



February 23, 2015

Arkansas Department of Environmental Quality
Water Enforcement Branch
5301 Northshore Drive
North Little Rock, AR 72118-5317

RE: NPDES Permit AR0000752 Discharge Monitoring Report for period ending January 31, 2015.

Enclosed you will find the Discharge Monitoring Reports ending January 31, 2015. The DMR's for Outfall 010-A were entered on the blank DMR forms provided by Amy Schluterman, ADEQ Water Enforcement.

If you have any questions regarding this report, please contact David Sartain at (870) 863-1400.

Sincerely,

A handwritten signature in cursive script that reads "Edward L. Pearson". The signature is written in black ink and is positioned above the printed name.

Edward L Pearson

Environmental Technician

Enclosures

Bio-Analytical Laboratories (BAL)
ADEQ#88-0630
Project X5634

Bio-Analytical Laboratories' Executive Summary

Permittee: El Dorado Chemical Company
P.O. Box 231
El Dorado, AR 71731

Project #: X5634

Outfall: Outfall 006 (contaminated storm water)

Permit #: AR0000752/ AFIN #70-00040

Contact: Mr. David Sartain

Test Dates: January 3 - 5, 2015

Test Type: 48-hour acute toxicity test using *Pimephales promelas* (EPA 2000.0).
48-hour acute toxicity test using *Daphnia pulex* (EPA 2021.0)

Results:

For *Pimephales promelas*:

1. If the NOEC for survival is less than the critical dilution (100.0%), enter a "1"; otherwise, enter a "0" for Parameter No. TEM6C- 0- **Pass**.
2. Report the NOEC for survival, Parameter TOM6C - 100.0%.
3. Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM6C - 0.00%.

For *Daphnia pulex*:

1. If the NOEC for survival is less than the critical dilution (100.0%), enter a "1"; otherwise, enter a "0" for Parameter No. TEM3D- 1 -**Fail**.
2. Report the NOEC for survival, Parameter TOM3D -75.0%.
3. Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM3D - 10.02%.

This report contains a total of 33 pages, including this page. The results pertain only to the samples listed in the chain of custody documents in Appendix A. The information contained within meets the requirements set forth by ADEQ. The chemical data in this report is for monitoring purposes only and should not be reported on discharge monitoring reports.

BAL
ADEQ #88-0630
Project X5634

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2.3 Dilution Water

Soft reconstituted water made per EPA guidelines was used as the dilution water and the control for the acute tests.

2.4 Test Concentrations

The test concentrations used in the acute tests were 100.0, 75.0, 56.0, 45.0, 32.0 and 22.0 percent effluent and a reconstituted water control. The critical dilution was defined as 100.0 percent effluent. The tests were conducted using five replicates of eight animals each for a total of 40 animals per concentration.

2.5 Sample Collection

One sample of Outfall 006 was collected by El Dorado Chemical personnel on January 2, 2015. Upon completion of collection, the sample was packed in ice and personally delivered to the laboratory. The temperature upon arrival was 0.7° Celsius.

2.6 Sample Preparation

Upon arrival, the sample was logged in, given an identification number and refrigerated unless needed. Prior to use, the sample was warmed to $25 \pm 1^{\circ}$ Celsius. The total residual chlorine level (SM4500-Cl D 1997) was measured with a Capital Controls^R amperometric titrator and recorded if present. The total ammonia level was measured using a HACH^R test strip. Dissolved oxygen (SM4500-O G 1997), pH (SM4500-H+ B 1997) and conductivity (SM2510-B 1997) measurements were taken on the control and each test concentration at test initiation, at each renewal and at test termination. Alkalinity (SM2320-B 1997) and hardness (SM2340-C 1997) levels were measured on the control and the highest effluent concentration.

2.7 Monitoring of the Tests

The tests were run in a Precision^R dual controlled illuminated incubator at a temperature of $25 \pm 1^{\circ}$ Celsius. An AEMC^R data logger was used to monitor diurnal temperature throughout the testing period. Light cycle and intensity were recorded twice a month.

2.8 Data Analysis

The NOEC and LC₅₀ values were obtained by approved EPA methods of analysis, using the ToxCalc statistical program.

BAL
ADEQ #88-0630
Project X5634

4.0 Conclusions

The sample of Outfall 006 collected from El Dorado Chemical Company, El Dorado, Arkansas, on January 2, 2015, was not found to be lethally toxic to the fathead minnow test organisms in the 100.0 percent critical dilution after 48 hours of exposure; however, significant lethal effects to the *Daphnia pulex* test organism were noted in the critical dilution ($p=.05$). The 48-hour LC_{50} values could not be calculated because greater than 50.0 percent survival occurred in the effluent dilutions ($p=.05$).

APPENDIX A
CHAIN-OF-CUSTODY DOCUMENTS

APPENDIX B
RAW DATA SHEETS

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5634
 Client El Dorado Chemical

Test started: Date 1/3/15 Time 1215
 Test ended: Date 1/5/15 Time 1405
 Test Species D. pulex ID# 15M5

Sample Description 006
 Technician: ELB 0hour ELB 24hour ELB 48hour PC 72hour _____ 96hour _____
 Time: 1215 0hour 1215 24hour 1415 48hour 1405 72hour _____ 96hour _____
 Temperature (°C): 24.0 0hour 24.0 24hour 24.0 48hour 24.0 72hour _____ 96hour _____

Test Dilution	Replicate	Test Salinity	↓ Live Organisms					Dissolved Oxygen					pH				Conductivity			
			0 Hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96			
			%	Na	g/L	g/L	g/L	g/L	g/L	g/L	g/L	g/L	g/L	g/L	g/L	g/L	g/L	g/L		
56	A		8	8	8			8.2	8.0	8.0			7.0	7.0	7.3			339	345	355
	B		8	8	6															
	C		8	8	8															
	D		8	8	6															
	E		8	8	8															
75	A		8	8	6			8.1	7.7	8.0			6.9	7.0	7.1			395	400	400
	B		8	8	8															
	C		8	8	8															
	D		8	8	6															
	E		8	8	6															
Chemistry Test Prerenewal/postrenewal								8.0	8.0	8.0			6.9	7.0	7.1			395	400	400

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5634
 Client EI Dorado Chemical

Test started: Date 1/3/15 Time 1250

Test ended: Date 1/5/15 Time 1415

Sample Description 006
 Technician: 0hour EB 24hour 203 48hour RC 72hour _____ 96hour _____
 Time: 0hour 1250 24hour 1030 48hour 1415 72hour _____ 96hour _____
 Temperature (°C): 0hour 24.0 24hour 24.0 48hour 24.3 72hour _____ 96hour _____

Test Species P. promelas ID# 12264

Test Dilution	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH				Conductivity					
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
0	A	Na	8	8	8			8.5	8.0	8.0			7.3	7.4	7.0			177.4	178.0	208		
	B		8	8	8																	
	C		8	8	8																	
	D		8	8	8																	
	E		8	8	8																	
22	A		8	8	8			8.3	8.0	8.0			7.1	7.1	7.1			246	250	310		
	B		8	8	8																	
	C		8	8	8																	
	D		8	8	8																	
	E		8	8	8																	
Chemistry Tech prerenewal/postrenewal			EB EB AB RC					EB EB AB RC					EB EB AB RC									

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5634
 Client El Dorado Chemical

Test started: Date 1/3/15 Time 1250
 Test ended: Date 1/5/15 Time 1415
 Test Species P. promelas ID# 120014

Sample Description 006
 Technician: 0hour ELB 24hour EB 48hour PC 72hour _____ 96hour _____
 Time: 0hour 1350 24hour 1020 48hour 1415 72hour _____ 96hour _____
 Temperature (°C): 0hour 24.6 24hour 24.0 48hour 24.3 72hour _____ 96hour _____

Test Dilution	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH				Conductivity					
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
56	A	Na	8	8	8			8.2	8.0	7.7			7.0	6.9	7.0			339	335	353		
	B		8	8	8																	
	C		8	8	8																	
	D		8	8	8																	
	E		8	8	8																	
75	A		8	8	8			8.1	8.0	7.7			6.9	7.0	6.9			395	400	408		
	B		8	8	8																	
	C		8	8	8																	
	D		8	8	8																	
	E		8	8	8																	
Chemistry Tech prerenewal/postrenewal							EB/PC					EB/PC				EB/PC						

APPENDIX C
STATISTICAL ANALYSES

Acute Fish Test-48 Hr Survival

Start Date: 1/3/2015 Test ID: X5634PP Sample ID: AR0000752
 End Date: 1/5/2015 Lab ID: ADEQ880630 Sample Type: EFF2-Industrial
 Sample Date: 1/2/2015 Protocol: EPAAW02-EPA/821/R-02-01 Test Species: PP-Pimephales promelas

Comments:

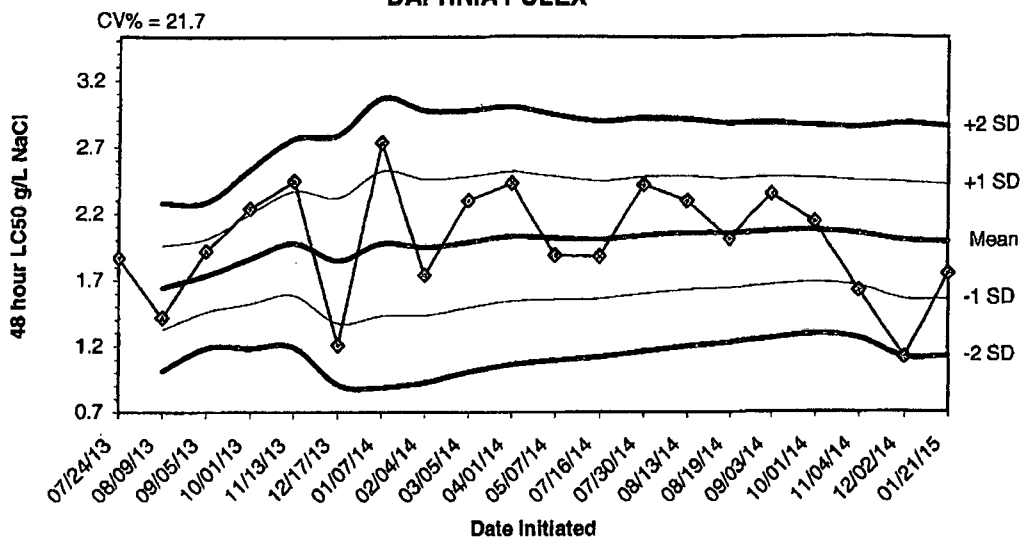
Conc-%	1	2	3	4	5
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000
22	1.0000	1.0000	1.0000	1.0000	1.0000
32	1.0000	1.0000	1.0000	1.0000	0.8750
45	1.0000	1.0000	1.0000	1.0000	1.0000
56	1.0000	1.0000	1.0000	1.0000	1.0000
75	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Transform: Arcsin Square Root						Rank Sum	1-Tailed Critical
	Mean	N-Mean	Mean	Min	Max	CV%		
D-Control	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	
22	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50 16.00
32	0.9750	0.9750	1.3564	1.2094	1.3931	6.055	5	25.00 16.00
45	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50 16.00
56	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50 16.00
75	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50 16.00
100	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50 16.00

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test Indicates non-normal distribution (p <= 0.05)	0.38831	0.934	-4.1486	23.0852
Equality of variance cannot be confirmed				
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	100	>100		1
Treatments vs D-Control				

EUB
2/2/15

2015 48 HOUR ACUTE REFERENCE TOXICANT TEST RESULTS FOR
DAPHNIA PULEX



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
07/24/13	1.8700					
08/09/13	1.4200	1.6450	1.3268	1.0086	1.9632	2.2814
09/05/13	1.9200	1.7367	1.4613	1.1859	2.0120	2.2874
10/01/13	2.2400	1.8625	1.5250	1.1875	2.2000	2.5375
11/13/13	2.4500	1.9800	1.5870	1.1940	2.3730	2.7660
12/17/13	1.2100	1.8517	1.3801	0.9085	2.3232	2.7948
01/07/14	2.7400	1.9786	1.4326	0.8867	2.5245	3.0704
02/04/14	1.7400	1.9488	1.4363	0.9239	2.4612	2.9736
03/05/14	2.3000	1.9878	1.4944	1.0009	2.4812	2.9746
04/01/14	2.4300	2.0320	1.5462	1.0605	2.5178	3.0035
05/07/14	1.8900	2.0191	1.5563	1.0934	2.4819	2.9447
07/16/14	1.8800	2.0075	1.5644	1.1213	2.4506	2.8937
07/30/14	2.4200	2.0392	1.5998	1.1604	2.4786	2.9180
08/13/14	2.3000	2.0579	1.6300	1.2021	2.4857	2.9136
08/19/14	2.0100	2.0547	1.6422	1.2297	2.4672	2.8797
09/03/14	2.3500	2.0731	1.6678	1.2625	2.4784	2.8837
10/01/14	2.1400	2.0771	1.6843	1.2915	2.4698	2.8626
11/04/14	1.6200	2.0517	1.6557	1.2597	2.4476	2.8436
12/02/14	1.1200	2.0026	1.5624	1.1223	2.4428	2.8830
01/21/15	1.7500	1.9900	1.5578	1.1257	2.4222	2.8543

APPENDIX E
AGENCY FORMS

**Biomonitoring
Daphnia pulex 48 hour Acute Static Renewal
Chemical Parameters Chart***

Permittee: El Dorado Chemical - Outfall 006
 NPDES Number: AR0000752/ AFIN 70-00040
 Contact: David Sartain
 Analyst: Briggs, Callahan
 Sample Collected

From: Date 1/1/15 Time 1000
 To: Date 1/2/15 Time 0800
 Date 1/3/15 Time 1215
 Date 1/5/15 Time 1405

Test Begin
 Test End

Parameter	D.O.			Temperature			Alkalinity			Hardness			pH			
	Dilut./Time	0hrs.	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs
0	8.5	8.0	8.2	24.0	24.0	24.0	28.0				40.0			7.3	7.4	7.5
22.0	8.3	8.2	8.2	24.0	24.0	24.0								7.1	7.1	7.3
32.0	8.3	8.3	8.1	24.0	24.0	24.0								7.1	7.2	7.3
45.0	8.3	8.4	8.1	24.0	24.0	24.0								7.0	7.0	7.2
56.0	8.2	8.3	8.0	24.0	24.0	24.0								7.0	7.0	7.2
75.0	8.1	8.3	8.0	24.0	24.0	24.0								6.9	7.0	7.1
100.0	7.9	8.0	8.0	24.0	24.0	24.0	28.0				92.0			6.8	6.8	7.0

*This Form is to be submitted with each DMR.
 Alkalinity and hardness to be reported as mg/l CaCO₃



Bio-Analytical Laboratories

3240 Spurgin Road
Post Office Box 527
Doyline, LA 71023

(318) 745-2772
1-800-259-1246
Fax: (318) 745-2773

REPORT QUALITY ASSURANCE FORM

Client: Eldorado Chemical

Project#: X5634

Chain of Custody Documents Checked by: EGB 2/6/15
Technician/Date

Raw Data Documents Checked by: EGB/2/2/15
Technician/Date

Statistical Analysis Package Checked by: EGB/2/2/15
Quality Manager/Date

Quality Control Data Checked by: EGB/2/2/15
Quality Manager/Date

Report Checked by: EGB/2/6/15
Quality Manager/Date

I certify that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. The information contained in this document, to the best of my knowledge, is true, accurate and complete.

Erin L. Baupp, BS
Quality Manager

2/6/15
Date

No part of this work may be altered in any form or by any means without written permission from Bio-Analytical Laboratories.

Bio-Analytical Laboratories (BAL)
ADEQ#88-0630
Project X5635

Bio-Analytical Laboratories' Executive Summary

Permittee: El Dorado Chemical Company
P.O. Box 231
El Dorado, AR 71731

Project #: X5635

Outfall: Outfall 007 (contaminated storm water)

Permit #: AR0000752/ AFIN #70-00040

Contact: Mr. David Sartain

Test Dates: January 3 - 5, 2015

Test Type: 48-hour acute toxicity test using *Pimephales promelas* (EPA 2000.0).
48-hour acute toxicity test using *Daphnia pulex* (EPA 2021.0)

Results:

For *Pimephales promelas*:

1. If the NOEC for survival is less than the critical dilution (100.0%), enter a "1"; otherwise, enter a "0" for Parameter No. TEM6C- 0 - **Pass**
2. Report the NOEC for survival, Parameter TOM6C - 100%.
3. Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM6C - 0.00%.

For *Daphnia pulex*:

1. If the NOEC for survival is less than the critical dilution (100.0%), enter a "1"; otherwise, enter a "0" for Parameter No. TEM3D- 1-**Fail**
2. Report the NOEC for survival, Parameter TOM3D -45.0%.
3. Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM3D - 7.47%.

-Note: Increasing the pH from 5.0 to a range of 6.0-9.0, significantly increased the survival in the *Daphnia pulex* test.

This report contains a total of 33 pages, including this page. The results pertain only to the samples listed in the chain of custody documents in Appendix A. The information contained within meets the requirements set forth by ADEQ. The chemical data in this report is for monitoring purposes only and should not be reported on discharge monitoring reports.

BAL
ADEQ #88-0630
Project X5635

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BAL
ADEQ #88-0630
Project X5635

2.3 Dilution Water

Soft reconstituted water made per EPA guidelines was used as the dilution water and the control for the acute tests.

2.4 Test Concentrations

The test concentrations used in the tests were 100.0, 75.0, 56.0, 50.0, 45.0, and 32.0 percent effluent and a reconstituted water control. The critical dilution was defined as 100.0 percent effluent. The tests were conducted using five replicates of eight animals each for a total of 40 animals per concentration.

2.5 Sample Collection

One sample of Outfall 007 was collected by El Dorado Chemical personnel on January 2, 2015. Upon completion of collection, the sample was packed in ice and delivered to the laboratory by BAL personnel. The temperature upon arrival was 0.9° Celsius.

2.6 Sample Preparation

Upon arrival, the sample was logged in, given an identification number and refrigerated unless needed. Prior to use, the sample was warmed to 25±1° Celsius. The total residual chlorine level (SM4500-Cl D 1997) was measured with a Capital Controls^R amperometric titrator and recorded if present. The total ammonia level was measured using a HACH^R test strip. An aliquot of the sample was adjusted from an initial pH of 4.3 to a pH range of 6.0-9.0. An extra 100.0 percent dilution was added to each test in order to document any lethality due to low pH. Dissolved oxygen (SM4500-O G 1997), pH (SM4500-H+ B 1997) and conductivity (SM2510-B 1997) measurements were taken on the control and each test concentration at test initiation, at each renewal and at test termination. Alkalinity (SM2320-B 1997) and hardness (SM2340-C 1997) levels were measured on the control and the highest effluent concentration.

2.7 Monitoring of the Tests

The tests were run in a Precision^R dual controlled illuminated incubator at a temperature of 25±1° Celsius. An AEMC^R data logger was used to monitor diurnal temperature throughout the testing period. Light cycle and intensity were recorded twice a month.

2.8 Data Analysis

The NOEC and LC₅₀ values were obtained by approved EPA methods of analysis, using the ToxCalc statistical program.

BAL
ADEQ #88-0630
Project X5635

4.0 Conclusions

The sample of Outfall 007 collected from El Dorado Chemical Company, El Dorado, Arkansas, on January 2, 2015, was not found to be lethally toxic to the fathead minnow test organisms in the 100.0 percent critical dilution after 48 hours of exposure ($p=.05$). The sample was found to be lethally toxic to the *Daphnia pulex* test organisms at the 100.0 percent critical dilution ($p=.05$). Increasing the pH significantly reduced the lethal effect in the *Daphnia pulex* test.

APPENDIX A
CHAIN-OF-CUSTODY DOCUMENTS

APPENDIX B
RAW DATA SHEETS

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5635
 Client El Dorado Chemical

Test started: Date 1/3/15 Time 1215
 Test ended: Date 1/3/15 Time 1340
 Test Species D. pulex ID# L5-M5

Sample Description 007 RB
 Technician: 0hour RB 24hour RB 48hour RC 72hour _____ 96hour _____
 Time: 0hour 1215 24hour 1045 48hour 1340 72hour _____ 96hour _____
 Temperature (°C): 0hour 24.0 24hour 24.0 48hour 24.0 72hour _____ 96hour _____

Test Dilution	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH					Conductivity				
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
0	A	NA	8	8	8			8.4	8.0	8.4			7.2	7.2	7.4			1768	1779	1724		
	B		8	8	8																	
	C		8	8	8																	
	D		8	8	8																	
	E		8	8	8																	
32	A		8	8	8			8.3	8.1	8.4			6.7	6.9	7.3			332	334	318		
	B		8	8	6																	
	C		8	8	5																	
	D		8	8	6																	
	E		8	8	8																	
Chemistry Tech pre-renewal/post-renewal			RB RB RB RB RB RB					RB RB RB RB RB RB					RB RB RB RB RB RB									

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5635
 Client EL Dorado Chemical

Test started: Date 1/3/15 Time 1215
 Test ended: Date 1/3/15 Time 1340
 Test Species D. pulex ID# 15-M5

Sample Description 007
 Technician: 0hour 21.5 24hour 20.3 48hour R 72hour _____ 96hour _____
 Time: 0hour 12.5 24hour 10.5 48hour 3.0 72hour _____ 96hour _____
 Temperature (°C): 0hour 24.0 24hour 24.0 48hour 29.0 72hour _____ 96hour _____

Test Dilution	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH				Conductivity						
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	
56	A	Na	8	8	7			8.2	7.9	8.3	8.2			6.4	6.3	6.7	6.1			430	429	440	456
	B		8	8	3																		
	C		8	8	5																		
	D		8	8	5																		
	E		8	8	6																		
75	A		8	8	6			8.1	7.9	8.3	8.2			6.1	6.0	6.9			519	499	530	541	
	B		8	8	5																		
	C		8	8	6																		
	D		8	8	5																		
	E		8	8	5																		
Chemistry Tech Pre-renewal/post-renewal								ECP/ECS ABR					ECP/ECS ABR				ECP/ECS ABR						

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X563E
 Client El Dorado Chemical

Test started: Date 1/3/15 Time 1320
 Test ended: Date 1/5/15 Time 1430
 Test Species P. promelas ID# 122614

Sample Description 007
 Technician: 0hour EB 24hour AB 48hour PC 72hour _____ 96hour _____
 Time: 0hour 1320 24hour 1010 48hour 1430 72hour _____ 96hour _____
 Temperature (°C): 0hour 24.0 24hour 24.0 48hour 24.2 72hour _____ 96hour _____

Test dilution	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH		Conductivity					
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96			
0	A	NA	8	8	8			8.4	8.0	8.0			7.2	7.2	7.2		1708	1710	204	
	B		8	8	8															
	C		8	8	8															
	D		8	8	8															
	E		8	8	8															
32	A		8	8	8			8.3	7.9	7.9			6.7	7.0	7.0		332	333	359	
	B		8	8	8															
	C		8	8	8															
	D		8	8	8															
	E		8	8	8															
Chemistry Tech prerenewal/postrenewal			EB/AB/PC					EB/AB/PC					EB/AB/PC							

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5635
 Client El Dorado Chemical

Test started: Date 1/3/19 Time 1320
 Test ended: Date 1/5/19 Time 1430
 Test Species P. promelas ID# 122614

Sample Description 007 RC
 Technician: 0hour EB 24hour EB 48hour RC 72hour _____ 96hour _____
 Time: 0hour 1320 24hour 1610 48hour 1430 72hour _____ 96hour _____
 Temperature (°C): 0hour 24.0 24hour 24.0 48hour 24.2 72hour _____ 96hour _____

Test Dilution	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH				Conductivity							
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96							
56	A	Na	8	8	8			8.1	8.1	8.1			6.4	6.4	6.8			430	430	460				
	B		8	8	8																			
	C		8	8	8																			
	D		8	8	8																			
	E		8	8	8																			
75	A		8	8	8			8.1	8.1	8.1			6.1	6.0	6.1			519	519	544				
	B		8	8	8																			
	C		8	8	8																			
	D		8	8	7																			
	E		8	8	8																			
Chemistry Tech			EB EB RC					EB EB RC					EB EB RC											
prerenewal/postrenewal			EB EB RC					EB EB RC					EB EB RC											

APPENDIX C
STATISTICAL ANALYSES

Acute Fish Test-48 Hr Survival

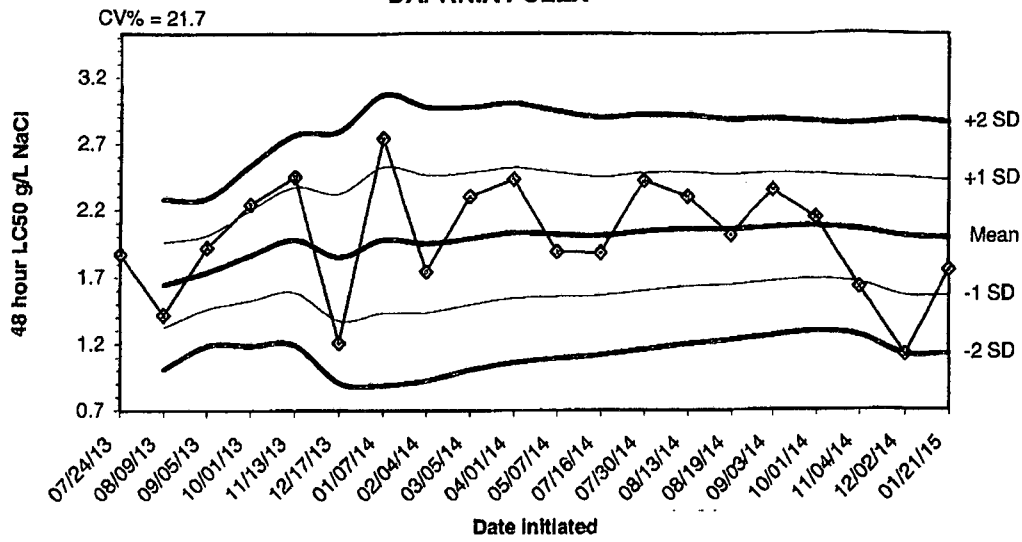
Start Date: 1/3/2015 Test ID: X5635PP Sample ID: AR0000752
 End Date: 1/5/2015 Lab ID: ADEQ880630 Sample Type: EFF2-Industrial
 Sample Date: 1/2/2015 Protocol: EPAAW02-EPA/821/R-02-01 Test Species: PP-Pimephales promelas
 Comments:

Conc-%	1	2	3	4	5
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000
32	1.0000	1.0000	1.0000	0.7500	1.0000
45	1.0000	1.0000	1.0000	1.0000	1.0000
50	1.0000	0.8750	1.0000	1.0000	1.0000
56	1.0000	1.0000	1.0000	1.0000	1.0000
75	1.0000	1.0000	1.0000	0.8750	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000
100.0 PH	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Transform: Arcsin Square Root					Rank Sum	1-Tailed Critical
			Mean	Min	Max	CV%	N		
D-Control	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5		
32	0.9500	0.9500	1.3239	1.0472	1.3931	11.684	5	25.00	16.00
45	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	16.00
50	0.9750	0.9750	1.3564	1.2094	1.3931	6.055	5	25.00	16.00
56	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	16.00
75	0.9750	0.9750	1.3564	1.2094	1.3931	6.055	5	25.00	16.00
100	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	16.00
100.0 PH	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	16.00

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.60588	0.94	-2.9299	10.767
Equality of variance cannot be confirmed				
Hypothesis Test (1-tail, 0.05)				
Steel's Many-One Rank Test indicates no significant differences				
Treatments vs D-Control				

**2015 48 HOUR ACUTE REFERENCE TOXICANT TEST RESULTS FOR
DAPHNIA PULEX**



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
07/24/13	1.8700					
08/09/13	1.4200	1.6450	1.3268	1.0086	1.9632	2.2814
09/05/13	1.9200	1.7367	1.4613	1.1859	2.0120	2.2874
10/01/13	2.2400	1.8625	1.5250	1.1875	2.2000	2.5375
11/13/13	2.4500	1.9800	1.5870	1.1940	2.3730	2.7660
12/17/13	1.2100	1.8517	1.3801	0.9085	2.3232	2.7948
01/07/14	2.7400	1.9786	1.4326	0.8867	2.5245	3.0704
02/04/14	1.7400	1.9488	1.4363	0.9239	2.4612	2.9736
03/05/14	2.3000	1.9878	1.4944	1.0009	2.4812	2.9746
04/01/14	2.4300	2.0320	1.5462	1.0605	2.5178	3.0035
05/07/14	1.8900	2.0191	1.5563	1.0934	2.4819	2.9447
07/16/14	1.8800	2.0075	1.5644	1.1213	2.4506	2.8937
07/30/14	2.4200	2.0392	1.5998	1.1604	2.4786	2.9180
08/13/14	2.3000	2.0579	1.6300	1.2021	2.4857	2.9136
08/19/14	2.0100	2.0547	1.6422	1.2297	2.4672	2.8797
09/03/14	2.3500	2.0731	1.6678	1.2625	2.4784	2.8837
10/01/14	2.1400	2.0771	1.6843	1.2915	2.4698	2.8626
11/04/14	1.6200	2.0517	1.6557	1.2597	2.4476	2.8436
12/02/14	1.1200	2.0026	1.5624	1.1223	2.4428	2.8830
01/21/15	1.7500	1.9900	1.5578	1.1257	2.4222	2.8543

APPENDIX E
AGENCY FORMS

**Biomonitoring
Daphnia pulex 48 hour Acute Static Renewal
Chemical Parameters Chart***

Permittee: El Dorado Chemical - Outfall 007
NPDES Number: AR0000752/ AFIN 70-00040

Contact: David Sartain
Analyst: Briggs, Callahan

Sample Collected From: Date 1/1/15 Time 1015
To: Date 1/2/15 Time 0815
Test Begin Date 1/3/15 Time 1215
Test End Date 1/5/15 Time 1340

Parameter	D.O.			Temperature			Alkalinity			Hardness			pH			
	Dilut./Time	0hrs.	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs
0		8.4	8.5	8.4	24.0	24.0	24.0	28.0			40.0			7.2	7.3	7.4
32.0		8.3	8.3	8.4	24.0	24.0	24.0							6.7	6.9	7.3
45.0		8.3	8.4	8.3	24.0	24.0	24.0							6.6	6.7	7.2
50.0		8.2	8.3	8.3	24.0	24.0	24.0							6.5	6.6	7.2
56.0		8.2	8.3	8.2	24.0	24.0	24.0							6.4	6.4	7.1
75.0		8.1	8.3	8.2	24.0	24.0	24.0							6.1	6.0	6.9
100.0		7.9	8.0	8.2	24.0	24.0	24.0	12.0			188.0			5.0	5.0	6.8
100.0 pH		8.1	8.0	8.2	24.0	24.0	24.0							6.7	7.0	6.8

*This Form is to be submitted with each DMR.
Alkalinity and hardness to be reported as mg/l CaCO₃

Biomonitoring
Pimephales promelas 48 hour Acute Static Renewal
Chemical Parameters Chart*

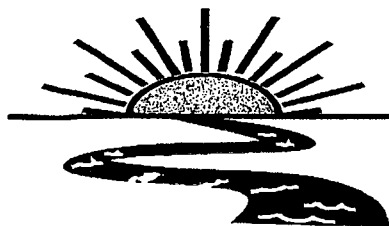
Permittee: El Dorado Chemical - Outfall 007
 NPDES Number: AR0000752/ AFIN 70-00040

Contact: David Sartain
 Analyst: Briggs, Callahan

Sample Collected From: Date 1/1/15 Time 1015
 To: Date 1/2/15 Time 0815
 Test Begin Date 1/3/15 Time 1320
 Test End Date 1/5/15 Time 1430

Parameter	D.O.			Temperature			Alkalinity			Hardness			pH			
	Dilut./Time	0hrs.	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs
0	8.4	8.5	8.0	24.0	24.0	24.2	28.0				40.0			7.2	7.3	7.2
32.0	8.3	8.3	7.9	24.0	24.0	24.2								6.7	6.9	7.0
45.0	8.3	8.4	7.8	24.0	24.0	24.2								6.6	6.7	6.9
50.0	8.2	8.3	7.8	24.0	24.0	24.2								6.5	6.6	6.9
56.0	8.2	8.3	7.8	24.0	24.0	24.2								6.4	6.4	6.8
75.0	8.1	8.3	7.8	24.0	24.0	24.2								6.1	6.0	6.7
100.0	7.9	8.0	7.7	24.0	24.0	24.2	12.0				188.0			5.0	5.0	6.3
100.0 pH	8.1	8.0	7.7	24.0	24.0	24.2								6.7	7.0	6.6

*This Form is to be submitted with each DMR.
 Alkalinity and hardness to be reported as mg/l CaCO₃



Bio-Analytical Laboratories

3240 Spurgin Road
Post Office Box 527
Doyline, LA 71023

(318) 745-2772
1-800-259-1246
Fax: (318) 745-2773

REPORT QUALITY ASSURANCE FORM

Client: Eldorado Chemical

Project#: X5635

Chain of Custody Documents Checked by: EGG/2-6-15
Technician/Date

Raw Data Documents Checked by: EGG/2-2-15
Technician/Date

Statistical Analysis Package Checked by: EGG/2-2-15
Quality Manager/Date

Quality Control Data Checked by: EGG/2-2-15
Quality Manager/Date

Report Checked by: EGG/2-6-15
Quality Manager/Date

I certify that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. The information contained in this document, to the best of my knowledge, is true, accurate and complete.

Erin J. Baggett, BS
Quality Manager

2-6-15
Date

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Express

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Page 1 of 2

From: (870) 863-1400
Eddie Pearson
ELDORADO CHEMICAL COMPANY
4500 NORTH WEST AVE
ELDORADO, AR 71730

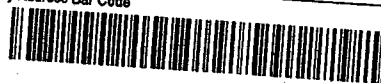
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Express



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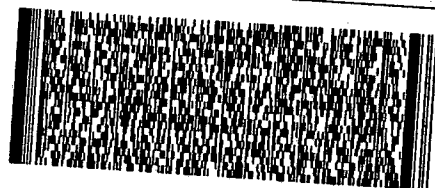


Ref #
Invoice #
PO #
Dept #

SHIP TO: (870) 863-1484
Water Enforcement Branch
ADEQ
5301 NORTHSHORE DR
NORTH LITTLE ROCK, AR 72118

BILL SENDER

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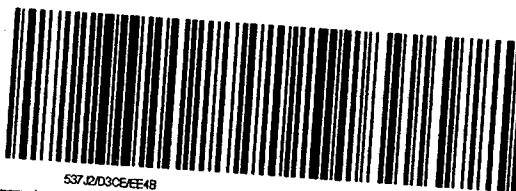


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PRIORITY OVERNIGHT

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