REVIEW OF TOXICITY BIOMONITORING REPORT

Environmental Toxicology, NPDES Permitting Program/OWQ

Biomonitoring Revie	w Report	IDEM/	/100/29	/334/ <mark>12</mark> 0	6- <mark>B</mark> /202	4 1	Documer	nt Date:	04/12/2024	
	dway WW				NPDES			032972	7(000	
City: Spee	dway	Coun	ty: Ma	rion	S	tate:	<u>IN</u>		Zip <u>46222</u>	
A 70 ANG A 1.1	I. Backs	ground I	nforma	ation: (To be co	omplete	ed by the	e testing 1	ab)	
A. Test Material: Effluent/W. Water	. Whole	Effluent					0	utfall No((s): 001	
Grab/Composite:		Effluent		s) Efflu	ent Col	lected:			7/2024 <u>03/29/202</u>	24
•		- 7					4	00/2/	772021 007237202	
Concentrations Us	sed: Cont	rol, 11.49	%, 22.7°	%, 45.5%				tion Facto		
Dilution Water:		eiving W			Reco	nstitute		Perrier		
Name of Receiving	Water Boo	dy: <u>Eag</u>	gle Cree	<u>ek</u>		Tes	t Date(s	s): <u>04/26/</u>	/2024 - 03/03/202	<u>24</u>
n m // r i	D	1011011	rwon r	NIC OOO	0 XX XX XX		G.			
B. Testing Laborate		IOMON		NC, 880	2 W. Wa	ishingto		INI '	7:n 46221	
Cit Responsible		ndianapol	118				State	<u>IN</u>	Zip <u>46231</u>	
•										
	Director/M	anager:		ael Britt	en					
	cal Staff:		Initial	_						
Phone 1	No.		317-2	<u>97-7713</u>						
C. Toxicity Test Co	onducted:									
Acute T						S	hort-Te	erm Chro	onic Test:	
✓ 1. Ceriodaphn	ia dubia/	reticulat	a	1	1.	Ceriodo	aphnia a	lubia / re	ticulate	
2. Daphnia ma	-			_				production		
3. Pimephales	•			w)	2.	-	-		Fathead Minnov	v)
4. Other:	ž			-				1 & Grow		
								(E)	utum Growth	
					14.	Other:				
D 01 1 1 1	CI I	11. /		15						
D. Chemical Analy	ses Check	dist:		Dov						
- Chann			3	Day 4			- 15	Commo		
Parameter	yses Check	dist:	3	Day 4	5	6	7	Commo		
- Chann	1		3				- 15	Commo		
Parameter 1. Control:	1	2	<u>√</u>	<u>√</u>	5	6 <u>√</u>	7	Commo		
Parameter 1. Control: D.O. Initial Final pH Initial	1	2	<u>√</u>	<u>√</u>	5	6 <u>√</u>	7	Commo		- 1
Parameter 1. Control: D.O. Initial Final pH Initial Final	1	2	<u>√</u>	<u>√</u>	5		- 15	Commo		
Parameter 1. Control: D.O. Initial Final pH Initial Final Alkalinity:	1		<u>√</u>		5	6 <u>√</u>	7	Commo		
Parameter 1. Control: D.O. Initial Final pH Initial Final Alkalinity: Hardness:	1	2	<u>√</u>	<u>√</u>	5	6 <u>√</u>	7	Commo		
Parameter 1. Control: D.O. Initial Final pH Initial Final Alkalinity: Hardness: Conductivit	1	2	3 <u>√</u> <u>√</u> <u>√</u> <u>√</u> <u>√</u> <u>√</u> <u>√</u> <u>√</u>	<u>√</u>		6 <u>√</u>	7	Commo		
Parameter 1. Control: D.O. Initial Final pH Initial Final Alkalinity: Hardness: Conductivit Chlorine:	1	2	<u>√</u>	<u>√</u>	5	6 <u>√</u>	7	Commo		
Parameter 1. Control: D.O. Initial Final pH Initial Final Alkalinity: Hardness: Conductivit Chlorine: 2. Test Sample:	1	2 <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> —	✓ ✓ ✓ ✓ ✓ ✓	4 V V V V V —	5	6 '\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\	7 ' ' ' ' ' ' ' ' ' '	Commo		
Parameter 1. Control: D.O. Initial Final pH Initial Final Alkalinity: Hardness: Conductivit Chlorine: 2. Test Sample: D.O. Initial	1	2 <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> —	✓ ✓ ✓ ✓ ✓ ✓	4 V V V V V —	5	6 '\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\	7 ' ' ' ' ' ' ' ' ' '	Commo		
Parameter 1. Control: D.O. Initial Final pH Initial Final Alkalinity: Hardness: Conductivit Chlorine: 2. Test Sample:	1	2 <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> —	✓ ✓ ✓ ✓ ✓ ✓	4 V V V V V —	5	6 '\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\	7 ' ' ' ' ' ' ' ' ' '	Commo		
Parameter 1. Control: D.O. Initial Final pH Initial Final Alkalinity: Hardness: Conductivit Chlorine: 2. Test Sample: D.O. Initial Final pH Initial Final	1	2 <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> —	✓ ✓ ✓ ✓ ✓ ✓	4 V V V V V —	5	6 <u>√</u>	7	Commo		
Parameter 1. Control: D.O. Initial Final pH Initial Final Alkalinity: Hardness: Conductivit Chlorine: 2. Test Sample: D.O. Initial Final pH Initial Final Alkalinity:	1	2 <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> —	✓ ✓ ✓ ✓ ✓ ✓	<u>√</u>	5	6 '\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\	7 ' ' ' ' ' ' ' ' ' '	Commo		
Parameter 1. Control: D.O. Initial Final pH Initial Final Alkalinity: Hardness: Conductivit Chlorine: 2. Test Sample: D.O. Initial Final pH Initial Final Alkalinity: Hardness:	1	2 <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> —	✓ ✓ ✓ ✓ ✓ ✓	4 V V V V V —	5	6 '\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\	7 ' ' ' ' ' ' ' ' ' '	Commo		
Parameter 1. Control: D.O. Initial Final pH Initial Final Alkalinity: Hardness: Conductivit Chlorine: 2. Test Sample: D.O. Initial Final pH Initial Final Alkalinity:	1	2 <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> —	<u>√</u>	4 V V V V V —	5	6 '\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\	7 ' ' ' ' ' ' ' ' ' '	Commo	ent	

II. Daphnia or Ceriodaphnia Toxicity Test Information

		(To be complete	ed by the testing lab))	
A. Data Analyses:					
Statistical Test	Method	Used	Comment		
Normality test:	Chi-S	quare Test	Passed. Indicates	s Normal Disti	ribution for Reprod.
Homogeneity te		ey Test	Passed. Indicates		
Significance tes	t:			-	
1. Parametric:		ett's test	Passed. No Signif		
2. Non-Parame			Passed. No Signif	icant Difference	e for Survival.
		of Significance P		es.	
4. Other: No	calculation	tor acute endpoi	nt was necessary.		
B. Toxicity Test Res	ults:				
1. Acute:					
LC50 (48-hr):	<u>> 100%</u> .	Effluent (<1 TU	<u>a)</u>		
2. Chronic:					
NOEL:	Survival	100% (1 TUc)	Reproduction	100% (1	Growth
LOEL:	Survival		Danisa disatias	TUc)	C
Chronic Value:	Survival		Reproduction Reproduction		Growth Growth
Chrome value.	Sul vivai		Reproduction	-	Growin
C. Permit Limits Re	quirement:				
1. Acute:					
LC50 (48-hr):	<u>100% Ef</u>	fluent (1 TUa)			
2. Chronic:					
NOEL: Surv LOEL: Surv		-	production 90.9% production		Growth
D. Reference Toxica	nt Data:				
1. Reference To	cicant: Co	pper chloride, Rea	gent Grade, from Ca	rolina Biologica	1
2. Test Date:		bruary 20 - 27, 2		8	
3. Results:	48-	hr LC ₅₀ = 86 μ g/L, 1	NOEL (Reprod.) = 40 μ	ig/L, LOEL (Repi	rod.) = 80 μg/L as Cu.
4. Acceptable Ra	ange: <u>Wi</u>	thin Laboratory	Control Limits.		
E. Permit Limits Co.	mpliance:	(To be comple	eted by IDEM Staff	only)	
Pass (LC ₅₀ [4	8-hr])	(1 TUa)	Fail (LC ₅₀ [48-1	hr])	
Pass (NOEL		(1 TUc)	Fail (NOEL/Su		
Pass (NOEL	,	(1 TUc)	Fail (NOEL/Re	, ,	
Pass (NOEL	Growth)		Fail (NOEL/Gi	·	
Is the Test Accent	able? V	os V No	Reason		

III. Fathead Minnow (Pimephales promelas) Toxicity Test Information (To be completed by the testing lab)

A. Data Analyses:

Statistical Test M	lethod Used	Comment	
Normality test:	Chi-Square Test		
		·	
Homogeneity test:	Hartley Test		
Significance test:			
1. Parametric:	<u>Dunnett's Test</u>		
2. Non-Parametric:	Fisher's Exact T	<u>est</u>	
Are the Critical \	lalues of Significa	nce Provided?	
4. Other:	Ü	· · · · · · · · · · · · · · · · · · ·	
B. Toxicity Test Results:			
1. Acute:			
2. Chronic:			
NOEL: Survival		Reproduction	Growth
LOEL: Survival		Reproduction	Growth
Chronic Survival		Reproduction	Growth
Value:		-	
C. Permit Limits Require 1. Acute: LC50 (48-hr): -	ement:		
a (C)			
2. Chronic:		75 7 10	G a
NOEL: Survival		Reproduction	Growth
LOEL: Survival	······	Reproduction	Growth
D. Reference Toxicant D	ata:		
1. Reference Toxicar	ıt.		
2. Test Date:			
4. Acceptable Range	<u></u>		•
E. Permit Limits Compli	ance: (To be o	completed by IDEM Staff only)	,
Pass (LC ₅₀ [48-hr	·l)	Fail (LC ₅₀ [48-hr])	
Pass (NOEL/Sur		Fail (NOEL/Survival)	
Pass (NOEL/Rep		Fail (NOEL/Reprod.)	
` -	-		<u></u>
Pass (NOEL/Gro	<u> </u>	Fail (NOEL/Growth)	- 111 All All All All All All All All All
Is the Test Acceptable	? Yes	No Reason	

IV. GLP and QA/QC Compliance:

(To be completed by IDEM Staff only)

2. 3.	the Biomonitoring Report provide? GLP Compliance Statement: QA/QC Compliance Statement: Were the required GLPs followed? If not, the Report lacks what major informs	Yes Yes Yes	<u>√</u> <u>√</u>	No No No	
1.	oratory Raw Data Sheets: Does the Report enclose raw data sheets? Does the raw data sheets provide essential	Yes	_	No	
3.	information? If not, the Report lacks what major informa	Yes tion:	<u>√</u>	No	

1. This was re[eat Semi-Annual WET test conducted in April 2024 by Speedway WTP for the WET test which had failed for Ceriodaphnia dubia Reproduction in March 2024. In this repeat WET test whole effluent did not demonstrate any acute or chronic toxicity to Ceriodaphnia dubias. The 48-hr LC₅₀ to the test species was >100% effluent (<1 TUa) and acceptable. Likewise, the NOEL (NOEC) for Ceriodaphnia dubia Survival and Reproduction was 100% effluent (1 TUc) and acceptable as compared to 90.9% effluent (1.1 TUc) WET compliance limit in the facility NPDES permit.

Signature:

Syed GhiasUddin

Date:

Environmental Toxicologist

NPDES Permits Branch, OWQ

Electronic copy:

Jerry Dittmer, BC, NPDES Permits Branch, OWQ Leigh Voss, SC, NPDES Permits Branch, OWQ

Updated: SMG: 00/2016