8.5		0.02		30.2			
3-Su	8/13/23		5.2	7.7	7.9		0.02		30.4			
3-M	8/14/23		5.2	7.7	7.8		0.02		31.4			
3-T	8/15/23		5.2	7.7	7.9		0.02		32.2			
3-W	8/16/23		5.2	7.8	7.9		0.07		32.0			
3-Th	8/17/23		5.2	7.8	7.9		0.03		32.1			
3-F	8/18/23		5.2	7.8	7.9		0.02		31.1			
3-Sa	8/19/23		5.2	7.8	8.0		0.01		32.4			
4-Su	8/20/23		5.2	7.9	8.0		0.02		31.6			
4-M	8/21/23		5.1	7.9	8.1		0.07		29.9			
4-T	8/22/23		5.1	8.0	8.1		0.02		30.0			
4-W	8/23/23		5.2	8.0	8.1		0.02		29.1			
4-Th	8/24/23		5.1	8.0	8.1		0.05		28.8			
4-F	8/25/23		5.1	7.9	8.0		0.05		29.1			
4-Sa	8/26/23		5.1	7.9	8.0		0.04		30.6			
5-Su	8/27/23		5.1	7.9	8.0		0.05		30.1			
5-M	8/28/23		5.2	7.9	8.3		0.06		30.3			
5-T	8/29/23		5.2	8.0	8.1		0.02		30.3			
5-W	8/30/23		5.2	7.9	8.1		0.02		28.7			
5-Th	8/31/23		5.2	8.0	8.2	M	0.01		27.9	5.71E+08*		
Daily Minimum				7.6					25.5			
				>= 6.5 (RO)					Report Only			
Average Monthly		Report Only	5.1							5.71e+008	1.3	17.7
			<= 5.6							<= 1.27e+009	<= 8.2	<= 53
Daily Maximum			5.2		8.5		0.07		32.9		1.3	17.7
			<= 9.4		<= 9.0 (RO)		<= 0.1		Report Only		<= 16.4	<= 107
Monthly Total		Report Only				M						
						Report Only						

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP



Week	Monitoring Point	Flow
		MGD Continuous Metered/Recorded SSWD
1-T	8/1/23	
1-W	8/2/23	
1-Th	8/3/23	
1-F	8/4/23	
1-Sa	8/5/23	
2-Su	8/6/23	
2-M	8/7/23	
2-T	8/8/23	
2-W	8/9/23	
2-Th	8/10/23	
2-F	8/11/23	
2-Sa	8/12/23	
3-Su	8/13/23	
3-M	8/14/23	
3-T	8/15/23	
3-W	8/16/23	
3-Th	8/17/23	
3-F	8/18/23	
3-Sa	8/19/23	
4-Su	8/20/23	
4-M	8/21/23	
4-T	8/22/23	
4-W	8/23/23	
4-Th	8/24/23	
4-F	8/25/23	
4-Sa	8/26/23	
5-Su	8/27/23	
5-M	8/28/23	
5-T	8/29/23	
5-W	8/30/23	
5-Th	8/31/23	
Daily Minimum		
Average Monthly		Report Only
Daily Maximum		
Monthly Total		Report Only



Outfall: 001 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
RWTS	All Parameters		C	
CWB	Heat Load Million Kilocalories	8/31/2023	5.71E+08	Average monthly heat load calculated using the following formula: [average monthly temperature (°C)] x [average monthly flow (MGD)] x [3.78x10 ⁶].
CWB	Chromium Total Micrograms/L (ug/L)	8/2/2023	1.3	Results from 24-hr composite sample collected 08/01/23-08/02/23
CWB	Zinc Total Micrograms/L (ug/L)	8/2/2023	17.7	Results from 24-hr composite sample collected 08/01/23-08/02/23
SSWD	All Parameters		C	



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 08/01/2023 - 08/31/2023

Outfall: Intk - Cooling water intake structure

Version: 1

Week	Monitoring Point	Flow MGD Continuous Metered/Recorded
		Intk
1-T	8/1/23	30.0
1-W	8/2/23	29.8
1-Th	8/3/23	28.3
1-F	8/4/23	29.6
1-Sa	8/5/23	29.1
2-Su	8/6/23	28.8
2-M	8/7/23	28.5
2-T	8/8/23	29.3
2-W	8/9/23	29.7
2-Th	8/10/23	29.6
2-F	8/11/23	29.4
2-Sa	8/12/23	30.6
3-Su	8/13/23	31.2
3-M	8/14/23	31.3
3-T	8/15/23	30.9
3-W	8/16/23	31.0
3-Th	8/17/23	30.5
3-F	8/18/23	31.0
3-Sa	8/19/23	29.1
4-Su	8/20/23	29.4
4-M	8/21/23	29.2
4-T	8/22/23	28.4
4-W	8/23/23	28.8
4-Th	8/24/23	29.2
4-F	8/25/23	29.7
4-Sa	8/26/23	29.6
5-Su	8/27/23	30.4
5-M	8/28/23	30.7
5-T	8/29/23	28.3
5-W	8/30/23	29.3
5-Th	8/31/23	28.0
Average Monthly		29.6
		Report Only
Monthly Total		918.5
		Report Only

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP

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 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.

Signature

Date



INTEROFFICE MEMO

GO2-23-116
DIC: 1316.20

DATE: October 10, 2023
TO: Columbia Generating Station, (CGS)
FROM: Kris Byers, Environmental Scientist (1025)
SUBJECT: **Columbia Generating Station September 2023
NPDES Discharge Monitoring Report**
REFERENCE: NPDES Permit No. WA 002515-1 Condition S3.A

Please find attached the NPDES Discharge Monitoring Report (DMR) for September 2023. All monitoring parameters were within permit specifications for the month.

The report will be submitted electronically to the State of Washington Department of Ecology (Ecology) via Ecology’s online reporting system. If you have any questions concerning this information, please contact Denis Mehinagic at (509) 372-5768.

Attachment: NPDES Discharge Monitoring Report, September 2023

KRB

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:	
D Mehinagic (via email)	Docket File PE20
K Byers (via email)	Regulatory (via email)
A Mowery (via email)	Document Control (via APW)

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 information, the information submitted is, to the best of my knowledge and

Columbia Generating Station
Page 2 of 2
January 30, 2024
CGS September 2023 DMR

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.

Prepared by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Ashley Mowery, Environmental Technician, Environmental Services

Reviewed by: Denis Mehinagic, Environmental Scientist, E&RP

Reviewed by: Matthew Turner, Manager, Environmental Services

Approved by: Mary Joy C. Ramos, Manager, Environmental & Regulatory Programs



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody: Columbia River

Monitoring Period: 09/01/2023 - 09/30/2023

Outfall: 001

Version: 1

Week	Monitoring Point	Flow Gallons Once per defined event Metered/Recorded	Flow MGD Continuous Metered/Recorded	pH Daily Min Standard Units Continuous Metered/Recorded	pH Daily Max Standard Units Continuous Metered/Recorded	Duration pH excursion Minutes Once per defined event Metered/Recorded	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L) Continuous Metered/Recorded	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L) Optional Grab	Temperature Calculated Degrees C Continuous Measurement	Heat Load Million Kilocalories Monthly Calculated	Chromium Total Micrograms/L (ug/L) Monthly Composite - 24 HR Flow	Zinc Total Micrograms/L (ug/L) Monthly Composite - 24 HR Flow
		RWTS	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB
1-F	9/1/23		5.2	8.0	8.2		0.00		28.9			
1-Sa	9/2/23		5.2	8.0	8.1		0.00		29.3			
2-Su	9/3/23		5.1	7.9	8.0		0.00		30.2			
2-M	9/4/23		5.1	8.0	8.1		0.00		29.2			
2-T	9/5/23		1.3	8.0	8.5	0	0.08		29.1			
2-W	9/6/23		2.8	8.0	8.5		0.07		27.9			
2-Th	9/7/23		2.8	8.0	8.1		0.01		28.2		1.9*	22.5*
2-F	9/8/23		2.7	8.1	8.2		0.00		28.2			
2-Sa	9/9/23		2.7	8.0	8.2		0.00		28.9			
3-Su	9/10/23		2.7	7.9	8.1		0.00		28.8			
3-M	9/11/23		2.8	8.0	8.2		0.03		29.2			
3-T	9/12/23		2.8	8.1	8.2		0.02		29.1			
3-W	9/13/23		2.8	8.1	8.2		0.03		28.9			
3-Th	9/14/23		2.8	8.1	8.2		0.02		28.7			
3-F	9/15/23		2.8	8.0	8.2		0.04		28.8			
3-Sa	9/16/23		2.8	8.1	8.2		0.03		27.9			
4-Su	9/17/23		1.4	8.1	8.2	0	0.05		28.0			
4-M	9/18/23		0.2	7.8	8.5	0	0.06		26.3			
4-T	9/19/23		2.2	7.8	8.6	0	0.06		27.9			
4-W	9/20/23		C	C	C	0	C		C			
4-Th	9/21/23		1.8	7.7	8.5	0	0.08		26.6			
4-F	9/22/23		3.5	7.7	7.8		0.04		27.3			
4-Sa	9/23/23		3.5	7.6	7.7		0.04		27.3			
5-Su	9/24/23		3.5	7.5	7.6		0.03		27.3			
5-M	9/25/23		3.5	7.4	8.1		0.08		28.0			
5-T	9/26/23		3.4	7.9	8.0		0.03		28.1			
5-W	9/27/23		3.4	7.7	7.9		0.02		28.2			
5-Th	9/28/23		1.9	7.8	8.4	0	0.08		26.7			
5-F	9/29/23		2.8	7.9	8.0		0.03		26.3			
5-Sa	9/30/23		2.8	7.8	7.9		0.07		25.9	2.90E+08*		
Daily Minimum				7.4					23.4			
				>= 6.5 (RO)					Report Only			
Average Monthly			2.9							2.9e+008	1.9	22.5
	Report Only		<= 5.6							<= 1.27e+009	<= 8.2	<= 53
Daily Maximum			5.2		8.6		0.08		30.2		1.9	22.5
			<= 9.4		<= 9.0 (RO)		<= 0.1		Report Only		<= 16.4	<= 107
Monthly Total						0						
	Report Only					Report Only						

Reporting Codes Used: C - No Discharge



Week	Monitoring Point	Flow
		SSWD
1-F	9/1/23	
1-Sa	9/2/23	
2-Su	9/3/23	
2-M	9/4/23	
2-T	9/5/23	
2-W	9/6/23	
2-Th	9/7/23	
2-F	9/8/23	
2-Sa	9/9/23	
3-Su	9/10/23	
3-M	9/11/23	
3-T	9/12/23	
3-W	9/13/23	
3-Th	9/14/23	
3-F	9/15/23	
3-Sa	9/16/23	
4-Su	9/17/23	
4-M	9/18/23	
4-T	9/19/23	
4-W	9/20/23	
4-Th	9/21/23	
4-F	9/22/23	
4-Sa	9/23/23	
5-Su	9/24/23	
5-M	9/25/23	
5-T	9/26/23	
5-W	9/27/23	
5-Th	9/28/23	
5-F	9/29/23	
5-Sa	9/30/23	
Daily Minimum		
Average Monthly		Report Only
Daily Maximum		
Monthly Total		Report Only



Outfall: 001 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
RWTS	All Parameters		C	
CWB	Heat Load Million Kilocalories	9/30/2023	2.90E+08	Average monthly heat load calculated using the following formula: [average monthly temperature (°C)] x [average monthly flow (MGD)] x [3.78x10 ⁶].
CWB	Chromium Total Micrograms/L (ug/L)	9/7/2023	1.9	Results from 24-hr composite sample collected 09/06/23-09/07/23
CWB	Zinc Total Micrograms/L (ug/L)	9/7/2023	22.5	Results from 24-hr composite sample collected 09/06/23-09/07/23
SSWD	All Parameters		C	



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 09/01/2023 - 09/30/2023

Outfall: Intk - Cooling water intake structure

Version: 1

Week	Monitoring Point	Flow MGD Continuous Metered/Recorded
		Intk
1-F	9/1/23	28.4
1-Sa	9/2/23	28.9
2-Su	9/3/23	29.3
2-M	9/4/23	28.8
2-T	9/5/23	24.7
2-W	9/6/23	26.6
2-Th	9/7/23	26.7
2-F	9/8/23	26.7
2-Sa	9/9/23	26.7
3-Su	9/10/23	27.0
3-M	9/11/23	26.5
3-T	9/12/23	26.3
3-W	9/13/23	26.2
3-Th	9/14/23	26.3
3-F	9/15/23	25.9
3-Sa	9/16/23	26.5
4-Su	9/17/23	25.3
4-M	9/18/23	23.5
4-T	9/19/23	23.9
4-W	9/20/23	19.8
4-Th	9/21/23	21.1
4-F	9/22/23	23.3
4-Sa	9/23/23	23.1
5-Su	9/24/23	23.4
5-M	9/25/23	23.2
5-T	9/26/23	23.6
5-W	9/27/23	23.0
5-Th	9/28/23	21.5
5-F	9/29/23	22.3
5-Sa	9/30/23	22.9

Average Monthly	25.0467
	Report Only
Monthly Total	751.6
	Report Only

Reporting Codes Used: C - No Discharge

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 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.

Signature

Date



INTEROFFICE MEMO

GO2-23-124

DIC: 1316.20

DATE: November 13, 2023
TO: Columbia Generating Station, (CGS)
FROM: Kris Byers, Environmental Scientist (1025)
SUBJECT: **Columbia Generating Station October 2023
NPDES Discharge Monitoring Report**
REFERENCE: NPDES Permit No. WA 002515-1 Condition S3.A

Please find attached the NPDES Discharge Monitoring Report (DMR) for October 2023. All monitoring parameters were within permit specifications for the month.

The report will be submitted electronically to the State of Washington Department of Ecology (Ecology) via Ecology's online reporting system. If you have any questions concerning this information, please contact Denis Mehinagic at (509) 372-5768.

Attachment: NPDES Discharge Monitoring Report, September 2023

KRB

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:	
D Mehinagic (via email)	Docket File PE20
K Byers (via email)	Regulatory (via email)
A Mowery (via email)	Document Control (via APW)

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 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.

Prepared by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Ashley Mowery, Environmental Technician, Environmental Services

Reviewed by: Denis Mehinagic, Environmental Scientist, E&RP

Reviewed by: Matthew Turner, Manager, Environmental Services

Approved by: Denis Mehinagic, Environmental Scientist, E&RP



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody: Columbia River

Monitoring Period: 10/01/2023 - 10/31/2023

Outfall: 001

Version: 1

Week	Monitoring Point	Flow Gallons Once per defined event Metered/Recorded	Flow MGD Continuous Metered/Recorded	pH Daily Min Standard Units Continuous Metered/Recorded	pH Daily Max Standard Units Continuous Metered/Recorded	Duration pH excursion Minutes Once per defined event Metered/Recorded	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L) Continuous Metered/Recorded	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L) Optional Grab	Temperature Calculated Degrees C Continuous Measurement	Heat Load Million Kilocalories Monthly Calculated	Chromium Total Micrograms/L (ug/L) Monthly Composite - 24 HR Flow	Zinc Total Micrograms/L (ug/L) Monthly Composite - 24 HR Flow
		RWTS	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB
1-Su	10/1/23		2.7	7.7	7.8		0.04		26.3			
1-M	10/2/23		C	C	C	0	C	<0.1*	26.3			
1-T	10/3/23		2.5	7.9	8.4		0.03		27.6			
1-W	10/4/23		2.8	7.8	8.0		0.03		27.7		1.3*	14.2*
1-Th	10/5/23		2.8	7.8	7.9		0.05		27.7			
1-F	10/6/23		2.8	7.6	7.8		0.03		27.6			
1-Sa	10/7/23		2.8	7.6	7.7		0.05		27.6			
2-Su	10/8/23		2.8	7.4	7.6		0.05		28.0			
2-M	10/9/23		2.8	7.6	8.1		0.04		27.9			
2-T	10/10/23		2.8	8.0	8.1		0.03		26.9			
2-W	10/11/23		2.8	7.9	8.0		0.03		26.9			
2-Th	10/12/23		2.7	7.9	8.2		0.03		26.4			
2-F	10/13/23		2.7	8.0	8.1		0.03		26.2			
2-Sa	10/14/23		2.7	7.9	8.0		0.03		26.5			
3-Su	10/15/23		2.7	7.8	7.9		0.03		26.9			
3-M	10/16/23		2.7	7.9	8.2		0.02		27.3			
3-T	10/17/23		2.8	8.0	8.1		0.02		27.0			
3-W	10/18/23		0.3	8.0	8.0	0	0.02	<0.1*	26.0			
3-Th	10/19/23		1.2	7.8	8.5		0.07		27.4			
3-F	10/20/23		2.8	7.9	8.1		0.01		27.9			
3-Sa	10/21/23		2.9	7.9	8.0		0.02		27.8			
4-Su	10/22/23		2.9	7.9	8.0		0.06		26.7			
4-M	10/23/23		2.9	7.9	8.2		0.03		26.6			
4-T	10/24/23		2.9	8.0	8.1		0.01		25.5			
4-W	10/25/23		2.9	8.0	8.1		0.01		22.1			
4-Th	10/26/23		2.9	8.0	8.2		0.02		21.7			
4-F	10/27/23		2.9	8.0	8.0		0.03		23.5			
4-Sa	10/28/23		2.9	7.9	8.0		0.02		23.7			
5-Su	10/29/23		2.9	7.9	8.0		0.02		22.6			
5-M	10/30/23		2.9	7.9	8.1		0.01		25.0			
5-T	10/31/23		2.9	7.9	8.0		0.01		24.8	2.39E+08		
Daily Minimum				7.4					18.0			
				>= 6.5 (RO)					Report Only			
Average Monthly			2.6							2.39e+008	1.3	14.2
	Report Only		<= 5.6							<= 1.27e+009	<= 8.2	<= 53
Daily Maximum			2.9		8.5		0.07		28.0		1.3	14.2
			<= 9.4		<= 9.0 (RO)		<= 0.1		Report Only		<= 16.4	<= 107
Monthly Total						0						
	Report Only					Report Only						

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge



Week	Monitoring Point	Flow
		SSWD
1-Su	10/1/23	
1-M	10/2/23	
1-T	10/3/23	
1-W	10/4/23	
1-Th	10/5/23	
1-F	10/6/23	
1-Sa	10/7/23	
2-Su	10/8/23	
2-M	10/9/23	
2-T	10/10/23	
2-W	10/11/23	
2-Th	10/12/23	
2-F	10/13/23	
2-Sa	10/14/23	
3-Su	10/15/23	
3-M	10/16/23	
3-T	10/17/23	
3-W	10/18/23	
3-Th	10/19/23	
3-F	10/20/23	
3-Sa	10/21/23	
4-Su	10/22/23	
4-M	10/23/23	
4-T	10/24/23	
4-W	10/25/23	
4-Th	10/26/23	
4-F	10/27/23	
4-Sa	10/28/23	
5-Su	10/29/23	
5-M	10/30/23	
5-T	10/31/23	
Daily Minimum		
Average Monthly		Report Only
Daily Maximum		
Monthly Total		Report Only



Outfall: 001 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
RWTS	All Parameters		C	
CWB	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L)	10/2/2023	B <0.1	Grab sample verification of TRH <0.1 prior to resuming blowdown.
CWB	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L)	10/18/2023	B <0.1	Grab sample verification of TRH <0.1 prior to resuming blowdown.
CWB	Chromium Total Micrograms/L (ug/L)	10/4/2023	1.3	Result from 24 hour composite collected 10/3/23-10/4/23
CWB	Zinc Total Micrograms/L (ug/L)	10/4/2023	14.2	Result from 24 hour composite collected 10/3/23-10/4/23
SSWD	All Parameters		C	



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 10/01/2023 - 10/31/2023

Outfall: Intk - Cooling water intake structure

Version: 1

Week	Monitoring Point	Flow MGD Continuous Metered/Recorded
		Intk
1-Su	10/1/23	22.6
1-M	10/2/23	19.9
1-T	10/3/23	22.5
1-W	10/4/23	22.9
1-Th	10/5/23	22.8
1-F	10/6/23	22.6
1-Sa	10/7/23	22.6
2-Su	10/8/23	22.9
2-M	10/9/23	20.0
2-T	10/10/23	21.9
2-W	10/11/23	21.9
2-Th	10/12/23	22.1
2-F	10/13/23	21.7
2-Sa	10/14/23	22.3
3-Su	10/15/23	22.6
3-M	10/16/23	22.4
3-T	10/17/23	22.5
3-W	10/18/23	20.2
3-Th	10/19/23	20.7
3-F	10/20/23	22.7
3-Sa	10/21/23	23.1
4-Su	10/22/23	22.9
4-M	10/23/23	22.8
4-T	10/24/23	17.7
4-W	10/25/23	14.9
4-Th	10/26/23	18.0
4-F	10/27/23	20.8
4-Sa	10/28/23	20.1
5-Su	10/29/23	20.1
5-M	10/30/23	20.3
5-T	10/31/23	20.6
Average Monthly		21.3
		Report Only
Monthly Total		660.9
		Report Only

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge

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 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.

Signature

Date



INTEROFFICE MEMO

GO2-23-133

DIC: 1316.20

DATE: December 12, 2023
TO: Columbia Generating Station, (CGS)
FROM: Ashley Mowery, Environmental Technician
SUBJECT: **Columbia Generating Station November 2023
NPDES Discharge Monitoring Report**
REFERENCE: NPDES Permit No. WA 002515-1 Condition S3.A

Please find attached the NPDES Discharge Monitoring Report (DMR) for November 2023. All monitoring parameters were within permit specifications for the month.

The report will be submitted electronically to the State of Washington Department of Ecology (Ecology) via Ecology's online reporting system. If you have any questions concerning this information, please contact Denis Mehinagic at (509) 372-5768.

Attachment: NPDES Discharge Monitoring Report, November 2023

AJM

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:	
D Mehinagic (via email)	Docket File PE20
K Byers (via email)	Regulatory (via email)
A Mowery (via email)	Document Control (via APW)

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 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.

Prepared by: Ashley Mowery, Environmental Technician, Environmental Services

Reviewed by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Denis Mehinagic, Environmental Scientist, E&RP

Reviewed by: Matthew Turner, Manager, Environmental Services

Approved by: Mary Joy C. Ramos, Manager, Environmental & Regulatory Programs



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody: Columbia River

Monitoring Period: 11/01/2023 - 11/30/2023

Outfall: 001

Version: 1

Week	Monitoring Point	Flow Gallons Once per defined event Metered/Recorded	Flow MGD Continuous Metered/Recorded	pH Daily Min Standard Units Continuous Metered/Recorded	pH Daily Max Standard Units Continuous Metered/Recorded	Duration pH excursion Minutes Once per defined event Metered/Recorded	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L) Continuous Metered/Recorded	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L) Optional Grab	Temperature Calculated Degrees C Continuous Measurement	Chromium Total Micrograms/L (ug/L) Monthly Composite - 24 HR Flow	Zinc Total Micrograms/L (ug/L) Monthly Composite - 24 HR Flow	Flow MGD Continuous Metered/Recorded
		RWTS	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	SSWD
1-W	11/1/23		2.9	7.7	8.0		0.01		24.9			
1-Th	11/2/23		2.9	7.7	7.8		0.01		25.7			
1-F	11/3/23		2.9	7.7	7.8		0.01		26.3			
1-Sa	11/4/23		2.9	7.7	7.8		0.01		26.9			
2-Su	11/5/23		2.9	7.7	7.8		0.02		27.1			
2-M	11/6/23		2.9	7.7	7.9		0.03		27.0			
2-T	11/7/23		2.9	7.7	7.8		0.02		27.3	1.41*	10.4*	
2-W	11/8/23		2.9	7.7	7.8		0.01		25.6			
2-Th	11/9/23		2.9	7.8	7.9		0.03		24.8			
2-F	11/10/23		2.9	7.8	7.9		0.01		25.6			
2-Sa	11/11/23		2.9	7.7	7.8		0.02		28.1			
3-Su	11/12/23		2.9	7.7	7.8		0.02		26.4			
3-M	11/13/23		2.9	7.7	7.8		0.03		25.9			
3-T	11/14/23		2.9	7.7	7.8		0.03		25.1			
3-W	11/15/23		2.9	7.7	7.8		0.02		24.2			
3-Th	11/16/23		2.9	7.7	7.8		0.03		24.3			
3-F	11/17/23		2.9	7.7	7.8		0.01		23.4			
3-Sa	11/18/23		2.9	7.7	7.8		0.01		23.7			
4-Su	11/19/23		2.9	7.7	7.8		0.01		26.4			
4-M	11/20/23		2.9	7.7	7.9		0.02		25.1			
4-T	11/21/23		3.0	7.7	7.8		0.01		23.9			
4-W	11/22/23		2.9	7.7	7.8		0.01		24.5			
4-Th	11/23/23		2.9	7.7	7.8		0.01		24.6			
4-F	11/24/23		2.9	7.7	7.8		0.01		23.9			
4-Sa	11/25/23		2.9	7.7	7.8		0.01		23.7			
5-Su	11/26/23		2.9	7.7	7.7		0.02		21.8			
5-M	11/27/23		2.1	7.7	7.9		0.06		21.7			
5-T	11/28/23		C	C	C	0	C		C			
5-W	11/29/23		0.4	7.6	8.2		0.04	<0.1*	19.9			
5-Th	11/30/23		3.0	7.7	8.2		0.05		24.0			
Daily Minimum				7.6					17.0			
				>= 6.5 (RO)					Report Only			
Average Monthly			2.7							1.41	10.4	
	Report Only		<= 5.6							<= 8.2	<= 53	Report Only
Daily Maximum			3		8.2		0.06		28.1	1.41	10.4	
			<= 9.4		<= 9.0 (RO)		<= 0.1		Report Only	<= 16.4	<= 107	
Monthly Total						0						
	Report Only					Report Only						Report Only

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge



Outfall: 001 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
RWTS	All Parameters		C	
CWB	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L)	11/29/2023	B <0.1	Grab sample verification of TRH <0.1 prior to resuming blowdown.
CWB	Chromium Total Micrograms/L (ug/L)	11/7/2023	1.41	Result from 24 hour composite collected 11/6/23-11/7/23
CWB	Zinc Total Micrograms/L (ug/L)	11/7/2023	10.4	Result from 24 hour composite collected 11/6/23-11/7/23
SSWD	All Parameters		C	



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 11/01/2023 - 11/30/2023

Outfall: Intk - Cooling water intake structure

Version: 1

Week	Monitoring Point	Flow
		MGD Continuous Metered/Recorded Intk
1-W	11/1/23	20.6
1-Th	11/2/23	20.9
1-F	11/3/23	20.7
1-Sa	11/4/23	21.4
2-Su	11/5/23	21.7
2-M	11/6/23	22.1
2-T	11/7/23	22.5
2-W	11/8/23	21.3
2-Th	11/9/23	20.5
2-F	11/10/23	21.2
2-Sa	11/11/23	22.5
3-Su	11/12/23	21.5
3-M	11/13/23	21.4
3-T	11/14/23	20.8
3-W	11/15/23	20.9
3-Th	11/16/23	20.4
3-F	11/17/23	19.8
3-Sa	11/18/23	20.3
4-Su	11/19/23	21.7
4-M	11/20/23	20.7
4-T	11/21/23	20.3
4-W	11/22/23	20.3
4-Th	11/23/23	20.8
4-F	11/24/23	20.6
4-Sa	11/25/23	18.2
5-Su	11/26/23	16.1
5-M	11/27/23	13.8
5-T	11/28/23	17.4
5-W	11/29/23	18.0
5-Th	11/30/23	21.1
Average Monthly		20.3167
		Report Only
Monthly Total		609.7
		Report Only

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge

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 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.

Signature

Date



INTEROFFICE MEMO

GO2-24-011

DIC: 1316.20

DATE: January 11, 2024
TO: Columbia Generating Station, (CGS)
FROM: Kris Byers, Environmental Scientist (1025)
SUBJECT: **Columbia Generating Station December 2023
NPDES Discharge Monitoring Report**
REFERENCE: NPDES Permit No. WA 002515-1 Condition S3.A

Please find attached the NPDES Discharge Monitoring Report (DMR) for December 2023. All monitoring parameters were within permit specifications for the month.

The report will be submitted electronically to the State of Washington Department of Ecology (Ecology) via Ecology's online reporting system. If you have any questions concerning this information, please contact Denis Mehinagic at (509) 372-5768.

Attachment: NPDES Discharge Monitoring Report, December 2023

KRB

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:	
D Mehinagic (via email)	Docket File PE20
K Byers (via email)	Regulatory (via email)
A Mowery (via email)	Document Control (via APW)

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 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.

Prepared by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Ashley Mowery, Water Treatment Op/Env. Scientist, Environmental Services

Reviewed by: Denis Mehinagic, Environmental & Regulatory Programs Lead

Reviewed by: Devon Van Alyne, Laboratory Services Manager, Environmental Services

Approved by: Mary Joy C. Ramos, Manager, Environmental & Regulatory Programs



Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody: Columbia River

Monitoring Period: 12/01/2023 - 12/31/2023

Outfall: 001

Version: 1

Week	Monitoring Point	Flow Gallons Once per defined event Metered/Recorded	Flow MGD Continuous Metered/Recorded	pH Daily Min Standard Units Continuous Metered/Recorded	pH Daily Max Standard Units Continuous Metered/Recorded	Duration pH excursion Minutes Once per defined event Metered/Recorded	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L) Continuous Metered/Recorded	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L) Optional Grab	Temperature Calculated Degrees C Continuous Measurement	Chromium Total Micrograms/L (ug/L) Monthly Composite - 24 HR Flow	Zinc Total Micrograms/L (ug/L) Monthly Composite - 24 HR Flow	Flow MGD Continuous Metered/Recorded
		RWTS	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	SSWD
1-F	12/1/23		3.1	7.7	7.8		0.03		23.5			
1-Sa	12/2/23		3.0	7.7	7.8		0.03		24.8			
2-Su	12/3/23		3.0	7.7	7.8		0.05		23.7			
2-M	12/4/23		1.1	7.7	8.1	0	0.05	<0.1*	23.2			
2-T	12/5/23		2.8	7.7	7.8		0.03		26.8			
2-W	12/6/23		2.8	7.7	7.7		0.03		28.5	3.8*	23.8*	
2-Th	12/7/23		2.8	7.7	7.8		0.03		27.3			
2-F	12/8/23		2.8	7.7	7.8		0.01		26.6			
2-Sa	12/9/23		2.9	7.7	7.8		0.01		23.5			
3-Su	12/10/23		2.9	7.6	7.7		0.04		23.6			
3-M	12/11/23		2.8	7.6	7.7		0.03		22.8			
3-T	12/12/23		2.8	7.6	7.7		0.03		22.6			
3-W	12/13/23		2.8	7.5	7.6		0.04		23.9			
3-Th	12/14/23		2.8	7.6	7.8		0.03		23.2*			
3-F	12/15/23		2.8	7.6	7.7		0.01		24.2*			
3-Sa	12/16/23		2.8	7.6	7.7		0.01		24.1			
4-Su	12/17/23		2.8	7.6	7.7		0.01		23.5			
4-M	12/18/23		2.8	7.6	7.7		0.01		23.3*			
4-T	12/19/23		2.7	7.6	7.7		0.01		25.9*			
4-W	12/20/23		2.8	7.6	7.7		0.01		24.8			
4-Th	12/21/23		2.7	7.6	7.7		0.01		24.8			
4-F	12/22/23		2.7	7.7	7.7		0.01		24.0			
4-Sa	12/23/23		2.7	7.7	7.8		0.01		23.6			
5-Su	12/24/23		2.7	7.7	7.8		0.01		23.3			
5-M	12/25/23		2.7	7.7	7.8		0.01		23.2			
5-T	12/26/23		2.7	7.7	7.7		0.01		23.1			
5-W	12/27/23		2.7	7.7	7.7		0.05		23.5			
5-Th	12/28/23		1.2	7.7	8.2	0	0.01	<0.1*	23.2			
5-F	12/29/23		3.1	8.1	8.3		0.01		23.6			
5-Sa	12/30/23		3.1	8.1	8.3		0.01		23.3			
6-Su	12/31/23		3.1	8.0	8.1		0.01		22.7			
Daily Minimum				7.5					19.0			
				>= 6.5 (RO)					Report Only			
Average Monthly			2.7							3.8	23.8	
	Report Only		<= 5.6							<= 8.2	<= 53	Report Only
Daily Maximum			3.1		8.3		0.05		28.5	3.8	23.8	
			<= 9.4		<= 9.0 (RO)		<= 0.1		Report Only	<= 16.4	<= 107	
Monthly Total						0						
	Report Only					Report Only						Report Only

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge



Outfall: 001 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
RWTS	All Parameters		C	
CWB	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L)	12/4/2023	B <0.1	Grab sample verification of TRH <0.1 prior to resuming blowdown.
CWB	Halogens, Total Combined, Total Residual Total Residual Milligrams/L (mg/L)	12/28/2023	B <0.1	Grab sample verification of TRH <0.1 prior to resuming blowdown.
CWB	Temperature Calculated Degrees C	12/14/2023	23.2	Data unavailable 12/14/23 1700 to 12/15/23 2000 due to maintenance outage. Daily maximum for 12/14/23 calculated from 12/14/23 0000-1600
CWB	Temperature Calculated Degrees C	12/15/2023	24.2	Data unavailable 12/14/23 1700 to 12/15/23 2000 due to maintenance outage. Daily maximum for 12/15/23 calculated from 12/15/23 2100-2359
CWB	Temperature Calculated Degrees C	12/18/2023	23.3	Data unavailable 12/18/23 2100 to 12/19/23 0800 due to maintenance outage. Daily maximum for 12/18/23 calculated from 12/18/23 0000-2000
CWB	Temperature Calculated Degrees C	12/19/2023	25.9	Data unavailable 12/18/23 2100 to 12/19/23 0800 due to maintenance outage. Daily maximum for 12/19/23 calculated from 12/19/23 0900-2359
CWB	Chromium Total Micrograms/L (ug/L)	12/6/2023	3.8	Result from 24 hour composite collected 12/5/23-12/6/23
CWB	Zinc Total Micrograms/L (ug/L)	12/6/2023	23.8	Result from 24 hour composite collected 12/5/23-12/6/23
SSWD	All Parameters		C	



Washington State Department of Ecology Discharge Monitoring Report (DMR)

Permit Number: WA0025151

Permittee: Energy Northwest Columbia Generating Station

Facility County: Benton

Receiving Waterbody:

Monitoring Period: 12/01/2023 - 12/31/2023

Outfall: Intk - Cooling water intake structure

Version: 1

Week	Monitoring Point	Flow MGD
		Continuous Metered/Recorded Intk
1-F	12/1/23	19.9
1-Sa	12/2/23	21.9
2-Su	12/3/23	21.2
2-M	12/4/23	19.0
2-T	12/5/23	21.7
2-W	12/6/23	22.0
2-Th	12/7/23	21.7
2-F	12/8/23	21.0
2-Sa	12/9/23	19.5
3-Su	12/10/23	13.3
3-M	12/11/23	13.7
3-T	12/12/23	14.0
3-W	12/13/23	15.8
3-Th	12/14/23	19.8*
3-F	12/15/23	22.5*
3-Sa	12/16/23	19.7
4-Su	12/17/23	20.6
4-M	12/18/23	20.0*
4-T	12/19/23	20.8*
4-W	12/20/23	20.9
4-Th	12/21/23	20.4
4-F	12/22/23	20.4
4-Sa	12/23/23	20.6
5-Su	12/24/23	19.5
5-M	12/25/23	19.6
5-T	12/26/23	20.1
5-W	12/27/23	20.4
5-Th	12/28/23	18.1
5-F	12/29/23	20.6
5-Sa	12/30/23	20.0
6-Su	12/31/23	20.0
Average Monthly		19.6
		Report Only
Monthly Total		608.6
		Report Only

Reporting Codes Used: B - Below Detection Limit/No Detection, C - No Discharge

Outfall: Intk - Cooling water intake structure

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
Intk	Flow	12/14/2023	19.8	Data unavailable 12/14/23 1700 to 12/15/23 2000 due to maintenance outage. Daily average for 12/14/23 calculated from 12/14/23 0000-1600
	MGD			
Intk	Flow	12/15/2023	22.5	Data unavailable 12/14/23 1700 to 12/15/23 2000 due to maintenance outage. Daily average for 12/15/23 calculated from 12/15/23 2100-2359
	MGD			
Intk	Flow	12/18/2023	20.0	Data unavailable 12/18/23 2100 to 12/19/23 0800 due to maintenance outage. Daily average for 12/18/23 calculated from 12/18/23 0000-2000
	MGD			



Intk	Flow MGD	12/19/2023	20.8	Data unavailable 12/18/23 2100 to 12/19/23 0800 due to maintenance outage. Daily average for 12/19/23 calculated from 12/19/23 0900-2359
------	-------------	------------	------	------------------------------------------------------------------------------------------------------------------------------------------

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 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.

Mary Joy Ramos

Signature

1/11/2024 10:59:33 AM

Date



INTEROFFICE MEMO

GO2-23-033

DIC: 409.3

DATE: March 15, 2023
TO: Columbia Generating Station, (CGS)
FROM: Kris Byers, Environmental Scientist (1025)
SUBJECT: COLUMBIA GENERATING STATION ACUTE TOXICITY BIOASSAY FOR THE 1st QUARTER 2023
REFERENCE: NPDES Permit No. WA 002515-1, Condition S13

Please find attached the acute toxicity bioassay report for Columbia Generating Station for the first quarter of calendar year 2023. The testing was conducted in accordance with condition S13 of Columbia's National Pollutant Discharge Elimination System (NPDES) permit. The bioassay results are favorable with no acute toxicity detected in the test concentration representing the acute critical effluent concentration (ACEC; the ACEC equals 11% effluent). In fact, the results show 100% survival of the test species, *Pimephales promelas*, in the 100% effluent sample.

A copy of the report (*.pdf format) and supporting statistical analysis (*.mdb format) will be submitted electronically to the State of Washington Department of Ecology (Ecology) and the Energy Facility Site Evaluation Council (EFSEC) via Ecology's Water Quality Permitting Portal (WQWebPortal).

If you have any questions concerning this information, please contact Marshall Schmitt at (509) 372-5334.

KRB

Attachment: Acute Toxicity Test Report

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:

M Schmitt	PE03
K Byers	1025

FILE COPY

Docket File	PE20
Columbia Files	964Y

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 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.

Prepared by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Ashley Mowery, Environmental Technician, Environmental Services

Reviewed by: Marshall Schmitt, Environmental Scientist, E&RP

Reviewed by: Matthew Turner, Manager, Environmental Services

Approved by: Mary Joy C. Ramos, Manager, Environmental & Regulatory Programs

AQUATIC TOXICOLOGY REPORT

Project Name: ENERGY NORTHWEST

Location: RICHLAND, WASHINGTON

Prepared by: Eurofins Environment Testing Northwest, LLC
(aka Eurofins TestAmerica – ASL)

1100 NE Circle Boulevard, Suite 310
Corvallis, Oregon 97330
541-243-6137



Accredited in accordance
with NELAP

Oregon Environmental Laboratory Accreditation Program #OR100022 (NELAP)
State of Washington DOE Environmental Laboratory Accreditation Program, Lab ID C556
California State Environmental Laboratory Accreditation Program, Certificate No.: 1726

Report Date: February 23, 2023 Released by: Michelle Bennett

Lab I.D. No. B5558

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

Results relate only to the items tested and the sample(s) as received by the laboratory. The results included in this report have been reviewed for compliance and meet all requirements for accredited parameters. All data have been found to be compliant with laboratory protocol, with the exception of any items noted in this report. For questions, please contact the Project Manager (contact info on next page).

CONTENTS

Section	Page
INTRODUCTION	3
OVERVIEW OF REGULATORY GUIDANCE	3
SUMMARY OF TEST RESULTS	4
ACRONYM DEFINITIONS	4
SAMPLE INFORMATION.....	5
METHODS AND MATERIALS	5
TEST METHODS	5
DEVIATIONS FROM PROTOCOLS	6
TEST DESIGN	6
DILUTION WATER	6
SAMPLE COLLECTION AND STORAGE	6
SAMPLE PREPARATION	7
DATA ANALYSIS	7
RESULTS AND DISCUSSION	8
REFERENCE TOXICANT TESTS	9
APPENDIX A. RAW DATA SHEETS	
APPENDIX B. REFERENCE TOXICANT DATA SHEETS	
APPENDIX C. CHAIN OF CUSTODY	

LABORATORY CONTACT: Brett Muckey, Business Unit Manager (BUMa)
Brett.Muckey@et.eurofinsus.com (541) 243-0980

INTRODUCTION

Eurofins Environment Testing Northwest, LLC Applied Sciences Laboratory (EETNW - ASL) conducted toxicity testing on sample(s) from Energy Northwest, Richland, Washington.

Testing was initiated on: February 8, 2023

The test(s) were conducted using:

- the fathead minnow (*Pimephales promelas*)

OVERVIEW OF REGULATORY GUIDANCE

The following provides an overview and excerpts of applicable permit specifics, regulatory guidance, and other relevant information. This is intended only as a helpful guide, from a laboratory perspective, for understanding test outcomes. The final responsibility for interpretation of results remains with the client and/or regulatory agency.

The following guidance is taken from EETNW-ASL's reading of the NPDES permit for Energy Northwest's Columbia Generating Station in Richland, WA (permit #WA002515-1, effective Nov 1, 2014, expires Oct 31, 2019, modified Feb 8, 2016, and Mar. 19, 2019).

Acute toxicity:

- *Effluent Limit for Acute Toxicity:*
 - "No acute toxicity detected in a test concentration representing the acute critical effluent concentration (ACEC)."
 - "The ACEC equals 11% effluent."
- *Compliance with the Effluent Limit for Acute Toxicity:*
 - "Compliance with the effluent limit for acute toxicity means the result of the testing ... show no statistically significant difference in survival between the control and the ACEC."
 - "The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance ..." (i.e. alpha = 0.05)
 - "If the difference in survival between the control and the ACEC is less than 10 percent, the Permittee must conduct the hypothesis test at the 0.01 level of significance."
 - "If the test results show a statistically significant difference in survival between the control and the ACEC, and EFSEC has not determined the test result to be anomalous under Section D, and the test is otherwise valid, the result is a violation of the effluent limit for acute toxicity."
- *Compliance Testing for Acute Toxicity:*
 - "Conduct quarterly acute toxicity testing on the final effluent." (Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec)
 - "... using each of the species and protocols listed ... on a rotating basis."

Response to Noncompliance With an Effluent Limit for Acute Toxicity:

- “If a toxicity test ... determines a statistically significant difference in response between the ACEC and the control, the Permittee must begin additional compliance monitoring within one week of receiving the test results”.
- *Sampling and Reporting Requirements:*
 - “The permittee must collect grab samples ... must cool the samples to 0 – 6 degrees Celsius during collection and send them to the lab immediately upon completion.”
 - “The lab must begin the toxicity testing ... no later than 36 hours after sampling was completed.”
 - “The Permittee must chemically dechlorinate final effluent ... with sodium thiosulfate just prior to test initiation. Do not add more sodium thiosulfate than is necessary to neutralize the chlorine. Provide in the test report the calculations to determine the amount of sodium thiosulfate necessary ...”

The following is taken from the WDOE guidance (WQ-R-95-80, June 2016 revision):

- “To reduce WET limit violations (and anomalous concentration-response relationships) due to statistical significance that is a Type I error [false positive], we lower alpha when differences in test organism response are small.”
- “Alpha will be lowered from 0.05 to 0.01 if a 10% difference in an acute test is significant ...”

SUMMARY OF TEST RESULTS

Exhibit 1 provides a summary of the final test results.

EXHIBIT 1 Summary of Acute Test Results

Species	NOEC (%)	LOEC (%)	LC ₅₀ (%)	Was a statistically significant difference between control and ACEC shown?
<i>P. promelas</i>	100	> 100	> 100	No

Note: acronyms are as defined below.

From the NPDES permit - *Effluent Limit for Acute Toxicity*: “Compliance with the effluent limit for acute toxicity means the result of the testing ... show no statistically significant difference in survival between the control and the ACEC.” [ACEC = 11%].

More detailed information is provided in the Results and Discussion section.

ACRONYM DEFINITIONS (from EPA guidance):

NOEC = No Observed Effect Concentration: The highest test concentration that causes no observable adverse effects on the test organisms (i.e. no statistically significant reduction from the control).

LOEC = Low Observed Effect Concentration: The lowest test concentration that does cause an observable adverse effect on the test organisms (i.e. is statistically significant reduction from the control).

LC₅₀ = Lethal Concentration (50%): A point estimate of the test concentration that would cause death in 50 percent of the test population.

SAMPLE INFORMATION

Exhibit 2 provides a summary of the sample conditions as received.

EXHIBIT 2

Sample Conditions on Receipt

Sample ID	230729-01
EETNW - ASL SDG	B5558-01
Collection - Date and Time	02/07/2023 07:06
Receipt - Date and Time	02/08/2023 14:35
Temperature (°C)	5.0
Dissolved Oxygen (mg/L)	8.9
pH	8.0
Conductivity (µS/cm)	1078
Total Residual Chlorine (mg/L)	< 0.02
Ammonia (mg/L as NH ₃ -N)	0.11
Total Hardness (mg/L as CaCO ₃)	533
Total Alkalinity (mg/L as CaCO ₃)	133

METHODS AND MATERIALS

TEST METHODS

The acute test methods were performed according to: *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, USEPA Office of Water (2002), EPA-821-R-02-012.

Additional guidance was provided by:

- *Whole Effluent Toxicity Testing Guidance and Test Review Criteria*, Washington State Department of Ecology (revised Jun 2016) Pub# WQ-R-95-80.

DEVIATIONS FROM PROTOCOLS

Deviations from required procedures in the test methods:

- None noted.

Deviations from recommended procedures in the test methods:

- None noted.

TEST DESIGN

The following summarizes the conditions used for both overall testing and the specifics for each test (observations and notations can be found on the datasheets in Appendix A):

Overall Test Design:

- Acute test: 6.25, 11.0 [ACEC], 25.0, 50.0, and 100 percent sample + dilution water for the control.

Test Organism Conditions:

- All organisms tested were fed and maintained during culturing, acclimation, and testing as prescribed by the EPA (2002).
- The test organisms appeared vigorous and in good condition prior to testing.

P. promelas acute test (renewal):

- Source: Aquatox Inc., Hot Springs, Arkansas
- Age: 1 to 14 days old, within a 24 hour age range
- Design: Four test vessels per concentration, Ten organisms per vessel
- Test Solution Renewal: Once @ 48 hours (i.e. static-renewal test)
- Monitoring:
 - Daily: Survival, DO, pH, and temperature; all concentrations.
 - Pre and Post Renewal solutions: DO and pH, all concentrations.
 - Test Initiation, with each new sample use, and Termination:
 - Conductivity, all concentrations (WDOE)
- Termination: 96 hours.
- Endpoints: Survival (at termination)

DILUTION WATER

The dilution water used was the standard culture water used by EETNW - ASL:

- Reconstituted, moderately hard water (as per EPA protocol) with a total hardness of 75 to 105 mg/L as CaCO₃ and an alkalinity of 50 to 75 mg/L as CaCO₃.

SAMPLE COLLECTION AND STORAGE

Samples were collected by Energy Northwest personnel. The samples were accepted as scheduled by EETNW - ASL. Chain of Custody and Sample Receipt Records are provided in Appendix C.

- The sample was received within the EPA recommended 0 to 6 °C range.
- The sample was received within the WDOE required 0 to 6 °C range.
- The sample was initially used for test initiation or test solution renewal within the EPA recommended maximum holding time of 36 hours of sample collection.
- All subsequent uses of the sample occurred within the EPA recommended maximum holding time of 72 hours past the time of initial use of that sample.
- All subsequent uses of a sample occurred within the WDOE recommended maximum holding time of 84 hours past the time of sample collection. (For renewals of a 96 hour duration acute test)
- Following receipt, the samples were stored in the dark at 0 to 6 °C until test solutions were prepared and tested.

SAMPLE PREPARATION

Samples used during these tests were:

- Temperature adjusted prior to test initiation and each daily renewal.
- As no Total Residual Chlorine was observed, dechlorination with sodium thiosulfate was not performed.

DATA ANALYSIS

The statistical analyses performed for the acute tests were those outlined in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, USEPA Office of Water, Fifth Edition (2002), EPA-821-R-02-012, using CETIS.

- The specific statistical analysis and CETIS version used for each endpoint evaluation is listed with the statistical outputs included with each test in Appendix A.
- If any additional analysis methods were also used, an explanation of the rationale and reference to the source method is included with the presentation of those results below.

Additional guidance was provided by:

- *Whole Effluent Toxicity Testing Guidance and Test Review Criteria*, Washington State Department of Ecology (revised Jun 2016) Pub# WQ-R-95-80.

RESULTS AND DISCUSSION

The raw data sheets for all tests are presented in Appendix A.

ACUTE BIOASSAYS

Table 1 summarizes the survival data for the *P. promelas* acute test.

Sample Concentration (%)	Percent Survival (at Test Termination)
Control	92.5
6.25	100
11.0	97.5
25.0	100
50.0	100
100	100

Statistical analysis in accordance with the EPA protocol and WDOE guidance results in:

- NOEC = 100 %
- LOEC > 100 %
- LC₅₀ > 100 %

From the NPDES permit - *Effluent Limit for Acute Toxicity*: “Compliance with the effluent limit for acute toxicity means the result of the testing ... show no statistically significant difference in survival between the control and the ACEC.” [ACEC = 11%].

- No statistically significant difference between control and ACEC was shown.

Dissolved oxygen concentrations remained at 4.0 mg/L or greater throughout the test period. Test temperatures remained in the range of 20±1 °C.

The *P. promelas* acute test meets Test Acceptability Criteria (TAC) of a minimum 90 percent control survival. Unless referenced above, the tests proceeded without any noted deviations or interruptions that could have affected test results. The testing should be considered “valid”.

REFERENCE TOXICANT TESTS

Reference toxicant (reftox) testing is performed to document both initial and ongoing laboratory performance of the test method(s). While the health of the test organisms is primarily evaluated by the performance of the laboratory control, reftox test results also may be used to assess the health and sensitivity of the test organisms. Reftox test results within their respective cumulative summary (Cusum) chart limits are indicative of consistent laboratory performance and normal test organism sensitivity.

The results of the reftox tests indicate that the test organisms were within their respective cusum chart limits based on EPA guidelines. This demonstrates ongoing laboratory proficiency of the test methods and suggests normal test organism sensitivity in the associated client testing.

The *P. promelas* acute reftox test was conducted using sodium chloride. The data sheets for the reference toxicant tests are provided in Appendix B.

Table 2 summarizes the reference toxicant test results and Cusum chart limits.

Species	LC₅₀	Cusum Chart Limits
<i>P. promelas</i>	7.1	6.5 to 8.9

APPENDIX A
RAW DATA SHEETS

Client Energy Northwest

Sample Designation (SDG): B 5558

Test Species Information	FHM # <u>2260</u> <i>Pimephales promelas</i> Acute				
Organism Age at Initiation	<u>14</u> Days, within a 24 hour window				
Test Container Size	400 ml				
Test Volume	250 ml				
Feeding: Type and Amount	0.15 ml <i>Artemia</i> , @ 48 hrs				
Aeration: In Test Chambers via Slow Bubble :	<input checked="" type="checkbox"/> None <input type="checkbox"/> Prior to use <input type="checkbox"/> @ _____ hrs				
Acclimation Period	<u>13</u> Days				
Organism Source	<u>Aquatox</u>				
Size	-				
Loading Rate	-				

Dissolved Oxygen aeration justifications (in test chambers):

Test(s): All _____
Date:

Comments:

Test Solution Preparation and Dilution Record

Client: Energy Northwest

Note: Indicates task not done, Indicates task was done. Temp adj. = Temperature adjusted to ambient or test temp

Ditto marks (' ') indicate that the same SDG, batch of dilution water, or food as the previous day's entry was used.

Fathead minnow - Acute

Test Concentration (%)	Sample Volume (mls)	Final Volume (mls)
Control	0.00	→ 1000
6.25	62.5	→ 1000
11.0	110	→ 1000
25.0	250	→ 1000
50.0	500	→ 1000
100	1,000	→ 1000

Test Day	Sample ID Used	Daily Sample Preparation (prior to dilution)	Dilution Water Used	Date	Time	Initials
0 (Initiation)	B 5558 - (1)	<input type="checkbox"/> Temp adj. <input type="checkbox"/> Aerated	ID # 5701	2/8/2023	15:05	dy
2	B 5558 - 01	<input type="checkbox"/> Temp adj. <input type="checkbox"/> Aerated	ID # 5701	2/10/2023	10:55	dy

Total Sample volume needed per day = 1923 mls

96 HOUR FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

6 conc. x 4 reps. # 6
 Random Template Used: 6
 Sample Description: Energy Northwest
 Client: Energy Northwest
 Test Species: Pimephales promelas ID# FRM 2260

Waterbath/Incubator Used: # 7
 Initial Sample ID # B 5558
 Technician DM
 Time 0 hr
 Therm. ID# 0 hr
 Test Initiation Date: 2/8/20 Time: 16:37
 Termination Date: 2/12/20 Time: 15:00
 48 hr 166 72 hr 176
 48 hr 19:00 72 hr 10:37
 48 hr 213 72 hr 278

Test Container Number	Number of Live Organisms				Dissolved Oxygen (mg/l)				pH				Temperature (°C)				Conductivity (µmhos/cm)			
	0	24	48	72	0	24	48	72	0	24	48	72	0	24	48	72	0	24	48	72
A	10	10	10	10	8.1	8.2	8.3	8.2	7.8	7.9	7.9	7.5	7.5	7.5	7.5	20.5	20.5	20.5	20.5	326
B	10	10	10	9																
C	10	10	10	10																
D	10	10	10	8																
A	10	10	10	10	8.3	8.3	8.3	8.3	8.1	8.1	8.1	7.4	7.4	7.5	7.5	20.3	20.3	20.3	20.3	392
B	10	10	10	10																
C	10	10	10	10																
D	10	10	10	10																
A	10	10	9	9	8.2	8.2	8.1	8.2	7.6	7.6	7.6	7.6	7.6	7.5	7.5	20.3	20.3	20.3	20.3	439
B	10	10	10	10																
C	10	10	10	10																
D	10	10	9	9																

Energy Northwest
 NWB5558

Energy NW - FRM - Doc Control ID: 65289-0122

96 HOUR FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Random Template Used: 6 conc. x 4 reps. # 6 Waterbath/Incubator Used: # 7 Test Initiation Date: 2 18 23 Time: 16:37

Sample Description: Energy Northwest Technician: 04 24 hr: 04 48 hr: 04 72 hr: 04 96 hr: 04

Client: Energy Northwest Initial Sample ID # B 5558 Date: 2 11 23 Time: 15:00

Test Species: Pimephales promelas ID# FEM 2260 Termination Date: 2 13 23 Time: 19:57

Therm. ID# 0 hr # 278 24 hr: 278 48 hr: 278 72 hr: 278 96 hr: 278

Test Container Number	Number of Live Organisms					Dissolved Oxygen (mg/l)					pH					Temperature (°C)					Conductivity (µmhos/cm)				
	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
A	10	10	10	10	10	8.2	8.1	8.0	7.7	7.9	7.4	7.7	7.9	7.7	7.5	20.3	20.5	20.5	20.5	20.5	543	564	552		585
B	10	10	10	10	10																				
C	10	10	10	10	10																				
D	10	10	10	10	10																				
A	10	10	10	10	10	8.5	8.3	8.1	7.5	7.7	7.3	7.7	7.9	7.6	7.7	19.8	20.4	20.7	20.5	20.4	735	743	776		779
B	10	10	10	10	10																				
C	10	10	10	10	10																				
D	10	10	10	10	10																				
A	10	10	10	10	10	8.4	8.4	8.0	7.3	7.8	7.5	7.9	7.9	7.7	7.8	19.9	20.5	20.7	20.5	20.4	1073	1091	1076		1128
B	10	10	10	10	10																				
C	10	10	10	10	10																				
D	10	10	10	10	10																				

CETIS Summary Report

Report Date: 22 Feb-23 09:17 (p 1 of 1)
 Test Code/ID: B555801ppa / 07-3082-8341

Fathead Minnow 96-h Acute Survival Test

Eurofins Environment Testing NW - ASL

Batch ID: 12-4340-0186	Test Type: Survival (96h)	Analyst:
Start Date: 08 Feb-23 16:39	Protocol: EPA/821/R-02-012 (2002)	Diluent: Mod-Hard Synthetic Water
Ending Date: 12 Feb-23 15:00	Species: Pimephales promelas	Brine:
Test Length: 94h	Taxon: Actinopterygii	Source: Aquatox, AR Age: 14d
Sample ID: 05-8357-8101	Code: B5558-01	Project:
Sample Date: 07 Feb-23 07:06	Material: Industrial Effluent	Source: Energy Northwest (WA 0025151)
Receipt Date: 08 Feb-23 14:35	CAS (PC):	Station:
Sample Age: 34h (5 °C)	Client:	

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	PMSD	TU	S
13-1561-0667	96h Survival Rate	Steel Many-One Rank Sum Test	100	>100	---	7.67%	1	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	Level	%	95% LCL	95% UCL	TU	S
02-6421-0958	96h Survival Rate	Linear Interpolation (ICPIN)	EC50	>100	---	---	<1	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
02-6421-0958	96h Survival Rate	Control Resp	0.925	0.9	>>	Yes	Passes Criteria
13-1561-0667	96h Survival Rate	Control Resp	0.925	0.9	>>	Yes	Passes Criteria

96h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	4	0.9250	0.7727	1.0770	0.8000	1.0000	0.0479	0.0957	10.35%	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	-8.11%
11		4	0.9750	0.8954	1.0550	0.9000	1.0000	0.0250	0.0500	5.13%	-5.41%
25		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	-8.11%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	-8.11%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	-8.11%

96h Survival Rate Detail

MD5: 7DB0310AA5EBFF2233A9C0D3C1A003C5

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	0.9000	1.0000	0.8000
6.25		1.0000	1.0000	1.0000	1.0000
11		0.9000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

96h Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	9/10	10/10	8/10
6.25		10/10	10/10	10/10	10/10
11		9/10	10/10	10/10	9/9
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 96-h Acute Survival Test

Eurofins Environment Testing NW - ASL

Analysis ID: 13-1561-0667 Endpoint: 96h Survival Rate CETIS Version: CETISv1.9.7
 Analyzed: 22 Feb-23 9:17 Analysis: Nonparametric-Control vs Treatments Status Level: 1
 Edit Date: 22 Feb-23 9:17 MD5 Hash: 7DB0310AA5EBFF2233A9C0D3C1A003C5 Editor ID: 007-238-492-3

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	100	>100	---	1	0.07099	7.67%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	22	10	2	6	CDF	0.9908	Non-Significant Effect
		11	20.5	10	3	6	CDF	0.9667	Non-Significant Effect
		25	22	10	2	6	CDF	0.9908	Non-Significant Effect
		50	22	10	2	6	CDF	0.9908	Non-Significant Effect
		100	22	10	2	6	CDF	0.9908	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0450442	0.0090089	5	1.929	0.1392	Non-Significant Effect
Error	0.084055	0.0046697	18			
Total	0.129099		23			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test				Indeterminate
Distribution	Shapiro-Wilk W Normality Test	0.7357	0.884	3.1E-05	Non-Normal Distribution

96h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	0.9250	0.7727	1.0000	0.9500	0.8000	1.0000	0.0479	10.35%	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-8.11%
11		4	0.9750	0.8954	1.0000	1.0000	0.9000	1.0000	0.0250	5.13%	-5.41%
25		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-8.11%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-8.11%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-8.11%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.2950	1.0610	1.5290	1.3310	1.1070	1.4120	0.0735	11.35%	0.00%
6.25		4	1.4120	1.4120	1.4120	1.4120	1.4120	1.4120	0.0000	0.00%	-9.03%
11		4	1.3690	1.2420	1.4970	1.4080	1.2490	1.4120	0.0401	5.85%	-5.72%
25		4	1.4120	1.4120	1.4120	1.4120	1.4120	1.4120	0.0000	0.00%	-9.03%
50		4	1.4120	1.4120	1.4120	1.4120	1.4120	1.4120	0.0000	0.00%	-9.03%
100		4	1.4120	1.4120	1.4120	1.4120	1.4120	1.4120	0.0000	0.00%	-9.03%

CETIS Analytical Report

Report Date: 22 Feb-23 09:17 (p 2 of 2)
Test Code/ID: B555801ppa / 07-3082-8341

Fathead Minnow 96-h Acute Survival Test

Eurofins Environment Testing NW - ASL

Analysis ID: 13-1561-0667	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.9.7
Analyzed: 22 Feb-23 9:17	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Edit Date: 22 Feb-23 9:17	MD5 Hash: 7DB0310AA5EBFF2233A9C0D3C1A003C5	Editor ID: 007-238-492-3

CETIS Analytical Report

Report Date: 22 Feb-23 09:17 (p 1 of 1)
Test Code/ID: B555801ppa / 07-3082-8341

Fathead Minnow 96-h Acute Survival Test

Eurofins Environment Testing NW - ASL

Analysis ID: 02-6421-0958 **Endpoint:** 96h Survival Rate **CETIS Version:** CETISv1.9.7
Analyzed: 22 Feb-23 9:17 **Analysis:** Linear Interpolation (ICPIN) **Status Level:** 1
Edit Date: 22 Feb-23 9:17 **MD5 Hash:** 7DB0310AA5EBFF2233A9C0D3C1A003C5 **Editor ID:** 007-238-492-3

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X+1)	Linear	634278	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC50	>100	---	---	<1	---	---

96h Survival Rate Summary

Conc-%	Code	Count	Calculated Variate(A/B)							Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	D	4	0.9250	0.9500	0.8000	1.0000	10.35%	0.00%	37/40	0.9833	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	0.00%	-8.11%	40/40	0.9833	0.00%
11		4	0.9750	1.0000	0.9000	1.0000	5.13%	-5.41%	38/39	0.9833	0.00%
25		4	1.0000	1.0000	1.0000	1.0000	0.00%	-8.11%	40/40	0.9833	0.00%
50		4	1.0000	1.0000	1.0000	1.0000	0.00%	-8.11%	40/40	0.9833	0.00%
100		4	1.0000	1.0000	1.0000	1.0000	0.00%	-8.11%	40/40	0.9833	0.00%

APPENDIX B
REFERENCE TOXICANT DATA SHEETS

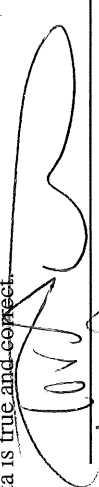
REFERENCE TOXICANT DATA SHEET

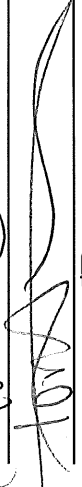
Client	QA/QC	Reference Toxicant	NaCl	Test Begin: Date	2/8/2023	Time	14:10
Test Organism	<i>Pimephales promelas</i>	Stock Solution	20 g/L in DI (ASTM Type D) water	Test End: Date	2/15/2023	Time	12:35
Source	Aquatox	Reagent Log ID #	5B008-04	*Dilution Water (Recon MH) ID#			
ID#	FHM 2200	Designed Test Temperature	20 ± 1 °C	Dilution Water Hardness (as CaCO ₃)			
Age	14 Days			Dilution Water Alkalinity (as CaCO ₃)			
Feeding:	none	Technician	IR	24 hr	07	48 hr	26
Test Chamber Size	800 ml	Time	1410	24 hr	111	48 hr	12:35
Volume per Replicate	750 ml	Therm. ID #	278	24 hr	278	48 hr	278

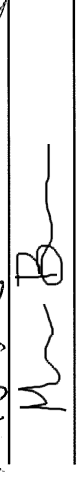
Toxicant Concentration (g/L)	Test Chamber Number	Number of Live Organisms			Dissolved Oxygen (mg/l)			pH			Temperature (°C)			Conductivity (µS)		
		0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
Control	A	10	10	10	7.9	8.1	8.2	7.3	7.6	7.7	20.5	20.5	20.6	331		343
4.0	A	10	10	10	8.1	8.3	8.3	7.8	7.6	7.4	20.5	20.3	20.7	7450		7620
6.0	A	10	10	9	8.2	8.3	8.3	7.7	7.7	7.7	20.5	20.4	20.7	11010		11350
8.0	A	10	6	2	8.2	8.4	8.3	7.8	7.6	7.7	20.5	20.3	20.7	13280		14550
10.0	A	10	3	0	8.2	8.4	8.4	7.7	7.6	7.7	20.7	20.3	20.7	17210 14910 209 2/15		17980
12.0	A	10	0	-	8.2	8.3	-	7.7	7.6	-	20.3	20.4	-	20600	20500	-
Test Acceptability Criteria (TAC) or test condition:		Survival in Controls: ≥ 90% (required TAC)			(@ 20°C): > 4.0 and < 9.1 (recommended)			pH: > 6.0 and < 9.0 (recommended)			Temperature + 1 °C (recommended)			(QA) none		

*Dilution Water Code
 Recon. - reconstituted water
 S - soft
 MH - moderately hard
 H - hard
 Art. Sea - Artificial Sea Water

We verify this data is true and correct.

Task Manager: 

Project Manager: 

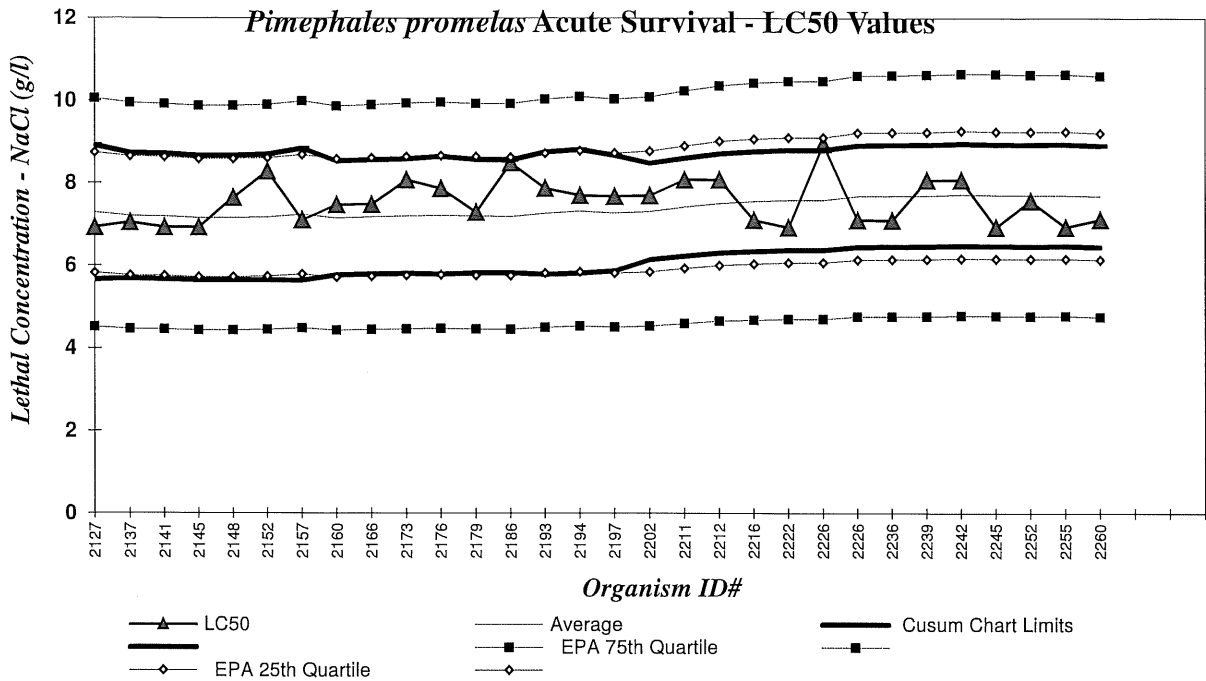
QA Officer: 

48 Hour LC₅₀: 7.1

Cusum Chart Limits: 0.5 to 8.9

Statistical Method: Probit

**REFERENCE TOXICANT CUMULATIVE SUMMARY (CUSUM)
CHART**



***Pimephales promelas* - ACUTE (EPA Test Method 2000.0)**

SODIUM CHLORIDE (g/L)

From EPA 833-R-00-003:

Organism age: 1 to 14 days

10th Quartile CV (*control limit*) = 0.08

Endpoint: 48 hour Survival

25th Quartile CV (*warning limit*) = 0.10

Stats Method: Probit, Spearman-Kärber, Linear Interpolation

75th Quartile CV (*warning limit*) = 0.19

Test Conditions: Recon MH, 20 oC

90th Quartile CV (*control limit*) = 0.33

Intralab CV is compared to EPA Warning limits (25th and 75th CV's) and Control limits (10th and 90th CV's),

If lab CV is outside EPA Control limits, the EPA Control limits are used to set Cusum chart limits.

Event #	FHM ID #	Test Start Date	LC50	Running Average	Running SD	Cusum Chart Limits		Intralab CV
						AVG-2SD	AVG+2SD	
959	2193	11/23/2021	7.9	7.3	0.74	5.8	8.7	0.10
960	2194	12/7/2021	7.7	7.3	0.75	5.8	8.8	0.10
961	2197	1/4/2022	7.7	7.3	0.70	5.9	8.7	0.10
962	2202	2/8/2022	7.7	7.3	0.70	6.1	8.5	0.08
963	2211	3/22/2022	8.1	7.4	0.58	6.2	8.6	0.07
964	2212	4/5/2022	8.1	7.5	0.53	6.3	8.7	0.07
965	2216	5/4/2022	7.1	7.6	0.53	6.3	8.8	0.06
966	2222	6/14/2022	6.9	7.6	0.48	6.4	8.8	0.06
967	2226	7/6/2022	9.0	7.6	0.48	6.4	8.8	0.07
968	2226	7/12/2022	7.1	7.7	0.55	6.5	8.9	0.07
969	2236	8/23/2022	7.1	7.7	0.54	6.5	8.9	0.07
970	2239	9/14/2022	8.1	7.7	0.53	6.5	8.9	0.07
971	2242	10/13/2022	8.1	7.7	0.53	6.5	9.0	0.07
972	2245	11/3/2022	6.9	7.7	0.52	6.5	8.9	0.07
973	2252	12/8/2022	7.6	7.7	0.54	6.5	8.9	0.07
974	2255	1/11/2023	6.9	7.7	0.53	6.5	8.9	0.07
975	2260	2/8/2023	7.1	7.7	0.56	6.5	8.9	0.07

APPENDIX C
CHAIN OF CUSTODY



Batch Number: B5558

Date Received: 2/8/23

Client/Project: Energy Northwest

Received By: DM

Were custody seals intact?

Yes No N/A

Packing Material:

Ice Blue Ice Box

Temperature: Digital Therm ID: 264 Expires: 08/28/2023 Observed: 5.0 °C

Is Yes

- OR - IR Therm ID: Expires: / / 20 Observed: °C

Temp OK? No

(for solid samples)

IR Gun Daily Offset: °C

(≤ 6.0 °C) N/A

Corrected Sample Temperature (IR Observed + IR Offset): °C

If sample is noted @ ≤ 0.0 °C, is the sample frozen or partially frozen?

Yes No N/A

Was a Chain of Custody (CoC) Provided?

Yes No N/A

Was the CoC correctly filled out? (If No, document below)

Yes No N/A

Were the sample containers in good condition (not broken or leaking)?

Yes No N/A

Are all samples within 36 hours of collection?

Yes No N/A

Method of Shipment:

Hand Delivered,

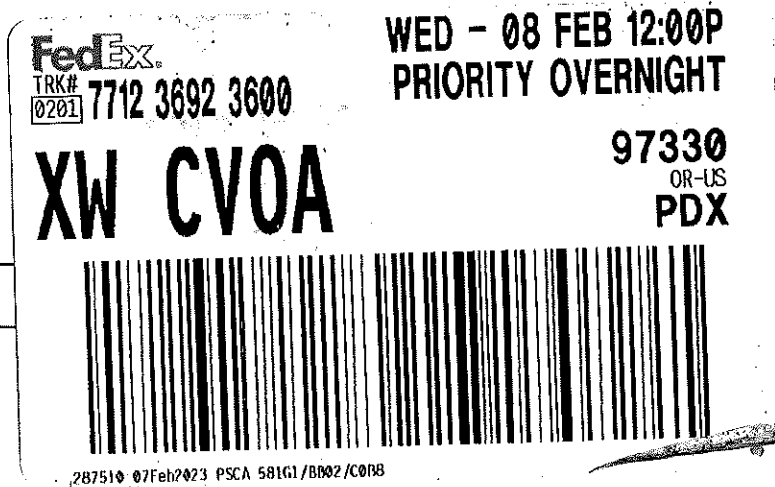
FedEx,

UPS,

Other: _____

N/A

Sample Exception Report (The following exceptions were noted)



Client was notified on:

Resolution to Exception:

CHAIN OF CUSTODY RECORD - FOR AQUATIC TOXICITY TESTING



Eurofins Environment Testing Northwest, LLC

Client: ENERGY NORTHWEST

Address: PO BOX 968

RICHLAND WA 99352

Contact Person: Kelsie Byers

Phone: 509-372-5016

PO# 344765

NPDES# WA002515-1

Ship Samples to:

Eurofins Environment Testing NW
 Attention: Aquatic Toxicology Laboratory
 1100 NE Circle Blvd. Suite 310
 Corvallis, OR 97330
 Phone: 541-243-6137

Composite Sample Information

Samples/Hour _____ Volume/Sample 4L

Total Hours _____ Total Volume _____

Initiated: Date _____ Time _____

Ended: Date 2-7-23 Time 0706

Chilled During Collection _____

Analysis Required / Comments

Sample ID	Date	Time	Sample Type	Comp.	Grab	# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Daphnia Acute	Trout Acute	SHM Acute	SHM Chronic	MB Acute	MB Chronic	MYS Acute	MYS Chronic	Algae	CA Haz Waste	WA Haz Waste	Concentration and/or Comments	
230724-01	2-7-23	0706			X	1	185886-01	X															sample not dechlorinated	

Sampled By & Title (Please sign and print name) Daisy Younger Env. Scientist Date/Time 2-7-23 0706

Received By (Please sign and print name) Kelsie Byers Env. Scientist Date/Time 2-7-23 0706

Received By (Please sign and print name) Daisy Younger Env. Scientist Date/Time 2-7-23 1435

Received By (Please sign and print name) _____ Date/Time _____

Received By (Please sign and print name) _____ Date/Time _____

Work Authorized By (Please sign and print name) _____ Date/Time _____

Relinquished By (Please sign and print name) Kelsie Byers Env. Scientist Date/Time _____

Relinquished By (Please sign and print name) _____ Date/Time _____

Relinquished By (Please sign and print name) _____ Date/Time _____

Shipped Via _____ Date/Time _____

Shipping # _____

Remarks _____

Shipping # _____

Other _____

COC Bioassay as of 020522.xlsx

Doc Control ID: ASI-612-0222



INTEROFFICE MEMO

GO2-23-081

DIC: 409.3

DATE: July 18, 2023
TO: Columbia Generating Station, (CGS)
FROM: Kris Byers, Environmental Scientist (1025)
SUBJECT: COLUMBIA GENERATING STATION ACUTE TOXICITY BIOASSAY FOR THE 2nd QUARTER 2023
REFERENCE: NPDES Permit No. WA 002515-1, Condition S13

Please find attached the acute toxicity bioassay report for Columbia Generating Station for the second quarter of calendar year 2023. The testing was conducted in accordance with condition S13 of Columbia's National Pollutant Discharge Elimination System (NPDES) permit. The bioassay results are favorable with no acute toxicity detected in the test concentration representing the acute critical effluent concentration (ACEC; the ACEC equals 11% effluent). In fact, the results show 100% survival of the test species, *Ceriodaphnia dubia*, in the 100% effluent sample.

A copy of the report (*.pdf format) and supporting statistical analysis (*.mdb format) will be submitted electronically to the State of Washington Department of Ecology (Ecology) and the Energy Facility Site Evaluation Council (EFSEC) via Ecology's Water Quality Permitting Portal (WQWebPortal).

If you have any questions concerning this information, please contact Denis Mehinagic at (509) 372-5768.

KRB

Attachment: Acute Toxicity Test Report

DISTRIBUTION LIST:

INTERNAL DISTRIBUTION:

D. Mehinagic PE03
K Byers 1025

FILE COPY

Docket File PE20
Columbia Files 964Y

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 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.

Prepared by: Kris Byers, Environmental Scientist, Environmental Services

Reviewed by: Ashley Mowery, Environmental Technician, Environmental Services

Reviewed by: Denis Mehinagic, Environmental Scientist, E&RP

Reviewed by: Matthew Turner, Manager, Environmental Services

Approved by: Mary Joy C. Ramos, Manager, Environmental & Regulatory Programs

AQUATIC TOXICOLOGY REPORT

Project Name: ENERGY NORTHWEST

Location: RICHLAND, WASHINGTON

Prepared by: Eurofins Environment Testing Northwest, LLC
(aka TestAmerica – ASL)

1100 NE Circle Boulevard, Suite 310
Corvallis, Oregon 97330
541-243-6137



Accredited in accordance
with NELAP

Oregon Environmental Laboratory Accreditation Program #OR100022 (NELAP)
State of Washington DOE Environmental Laboratory Accreditation Program, Lab ID C556
California State Environmental Laboratory Accreditation Program, Certificate No.: 1726

Report Date: June 29, 2023 Released by: Michelle Bennett

Lab I.D. No. B5656

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

Results relate only to the items tested and the sample(s) as received by the laboratory. The results included in this report have been reviewed for compliance and meet all requirements for accredited parameters. All data have been found to be compliant with laboratory protocol, with the exception of any items noted in this report. For questions, please contact the Project Manager (contact info on next page).

CONTENTS

Section	Page
INTRODUCTION	3
OVERVIEW OF REGULATORY GUIDANCE	3
SUMMARY OF TEST RESULTS	4
ACRONYM DEFINITIONS	4
SAMPLE INFORMATION.....	5
METHODS AND MATERIALS	6
TEST METHODS	6
DEVIATIONS FROM PROTOCOLS	6
TEST DESIGN	6
DILUTION WATER	7
SAMPLE COLLECTION AND STORAGE	7
SAMPLE PREPARATION	7
DATA ANALYSIS	7
RESULTS AND DISCUSSION	8
REFERENCE TOXICANT TESTS	9
APPENDIX A. RAW DATA SHEETS	
APPENDIX B. REFERENCE TOXICANT DATA SHEETS	
APPENDIX C. CHAIN OF CUSTODY	

LABORATORY CONTACT: Brett Muckey, Business Unit Manager (BUMa)
Brett.Muckey@et.eurofinsus.com (541) 243-0980

INTRODUCTION

Eurofins Environment Testing Northwest, LLC Applied Sciences Laboratory (EETNW - ASL) conducted toxicity testing on sample(s) from Energy Northwest, Richland, Washington.

Testing was initiated on: June 7, 2023

The test(s) were conducted using:

- the water flea (*Ceriodaphnia dubia*)

OVERVIEW OF REGULATORY GUIDANCE

The following provides an overview and excerpts of applicable permit specifics, regulatory guidance, and other relevant information. This is intended only as a helpful guide, from a laboratory perspective, for understanding test outcomes. The final responsibility for interpretation of results remains with the client and/or regulatory agency.

The following guidance is taken from EETNW-ASL's reading of the NPDES permit for Energy Northwest's Columbia Generating Station in Richland, WA (permit #WA0025151, effective Nov 1, 2014, expires Oct 31, 2019, modified Feb 8, 2016, and Mar. 19, 2019).

Acute toxicity:

- *Effluent Limit for Acute Toxicity:*
 - "No acute toxicity detected in a test concentration representing the acute critical effluent concentration (ACEC)."
 - "The ACEC equals 11% effluent."
- *Compliance with the Effluent Limit for Acute Toxicity:*
 - "Compliance with the effluent limit for acute toxicity means the result of the testing ... show no statistically significant difference in survival between the control and the ACEC."
 - "The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance ..." (i.e. alpha = 0.05)
 - "If the difference in survival between the control and the ACEC is less than 10 percent, the Permittee must conduct the hypothesis test at the 0.01 level of significance."
 - "If the test results show a statistically significant difference in survival between the control and the ACEC, and EFSEC has not determined the test result to be anomalous under Section D, and the test is otherwise valid, the result is a violation of the effluent limit for acute toxicity."
- *Compliance Testing for Acute Toxicity:*
 - "Conduct quarterly acute toxicity testing on the final effluent." (Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec)
 - "... using each of the species and protocols listed ... on a rotating basis."

Response to Noncompliance With an Effluent Limit for Acute Toxicity:

- “If a toxicity test ... determines a statistically significant difference in response between the ACEC and the control, the Permittee must begin additional compliance monitoring within one week of receiving the test results”.
- **Sampling and Reporting Requirements:**
 - “The permittee must collect grab samples ... must cool the samples to 0 – 6 degrees Celsius during collection and send them to the lab immediately upon completion.”
 - “The lab must begin the toxicity testing ... no later than 36 hours after sampling was completed.”
 - “The Permittee must chemically dechlorinate final effluent ... with sodium thiosulfate just prior to test initiation. Do not add more sodium thiosulfate than is necessary to neutralize the chlorine. Provide in the test report the calculations to determine the amount of sodium thiosulfate necessary ...”

The following is taken from the WDOE guidance (WQ-R-95-80, June 2016 revision):

- “To reduce WET limit violations (and anomalous concentration-response relationships) due to statistical significance that is a Type I error [false positive], we lower alpha when differences in test organism response are small.”
- “Alpha will be lowered from 0.05 to 0.01 if a 10% difference in an acute test is significant ...”

SUMMARY OF TEST RESULTS

Exhibit 1 provides a summary of the final test results.

EXHIBIT 1 Summary of Acute Test Results

Species	NOEC (%)	LOEC (%)	LC ₅₀ (%)	Was a statistically significant difference between control and ACEC shown?
<i>C. dubia</i>	100	> 100	> 100	No

Note: acronyms are as defined below.

From the NPDES permit - *Effluent Limit for Acute Toxicity*: “Compliance with the effluent limit for acute toxicity means the result of the testing ... show no statistically significant difference in survival between the control and the ACEC.” [ACEC = 11%].

More detailed information is provided in the Results and Discussion section.

ACRONYM DEFINITIONS (from EPA guidance):

NOEC = No Observed Effect Concentration: The highest test concentration that causes no observable adverse effects on the test organisms (i.e. no statistically significant reduction from the control).

LOEC = Low Observed Effect Concentration: The lowest test concentration that does cause an observable adverse effect on the test organisms (i.e. is statistically significant reduction from the control).

LC₅₀ = Lethal Concentration (50%): A point estimate of the test concentration that would cause death in 50 percent of the test population.

SAMPLE INFORMATION

Exhibit 2 provides a summary of the sample conditions as received.

EXHIBIT 2

Sample Conditions on Receipt

Sample ID	231092-01
EETNW - ASL SDG	B5656-01
Collection - Date and Time	06/06/2023 06:50
Receipt - Date and Time	06/07/2023 12:22
Temperature (°C)	1.4
Dissolved Oxygen (mg/L)	10.5
pH	7.4
Conductivity (µS/cm)	215
Total Residual Chlorine (mg/L)	< 0.02
Ammonia (mg/L as NH ₃ -N)	< 0.10
Total Hardness (mg/L as CaCO ₃)	83
Total Alkalinity (mg/L as CaCO ₃)	56

METHODS AND MATERIALS

TEST METHODS

The acute test methods were performed according to: *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, USEPA Office of Water (2002), EPA-821-R-02-012.

Additional guidance was provided by:

- *Whole Effluent Toxicity Testing Guidance and Test Review Criteria*, Washington State Department of Ecology (revised Jun 2016) Pub# WQ-R-95-80.

DEVIATIONS FROM PROTOCOLS

Deviations from required procedures in the test methods:

- None noted.

Deviations from recommended procedures in the test methods:

- None noted.

TEST DESIGN

The following summarizes the conditions used for both overall testing and the specifics for each test (observations and notations can be found on the datasheets in Appendix A):

Overall Test Design:

- Acute test: 6.25, 11.0 [ACEC], 25.0, 50.0, and 100 percent sample + dilution water for the control.

Test Organism Conditions:

- All organisms tested were fed and maintained during culturing, acclimation, and testing as prescribed by the EPA (2002).
- The test organisms appeared vigorous and in good condition prior to testing.

C. dubia acute test: (WDOE)

- Source: EETNW-ASL's in-house cultures
- Age: Less than 24 hours old
- Design: Four test vessels per concentration, five organisms per vessel
- Test Solution Renewal: None (i.e. static test)
- Monitoring:
 - Daily: Survival, DO, pH, and temperature; all concentrations.
 - Test Initiation and Termination: Conductivity, all concentrations
- Termination: 48 hours.
- Endpoints: Survival (at termination).

DILUTION WATER

The dilution water used was the standard culture water used by EETNW - ASL:

- Reconstituted, moderately hard water (as per EPA protocol) with a total hardness of 75 to 105 mg/L as CaCO₃ and an alkalinity of 50 to 75 mg/L as CaCO₃.

SAMPLE COLLECTION AND STORAGE

Samples were collected by Energy Northwest personnel. The samples were accepted as scheduled by EETNW - ASL. Chain of Custody and Sample Receipt Records are provided in Appendix C.

- The sample was received within the EPA recommended 0 to 6 °C range.
- The sample was received within the WDOE required 0 to 6 °C range.
- The sample was initially used for test initiation or test solution renewal within the EPA recommended maximum holding time of 36 hours of sample collection.
- All subsequent uses of the sample occurred within the EPA recommended maximum holding time of 72 hours past the time of initial use of that sample.
- All subsequent uses of a sample occurred within the WDOE recommended maximum holding time of 84 hours past the time of sample collection. (For renewals of a 96 hour duration acute test)
- Following receipt, the samples were stored in the dark at 0 to 6 °C until test solutions were prepared and tested.

SAMPLE PREPARATION

Samples used during these tests were:

- Temperature adjusted prior to test initiation and each daily renewal.
- As no Total Residual Chlorine was observed, dechlorination with sodium thiosulfate was not performed.

DATA ANALYSIS

The statistical analyses performed for the acute tests were those outlined in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, USEPA Office of Water, Fifth Edition (2002), EPA-821-R-02-012, using CETIS.

- The specific statistical analysis and CETIS version used for each endpoint evaluation is listed with the statistical outputs included with each test in Appendix A.
- If any additional analysis methods were also used, an explanation of the rationale and reference to the source method is included with the presentation of those results below.

Additional guidance was provided by:

- *Whole Effluent Toxicity Testing Guidance and Test Review Criteria*, Washington State Department of Ecology (revised Jun 2016) Pub# WQ-R-95-80.

RESULTS AND DISCUSSION

The raw data sheets for all tests are presented in Appendix A.

ACUTE BIOASSAYS

Table 1 summarizes the survival data for the *C. dubia* acute test.

Sample Concentration (%)	Percent Survival (at Test Termination)
Control	100
6.25	100
11.0	100
25.0	100
50.0	100
100	100

Statistical analysis in accordance with the EPA protocol and WDOE guidance results in:

- NOEC = 100 %
- LOEC > 100 %
- LC₅₀ > 100 %

From the NPDES permit - *Effluent Limit for Acute Toxicity*: “Compliance with the effluent limit for acute toxicity means the result of the testing ... show no statistically significant difference in survival between the control and the ACEC.” [ACEC = 11%].

- No statistically significant difference between control and ACEC was shown.

Dissolved oxygen concentrations remained at 4.0 mg/L or greater throughout the test period. Test temperatures remained in the range of 20±1 °C.

The *C. dubia* acute test meets Test Acceptability Criteria (TAC) of a minimum 90 percent control survival. Unless referenced above, the tests proceeded without any noted deviations or interruptions that could have affected test results. The testing should be considered “valid”.

REFERENCE TOXICANT TESTS

Reference toxicant (reftox) testing is performed to document both initial and ongoing laboratory performance of the test method(s). While the health of the test organisms is primarily evaluated by the performance of the laboratory control, reftox test results also may be used to assess the health and sensitivity of the test organisms. Reftox test results within their respective cumulative summary (Cusum) chart limits are indicative of consistent laboratory performance and normal test organism sensitivity.

The results of the reftox tests indicate that the test organisms were within their respective cusum chart limits based on EPA guidelines. This demonstrates ongoing laboratory proficiency of the test methods and suggests normal test organism sensitivity in the associated client testing.

The *C. dubia* reftox test was conducted using sodium chloride. The data sheets for the reference toxicant test are provided in Appendix B.

Table 2 summarizes the reference toxicant test results and Cusum chart limits.

Table 2		
Acute Reference Toxicant Test with Sodium Chloride (g/L)		
Species	LC₅₀	Control Chart
<i>C. dubia</i>	2.46	1.99 to 2.77

APPENDIX A
RAW DATA SHEETS



FRESHWATER TOXICITY TEST: SAMPLE AND DILUTION WATER DATA

Client Contact
NW B550.pdf

Energy Northwest
Kristopher Byers (509) 377-4061

SDG # B 5656

Test Initiation: Date 6/7/23
Test Termination: Date 6/7/23

Sample ID Number	Field ID	Collected Date (mm/dd/yy)	Collected Time (Pacific Zone)	Received Date (mm/dd/yy)	Received Time (Pacific Zone)	Temp (°C) as Rcv'd	Total Residual Chlorine (mg/l) as Rcv'd / after Dechlor. □	Ammonia NH ₃ -N mg/l as Rcv'd	Hardness mg/l as CaCO ₃ as Rcv'd	Alkalinity mg/l as CaCO ₃ as Rcv'd	DO (mg/L) as Rcv'd	pH as Rcv'd	Cond. (uS) as Rcv'd	60 um filtered? (organisms noted)
B5656-01	231092-01	06/06/23	06:50	06/07/23	12:22	1.4	<0.02 / -	<0.10	83	56	10.5	7.4	215	<input type="checkbox"/>
Reporting Limits:														
						na	0.02 mg/L	0.10 mg/L	5 mg/L	5 mg/L	na	na	na	na

Note: "-" Indicates data collection or dechlorination not needed. Any other adjustments to samples prior to use are documented in Comments below or on Dilutions page.

Dilution Water	ID#	Hardness mg/l as CaCO ₃	Alkalinity mg/l as CaCO ₃	Comments: <input checked="" type="checkbox"/> Indicates the action was taken, (<input type="checkbox"/> = action not taken):
Recon MH (FHM)	5763	100	40	" - " = sample not dechlorinated, or analyte not collected/needed.

Water Quality Meters Used/ID#: Dissolved Oxygen # 7 pH # 23 Conductivity # 2

Client Energy Northwest

Sample Designation (SDG): B 5656

Test Species Information	Cd # <u>4108</u> <i>Ceriodaphnia dubia</i> Acute				
Organism Age at Initiation	< 24 hrs				
Test Container Size	30 ml				
Test Volume	25 ml				
Feeding: Type and Amount	Algae and YCT during acclimation				
Aeration: In Test Chambers via Slow Bubble :	<input checked="" type="checkbox"/> None <input type="checkbox"/> Prior to use				
Acclimation Period	<24 hrs				
Organism Source	In-House				
Size	-				
Loading Rate	-				

Dissolved Oxygen aeration justifications (in test chambers):

Test(s): All _____
Date:

Comments:

Test Solution Preparation and Dilution Record

Client: Energy Northwest

Note: Indicates task not done, Indicates task was done. Temp adj. = Temperature adjusted to ambient or test temp
 Ditto marks (' ') indicate that the same SDG, batch of dilution water, or food as the previous day's entry was used.

Ceriodaphnia dubia - Acute

Test Concentration (%)	Sample Volume (mls)	Final Volume (mls)
Control	0.00	→ 200
6.25	12.5	→ 200
11.0	22.0	→ 200
25.0	50.0	→ 200
50.0	100	→ 200
100	200	→ 200

Test Day 0 (Initiation) B5656 Sample ID Used B5656 Daily Sample Preparation (prior to dilution) Temp adj, Aerated Dilution Water Used ID # 5765 Date 6/17/2013 Time 13:10 Initials TC

P16 TC 617

Total Sample volume needed per day = 385 mls

Client Energy Northwest Sample ID # B 5656 Beginning, Date 6/7/23 Time 1422
 Sample Description _____ Ending, Date 6/8/23 Time 1342
 Random Template Used: Whiskey Cup random # 61 Waterbath/Incubator Used: # 7 Technician 0 hr 09 24 hr 12 48 hr 09
 Test Species Ceriodaphnia dubia ID# Cd 4108 Time 0 hr 1422 24 hr 1335 48 hr 1342
 Therm. ID# 0 hr #280 24 hr #280 48 hr #280

Percent	Test Container Number	Number of Live Organisms			Dissolved Oxygen (mg/l)			pH			Temperature (°C)			Conductivity (µmohs/cm)		
		0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
Control	Surrogate					7.9			8.0	7.9		20.0				
	A	5	5	5	7.8		7.7	8.0	8.1	19.7		21.0	352		352	
	B	5	5	5												
	C	5	5	5												
	D	5	5	5												
6.25	Surrogate					8.1			8.1		19.7					
	A	5	5	5	8.0		7.9	8.0	8.1	19.4		20.3	355		355	
	B	5	5	5												
	C	5	5	5												
	D	5	5	5												
11.0	Surrogate					8.2			8.2		19.7					
	A	5	5	5	8.1		8.0	8.0	8.1	19.8		20.0	347		350	
	B	5	5	5												
	C	5	5	5												
	D	5	5	5												
25.0	Surrogate					8.1			8.1		20.0					
	A	5	2M	2	8.2		8.0	8.0	8.1	19.6		20.4	327		330	
	B	5	5	5												
	C	5	5	5												
	D	5	5	5												
50.0	Surrogate					8.2			8.2		20.1					
	A	5	5	5	8.5		8.1	7.9	8.1	19.2		20.6	297		303	
	B	5	5	5												
	C	5	5	5												
	D	5	5	5												
100	Surrogate					8.2			8.2		20.0					
	A	5	5	5	8.8		8.1	7.6	8.1	19.2		20.5	212		223	
	B	5	5	5												
	C	5	5	5												
	D	5	5	5												

CETIS Summary Report

Report Date: 12 Jun-23 07:26 (p 1 of 1)
 Test Code/ID: B565601cda / 21-3391-0618

Ceriodaphnia 48-h Acute Survival Test

Eurofins Environment Testing NW - ASL

Batch ID: 18-3314-3584	Test Type: Survival (48h)	Analyst:
Start Date: 07 Jun-23 14:22	Protocol: EPA/821/R-02-012 (2002)	Diluent: Mod-Hard Synthetic Water
Ending Date: 09 Jun-23 13:42	Species: Ceriodaphnia dubia	Brine:
Test Length: 47h	Taxon: Branchiopoda	Source: In-House Culture Age: <24
Sample ID: 13-5305-2030	Code: B5656-01	Project:
Sample Date: 06 Jun-23 06:50	Material: Unknown	Source: Energy Northwest (WA 0025151)
Receipt Date: 07 Jun-23 12:22	CAS (PC):	Station:
Sample Age: 32h (1.4 °C)	Client:	

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
09-3198-1279	48h Survival Rate	Steel Many-One Rank Sum Test	100	>100	---	7.25%	1	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓ Level	%	95% LCL	95% UCL	TU	S
00-4116-3045	48h Survival Rate	Linear Interpolation (ICPIN)	EC50	>100	---	---	<1	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
00-4116-3045	48h Survival Rate	Control Resp	1	0.9	>>	Yes	Passes Criteria
09-3198-1279	48h Survival Rate	Control Resp	1	0.9	>>	Yes	Passes Criteria

48h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
11		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
25		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%

48h Survival Rate Detail

MD5: 7C3CB5340F8C0CF602EDD7FB547CC89A

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
11		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

48h Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	5/5	5/5	5/5	5/5
6.25		5/5	5/5	5/5	5/5
11		5/5	5/5	5/5	5/5
25		2/2	5/5	5/5	5/5
50		5/5	5/5	5/5	5/5
100		5/5	5/5	5/5	5/5

CETIS Analytical Report

Report Date: 12 Jun-23 07:26 (p 1 of 2)
Test Code/ID: B565601cda / 21-3391-0618

Ceriodaphnia 48-h Acute Survival Test

Eurofins Environment Testing NW - ASL

Analysis ID: 09-3198-1279 **Endpoint:** 48h Survival Rate **CETIS Version:** CETISv1.9.7
Analyzed: 12 Jun-23 7:25 **Analysis:** Nonparametric-Control vs Treatments **Status Level:** 1
Edit Date: 12 Jun-23 7:25 **MD5 Hash:** 7C3CB5340F8C0CF602EDD7FB547CC89 **Editor ID:** 007-238-492-3

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	100	>100	---	1	0.07255	7.25%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	18	10	1	6	CDF	0.8333	Non-Significant Effect
		11	18	10	1	6	CDF	0.8333	Non-Significant Effect
		25	18	10	1	6	CDF	0.8333	Non-Significant Effect
		50	18	10	1	6	CDF	0.8333	Non-Significant Effect
		100	18	10	1	6	CDF	0.8333	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0038451	0.0007690	5	1	0.4457	Non-Significant Effect
Error	0.0138422	0.0007690	18			
Total	0.0176872		23			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test				Indeterminate
Distribution	Shapiro-Wilk W Normality Test	0.4634	0.884	<1.0E-05	Non-Normal Distribution

48h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
11		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
6.25		4	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
11		4	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
25		4	1.3110	1.2030	1.4190	1.3450	1.2090	1.3450	0.0340	5.18%	2.52%
50		4	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
100		4	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%

CETIS Analytical Report

Report Date: 12 Jun-23 07:26 (p 2 of 2)
Test Code/ID: B565601cda / 21-3391-0618

Ceriodaphnia 48-h Acute Survival Test

Eurofins Environment Testing NW - ASL

Analysis ID: 09-3198-1279	Endpoint: 48h Survival Rate	CETIS Version: CETISv1.9.7
Analyzed: 12 Jun-23 7:25	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Edit Date: 12 Jun-23 7:25	MD5 Hash: 7C3CB5340F8C0CF602EDD7FB547CC89	Editor ID: 007-238-492-3

CETIS Analytical Report

Report Date: 12 Jun-23 07:26 (p 1 of 1)
Test Code/ID: B565601cda / 21-3391-0618

Ceriodaphnia 48-h Acute Survival Test

Eurofins Environment Testing NW - ASL

Analysis ID: 00-4116-3045 **Endpoint:** 48h Survival Rate **CETIS Version:** CETISv1.9.7
Analyzed: 12 Jun-23 7:25 **Analysis:** Linear Interpolation (ICPIN) **Status Level:** 1
Edit Date: 12 Jun-23 7:25 **MD5 Hash:** 7C3CB5340F8C0CF602EDD7FB547CC89 **Editor ID:** 007-238-492-3

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X+1)	Linear	429353	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC50	>100	---	---	<1	---	---

48h Survival Rate Summary

Conc.-%	Code	Count	Calculated Variate(A/B)							Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	D	4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	20/20	1.0000	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	20/20	1.0000	0.00%
11		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	20/20	1.0000	0.00%
25		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	17/17	1.0000	0.00%
50		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	20/20	1.0000	0.00%
100		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	20/20	1.0000	0.00%

APPENDIX B
REFERENCE TOXICANT DATA SHEETS

REFERENCE TOXICANT DATA SHEET

Client	QA / QC	Reference Toxicant	NaCl	Test Begin: Date	Time
Test Organism	<i>Ceriodaphnia dubia</i>	Stock Solution	20 g/L in DI (ASTM Type I) water	6 / 13 / 2023	14 : 20
Source	In-House culture	Reagent Log ID #	S B 008 -08	Test End: Date	14 : 50
ID#	Cd 4111	Designed Test Temperature	20 ± 1 °C	*Dilution Water (Recon MH) ID# 5777	
Age	< 24 hours	Dilution Water Hardness (as CaCO ₃) 100			
Feeding:	none	Dilution Water Alkalinity (as CaCO ₃) 59			
Test Chamber Size	30 ml	Technician	0 hr	24 hr	48 hr
Volume per Replicate	25 ml	Time	14 20	24 hr	1037
		Therm. ID #	280	24 hr	280

Toxicant Concentration (g/L)	Test Chamber Number	Number of Live Organisms			Dissolved Oxygen (mg/l)			pH			Temperature (°C)			Conductivity (µS)		
		0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
Control	A	5	5	5	8.3	8.0	8.0	8.0	19.0	19.0	20.8	3.95	371			
	B	5	5	5												
1.0	A	5	5	5	8.5	7.9	8.1	7.9	19.0	19.7	20.2	2250	2170			
	B	5	5	5												
1.5	A	5	5	5	8.6	8.0	8.4	8.0	18.9	19.0	20.2	3210	3120			
	B	5	5	5												
2.0	A	5	5	5	8.7	7.9	8.4	7.9	18.9	19.3	19.8	4200	4130			
	B	5	5	5												
3.0	A	5	2	0	8.7	7.9	8.4	7.9	19.0	20.0	20.1	5920	5740			
	B	5	4	0												
4.0	A	5	0	0	8.7	8.1	8.1	7.9	19.0	19.5	—	7600	7290			
	B	5	0	0												
Test Acceptability Criteria (TAC) or test condition:		Survival in Controls: ≥ 90% (required TAC)			(@ 20°C): > 4.0 and < 9.1 (recommended)			pH: > 6.0 and < 9.0 (recommended)			Temperature + 1 °C (recommended)			(QA) none		

Note: If organisms are alive @ 24hrs, no DO, pH, or Cond. measurements to be taken in that test chamber to avoid injuring the organisms

We verify this data is true and correct.

*Dilution Water Code 2.46
 Recon. - reconstituted water
 MH - moderately hard

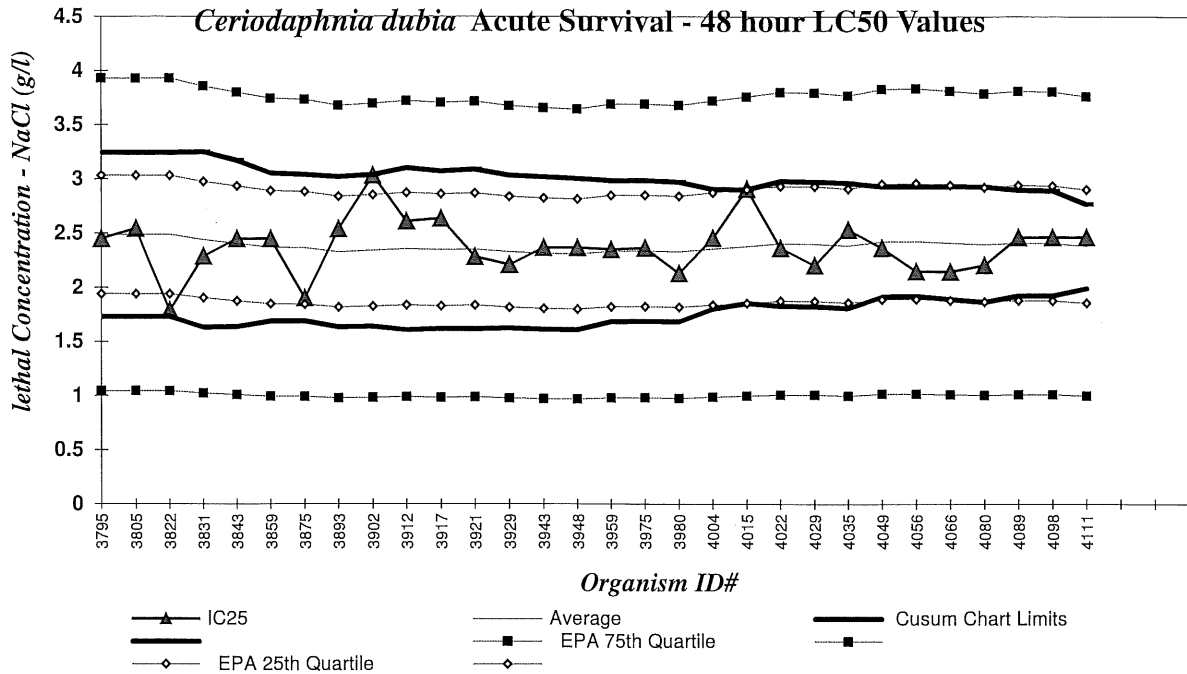
48 Hour LC₅₀ 1.99 to 2.77

Cusum Chart Limits Linear Inter.

Statistical Method

Task Manager *Scotty Meyer*
 Project Manager *Tom A*
 QA Officer *M B*

**REFERENCE TOXICANT CUMULATIVE SUMMARY (CUSUM)
CHART**



***Ceriodaphnia dubia* - ACUTE (EPA Test Method 2002.0)**

SODIUM CHLORIDE (g/L)

From EPA 833-R-00-003:

Endpoint: 48 hour Survival

10th Quartile CV (*control limit*) = 0.06

Stats Method: Probit, Spearman-Kärber, Linear Interpolation

25th Quartile CV (*warning limit*) = 0.11

Test Conditions: Recon MH, 20 oC

75th Quartile CV (*warning limit*) = 0.29

90th Quartile CV (*control limit*) = 0.34

Intralab CV is compared to EPA Warning limits (25th and 75th CV's) and Control limits (10th and 90th CV's),

If lab CV is outside EPA Control limits, the EPA Control limits are used to set Cusum chart limits.

Event #	Cerio ID #	Test Start Date	LC50	Running Average	Running SD	Cusum Chart Limits		Intralab CV
						AVG-2SD	AVG+2SD	
219	4035	11/03/22	2.54	2.4	0.29	1.81	2.96	0.10
220	4049	12/08/22	2.37	2.4	0.25	1.92	2.93	0.10
221	4056	01/11/23	2.15	2.4	0.25	1.92	2.93	0.11
222	4066	02/06/23	2.15	2.4	0.26	1.89	2.93	0.11
223	4080	03/08/23	2.21	2.4	0.27	1.87	2.93	0.10
224	4089	04/05/23	2.46	2.4	0.24	1.92	2.90	0.10
225	4098	05/04/23	2.46	2.4	0.24	1.92	2.89	0.08
226	4111	06/13/23	2.46	2.4	0.19	1.99	2.77	0.08

APPENDIX C
CHAIN OF CUSTODY

Batch Number: B5656-01

Date Received: 6-7-23

Client/Project: Energy NW

Received By: [Signature]

Were custody seals intact? Yes No N/A

Packing Material: Ice Blue Ice Box

Temperature: Digital Therm ID: 264 Expires: 08/28/2023 Observed: 1.4 °C Is Yes

- OR - IR Therm ID: _____ Expires: / /20 Observed: _____ °C Temp OK? No
(for solid samples) IR Gun Daily Offset: _____ °C (≤ 6.0 °C) N/A

Corrected Sample Temperature (IR Observed + IR Offset): _____ °C

If sample is noted @ ≤ 0.0 °C, is the sample frozen or partially frozen? Yes No N/A

Was a Chain of Custody (CoC) Provided? Yes No N/A

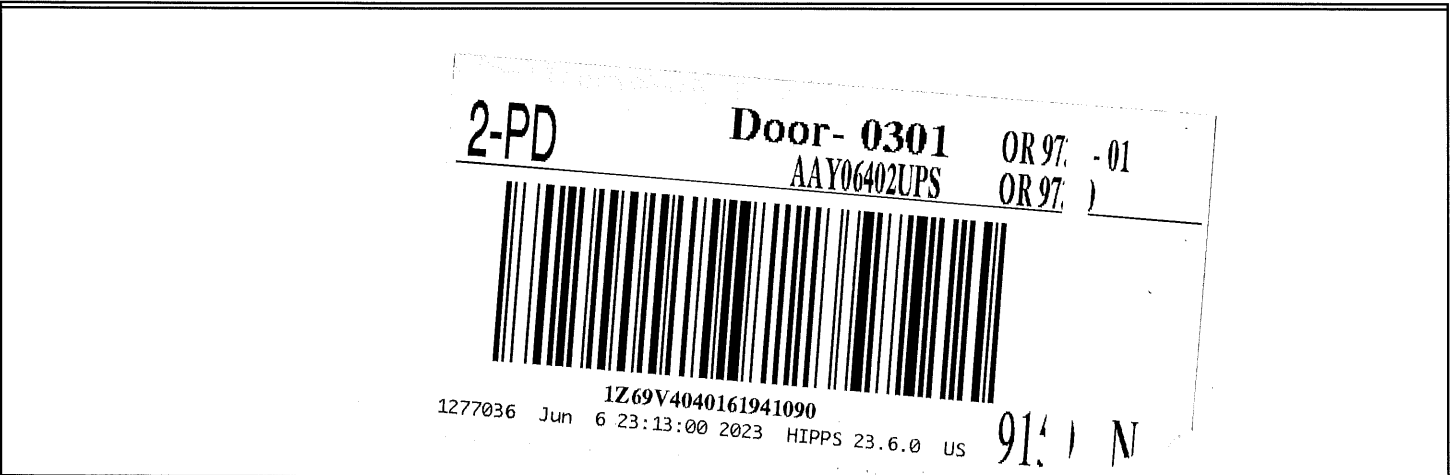
Was the CoC correctly filled out? (If No, document below) Yes No N/A

Were the sample containers in good condition (not broken or leaking)? Yes No N/A

Are all samples within 36 hours of collection? Yes No N/A

Method of Shipment: Hand Delivered, FedEx, UPS, Other: _____ N/A

Sample Exception Report (The following exceptions were noted)



Client was notified on: _____ Client contact: _____

Resolution to Exception:

