PARAGOULD
MUNICIPAL UTILITIES

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March 18, 2024

Ms. Christina McCutcheon
Enforcement Analyst
Arkansas Department of Energy and Environment
Division of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

RE: NPDES Permit AR0033766

Dear Ms. McCutcheon,

This notification serves as the Final Progress Report certifying Paragould Municipal Utilities (PMU) met the Final Effluent WET Lethal Limitations for P. promelas and C. dubia as set forth in NPDES Permit AR0033766 effective March 1, 2021. See enclosed data for further details.

If you have any questions or need additional information, please contact me at (870) 239-7723 or dromine@paragould.com

Sincerely,

David Romine
Chief Operations Officer

Enclosures

Paragould Municipal Utilities
Wastewater Treatment Plant
NPDES Permit AR0033766
Whole Effluent Toxicity Final Report – March 2024

As required by the National Pollutant Discharge Elimination System (NPDES) permit AR0033766 in Part 1, Section B, Subsection 2, the following information serves as documentation PMU has met requirements of the Final Limitations for P. promelas and C. dubia Whole Effluent Toxicity (WET) lethal limits as of the effective date of the permit thru the most current date of testing listed in the following table. All WET reports referenced below were, or will be, submitted to ADEQ with the corresponding Discharge Monitoring Report (DMR).

Date of Samples	**Results**	**ADEQ Report Date**
January 9-12, 2023	No Lethal or Sub-lethal effects	April 20, 2023
April 10-13, 2023	No Lethal or Sub-lethal effects	July 21, 2023
July 10-13, 2023	No Lethal or Sub-lethal effects	October 19, 2023
October 16-19, 2023	No Lethal or Sub-lethal effects	January 16, 2024
February 19-22, 2024	No Lethal or Sub-lethal effects	PMU will submit April 2024

In addition to the information provided in the table above, PMU has included a summary of analytical results provided by Arkansas Analytical, the contract laboratory selected to conduct WET testing for PMU.

Arkansas Analytical, Inc.

Toxicity Test Results

Paragould Light, Water & Cable
NPDES PERMIT NUMBER: AR0033766
First Quarter 2023
AFIN # 28-00470

Fathead Minnow, *Pimephales promelas,* Larval Survival and Growth Test
Test 1000.0

Ceriodaphnia dubia, Survival and Reproduction Test
Test 1002.0

Prepared for: **David Romine**
401 Grant Lane
Paragould, Arkansas 72450

Prepared by: Arkansas Analytical, Inc.
8100 National Drive
Little Rock, Arkansas 72209
Lab Number K2301005

Friday, January 27, 2023

Plant location

City of Paragould. The facility is located at 401 Grant Lane, Paragould, AR 72450, approximately 1.4 miles south of U.S. Highway 412 and 0.4 miles west of Arkansas Highway 69 on Grant Lane in Greene County, Arkansas

Test Methods

EPA Method 1000.0 *Pimephales promelas*, Larval survival and growth test

- Test chambers: 500 mL plastic cups
- Test solution volume: 250 mL
- Number of test organisms per chamber: 10
- Number of replicates per concentration: 5
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 32%, 42%, 56%, 80%, 100%
- Dilution water: Moderately Hard Synthetic
- No deviation from method

EPA Method 1002.0 *Ceriodaphnia dubia*, Survival and reproduction test

- Test chambers: 30 mL plastic cups
- Test solution volume: 15 mL
- Number of test organisms per chamber: 1
- Number of replicates per concentration: 10
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 32%, 42%, 56%, 80%, 100%
- Dilution water: Moderately Hard Synthetic
- No deviation from method

Reference Toxicant Data

REFERENCE TOXICANT (Potassium Chloride)

Ceriodaphnia dubia 12/28/22-1/3/23		*Pimephales promelas* 12/28/22-1/4/23	
NOEC Survival:	500 ppm KCl	NOEC Survival:	500 ppm KCl
LOEC Survival:	1000 ppm KCl	LOEC Survival:	1000 ppm KCl
NOEC Reproduction:	250 ppm KCl	NOEC Growth:	500 ppm KCl
LOEC Reproduction:	500 ppm KCl	LOEC Growth:	1000 ppm KCl

Summary of Results

Paragould Light, Water & Cable

Ceriodaphnia dubia		*Pimephales promelas*	
NOEC Survival Parameter: **TOP3B**	100%	NOEC Survival Parameter: **TOP6C**	100%
Pass/Fail Survival Parameter: **TLP3B**	Pass	Pass/Fail Survival Parameter: **TLP6C**	Pass
NOEC Reproduction Parameter: **TPP3B**	100%	NOEC Growth Parameter: **TPP6C**	100%
Pass/Fail Reproduction Parameter: **TGP3B**	Pass	Pass/Fail Growth Parameter: **TGP6C**	Pass
%CV Reproduction Parameter: **TQP3B**	20.8%	%CV Growth Parameter: **TQP6C**	12.1%
PMSD Reproduction	22.0%	PMSD Growth	15.1%
Chronic Toxicity NOEC Parameter: **51710**	Lethality: 100% Sub-lethality: 100%	Chronic Toxicity NOEC Parameter: **51714**	Lethality: 100% Sub-lethality: 100%

Conclusion

Pimephales promelas, (Method 1000.0): The permit issued to the Paragould Light, Water & Cable, specifies that the **critical dilution is 100% effluent.** The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

Ceriodaphnia dubia, (Method 1002.0): The permit issued to the Paragould Light, Water & Cable, specifies the **critical dilution is 100% effluent.** The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

Biomonitoring Analysts: Melissa Bird, Jason Bird, Johnny Moline

Reviewed by:

Melissa Bird
Melissa Bird

Appendices

Arkansas Analytical, Inc.

Toxicity Test Results

Paragould Light, Water & Cable
NPDES PERMIT NUMBER: AR0033766
Second Quarter 2023
AFIN # 28-00470

Fathead Minnow, *Pimephales promelas,* Larval Survival and Growth Test
Test 1000.0

Ceriodaphnia dubia, Survival and Reproduction Test
Test 1002.0

Prepared for: **David Romine**
401 Grant Lane
Paragould, Arkansas 72450

Prepared by: Arkansas Analytical, Inc.
8100 National Drive
Little Rock, Arkansas 72209
Lab Number K2304007

Monday, May 01, 2023

Plant location

City of Paragould. The facility is located at 401 Grant Lane, Paragould, AR 72450, approximately 1.4 miles south of U.S. Highway 412 and 0.4 miles west of Arkansas Highway 69 on Grant Lane in Greene County, Arkansas

Test Methods

EPA Method 1000.0 *Pimephales promelas*, Larval survival and growth test

- Test chambers: 500 mL plastic cups
- Test solution volume: 250 mL
- Number of test organisms per chamber: 10
- Number of replicates per concentration: 5
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 32%, 42%, 56%, 80%, 100%
- Dilution water: Moderately Hard Synthetic
- No deviation from method

EPA Method 1002.0 *Ceriodaphnia dubia*, Survival and reproduction test

- Test chambers: 30 mL plastic cups
- Test solution volume: 15 mL
- Number of test organisms per chamber: 1
- Number of replicates per concentration: 10
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 32%, 42%, 56%, 80%, 100%
- Dilution water: Moderately Hard Synthetic
- No deviation from method

Reference Toxicant Data

REFERENCE TOXICANT (Potassium Chloride)

Ceriodaphnia dubia 3/7/23-3/14/23		*Pimephales promelas* 3/7/23-3/14/23	
NOEC Survival:	500 ppm KCl	NOEC Survival:	500 ppm KCl
LOEC Survival:	1000 ppm KCl	LOEC Survival:	1000 ppm KCl
NOEC Reproduction:	250 ppm KCl	NOEC Growth:	500 ppm KCl
LOEC Reproduction:	500 ppm KCl	LOEC Growth:	1000 ppm KCl

Summary of Results

Paragould Light, Water & Cable

Ceriodaphnia dubia		*Pimephales promelas*	
NOEC Survival Parameter: **TOP3B**	100%	NOEC Survival Parameter: **TOP6C**	100%
Pass/Fail Survival Parameter: **TLP3B**	Pass	Pass/Fail Survival Parameter: **TLP6C**	Pass
NOEC Reproduction Parameter: **TPP3B**	100%	NOEC Growth Parameter: **TPP6C**	100%
Pass/Fail Reproduction Parameter: **TGP3B**	Pass	Pass/Fail Growth Parameter: **TGP6C**	Pass
%CV Reproduction Parameter: **TQP3B**	23.8%	%CV Growth Parameter: **TQP6C**	8.75%
PMSD Reproduction	18.8%	PMSD Growth	12.6%
Chronic Toxicity NOEC Parameter: **51710**	Lethality: 100% Sub-lethality: 100%	Chronic Toxicity NOEC Parameter: **51714**	Lethality: 100% Sub-lethality: 100%

Conclusion

Pimephales promelas, (Method 1000.0): The permit issued to the Paragould Light, Water & Cable, specifies that the **critical dilution is 100% effluent**. The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

Ceriodaphnia dubia, (Method 1002.0): The permit issued to the Paragould Light, Water & Cable, specifies the **critical dilution is 100% effluent**. The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

Biomonitoring Analysts: Melissa Bird, Jason Bird, Justin Yeatts, Noah Limbaugh

Reviewed by:

Melissa Bird

Appendices

Arkansas Analytical, Inc.

Toxicity Test Results

Paragould Light, Water & Cable
NPDES PERMIT NUMBER: AR0033766
Third Quarter 2023
AFIN # 28-00470

Fathead Minnow, *Pimephales promelas,* Larval Survival and Growth Test
Test 1000.0

Ceriodaphnia dubia, Survival and Reproduction Test
Test 1002.0

Prepared for: **David Romine**
401 Grant Lane
Paragould, Arkansas 72450

Prepared by: Arkansas Analytical, Inc.
8100 National Drive
Little Rock, Arkansas 72209
Lab Number K2307001

Monday, July 31, 2023

Plant location

City of Paragould. The facility is located at 401 Grant Lane, Paragould, AR 72450, approximately 1.4 miles south of U.S. Highway 412 and 0.4 miles west of Arkansas Highway 69 on Grant Lane in Greene County, Arkansas

Test Methods

EPA Method 1000.0 *Pimephales promelas*, Larval survival and growth test

- Test chambers: 500 mL plastic cups
- Test solution volume: 250 mL
- Number of test organisms per chamber: 10
- Number of replicates per concentration: 5
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 32%, 42%, 56%, 80%, 100%
- Dilution water: Moderately Hard Synthetic
- No deviation from method

EPA Method 1002.0 *Ceriodaphnia dubia*, Survival and reproduction test

- Test chambers: 30 mL plastic cups
- Test solution volume: 15 mL
- Number of test organisms per chamber: 1
- Number of replicates per concentration: 10
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 32%, 42%, 56%, 80%, 100%
- Dilution water: Moderately Hard Synthetic
- No deviation from method

Reference Toxicant Data

REFERENCE TOXICANT (Potassium Chloride)

Ceriodaphnia dubia 6/26/23-7/3/23		*Pimephales promelas* 6/26/23-7/3/23	
NOEC Survival:	250 ppm KCl	NOEC Survival:	500 ppm KCl
LOEC Survival:	500 ppm KCl	LOEC Survival:	1000 ppm KCl
NOEC Reproduction:	250 ppm KCl	NOEC Growth:	500 ppm KCl
LOEC Reproduction:	500 ppm KCl	LOEC Growth:	1000 ppm KCl

Summary of Results

Paragould Light, Water & Cable

Ceriodaphnia dubia		*Pimephales promelas*	
NOEC Survival Parameter: **TOP3B**	100%	NOEC Survival Parameter: **TOP6C**	100%
Pass/Fail Survival Parameter: **TLP3B**	Pass	Pass/Fail Survival Parameter: **TLP6C**	Pass
NOEC Reproduction Parameter: **TPP3B**	100%	NOEC Growth Parameter: **TPP6C**	100%
Pass/Fail Reproduction Parameter: **TGP3B**	Pass	Pass/Fail Growth Parameter: **TGP6C**	Pass
%CV Reproduction Parameter: **TQP3B**	24.3%	%CV Growth Parameter: **TQP6C**	15.9%
PMSD Reproduction	20.9%	PMSD Growth	20.8%
Chronic Toxicity NOEC Parameter: **51710**	Lethality: 100% Sub-lethality: 100%	Chronic Toxicity NOEC Parameter: **51714**	Lethality: 100% Sub-lethality: 100%

Conclusion

Pimephales promelas, (Method 1000.0): The permit issued to the Paragould Light, Water & Cable, specifies that the **critical dilution is 100% effluent**. The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

Ceriodaphnia dubia, (Method 1002.0): The permit issued to the Paragould Light, Water & Cable, specifies the **critical dilution is 100% effluent**. The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

Biomonitoring Analysts: Melissa Bird, Jason Bird, Justin Yeatts, Noah Limbaugh

Reviewed by:

Melissa Bird

Appendices

Arkansas Analytical, Inc.

Toxicity Test Results

Paragould Light, Water & Cable
NPDES PERMIT NUMBER: AR0033766
Fourth Quarter 2023
AFIN # 28-00470

Fathead Minnow, *Pimephales promelas,* Larval Survival and Growth Test
Test 1000.0

Ceriodaphnia dubia, Survival and Reproduction Test
Test 1002.0

Prepared for: **David Romine**
401 Grant Lane
Paragould, Arkansas 72450

Prepared by: Arkansas Analytical, Inc.
8100 National Drive
Little Rock, Arkansas 72209
Lab Number K2310010

Tuesday, November 07, 2023

Plant location

City of Paragould. The facility is located at 401 Grant Lane, Paragould, AR 72450, approximately 1.4 miles south of U.S. Highway 412 and 0.4 miles west of Arkansas Highway 69 on Grant Lane in Greene County, Arkansas

Test Methods

EPA Method 1000.0 *Pimephales promelas*, Larval survival and growth test

- Test chambers: 500 mL plastic cups
- Test solution volume: 250 mL
- Number of test organisms per chamber: 10
- Number of replicates per concentration: 5
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 32%, 42%, 56%, 80%, 100%
- Dilution water: Moderately Hard Synthetic
- No deviation from method

EPA Method 1002.0 *Ceriodaphnia dubia*, Survival and reproduction test

- Test chambers: 30 mL plastic cups
- Test solution volume: 15 mL
- Number of test organisms per chamber: 1
- Number of replicates per concentration: 10
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 32%, 42%, 56%, 80%, 100%
- Dilution water: Moderately Hard Synthetic
- No deviation from method

Reference Toxicant Data

REFERENCE TOXICANT (Potassium Chloride)

Ceriodaphnia dubia 9/20/23-9/26/23		*Pimephales promelas* 9/20/23-9/27/23	
NOEC Survival:	500 ppm KCl	NOEC Survival:	500 ppm KCl
LOEC Survival:	1000 ppm KCl	LOEC Survival:	1000 ppm KCl
NOEC Reproduction:	500 ppm KCl	NOEC Reproduction:	500 ppm KCl
LOEC Reproduction:	1000 ppm KCl	LOEC Reproduction:	1000 ppm KCl

Summary of Results

Paragould Light, Water & Cable

Ceriodaphnia dubia		*Pimephales promelas*	
NOEC Survival Parameter: **TOP3B**	100%	NOEC Survival Parameter: **TOP6C**	100%
Pass/Fail Survival Parameter: **TLP3B**	Pass	Pass/Fail Survival Parameter: **TLP6C**	Pass
NOEC Reproduction Parameter: **TPP3B**	100%	NOEC Growth Parameter: **TPP6C**	100%
Pass/Fail Reproduction Parameter: **TGP3B**	Pass	Pass/Fail Growth Parameter: **TGP6C**	Pass
%CV Reproduction Parameter: **TQP3B**	19.0%	%CV Growth Parameter: **TQP6C**	11.6%
PMSD Reproduction	16.5%	PMSD Growth	13.9%
Chronic Toxicity NOEC Parameter: **51710**	Lethality: 100% Sub-lethality: 100%	Chronic Toxicity NOEC Parameter: **51714**	Lethality: 100% Sub-lethality: 100%

Conclusion

Pimephales promelas, (Method 1000.0): The permit issued to the Paragould Light, Water & Cable, specifies that the **critical dilution is 100% effluent**. The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

Ceriodaphnia dubia, (Method 1002.0): The permit issued to the Paragould Light, Water & Cable, specifies the **critical dilution is 100% effluent**. The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

Biomonitoring Analysts: Melissa Bird, Brittany Story, Justin Yeatts, Noah Limbaugh

Reviewed by:

Melissa Bird

Melissa Bird

Appendices

Arkansas Analytical, Inc.

Toxicity Test Results

Paragould Light, Water & Cable
NPDES PERMIT NUMBER: AR0033766
First Quarter 2024
AFIN # 28-00470

Fathead Minnow, *Pimephales promelas,* Larval Survival and Growth Test
Test 1000.0

Ceriodaphnia dubia, Survival and Reproduction Test
Test 1002.0

Prepared for: **David Romine**
401 Grant Lane
Paragould, Arkansas 72450

Prepared by: Arkansas Analytical, Inc.
8100 National Drive
Little Rock, Arkansas 72209
Lab Number K2402013

Friday, March 08, 2024

Plant location

City of Paragould. The facility is located at 401 Grant Lane, Paragould, AR 72450, approximately 1.4 miles south of U.S. Highway 412 and 0.4 miles west of Arkansas Highway 69 on Grant Lane in Greene County, Arkansas

Test Methods

EPA Method 1000.0 *Pimephales promelas*, Larval survival and growth test

- Test chambers: 500 mL plastic cups
- Test solution volume: 250 mL
- Number of test organisms per chamber: 10
- Number of replicates per concentration: 5
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 32%, 42%, 56%, 80%, 100%
- Dilution water: Moderately Hard Synthetic
- No deviation from method

EPA Method 1002.0 *Ceriodaphnia dubia*, Survival and reproduction test

- Test chambers: 30 mL plastic cups
- Test solution volume: 15 mL
- Number of test organisms per chamber: 1
- Number of replicates per concentration: 10
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 32%, 42%, 56%, 80%, 100%
- Dilution water: Moderately Hard Synthetic
- No deviation from method

Reference Toxicant Data

REFERENCE TOXICANT (Potassium Chloride)

Ceriodaphnia dubia 1/17/24-1/24/24		*Pimephales promelas* 1/3/24-1/10/24	
NOEC Survival:	500 ppm KCl	NOEC Survival:	500 ppm KCl
LOEC Survival:	1000 ppm KCl	LOEC Survival:	1000 ppm KCl
NOEC Reproduction:	250 ppm KCl	NOEC Reproduction:	500 ppm KCl
LOEC Reproduction:	500 ppm KCl	LOEC Reproduction:	1000 ppm KCl

Summary of Results

Paragould Light, Water & Cable

Ceriodaphnia dubia		*Pimephales promelas*	
NOEC Survival Parameter: **TOP3B**	100%	NOEC Survival Parameter: **TOP6C**	100%
Pass/Fail Survival Parameter: **TLP3B**	Pass	Pass/Fail Survival Parameter: **TLP6C**	Pass
NOEC Reproduction Parameter: **TPP3B**	100%	NOEC Growth Parameter: **TPP6C**	100%
Pass/Fail Reproduction Parameter: **TGP3B**	Pass	Pass/Fail Growth Parameter: **TGP6C**	Pass
%CV Reproduction Parameter: **TQP3B**	26.0%	%CV Growth Parameter: **TQP6C**	12.0%
PMSD Reproduction	44.2%	PMSD Growth	16.4%
Chronic Toxicity NOEC Parameter: **51710**	Lethality: 100% Sub-lethality: 100%	Chronic Toxicity NOEC Parameter: **51714**	Lethality: 100% Sub-lethality: 100%

Conclusion

Pimephales promelas, (Method 1000.0): The permit issued to the Paragould Light, Water & Cable, specifies that the **critical dilution is 100% effluent**. The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

Ceriodaphnia dubia, (Method 1002.0): The permit issued to the Paragould Light, Water & Cable, specifies the **critical dilution is 100% effluent**. The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

Biomonitoring Analysts: Melissa Bird, Jason Bird, Justin Yeatts, Noah Limbaugh

Reviewed by:

Melissa Bird

Melissa Bird

Appendices