

Louisville and Jefferson County Metropolitan Sewer District 700 West Liberty Street Louisville Kentucky 40203-1911 502-540-6000 www.msdlouky.org

October 8, 2007

Ms. Kathy Thurman Kentucky Division of Water 14 Reilly Road Frankfort, Kentucky 40601

RE:

West County Treatment Plant, KPDES No: KY0078956

Discharge Monitoring Report

September 2007

Dear Ms. Thurman:

Attached are the Discharge Monitoring Report (DMR) for the West County Wastewater Treatment Plant, for the month of September 2007. Also enclosed is the Whole Effluent Toxicity (WET) test for the third quarter.

If you have any questions concerning the attached DMR's, please contact me at (502)540-6031.

Sincerely,

Kevin D. Ries

Process Supervisor, West Region

Kert D. Res

KDR/West County 0307.doc

Enclosures

cc:

P. Burgin

T. Singleton

R. Shaw





Louisville and Jefferson County Metropolitan Sewer District 700 West Liberty Street Louisville Kentucky 40203-1911 502-540-6000 www.msdlouky.org

October 8, 2007

Mr. A. Charles Clark, Environmental Scientist Whole Effluent Toxicity Program Water Quality Branch Kentucky Division of Water 14 Reilly Road Frankfort, Kentucky 40601

RE:

West County Treatment Plant, KPDES No: KY0078956

Third Quarter Biomonitoring Report 2007

Dear Mr. A. Charles Clark,

Attached is the third quarter Biomonitoring Report for West County Treatment Plant.

If you have any questions concerning the attached DMR's, please contact me at (502)540-6031.

Sincerely,

Kevin D. Ries

Process Supervisor, West Region

KDR/West County 0307.doc

Kews D. Russ

Enclosures

cc:

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Louisville and Jefferson County Metropolitan Sewer District 700 West Liberty Street Louisville Kentucky 40203-1911 502-540-6000 www.msdlouky.org

October 8, 2007

Mr. Charlie Roth Kentucky Division of Water 9116 Leesgate Rd. Louisville, Kentucky 40222

RE:

West County Treatment Plant, KPDES No: KY0078956

Discharge Monitoring Report

September 2007

Dear Mr. Roth:

Attached are the Discharge Monitoring Report (DMR) and the Monthly Operating Report (MOR) report for the West County Wastewater Treatment Plant, for the month of September 2007. Also enclosed is the Whole Effluent Toxicity (WET) test for the third quarter.

If you have any questions concerning the attached DMR's, please contact me at (502)540-6031.

Sincerely,

Kevin D. Ries

Process Supervisor, West Region

KDR/West County 1206.doc

Kews D. Russ



NAME OF SEWAGE TREATMENT PLANT WEST COUNTY WTP

Month of:

September 2007

Average Flow

16.56 MGD

		Weather		
		Data		
Date	High	Low	Rainfall	Remarks
1			<u> </u>	Hypo delivery. Reset 1-B and 2-B Inf. Pumps.
2				
3				Reset 1-B and 2-B pumps.
4				PM algae sweeps
5				<u> </u>
6				Cleaned grit building
7				Hosed #2 clarifier.
8			0.61	PM RAS pumps, security fence.
9				Cleaned screen area
10				
11				Maint. Installed new algae sweep brushes on #1 clarifier.
12				Valved out #1 hypo tank due to small leak at flange.
13				Repaired #3 RAS seal water drain line.
14				
15				Inst. Tech PM DO probe. Maint repaired #1 Hypo tank.
16				
17				Maint. Replaced algae sweep brushes on #2 clarifier. Draining south contact.
18				
19				Maint. Replaced algae sweep brushes on #5 clarifier.
20				1-B Inf. Pump taken out of service due to vibration.
21				Valved out 4-B for seal water repair. Contractor cleaned south contact.
22				
23				
24				Test ran 4-B for maint. Check. Locked out and taged for repairs.
25				PM odor control and chemical unloading.
26			0.84	
27				
28				Contractor at pump building checking vibration on 1-B with maint.
29				Hypo delivery.
30				
31				
Total			1.45	
Avg.			0.73	

Name	of Sewa	age Treatm	nent Pl	lant:		_		************	West	Count	y WTP				<u>-</u> -		effersor	п		_	Month of:				Septe	mber	····		2007	·					
KPDES	3 Permi	t Number:		-		KY007	8956			Plant C	apacity	:	;	30 MGD	c	County			Receiv	ing Strea	arn:					Ohio Riv	ег								
																				Г		Activated		1											
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- Date	Total Flow (MG)	Grit Removed (cu	Screenings (cu. ft.	%aw 6.4	Final	Raw	Primary (or Sec.)	Final	Stream Above	6.0	Stream Below	%e⊁ 328	Primary (or Sec.)	ω Final	Raw	Primary (or Sec.)	Final	#BY 201	Primary (or Sec.)	10 Final	Million Gal/Day	MLSS mg/L 09 X 1000	Gal/Day X 1000	Dissolved Oxygen (mg/L) #1	Dissolved Oxygen (mg/L) #2	MLSS (mg/L) 8 X1000 #18#2	MLVSS (mg/L.) X1000 #18#2	0.08 30 min. SettS.	SNI SNI	% Solids	Phosphorus (mg/L)	TKN (mg/L)	Chlorine Residual	00 NH3-N (mg/L)	Fecal Coliform 5 Col/100ml
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PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME MSD WEST COUNTY STP

ADDRESS C/O LOUISVILLE/JEFF CO MSD

ASSS ALGONGUIN PRWY

ATTN: ALEX E MOVAK, OPER MGR

LOUISVILLE FACILITY MED WEST COUNTY STP

LOCATIONLEUISVILLE

KY 40211-2497

KY 40272

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

MONITORING PERIOD

TO

YEAR

KY0078956 PERMIT NUMBER

YEAR MO

FROM

001 2 DISCHARGE NUMBER

MQ. DAY

MAJOR (SUBR LV) F - FINAL

JEFFE

Form Approved.

OMB No. 2040-0004

MUNICIPAL WASTEWATER

EFFLUENT

NO DISCHARGE | | ***

NOTE: Read Instructions before completing this form.

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PARAMETER		QUAN	TITY OR LOADING			QUALITY OR CONC	ENTRATION		NO.	FREQUENCY OF	SAMPLE
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H.J. Schardein	to assur	e that qualified personnel pro ed. Based on my inquiry of th	operly gather and evaluate th	ne information	1 . 1	I D. Rus					
Exec. Director	or those	ed. Based on my inquiry of tr e persons directly responsible ed is, to the best of my knowl	for gathering the informatio	n, the informatio	n 100		<u></u>) . 574 n . 4	. 036	63. 10	80
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COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

USE MO AVO FOR BODITSS REMV: REPT IN MINIMUM COLUMN.

MONITORING PERIOD

TO

DAY

Form Approved. OMB No. 2040-0004

MSO WEST COUNTY STP

ADDRESS C/G LGUISVILLE/JEFF CO MSD

ARES ALGONOUTH PKWY

ATTM: ALEY E NOVAK, OFFR MOR

LOUISVILLE FACILITY PERO WEST COUNTY STP

LOCATION LOUISVILLE

NAME

KY 40211-2497

KY 40272

KY0078956 PERMIT NUMBER

MO

YEAR

117

FROM

001 DISCHARGE NUMBER

YEAR MO DAY

MAJOR (SUBRIV) F - FINAL

JEFFE

MUNICIPAL WASTEWATER

EFFLUENT

*** NO DISCHARGE | | ***

NOTE: Read Instructions before completing this form.

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NAME/TITLE PRINCIPAL EXECUTIVE	OFFICER 1 certi	fy under penalty of law that the red under my direction or sup			1	^ -		TELEPHON	1E	DA	TE
H.J. Schardein	to assu	re that qualified personnel p tted. Based on my inquiry of t	roperly gather and evaluate t	he information	1 <u>-</u>	D. Pre					
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TYPED OR PRINTED	incina	ing the possibility of time and	umprisonment for knowing v	otations.			CO	DE NOMBE	ח	I CAN W	UDAT

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

USE MO AVO FOR BOD/TSS REMV; REPT IN MINIMUM COLUMN.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

MGO WEST COUNTY STP

ADDRESS C/O LOUISVILLE/JEFF OR MED

ASTR ALGUNOUIN PRWY

LOUISVILLE

LOCATION OUTSVILLE

FACILITY MED WEST COUNTY STP

KY 40211-2497

KY 40272

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

MONITORING PERIOD

KY0078956 PERMIT NUMBER

V.

YEAR MO DAY

FROM 77

001 2 DISCHARGE NUMBER

YEAR MO DAY

MAJOR (SUBR LV) F - FINAL

JEFFE

Form Approved

OMB No. 2040-0004

MUNICIPAL WASTEWATER

EFFLUENT

*** NO DISCHARGE | | ***

ATTR: ALEX E MOVAK.	OPER M	or the	FHOM	23.7	/ <u>-</u> 110 L	S.F. F	07 30 87	NOTE: Read Instru	i ಗ್ರಾಣ್ಮಹ್ಮದ uctions befo	e com	: ਜਸਤ pleting this	form.
PARAMETER		QU	ANTITY OR LOADING			G	QUALITY OR CONC	ENTRATION		NO.	FREQUENCY	SAMPLE
		AVERAGE	MAXIMUM	UNITS	MINIMU	JM	AVERAGE	MAXIMUM	UNITS	EX	ANALYSIS	TYPE
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	MEASUREN	IENT	National Property of the Control of									
NAME/TITLE PRINCIPAL EXECUTIVE	REQUIREM	ENT	at this document and all attachn	nente ware	73/18/12/11/17/17/17/17/17/17/17/17/17/17/17/17/					grass in al		
H.J. Schardein		prepared under my direction or to assure that qualified personn	supervision in accordance with el properly gather and evaluate of the person or persons who m	a system designed the information		ı./	-> DC		TELEPHON	E	DA	TE
H.J. Schardein Exec. Director		or those persons directly respon submitted is, to the best of my k I am aware that there are signif	sible for gathering the informati nowledge and belief, true, accur- icant penalties for submitting fal	ion, the information ate, and complete. Ise information,	on		TURE OF PRINCIPAL		2 540-			S 08
TYPED OR PRINTED	<u> </u>	including the possibility of fine	and imprisonment for knowing v	iolations.		OFFI	CER OR AUTHORIZE	DAGENT ARI	EA NUMBER	1	YEAR M	O DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

USE MO AVG FOR BOD/TSS REMV; REPT IN MINIMUM COLUMN.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

MSD WEST COUNTY STP

ADDRESS C / O LOUYSVILLE / JEFF CO MSO

4522 ALGONGUIN PKWY

LOUISVILLE FACILITY MED WEST COUNTY STF

LOCATION LOUISVILLE

KY 40211-2497

KY 40272

KY007895A PERMIT NUMBER

MO

DAY

YEAR

FROM

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

00117 DISCHARGE NUMBER

YEAR MO DAY

MAJOR (SUBR LV) F - FINAL

JEFFF

Form Approved.

OMB No. 2040-0004

REASONABLE POTENTIAL MONITORING PERIOD

EFFLUENT

*** NO DISCHARGE ! ! ***

ATTM: ALEX E NOVAK,	OFER MGR						NOTE: Read Instru	ictions befor	re com	pleting this	form.
PARAMETER		QUAN	TITY OR LOADING			QUALITY OR CO	NCENTRATION		NO.	FREQUENCY	SAMPLE
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NAME/TITLE PRINCIPAL EXECUTIVE	prepared	l under my direction or supe	is document and all attachme rvision in accordance with a	system designed	1			TELEPHON	IE	DA	TE
H.J. Schardein Exec. Director	submitte	d. Based on my inquiry of th	operly gather and evaluate th ne person or persons who man for gathering the information	nage the system,		SD. K	5				
	submitte I am awa	ed is, to the best of my knowle are that there are significant	edge and belief, true, accurat penalties for submitting false	e, and complete e information,	. SIG	NATURE OF PRINCIPA	L EXECUTIVE 50	2-540-6			
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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved. OMB No. 2040-0004

MSD WEST COUNTY STP

ADDRESS C/O LOUISVILLE/JEFF CO MSD

ABZZ ALGOMOUIN PKWY

LOUISVILLE

MY 40211-2497

PERMIT NUMBER

KY0078956

001 Y DISCHARGE NUMBER

MAJOR (SUBR LV) F - FINAL

FFFF

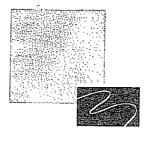
BIOMONITORING/METALS/QUARTERLY

EFFLUENT

*** NO DISCHARGE | | ***

FACILITY MEST COUNTY STP				I.	IONITO	RING	PERIO	D	
			YEAR	MO	DAY		YEAR	MO	Γ
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PARAMETER		QUAN	TITY OR LOADING			QUALITY OR CON	CENTRATION		NO.	FREQUENCY OF	SAMPLE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS	EX	ANALYSIS	TYPE
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Acute Toxicity Evaluation for the MSD – West County Wastewater Treatment Plant

August 2007

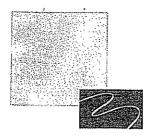
Prepared by:

Beckmar Environmental Laboratory
Biomonitoring Department
3251 Ruckriegel Parkway
Louisville, KY. 40299
(502) 266-6533

Submitted to:

Mr. Kevin Ries
West County Wastewater Treatment Plant
700 West Liberty St.
Louisville, KY. 40203

Released by: Manda X. Spalding
Biomonitoring QA Officer 9-13-07



Summary

Acute toxicity testing was performed on final effluent samples collected August 28 and 29, 2007 from the MSD West County Wastewater Treatment Plant. Testing was performed August 29 through 31, 2007 and upon termination, the following conclusions were reached:

For the 48-hour *Ceriodaphnia dubia* survival test, the LC50 for survival for samples "A" and "B" was greater than 100% effluent, generating an acute toxicity value of less than 1.00 TUa (TUa=100/LC50).

For the 48-hour *Pimephales promelas* survival test, the LC50 for survival for samples "A" and "B" was greater than 100% effluent, generating an acute toxicity value of less than 1.00 TUa (TUa=100/LC50).

Introduction

At the request of Mr. Kevin Ries, acute toxicity testing was performed on two grab effluent samples collected August 28 and 29, 2007 from the MSD West County Wastewater Treatment Plant in Louisville, KY. Metals analyses were also performed on effluent samples collected during the same time period. Information concerning plant and laboratory conditions can be found on the following pages.

The acute toxicity testing was performed in accordance with the US EPA methodology as defined in the US EPA manual "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" fifth edition, 2002 (EPA-821-R-02-012). The acute toxicity tests were performed in order to ascertain the LC50 values for *Ceriodaphnia dubia* and *Pimephales promelas* survival.



Date of Issue: September 10, 2007

Page 1 of 1

Metropolitan Sewer District c/o Mr. Kevin Ries 700 West Liberty St. Louisville, KY 40203-1913

RE: Analysis results for: West County WWTP: Biomonitoring metals/hardness.

BECKMAR CERTIFICATE OF ANALYSIS # 188973

Sample Date: 8/29/2007 Sample Time: 8:00 Sampled by: Client

Parameter	Results	Units	Туре	Method	Analyz Date / T		Analyst
Hardness (T)	255	mg/l	С	EPA 130.2	9/10/2007	12:00	PJB
Cadmium (TR)	< 0.001	mg/l	С	EPA 200.7	8/30/2007	10:40	ALS
Cadmium (D)	< 0.001	mg/l	C	EPA 200.7	8/30/2007	10:40	ALS
Copper (TR)	0.004	mg/l	C	EPA 200.7	8/30/2007	10:40	ALS
Copper (D)	0.004	mg/l	С	EPA 200.7	8/30/2007	10:40	ALS
Lead (TR)	< 0.005	mg/l	C	EPA 200.7	8/30/2007	10:40	ALS
Lead (D)	< 0.005	mg/l	С	EPA 200.7	8/30/2007	10:40	ALS
Zinc (TR)	0.0328	mg/l	С	EPA 200.7	8/30/2007	10:40	ALS
Zinc (D)	0.0328	mg/l	С	EPA 200.7	8/30/2007	10:40	ALS

Remarks:

If you have any questions please call.

Thank you,

Joffersonlown Business Park

ENVIRONMENTAL

LABORATORY

3251 Ruckriegel Parkway

leffersontown, KY 40299

502.266.6533

AX.502.266.6446

Joe P. Carney

Quality Control Officer

JPC:dwt



Test Type: Acute X Screen Chronic Definitive X

TOXICITY TEST REPORT SHEET

1) Facility/Discharger: MSD West County WWTP	Report Date:	9/11/2007
2) Address: 11601 Lower River Rd. Louisville, KY. 40272		
3) NPDES Permit #: KY0078956 4) Receiving Stre	am: <u>Ohio River @</u>	mile 358.1
5) Facility Contact: Mr. Kevin Ries		
6) Phone #: (502)-540-6031		
7) Consultant/Testing Lab Name Beckmar Environmental Lab	oratory	
8) Lab Contact: Becky Barker Phone #:	(502) 266-6533	
9) Outfall(s) Tested: 1		
10) Average Daily flow on day sampled (MGD) 1) na 3)4)5)6)	2) <u>na</u> 7)	
11) Test Species: 1) Ceriodaphnia dubia 2) Pi	mephales promelas	
12) Species Age: 1) <24 hours 2) 7	days old	·
13) Organism Source: 1) lab culture 2) fis	sh hatch 082207	_
14) Acclimation Procedures: 1) Reared at test conditions in synt Reared at test conditions in synt		<u> </u>
15) Test Conditions: Static: X Static-Renewal:	numa.	
16) Dilution Water Type (Synthetic, Receiving Stream synthetic -	mhsw	
17) Aeration? (Before Test/During Test/None): no		
18) Dechlorination? no Original Chlorine Level	: <0.01 mg/L	
Thomas Baker	9/11/200	7
(Signature of person filling out form)	Date	
Rhonda Baker	Biologist	
Name (Typed or Printed)	Title	



Materials and Methods

Sampling

Two effluent samples were collected 12 hours apart (Table I) and delivered to Beckmar Environmental Laboratory. Upon receipt, each sample went through standard log in procedures.

Control/Dilution Water

All chemicals used are reagent grade, obtained from Aldrich. 1.20 grams of CaSO₄, 1.2 grams of MgSO₄, 1.92 grams of NaHCO₃, and 0.080 grams of KCl were dissolved in distilled water provided by a Barnstead Thermolyne distillation system and aerated for a minimum of 24 hours.

Test Containers

C. dubia tests were performed in 1 ounce plastic cups obtained from Plastics Inc. (St. Paul, MN). Pimephales promelas tests were performed in 600 mL plastic cups obtained from Liquor Outlet (Louisville, KY).

Toxicity Testing

Samples were allowed to warm to room temperature (25°C) and were tested for residual chlorine immediately prior to dilution. Testing was then performed in accordance with US EPA methodology. Data was recorded on Beckmar generated lab sheets (Appendix I).

Chemical Analysis

All test dilutions as well as control/dilution water were tested to determine initial dissolved oxygen, temperature, and pH. At the end of 48 hours, the control/dilution water and test dilutions were again tested to determine final dissolved oxygen, temperature and pH. Also, specific conductance, hardness, and alkalinity analyses were performed on the initial control/dilution water and 100% effluent samples. Data was recorded on Beckmar generated lab sheet (Appendix I).

Statistical Analysis

Statistical data was generated using ToxCalc 5.0° (Tidepool Scientific software, McKinleyville, CA) and ToxStat® (USEPA, Cincinnati, OH) on a Pentium IV®, computer using Windows 98® Operating System.



Additional Toxicity Test Information

1) Submit copies of all bench sheets and statistical calculations/printouts obtained during the test(s). Data must be presented in tabular form and must include all physical and/or chemical measurements recorded during the test (e.g. temperature, conductivity, total residual chlorine, dissolved oxygen, etc.).

2) Methods/Instrumentation used in chemical analysis:

Dissolved Oxygen/temperature:

YSI Model 52

PH:

Orion Model 720A

Conductivity:

Alkalinity:

Oakton CON 100 Series

Standard Methods Titration

Hardness:

Standard Methods Titration Fisher-Porter Titration

Total Chlorine Residual:

EPA Acute/Chronic Manual:

5th Acute Edition, 2002

- 3) Indicate below any other relevant information that may aid in the evaluation of this report. Include any deviations from EPA methodology that was necessary for these tests as well as any sample manipulations that were performed, such as aeration, dechlorination with sodium thiosulfate, etc., and the justification for such manipulations or deviations. Attach additional pages as needed.
- 4) Sample temperature upon receipt may be greater than 4°C. Samples are picked up immediately after the final grab sample is collected. The samples are refrigerated; however it may be impossible to rapidly drop the effluent to 4°C.

TABLE I Sampling Summary

Outfall	Sample Type	Volume	Collection Period	Rainfall	Sample Temp
	1 Grab	2 gallon	08/28/07 @ 8:00 P.M.	NA	4.0 degrees C
	Grab	2 gallon	08/29/07 @ 8:00 A.M.	NA NA	4.0 degrees C

Dates/Times of Test Performance

 Species #1: Ceriodaphnia dubia

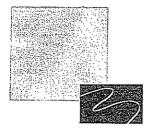
 Initiated:
 08/29/07 @ 11:30 A.M.

 Terminated
 08/31/07 @ 11:30 A.M.

 Species #2: Pimephales promelas

 Initiated:
 08/29/07 @ 11:00 A.M.

 Terminated
 08/31/07 @ 11:00 A.M.



Results

In sample "A", Ceriodaphnia dubia test exhibited 100% survival in the control, 100% survival in the 20% dilution, 100% survival in the 40% dilution, 100% survival in the 60% dilution, 100% survival in the 80% dilution, and 100% survival in the 100% dilution.

In sample "B", Ceriodaphnia dubia test ran exhibited 100% survival in the control, 100% survival in the 20% dilution, 100% survival in the 40% dilution, 95% survival in the 60% dilution, 100% survival in the 80% dilution, and 100% survival in the 100% dilution.

For the 48-hour Ceriodaphnia dubia survival test, the LC50s for survival for samples "A" and "B" were greater than 100% effluent, generating an acute toxicity value of less than 1.00 TUa.

In sample "A", the *Pimephales promelas* test ran exhibited 100% survival in the control, 100% survival in the 20% dilution, 100% survival in the 40% dilution, 100% survival in the 60% dilution, 100% survival in the 80% dilution, and 100% survival in the 100% dilution.

In sample "B", the *Pimephales promelas* test exhibited 100% survival in the control, 100% survival in the 20% dilution, 100% survival in the 40% dilution, 95% survival in the 60% dilution, 100% survival in the 80% dilution, and 95% survival in the 100% dilution.

For the 48-hour *Pimephales promelas* survival test, the LCsos for survival for samples "A" and "B" were greater than 100% effluent, generating an acute toxicity value of less than 1.00 TUa.



Appendix I

Ceriodaphnia dubia Data Sheets

Start Date:	8/29/2007		Test ID:	westa0807		duction Test-48 F Sample ID:	westa0807
	8/31/2007		Lab ID:		ar environmenta	Sample Type:	EFF1-POTW
Sample Date:	8/28/2007		Protocol:	EPAF 94-EP	A Freshwater	Test Species:	CD-Ceriodaphπia dubia
Comments	west _i co ar	n cerio a	cute augu	st 2007			oo oonodapiiina dabid
Conc		2	3	4			
B-Control	100000	1.0000	1.0000	1.0000	·		
20	1.0000	1.0000	1.0000	1.0000			
40	1.0000	1.0000	1.0000	1.0000			
60	1.0000	1.0000	1.0000	1.0000			
80	1.0000	1.0000	1.0000	1.0000			
100	1.0000	1.0000	1.0000	1.0000			

		_						
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	,
B-Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	
20	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	
40	1.0000	1.0000	1.3453	1.3453	1,3453	0.000	4	
60	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	
80	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	
100	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	1	0.884	· · · · · · · · · · · · · · · · · · ·	
Equality of variance cannot be confirmed				





Toxicity Test Results

Results of

Ceriodaphnia (Genus)

dubia (Species) 48 HR. ACUTE (Type / Duration)

Toxicity Test

Conducted:

08/29/07 (mm/dd/yy) 08/31/07 (mm/dd/yy) Using Effluent from Outfall # __1

"Capped"				ercent				,	# of Young Dry W		Veight		
Capped	1	2	(time i	nterval 4	s used: 5	- DAY 6) 7	8	Total	Mean	Total	Mean	
Control	100	100											
20% Effluent	100	100											
40% Effluent	100	100											
60% Effluent	100	100											
80% Effluent	100	100											
100% Effluent	100	100				ŕ							
	LC ₅₀ / IC ₂₅ Value: >100% 95% Confidence Limits						Calculated TU Estimate * <1.00 Tua (indicate Aute / Chromic)						
UL: na LL: na	Permit Limits: 1.00 Tua (Indicate TU _a / TU _c)												
UL = Upper L LL = Lower L					ed to de imit Va		÷						

Note: $TU_a = 100/LC_{50}$; $TU_c = 100/IC_{25}$

	R	Reference	Toxicant T	est Results	
Species <i>iodaphnia du</i>	Date 08/22/07	Time 6:30 P.M.	Duration 48 hrs.	Toxicant NaCl	Results (LC ₅₀ / IC ₂₅) LC50=2.3042g/l

Client: WEST COUNTY	Persons Conducting Test: B. Barker Ash
Beckmar Sample Number 188972	Test Period: Beginning Date: 8-29-07 Time: //:30/
eckmar	Ending Date: 831-07 Time: 11:30 A
NPDES Permit No:	Test Species: C. dubic
Grab Sample Collected: (1) 8:00 (am/pm; 8/19/07 (Date)	Age / Source: <24 hrs.; lab culture
(2)am/pm;/_ (Date)	Dilution Water Used: MHSル

Sample ID	Test Container Number	Number of Live Organisms			Dissolved Oxyger	n (mg/l) / Temp C		Hq		Total Hardness (mg/l as	Conductivity	Total Residual Chlorine
		0	24	48	0 /240.0	48	0	48	(mg/l as CaCO ₃)	CaCO ₃)	(umhas/cm)	
C.	1 1	5	5	5	8.3 /28-0	8.01240	8.10	843	72.4	1080	454	40.01
	2			_5					- 	<u> </u>	1	
	3	,		5					•			
	Ч			5		1						
20%	1			5	18.1 /24.0	8.0/240	7.75	8,19		1		
	2			5								
	3			5								
	4			5								
40%	1			5	8.0 /240	8.11 240	7.59	8.18		 		
	Z			5		 		7,,10				
	3			5								 -
	4	1		5								
60%]]			5	7.8 /240	8-0 124.0	7.49	8.73		 	- 1	·
	Z			5								
	3			5					 			
	4			5					<u> </u>			
80%	1			5	4.7/24.0	8.0 1 24.0	4.44	8-1-8				
	2	0 ×2.1		5								
	3			5			•					
	4	7.		5								
1000/0				5	7.5 /24co	7.91240	7.30	8-31	7-39,0	183.6	1000	<0.0
·	2			5				Nielf	13113	- V. W.		
	3	1	$\sqrt{}$	5								
·	4	5	5	5		***************************************	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					

				Ceriod	aphnia Sur	vival and Reprod	uction Test-48	Hr Survival	
	End Date: Sample Date:		-	Test ID: Lab ID: Protocol:	westb0807 0044:beckr EPAF 94-E		Sample ID:	westb0807 EFF1-POTW CD-Ceriodaphnia dubia	
ģja i Sta	Comments Cond	westico pr	n ceno a	cute augu	ıst 2007		· · · · · · · · · · · · · · · · · · ·	-	
•	B-Control 20 40 60 80 100	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	1.0000	1.0000 1.0000 0.8000				

Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	•
B-Control	1.0000	1.0000	1.3453	1.3453	1,3453	0.000	4	
20	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	
40	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	
60	0.9500	0.9500	1.2857	1.1071	1.3453	9.261	4	
80	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	•
100	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	

A. Stiller, T. A.			
Auxiliary Tests	Statistic	Critical	Skew Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.46500		
	0.46508	0.884	-3.0206 13.9892
Equality of variance cannot be confirmed			



Toxicity Test Results

Results of

Ceriodaphnia (Genus) dubia (Species) 48 HR. ACUTE (Type / Duration)

Toxicity Test

Conducted:

08/29/07 (mm/dd/yy)

08/31/07 (mm/dd/yy) Using Effluent from Outfall # 1

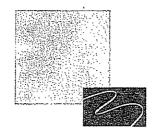
1100000111		<u> </u>			Surviv				# of ?	Young	Dry V	Veight
"Capped"	1	2	(time i	nterval. 4	s used: 5	- DAY 6) · 7	8	Total	Mean	Total	Mean
Control	100	100										
20% Effluent	100	100										
40% Effluent	100	100										
60% Effluent	100	95										
80% Effluent	100	100										
100% Effluent	100	100										
	LC ₅₀ / IC ₂₅ Value: >100% 95% Confidence Limits						Calculated TU Estimate * <1.00 Tua (indicate Aute / Chromic) Permit Limits: 1.00 Tua					
UL: na LL: na	(Indicate TU _a / TU _c)											
UL = Upper L LL = Lower L									d to de imit Va		3	

Note: $TU_n = 100/LC_{50}$; $TU_c = 100/IC_{25}$

	R	Leference	Toxicant T	est Results	
Species	Date	Time	Duration 48 hrs.	Toxicant	Results (LC ₅₀ / IC ₂₅)
iodaphnia du	08/22/07	6:30 P.M.		NaCl	LC50=2.3042g/l

Client: WEST COUNTY	Persons Conducting Test: B. Barker, Msh.
Beckmar Sample Number 188971	Test Period: Beginning Date: 8/29/07 Time: /1:30 A
SCKMOI Client Contact:	Ending Date: 8/31/07 Time: 11:30 A
NPDES Permit No:	Test Species: C. dului
Grab Sample Collected: (1) 500 ampm 8/27/07 (Date)	Age / Source: 424 hrs. , lab culture
(2)am/pm; _ / / (Date)	Dilution Water Used:mหรม

Sample ID	Test Container		Numb	er of	Live Org	janisms	!		(mg/l) / Temp C		pH	Total Alkalinity (mg/l as	Total · Hardness (mg/l as	Conductivity	Total Residual Chlorine
,	Number	()		24	48		0 /34.00	48	0	48	CaCO ₃ }	CaCO ₃)	(umhos/cm)	
Q	1	_ 5	,		2	5	8.3	1240	8.0124,0	8,10	8.43	72.4	108,0	454	20.01
	2	1				5									
	3					5						·			
	4					5		• •							
ao%	1					5	8.3	1240	8.0 (240	7.43	8.28				
	7_					5									
	3					5									
	4					5									
40%	١					5	8.2	1240	X1 1240	7.67	8,26				
	7	···	!			5									
***************************************	3		<u> </u>			5									
	4					5		1							
60%	1		<u> </u>			5	8.1	1240	8.0 1240	4.53	8-27				
	2	-	<u> </u>			5									
	3					5									
	4					4 95							-		
80%	1		ļ			5	පි _⊳ i	1240	80/240	7.46	8-30				
	2	,	13.5		;	5									
	3					5								 	
	4					5			\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			01.0	2		
1000/0	1					5	79	1240	10 12to	7.33	8.32	186-4	229-9	989	<0.01
	2					.5								 	
	3	}				5									
	4		5	5	<u>.</u>	5						<u> </u>	<u> </u> . :		



Appendix II

Pimephales promelas Data Sheets

	verene verene (* 17. j.)								
				La	rval Fish Growt	h and Surviv	al Test-48 Hr Su	rvival	
	End Date: Sample Date: Comments:	west₌co ar	n fhm ac	Test ID: Lab ID: Protocol:	westafh87 0044:beckmar e EPAF 94-EPA F	environmental	Sample ID:	westafn0807 EFF1-POTW PP-Pimephales promelas	
تناد	Concess		2		:				
	B-Canton 20	1,0000 1,0000	1.0000						
	40	1.0000	1.0000						
	60	1.0000	1.0000						
	80	1,0000	1.0000						
	100	1.0000	1.0000						

		_	Tra	ansform:	Arcsin Sc	uare Root	ŧ	 	
 Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N		
B-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	 n	20
20	1,0000	1.0000	1.4120	1.4120	1.4120	0.000	2	Õ	20
40	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	Ö	20
60	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	Ö	20
80	1.0000	1,0000	1.4120	1.4120	1.4120	0.000	2	Ö	20
100	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	Ů	20
								U	20

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Normality of the data set cannot be confirmed				71011
Equality of variance cannot be confirmed				

Reviewed by:



Toxicity Test Results

Results of

Pimephales (Genus)

promelas (Species)

48 HR. ACUTE
(Type / Duration)

Toxicity Test

Conducted:

08/29/07 (mm/dd/yy) 08/31/07 (mm/dd/yy) Using Effluent from Outfall # 1

			_		Surviv				# of \	Young	Dry Weight	
Test Solution	1	2	(time in 3	nterval: 4	s used:- 5	- DAY) 6) 7	8	Total	Mean	Total	Mean
Control	100	100	,		J	U	,	0				
20% Effluent	100	100										
40% Effluent	100	100										
60% Effluent	100	100										
80% Effluent	100	100		·		·						
100% Effluent	100	100								AND	•	
LC ₅₀ / IC ₂₅ Value: > 100% 95% Confidence Limits					Calculated TU Estimate * < 1.0 Tua (indicate Acute/Chron Permit Limits: 1.00 Tua					- onic)		
UL: na		re	mnic lai		dicate		· ·U _c)					
1 77	UL = Upper Limit LL = Lower Limit							hod us dence I			e	

Note: $TU_e = 100/LC_{50}$; $TU_c = 100/IC_{25}$

	Reference Toxicant Test Results												
Species	Date	Time	Duration	Toxicant	Results (LC ₅₀ / IC ₂₅)								
Pimephales	08/23/07	6:00 P.M.	48 hrs.	<u>NaCl</u>	LC50=7.1542g/l								
promelas													

Client: WEST WUNTY Beckmar Sample Number 88972	Persons Conducting Test: B. Backer Backer Test Period: Beginning Date: 8-29-07 Time: 11 A
PDES Permit No:	Ending Date: 8-31.01 Time: (A
Sample Collector: Grab Sample Collected: (1) \$\igcup 0 \tag{am}pm; \frac{3}{2} \frac{19}{6} \tag{Date} (2)am/pm; _/_/(Date)	Age / Source: 7-day- lab culture Fish Halh of 220

Sample ID	Test Container	Numbe	er of Live Orga	anisms	Dissol	ved Oxygen	(mg/l) / Temp C		рН	Total Alkabnity (mg/l as	Total Hardness (mg/l as	Conductivity	Total Residual Chlorine
	Number	0	24	48		0/54.04	48	0	489	CaCO ₃)	CaCO ₃)	(umhos/cm)	
C	1	Ю	10	ľο	8.1	24.0	7.7 240	7.45	7.8	72.4	108.0	327	<0.01
20%	2	-			8.0	1240	7.5 240	7.57	7.90	•			
40%	2				පි.ව	12Y-0	75/240	7.48	7.97				
	2						1 7						
60%	2				7.8	1240	7,2/240	7.42	9.04				
නිංරලි	1 2				7.7	1240	6.8/240	7,38	80-8				
100%	1	V			7.5	140	6.7 240	7.30	8-(1	239.0	183.6	1000	۷٥.۵۱
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n gradianian kaga i ka								
			La	rval Fish Growth	and Surviv	al Test-48 Hr Si	ırvival	
		i	Test ID: Lab ID: Protocol:	westbfh87 0044:beckmar ei EPAF 94-EPA Fi	nvironmental	Sample ID:	westbfh0807 EFF1-POTW PP-Pimephales promelas	
Conc.		2					<u> </u>	
B-Control 20 40 60 80 100	1:0000 1:0000 1:0000 0.9000 1:0000 0.9000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000						

Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	
B-Control	1,0000	1.0000	1.4120	1.4120	1.4120	0.000	2	
20	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	
40	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	
60	0.9500	0.9500	1.3305	1.2490	1.4120	8.661	2	
80	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	
100	0.9500	0.9500	1.3305	1.2490	1.4120	8.661	2	

Auxiliary Tests	01-11-11-		
	Statistic	Critical	Skew Kurt
Normality of the data set cannot be confirmed			
Equality of variance cannot be confirmed			





Toxicity Test Results

Results of

Pimephales (Genus) promelas
(Species)

48 HR. ACUTE
(Type / Duration)

Toxicity Test

Conducted:

08/29/07 (mm/dd/yy) 08/31/07 (mm/dd/yy)

Using Effluent from Outfall # 1

Percent Survival # of Young | Dry Weight Test Solution (time intervals used:- DAY) Total Mean Total Mean Control 100 100 20% Effluent 100 100 40% Effluent 100 100 60% Effluent 100 95 80% Effluent 100 100

LC₅₀ / IC₂₅ Value:

100% Effluent 100

> 100%

95% Confidence Limits

UL: LL: na

UL = Upper Limit

LL = Lower Limit

Calculated TU Estimate * < 1.0 Tua

(indicate Acute/Chronic)

Permit Limits:

1.00 Tua

(Indicate TU_n / TU_c)

If acute test, method used to determine LC50 and Confidence Limit Valued:

Note: $TU_a = 100/LC_{50}$; $TU_c = 100/IC_{25}$

	Reference Toxicant Test Results											
Species Pimephales promelas	Date 08/23/07	Time 6:00 P.M.	Duration 48 hrs.	Toxicant NaCl	Results (LC ₅₀ / IC ₂₅) LC50=7.1542g/l							

Client: WEST COUNTY Beckmar Sample Number 188971	Persons Conducting Test: B-Backer Both Test Period: Beginning Date: 8-29-07 Time: 11A
Beckmar Sample Number 180971 Client Contact: NPDES Permit No:	Ending Date: 8.31-07 Time: 11.4 Test Species: FHM
Sample Collector:am(pm;) 8 / 18 / 07 (Date)	Age/Source: 7 days; lab culture Fish Hill 08220
(2)am/pm;/(Date)	Dilution Water Used: <u>MHSW</u>

Sample ID	Test Container	Numb	er of Live Org	anisms	Dissolved Oxygen	-		рН	Total Alkalinity (mg/l as	Total Hardness (mg/l as	Conductivity	Residual Chlorine	
	Number	0	24	48	0 /21/24.2	48	0	48	CaCO3)	CaCO ₃)	(umhos/cm)		
Q	1	10	(0	Į0	8.1 /240	77/240	7.75	7.9/	72.4	108.0	324	40،01	
•	2			10						<u> </u>			
20%	1	<u> </u>		10	8.1 /240	7.6 /240	7,60	7-95	·		ļ		
40%	2			[0	8.2 /ZKO	7.5 240	7.54	8,04					
(pp.)	2			(0)		7,31240	<i>7.48</i>	8.09					
60%	2			10 0		1,3100	T. 40	0-01					
802/4	i			10	8.0 /240	7.1 840	7.45	8.13					
	2			1,0		- 1	Se 60	9 16		2			
100%	2	10	70	(0 A5	7.9 1240	7,11240	7.33	8.19	186.4	229.9	989	ζ0 <u>.ο</u> /	
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Appendix III

Chain of Custody Data Sheets

Beckmar Environmental Laboratory 3251 Ruckriegel Parkway Louisville, KY 40299 (502) 266-6533 Fax: (502) 266-6446

www.beckmarlab.com

CHAIN OF CUSTODY



										١	Χ'													
Client / Company	Name:	W.C.	γ	ツモダブ	commI)	ners					<i>y</i> /	/ /	/ /	Tests	/An	lysis	Reg	uest	eđ /	/ /	/ /			// /
Sampled by (prin	t name):	UD	L	H		Ontai	Sample Matrix	7.70		X	Ŋ.			/ /	/ /									/ /
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Beckmar		ection	Sample Type	Samule Poi	nt / Description	Number of Containers	Sam	1	Z4)	Ž,				//	/ /	/ .								Preservative
ID#	Date	Time	Type			ź	İ	7 (Y	/		\angle	/		_/_		_						/	\a\f\
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Relinquished by:		Recei	Received by:		Date:	ale:	Tim	Time:		mg/l														
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