



**City and Borough of Juneau  
Wastewater Utility  
2009 Radcliffe Rd.  
Juneau, AK 99801  
Phone (907) 586-0393  
Fax (907-789-1681**

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November 10, 2015

Alaska Department of Environmental Conservation  
Division of Water  
555 Cordova Street  
Anchorage, AK 99501-2617

Reference: permit # AK-0022951

Please find enclosed with the DMR the following information:

- A copy of the Noncompliance Notification regarding a fecal coliform violation on October 06, 2015.
- A copy of the WET test results (pages 1-6 of 34) and copies of the Chain of Custody forms of the WET test.

The Influent Pump Station sampler is out of service due to an issue with the refrigeration unit. The new refrigeration unit is on order.

If you have any questions, please do not hesitate to contact me or Karen Sewell at 907-586-0393.

Sincerely,

A handwritten signature in black ink, appearing to read "Grieko Tempel", written over a horizontal line.

Grieko Tempel  
Senior Wastewater Treatment Operator CBJ Wastewater Utility  
2009 Radcliffe Road  
Juneau, AK 99801  
Rico.Tempel@Juneau.org



MENDENHALL WASTEWATER TREATMENT FACILITY

Juneau, Alaska

October 2015

		FLOWS				Influent											Effluent									
DAY	DATE	SBR	precip	SBR	SBR	TEMP	pH	D.O.	S.S.	S.S.	B.O.D.	B.O.D.	IPS	IPS	IPS	IPS	TEMP	pH	D.O.	S.S.	S.S.	B.O.D.	B.O.D.	Turbidity	FECAL	
		INFLUENT		TTL EFFL	WASTE																					mg/L
		MGD	MGD	MGD	°C	mg/L	mg/L	LBS	mg/L	LBS	mg/L	LBS	mg/L	LBS	mg/L	LBS	°C	mg/L	mg/l	LBS	mg/L	LBS	Grab	/100 ml		
SUN	4	2.43	0.00	2.32	0.0478																					
MON	5	2.35	0.00	2.25	0.0682	13.6	7.3	3.0	142.0	2783.1	170.0	3331.8	335.0	6565.7	450.0	8819.6	14.6	6.8	2.5	26.0	487.9	21.0	394.1	9.7	78.0	
TUE	6	2.30	0.00	2.17	0.0869	14.6	7.1	2.4	164.0	3145.8	310.0	5946.4	485.0	9303.3	630.0	12084.7	15.2	6.9	2.5	20.0	362.0	23.0	416.2	8.0	1400.0	
WED	7	2.32	T	2.07	0.0956	14.0	7.0	2.1	250.0	4837.2	350.0	6772.1	580.0	11222.3	530.0	10254.9	14.8	6.9	2.8	22.0	379.8	25.0	431.6			
THU	8	2.46	0.62	2.24	0.0891	14.6	6.9	3.0	207.0	4246.9	310.0	6360.1	510.0	10463.4	450.0	9232.4	15.6	6.8	2.6	10.0	186.8	30.0	560.4			
FRI	9	2.60	1.02	2.39	0.1023	13.8	6.8	3.1	193.0	4185.0	330.0	7155.7	990.0	21467.2	520.0	11275.7	15.8	6.8	2.8	20.0	398.7	29.0	578.0			
SAT	10	2.41	0.04	2.48	0.0957																					
SUN	11	2.18	0.54	2.16	0.0784																					
MON	12	2.57	0.48	2.50	0.0602	13.4	7.3	2.7	140.0	3000.7	200.0	4286.8	1640.0	35151.4	520.0	11145.6	14.8	6.8	2.3	16.0	333.6	26.0	542.1	7.6	98.0	
TUE	13	2.53	0.38	2.52	0.0845	13.2	6.8	3.4	211.0	4452.1	260.0	5486.1	1480.0	31228.3	430.0	9073.1	15.0	6.8	2.5	14.0	294.2	22.0	462.4	4.9	88.0	
WED	14	2.56	0.05	2.49	0.0829	14.2	7.2	5.5	169.0	3608.2	310.0	6618.6	569.0	12148.4	410.0	8753.7	15.3	6.7	2.9							
THU	15	2.35	0.29	2.23	0.0711	13.9	7.4	2.8	192.0	3763.0	240.0	4703.8	464.0	9093.9	380.0	7447.6	15.4	6.8	2.7	16.0	297.6	22.0	409.2			
FRI	16	2.31	0.23	2.28	0.0641	14.2	7.5	2.4	132.0	2543.0	230.0	4431.0	122.0	2350.4	320.0	6164.9	15.6	6.8	2.4	13.0	247.2	19.0	361.3			
SAT	17	2.49	0.48	2.28	0.0783																					
SUN	18	2.54	0.67	2.34	0.0718																					
MON	19	2.71	0.05	2.63	0.0822	12.2	7.3	3.6									14.4	6.8	2.2							
TUE	20	2.76	0.33	2.63	0.0824	13.9	7.3	2.7	175.0	4028.2	250.0	5754.6	687.0	15813.6	440.0	10128.1	14.7	6.8	2.5	19.0	416.7	27.0	592.2	9.3	560.0	
WED	21	2.88	0.61	2.70	0.1141	13.6	7.0	2.6	257.0	6172.9	310.0	7446.0	544.0	13086.4	440.0	10568.4	14.7	6.8	2.6	19.0	427.8	22.0	495.4	11.1	600.0	
THU	22	2.94	0.48	2.76	0.0813	13.2	6.9	4.1	132.0	3236.6	290.0	7110.7	488.0	11965.6	330.0	8091.5	14.7	6.6	3.2	15.0	345.3	23.0	529.4		72.0	
FRI	23	2.73	0.05	2.68	0.0952	13.6	7.0	3.3	152.0	3460.8	320.0	7285.8	360.0	8196.6	370.0	8424.2	15.1	6.7	3.6	15.0	335.3	24.0	536.4		27.0	
SAT	24	2.48	T	2.49	0.0648																					
SUN	25	2.32	0.00	2.12	0.0583																					
MON	26	2.36	0.00	2.22	0.0621	13.1	7.3	2.6									14.8	6.9	2.8					6.0	92.0	
TUE	27	2.34	0.00	2.17	0.1035	13.8	7.2	2.3	180	3513	290	5660					15.2	6.7	2.7	12	217	16.0	290	8.7	88.0	
WED	28	2.27	0.08	2.05	0.2257	15.4	7.1	5.3	243	4600	430	8141					16.1	6.8	2.2	16	274	20.0	342			
THU	29	2.41	0.34	2.15	0.0529	14.9	7.1	5.3	200	4020	350	7035					14.8	6.8	3.2	14	251	21.0	377			
FRI	30	2.01	0.45	2.19	0.0503	14.0	7.1	6.4	205	3436	360	6035					14.8	6.8	2.7	13	237	20.0	365			
SAT	31	2.34	0.01	2.17	0.0938																					
TOTAL		68.95	7.20	65.68	2.3435																					
MAXIMUM		2.94	1.02	2.76	0.2257	15.4	7.5	6.4	257	6172.9	430.0	8140.7	1640.0	35151.4	630.0	12084.7	16.1	6.9	3.6	26.0	487.9	30.0	592.2	11.1	1400.0	
MINIMUM		2.01	0.00	2.05	0.0478	12.2	6.8	2.1	132	2543.0	170.0	3331.8	122.0	2350.4	320.0	6164.9	14.4	6.6	2.2	10.0	187	16.0	289.6	4.9	27.0	
AVERAGE *		2.46	0.28	2.35	0.084	13.9		3.4	185.8	3835.2	295.0	6086.6	661.0	14145.5	444.3	9390.3	15.1		2.7	16.5	323.1	22.9	451.9	8.2	147.8	
Number of Analyses		28	26	28	28	20	20	20	18	18	18	18	14	14	14	14	20	20	20	17	17	17	17	10	10	

Tox. TUC	5.6
6/22/2015-6/24/2015	
Copper	19.0
Lead	ND
Silver	ND
Zinc	19.0
***NH3 mg	23.0
Hrd. mg/l	68.0
Alk. mg/l	157.0
Avg. Q X 3 days	
Pass/Fail	P

2015	
Hrd. mg/l	73.0
Hrd. mg/l	
Alk. mg/l	110.0
D.O. mg/l	2.7

2015 Metals	
ug/L (ppm)	LBS
Copper	14.0
Copper	0.36
Lead	
Silver	
Zinc	
***NH3 mg/L	7.8

% REMOVAL	
B.O.D.	92.2
S.S.	91.1
Floating Solids	
Waste, or Foam	
Pass/Fail	P

WEEKLY AVERAGE					WEEKLY
WEEK	BOD		TSS		COLIFORM
	mg/l	lbs	mg/l	lbs	Geo. Mean
1	25.6	476.1	19.6	363.0	330.5
2	22.3	443.7	14.8	293.2	92.9
3	24.0	538.4	17.0	381.3	159.9
4	19.3	343.3	13.8	244.8	90.0
MAX	25.6	538.4	19.6	381.3	330.5



# Alaska Department of Environmental Conservation Monthly Discharge Monitoring Report (DMR)

CONTACT NAME: Samantha Stoughtenger  
 MAILING ADDRESS: 2009 Radcliffe Rd.  
 Juneau, AK 99801

FACILITY: MENDENHALL WW TREATMENT FACILITY  
 LOCATION: 2009 RADCLIFFE RD  
 Juneau, AK 99801

PERMIT NUMBER: AK0022951

MONITORING PERIOD: 10/1/2015

TO

10/31/2015

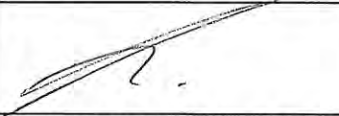
OUTFALL / MONITORING POINT: 001A MENDENHALL RIVER DIFFUSER

NO DISCHARGE:  

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
Temperature (C)  1 - Final Effluent 00010	Sample meas.	*****	*****		*****	15.1	16.1		0		
	Permit reqmt.	*****	*****		*****	Report monthly average	Report daily maximum	DEG.C		5X Weekly	Grab
Dissolved Oxygen  1 - Final Effluent 00300	Sample meas.	*****	*****		2.7	*****	3.6		0		
	Permit reqmt.	*****	*****		Report daily minimum	*****	Report daily maximum	mg/l		Monthly	Grab
Biochemical Oxygen Demand (BOD5)  1 - Final Effluent 00310	Sample meas.	451.9	592.2		*****	22.9	30.0		0		
	Permit reqmt.	1226 monthly average	2452 daily maximum	lbs/day	*****	30 monthly average	60 daily maximum	mg/l		2X Monthly	24-Hr Composite
Biochemical Oxygen Demand (BOD5)  G - Influent 00310	Sample meas.	*****	*****		*****	295.0	*****		0		
	Permit reqmt.	*****	*****		*****	Report monthly average	*****	mg/l		2X Monthly	24-Hr Composite
Biochemical Oxygen Demand (BOD5)  W - See Comments 00310	Sample meas.	538.4	*****		*****	25.6	*****		0		
	Permit reqmt.	1839 weekly average	*****	lbs/day	*****	45 weekly average	*****	mg/l		2X Monthly	24-Hr Composite

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
**GRIEKO TEMPEL**  
 SR. OPERATOR  
 TYPED OR PRINTED

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 the 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 OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE	DATE
907-586-0393	10/11/10
AREA   NUMBER	Y   M   D

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PERMIT NUMBER: AK0022951


MONITORING PERIOD: 10/1/2015

TO 10/31/2015

OUTFALL / MONITORING POINT: 001A MENDENHALL RIVER DIFFUSER

NO DISCHARGE:

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
pH  1 - Final Effluent 00400	Sample meas.	*****	*****		6.6	*****	6.9		0		
	Permit reqmt.	*****	*****		6.3 instantaneous minimum	*****	8.5 instantaneous maximum	S.U.		5X Weekly	Grab
Total Suspended Solids  1 - Final Effluent 00530	Sample meas.	323.1	487.9		*****	16.5	26.0		0		
	Permit reqmt.	1226 monthly average	2452 daily maximum	lbs/day	*****	30 monthly average	60 daily maximum	mg/l		2X Monthly	24-Hr Composite
Total Suspended Solids  G - Influent 00530	Sample meas.	*****	*****		*****	185.8	*****		0		
	Permit reqmt.	*****	*****		*****	Report monthly average	*****	mg/l		2X Monthly	24-Hr Composite
Total Suspended Solids  W - See Comments 00530	Sample meas.	381.3	*****		*****	19.6	*****		0		
	Permit reqmt.	1839 weekly average	*****	lbs/day	*****	45 weekly average	*****	mg/l		2X Monthly	24-Hr Composite
Ammonia Nitrogen (as N)  1 - Final Effluent 00610	Sample meas.	199.0	199.0	lbs/day	*****	7.8	7.8		0		
	Permit reqmt.	*****	*****		*****	Report monthly average	Report daily maximum	mg/l		Monthly	24-Hr Composite

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  GRIEKO TEMPEL SR. OPERATOR  TYPED OR PRINTED	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 the 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 OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE 907.586.0393 AREA   NUMBER	DATE 10/11/10 Y   M   D
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 LOCATION: 2009 RADCLIFFE RD  
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PERMIT NUMBER: AK0022951

MONITORING PERIOD: 10/1/2015

TO

10/31/2015


OUTFALL / MONITORING POINT: 001A MENDENHALL RIVER DIFFUSER

NO DISCHARGE:

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
Hardness, Total (as CaCO3)  1 - Final Effluent 00900	Sample meas.	*****	*****		*****	73.0	73.0		0		
	Permit reqmt.	*****	*****		*****	Report monthly average	Report daily maximum	mg/l		Monthly	24-Hr Composite
Silver Total Recoverable  1 - Final Effluent 01079	Sample meas.	*****	*****		*****				NA		
	Permit reqmt.	*****	*****		*****	Report monthly average	Report daily maximum	ug/l		See Permit Requirements	24-Hr Composite
Zinc Total Recoverable  1 - Final Effluent 01094	Sample meas.	*****	*****		*****				NA		
	Permit reqmt.	*****	*****		*****	Report monthly average	Report daily maximum	ug/l		See Permit Requirements	24-Hr Composite
Lead Total Recoverable  1 - Final Effluent 01114	Sample meas.	*****	*****		*****				NA		
	Permit reqmt.	*****	*****		*****	Report monthly average	Report daily maximum	ug/l		See Permit Requirements	24-Hr Composite
Copper Total Recoverable  1 - Final Effluent 01119	Sample meas.	0.36	0.36		*****	14.0	14.0		0		
	Permit reqmt.	1.82 monthly average	3.92 daily maximum	lbs/day	*****	44.5 monthly average	95.8 daily maximum	ug/l		Monthly	24-Hr Composite

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
 GRIEKO TEMPEL  
 SR. OPERATOR  
 TYPED OR PRINTED

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 the 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 OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE	DATE
907.586.0393	10/11/10
AREA   NUMBER	Y   M   D



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 LOCATION: 2009 RADCLIFFE RD  
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PERMIT NUMBER: AK0022951

MONITORING PERIOD: 10/1/2015 TO 10/31/2015


OUTFALL / MONITORING POINT: 001A MENDENHALL RIVER DIFFUSER

NO DISCHARGE:

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
Chronic Toxicity  1 - Final Effluent TTOOO	Sample meas.	*****	*****		*****	5.6	5.6		0		
	Permit reqmt.	*****	*****		*****	Report monthly average	Report daily maximum	TUC		See Permit Requirements	24-Hr Composite
Floating solids, waste or visible foam-visual  1 - Final Effluent 45613	Sample meas.	*****	*****		*****	*****	P		0		
	Permit reqmt.	*****	*****		*****	*****	Report value	pass/fail		Monthly	Visual
Flow  1 - Final Effluent 50050	Sample meas.	2.35	2.76		*****	*****	*****		0		
	Permit reqmt.	Report monthly average	4.9 daily maximum	MGD	*****	*****	*****			Continuous	Recorded
Fecal Coliform  1 - Final Effluent 74055	Sample meas.	*****	*****		*****	147.8	1400.0		1		
	Permit reqmt.	*****	*****		*****	200 monthly geometric mean	800 daily maximum	cts/100 ml		Weekly	Grab
Fecal Coliform  W - See Comments 74055	Sample meas.	*****	*****		*****	330.5	*****		0		
	Permit reqmt.	*****	*****		*****	400 weekly geometric mean	*****	cts/100 ml		Weekly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
*GRIEKO TEMPEL*  
*SR. OPERATOR*  
 TYPED OR PRINTED

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10/31/2015


OUTFALL / MONITORING POINT: 001A MENDENHALL RIVER DIFFUSER

NO DISCHARGE:

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
BOD5 Minimum % Removal	Sample meas.	*****	*****		92.2	*****	*****		0		
K - Percent Removal 81010	Permit reqmt.	*****	*****		85 minimum	*****	*****	%		Monthly	Calculation
Total Suspended Solids Minimum % Removal	Sample meas.	*****	*****		91.1	*****	*****		0		
K - Percent Removal 81011	Permit reqmt.	*****	*****		85 minimum	*****	*****	%		Monthly	Calculation

COMMENTS: W is weekly average.

Mail this report when completed to ADEC, Division of Water, 555 Cordova Street, Anchorage, AK 99501-2617  
 Attach an explanation of any violations. Reference all attachments below.

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  <i>GRIEKO TEMPEL</i>  <i>SR. OPERATOR</i>  TYPED OR PRINTED	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 the 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.	<div style="text-align: center;">                       SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT                 </div>	TELEPHONE  <i>907.586.0393</i>  AREA   NUMBER	DATE  <i>15/11/10</i>  Y   M   D
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# Alaska Department of Environmental Conservation

Division of Water, Compliance and Enforcement Program

555 Cordova Street

Anchorage, Alaska 99501

Nationwide Toll Free: 1(877) 569-4114 Anchorage/International: (907) 269-4114

Fax: (907) 269-4604 E-mail address: [dec-wqreporting@alaska.gov](mailto:dec-wqreporting@alaska.gov).

## NONCOMPLIANCE NOTIFICATION

<b>GENERAL INFORMATION</b>		<b>PERMIT# (if any):</b> AK 0022951
<b>Owner or Operator:</b> City and Borough of Juneau, AK	<b>Facility Name:</b> Mendenhall Wastewater Treatment Facility	<b>Facility Location:</b> 2009 Radcliffe Rd., Juneau, AK 99801
<b>Person Reporting:</b> Jim Westcott	<b>Phone Numbers of Person Reporting:</b> 907-586-0393	<b>Reported How? (e.g. by phone):</b> By Phone
<b>Date/Time Event was Noticed:</b> October 16, 2015 / 1230	<b>Date/Time Reported:</b> October 16, 2015 / 1400 via email	<b>Name of DEC Staff Contacted:</b> ADEC at <a href="mailto:dec-wqreporting@alaska.gov">dec-wqreporting@alaska.gov</a> and DMR October 2015 submittal

**VERBAL NOTIFICATION MUST BE MADE TO ADEC WITHIN 24 HOURS OF DISCOVERY OF NONCOMPLIANCE**

### INCIDENT DETAILS (attach additional sheets, lab reports, and photos as necessary)

<b>Period of Noncompliance</b>	<b>Start Date/Time (exact):</b> 10/6/15 / 0915	<b>End Date/Time (exact):</b> 10/6/15 / 0915
<b>If noncompliance has not been corrected, provide a statement regarding the anticipated time the noncompliance is expected to continue:</b> N/A		
<b>Estimated Quantity involved (volume or weight):</b> Effluent discharge on October 6, 2015 estimated at 2.25 MGD		
<b>Description of the noncompliance and its cause (be specific):</b> Fecal Coliform violation; exceeded daily maximum limit of 800 FC/100 mL. Our UV lamps and sleeves have reached the end of their anticipated effective life span.		
<b>Actions taken to reduce, eliminate, and prevent reoccurrence of noncompliance and Actual/Potential Impact on Environmental Health (describe in detail) (e.g. Supplied drinking water to nearby well owners and informed well owners not to drink from wells until further notice)</b> Weekly cleaning of UV lamp system consists of cleaning one of three banks in service each week. Additional cleanings scheduled for the next three weeks.		

### Permit Condition Deviation (Identify each permit condition exceeded during the event.)

<u>Parameter (e.g. BOD pH)</u>	<u>Permit Limit</u>	<u>Exceedance (sample result)</u>	<u>Sample Date</u>
Fecal Coliform Bacteria (May 1 – October 31)	Daily Maximum Limit 800 FC/100mL	1,400 FC/100mL.	October 6, 2015

**Corrective Actions (Attach a description of corrective actions taken to restore the system to normal operation and to minimize or eliminate chances of recurrence.)** Annual change out of UV system bulbs and sleeves has been underway since October 7. Completion date is scheduled for October 28, 2015.

**Environmental Damage: (if yes, provide details below)**  Yes  No  Unknown

**Actual /Potential Impact on Environment/Public Health (describe in detail)** None

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 the 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.

Name: Jim Westcott

Title: Senior Operator

Signature:

Date: 10/16/15

**FORMS MUST BE SENT TO ADEC WITHIN FIVE DAYS OF BECOMING AWARE OF THE EVENT.**





**Bio-Aquatic Testing, Inc.**



TCEQ TNI Accredited

**City and Borough of Juneau  
Mendenhall WWTP  
OUTFALL 001**

**Client Address:  
2009 RADCLIFFE RD.  
JUNEAU, AK 99801**

**Chronic Biomonitoring Report**

**59779**

***Ceriodaphnia dubia  
Pimephales promelas***

**June 23, 2015**

Approved by: *Chi Robison*

*Bio-Aquatic Testing, Inc. • 2501 Mayes Rd. Ste. 100 • Carrollton, Texas • 75006*

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**Unless otherwise noted in the body of the report, all data reported in this document are in compliance with current TNI standards and apply only to the samples referenced within. This report document may not be edited or reproduced in part or in full by any other entity, unless Bio-Aquatic Testing, Inc. issues written approval.**

**\*HAND-WRITTEN RAW DATA TABLES ARE AVAILABLE UPON REQUEST**



**BIO-AQUATIC TESTING, INC.**

2501 Mayes Road, Suite 100  
Carrollton, Texas 75006  
Tel: (972) 242-7750  
Fax: (972) 242-7749

**TOXICITY TEST REPORT - Chronic**

Client: Juneau, City and Borough of  
Facility: Mendenhall WWTP  
Permit No. AK-002295-1

Sample: 001  
Laboratory Number: 59779  
Date: June 23, 2015

*Ceriodaphnia dubia* passed survival and reproduction testing requirements. *Pimephales promelas* passed survival and growth testing requirements.

**SAMPLE COLLECTION:** Composite effluent samples from the City and Borough of Juneau, Mendenhall WWTP, were received on June 23, 2015 and June 25, 2015. Effluent samples were collected from Outfall 001 by facility personnel.

The effluent samples were analyzed for total residual chlorine using the Hanna Ion Specific Meter #711 and contained <0.10 mg/L, <0.10 mg/L, and <0.10 mg/L, respectively. Effluent and laboratory dilution water pH, temperature, and dissolved oxygen data were collected daily.

**TEST PROCEDURES:**  
*Ceriodaphnia dubia*

EPA METHOD: 1002

The seven-day (three brood) Chronic *Ceriodaphnia dubia* survival and reproduction test was initiated at 14:10 hours on June 23, 2015. Five effluent concentrations of 2%, 3%, 5%, 9% and 18% were prepared using synthetic water as dilution water. The test was set up with 30mL plastic cups containing 15mL of test solution or control dilution water. Each effluent concentration or control dilution water included ten replicate cups with one organism in each cup. The control was conducted concurrently with the test. Test organisms were less than 24-hour old laboratory cultured neonates. Neonates were introduced into the test solutions using a blocking design. The test was renewed daily with newly prepared solutions. Food consisting of a half-milliliter suspension of the green algae, *Selenastrum capricornutum*, and YTC was added to the test solutions each day. The test proceeded for seven days or until 60% of the females in the control had three broods. Data on survival and number of young produced per female were collected daily. The test ended at 10:25 hours on June 30, 2015. Survival and reproduction data were statistically ( $p=0.05$ ) analyzed according to EPA procedures to determine the Lowest Observable Effect Concentration (LOEC) and the No Observable Effect Concentration (NOEC).

## SURVIVAL:

### *Ceriodaphnia dubia*

Fisher's Exact test on *Ceriodaphnia dubia* survival test data demonstrated no statistically significant differences between the control and any of the effluent concentrations tested.

**LOEC: Not Calculable (Q)**

**NOEC: 18% Effluent**

**TOXIC UNITS: 5.56 TUc (NOEC based)**

**LC<sub>50</sub>: >18% Effluent**

## REPRODUCTION:

### *Ceriodaphnia dubia*

The *Ceriodaphnia dubia* reproduction data were normally distributed at the alpha level of 0.01 (13.277) using the Chi-square test for normality. Reproduction data were shown to be homogeneous using Bartlett's test at the alpha level of 0.01 (15.09) without data transformations. Using ANOVA and Dunnett's or Steel's Many- One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment as appropriate for Sub-Lethality) *Ceriodaphnia dubia* reproduction data demonstrated no statistically significant differences between the control and any of the effluent concentrations tested.

**LOEC: Not Calculable (Q)**

**NOEC: 18% Effluent**

**TOXIC UNITS: 5.56 TUc (NOEC based) & Q\* TUc (IC25 based)**

**IC<sub>25</sub>: Q\* (Not Calculable)**

## TEST PROCEDURES:

### *Pimephales promelas*

EPA METHOD: 1000

The seven-day Chronic *Pimephales promelas* survival and growth test was initiated at 15:35 hours on June 23, 2015. Five effluent concentrations of 2%, 3%, 5%, 9% and 18% were prepared using synthetic water as dilution water. The test was set up with 450mL plastic cups containing 250mL of test solution as test chambers. Each concentration consisted of five replicate chambers containing eight organisms each, giving a total of 40 (forty) per treatment. The control test was conducted concurrently with the test. Test organisms were laboratory-cultured *Pimephales promelas* larvae less than 24-hours old. The number of surviving larvae and water quality parameters in the old test solutions were recorded after each 24-hour period. The test was renewed daily with fresh solutions. Surviving larvae in each test chamber were fed freshly hatched brine shrimp two times per day. The test proceeded for seven days.

At the end of the test, all organisms were sacrificed, dried, and weighed. Data on surviving organisms and water quality were collected. The test ended at 10:10 hours on June 30, 2015. Survival and growth (weight) were statistically ( $p=0.05$ ) analyzed according to EPA procedures to determine the Lowest Observable Effect Concentration (LOEC) and the No Observable Effect Concentration (NOEC).



**SURVIVAL:**

*Pimephales promelas*

Wilcoxon's Rank-Sum Test performed on *Pimephales promelas* survival data demonstrated no statistically significant differences between the control and any of the effluent concentrations tested. Replicates "A" and "B" of the 5% effluent concentration were excluded from the statistical analysis because of lab errors.

**LOEC: Not Calculable (Q)**

**NOEC: 18% Effluent**

**TOXIC UNITS: 5.56 TUc (NOEC based)**

**LC<sub>50</sub>: >18% Effluent**

**GROWTH:**

*Pimephales promelas*

The *Pimephales promelas* growth data were normally distributed at the alpha level of 0.01 (0.900) using Shapiro Wilk's test for normality. Growth data were shown to be homogeneous using Bartlett's test at the alpha level of 0.01 (15.09) without data transformations. Bonferroni t-test on *Pimephales promelas* growth data demonstrated no statistically significant differences between the control and any of the effluent concentrations tested.

**LOEC: Not Calculable (Q)**

**NOEC: 18% Effluent**

**TOXIC UNITS: 5.56 TUc (NOEC based) & Q\* TUc (IC<sub>25</sub> based)**

**IC<sub>25</sub>: Q\* (Not Calculable)**

**BIO-AQUATIC TESTING, INC.**  
**TOXICITY TEST**

**Chronic**      *Ceriodaphnia dubia*

**Client:**      Juneau, City and Borough of      Mendenhall WWTP

**Lab ID:** 59779

**Permit Number:** NPDES AK-002295-1

**Test Temperature (oC):** 25 ± 1

**Sample Type:** Composite

**Photo Period:** 16 hours light, 8 hours dark

**Outfall Name:** 001

**Dilution Water:** synthetic

**Receiving Water Name:** Mendenhall River

**Begin Date:** 6/23/2015

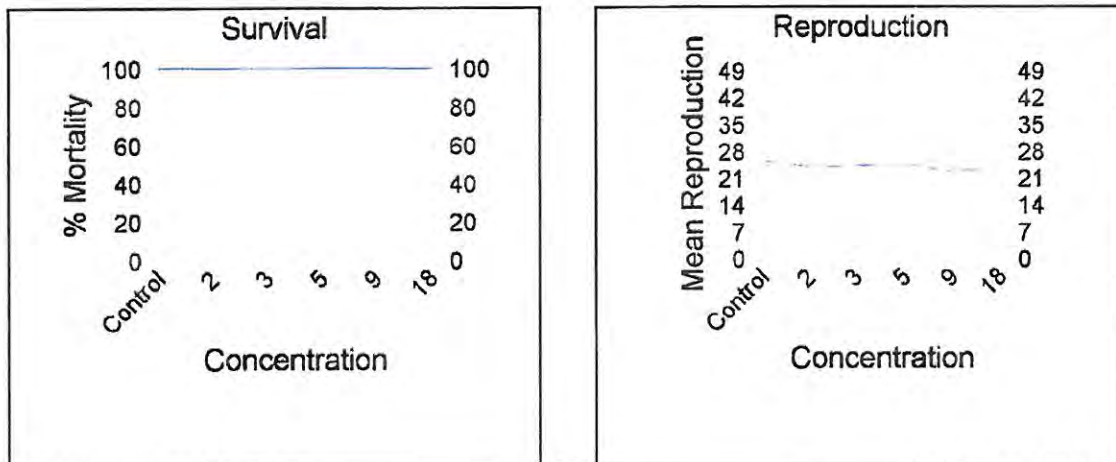
**End Date:** 6/30/2015

**Test Start Time:** 14:10      **Test End Time:** 10:25

**SURVIVAL AND REPRODUCTION TABLE**

FEMALE #	Control	2	%	3	%	5	%	9	%	18	%
1	22	21		19		25		25		22	
2	25	27		24		27		22		21	
3	21	20		22		22		18		17	
4	27	19		20		20		18		22	
5	26	25		25		26		23		30	
6	28	25		25		31		23		27	
7	28	25		33		22		24		24	
8	30	25		25		22		25		22	
9	24	22		24		24		24		20	
10	23	28		23		24		26		26	
Mean	25.4	23.7		24		24.3		22.8		23.1	
C.V%	11.4	12.7		15.8		13		12.1		16.2	
Var	8.488	9.122		14.444		10.011		7.733		14.1	
Std.Dev.	2.913	3.02		3.8		3.164		2.78		3.754	
Max	30	28		33		31		26		30	
Min	21	19		19		20		18		17	

**Concentration Response Relationships**





# **CHAIN-OF-CUSTODY SHEETS**

## **Appendix D**



**BIO-AQUATIC TESTING, INC.**  
 2501 MAYES RD., STE. 100  
 CARROLLTON, TX 75006  
 PH: 972-242-7750 FAX: 972-242-7749

**CHAIN OF CUSTODY**

Bio Only  
 No Sample Left  
 Lab id: **59779**

Please Review & Complete Sections A, B, C, & D.

Sample No: **59779**

Check Sample No.: \_\_\_ First, \_\_\_ Second, or \_\_\_ Third.

P.O. No: \_\_\_\_\_

Client: Juneau, City and Borough of  
 Facility: Mendenhall WWTP  
 Permit No: AK-002295-1  
 Outfall: 001  
 Client Contact: KAREN SEWELL  
 Client Phone: 907-586-0393 X 27

**B. Use area below to make changes, if the Scheduled Test(s) in "A" are incorrect:**

Freshwater Species					Saltwater Species	
<i>C. dubia</i> (water flea)	<i>D. pulex</i> (water flea)	<i>D. magna</i> (water flea)	<i>P. promelas</i> (minnow)	<i>Selenastrum</i> (green algae)	<i>M. beryllina</i> (minnow)	<i>Mysidopsis</i> (shrimp)
<input checked="" type="checkbox"/> Chronic	<input type="checkbox"/> Chronic	<input type="checkbox"/> Chronic	<input checked="" type="checkbox"/> Chronic	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> Chronic	<input type="checkbox"/> Chronic
<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 96 Hour
<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 48 Hour
<input checked="" type="checkbox"/> 24 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 24 Hour	<input checked="" type="checkbox"/> 24 Hour		<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 24 Hour

**A. REVIEW SCHEDULED TEST(s):**

Chronic	<u>Ceriodaphnia dubia</u>
Chronic	<u>Pimephales promelas</u>

To Ship the 1st Sample on: 6/22/2015

Concentration: 2 3 5 9 18

(For TX) Setup separate 24hr Acute Test?  No

Notes: May-October RWC = 3% (BG)

C. Sample ID or Location: (Outfall No. or Name)	Sample Type: E = Effluent RS = Rec. Stream S = Sediment	Sample Date		Sample Time (military)		Grab or Composite	Sampled By: (Sign and Print Name)	Number Of Containers Shipped
		From	To	From	To			
<u>Mendenhall 1 WWTP</u>	<u>E</u>	<u>6-21-15</u>	<u>6-22-15</u>	<u>0830</u>	<u>0905</u>	<u>C</u>	<u>Karen Sewell</u>	<u>1</u>
<u>2</u>								
<u>3</u>								

D. Relinquished By:	Date	Time	Received By:	Date	Time
<u>Laura A Sewell</u>	<u>6-22-15</u>	<u>1010</u>	<u>[Signature]</u>	<u>6/22/15</u>	<u>1010</u>
<u>2</u>					
<u>3</u>			<u>[Signature]</u>	<u>6-23-15</u>	<u>1300</u>

**Bio-Aquatic Sample Login**

BAT sample personnel:  Yes  No

Check for Ammonia:  Yes  No

Dechlorinate Sample:  Yes  No

Dilution Water:  Receiving Stream  Synthetic Lab

Date: 6-23-15 Time: 1300 By: [Signature]

Temperature: 4 (C) IR# 602 Int. Salinity:     ppt Adj. Salinity:     ppt

Chlorine: 2.7 mg/l Ammonia: 32.6 Other:    

pH: 7.4 DO: 9.9 mg/l Condition: Good





**BIO-AQUATIC TESTING, INC.**  
 2501 MAYES RD., STE. 100  
 CARROLLTON, TX 75006  
 PH: 972-242-7750 FAX: 972-242-7749

**CHAIN OF CUSTODY**

Bio Only  
 No Sample Left

Lab Id: **59779**

Please Review & Complete Sections A, B, C, & D.

Sample No: **59779**

Check Sample No.: \_\_\_\_\_ First, 2 Second, or \_\_\_\_\_ Third.

P.O. No:

Client: Juneau, City and Borough of

Facility: Mendenhall WWTP

Permit No: AK-002295-1

Outfall: 001

Client Contact: KAREN SEWELL

Client Phone: 907-586-0393 X 27

**A. REVIEW SCHEDULED TEST(S):**

Chronic	Ceriodaphnia dubia
Chronic	Pimephales promelas

To Ship the  
1st Sample on:  
6/22/2015

Concentration: 2 3 5 9 18

(For TX) Setup separate 24hr Acute Test?  Yes  No

**B. Use area below to make changes, if the Scheduled Test(s) in "A" are incorrect:**

Freshwater Species					Saltwater Species	
C. dubia (water flea)	D. pulex (water flea)	D. magna (water flea)	P. promelas (minnow)	Selenastrum (green algae)	M. beryllina (minnow)	Mysidopsis (shrimp)
<input checked="" type="checkbox"/> Chronic	<input type="checkbox"/> Chronic	<input type="checkbox"/> Chronic	<input checked="" type="checkbox"/> Chronic	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> Chronic	<input type="checkbox"/> Chronic
<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 96 Hour
<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 48 Hour
<input checked="" type="checkbox"/> 24 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 24 Hour	<input checked="" type="checkbox"/> 24 Hour		<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 24 Hour

Notes: May-October RWC = 3%  
(BG)

Sample ID or Location: (Outfall No. or Name)	Sample Type: E = Effluent RS = Rec. Stream S = Sediment	Sample Date		Sample Time (military)		Grab or Composite	Sampled By: (Sign and Print Name)	Number of Containers Shipped
		From	To	From	To			
1 Mendenhall WWTP	E	6-22-15	6-23-15	0910	0910	C	Karen A Sewell & Karen A Sewell	1
2								
3								

Relinquished By:	Date	Time	Received By:	Date	Time
1 Karen A. Sewell	6-23-15	1000	[Signature]	6/23/15	1005
2					
3			[Signature]	6-25-15	8:40

**Bio-Aquatic Sample Login**

BAT sample personnel:  Yes  No  
 Check for Ammonia:  Yes  No  
 Dechlorinate Sample:  Yes  No  
 Dilution Water:  Receiving Stream  Synthetic Lab

Date: 6-25-15 Time: 8:40 By: [Signature]  
 Temperature: 4 (C) IR#: 002 Int. Salinity: \_\_\_\_\_ ppt Adj. Salinity: \_\_\_\_\_ ppt  
 Chlorine: 6.2 mg/l Ammonia: 29.7 Other: \_\_\_\_\_  
 pH: 7.0 DO: 9.5 mg/l Condition: good



**BIO-AQUATIC TESTING, INC.**  
 2501 MAYES RD., STE. 100  
 CARROLLTON, TX 75006  
 PH: 972-242-7750 FAX: 972-242-7749

**CHAIN OF CUSTODY**

Bio Only  
 No Sample Left

Lab Id : **59779**

Please Review & Complete Sections A, B, C, & D.

Sample No: **59779**

Check Sample No. : \_\_\_ First, \_\_\_ Second, or  Third.

P.O. No: \_\_\_\_\_

Client: **Juneau, City and Borough of**

Facility: **Mendenhall WWTP**

Permit No: **AK-002295-1**

Outfall: **001**

Client Contact: **KAREN SEWELL**

Client Phone: **907-586-0393 X 27**

**A. REVIEW SCHEDULED TEST(S):**

Chronic	Ceriodaphnia dubia
Chronic	Pimephales promelas

To Ship the  
 1st Sample on:  
**6/22/2015**

Concentration: 2 3 5 9 18

(For TX) Setup separate 24hr Acute Test?  No

**B. Use area below to make changes, if the Scheduled Test(s) in "A" are incorrect:**

Freshwater Species					Saltwater Species	
C. dubia (water flea)	D. pulex (water flea)	D. magna (water flea)	P. promelas (minnow)	Selenastrum (green algae)	M. beryllina (minnow)	Mysidopsis (shrimp)
<input checked="" type="checkbox"/> Chronic	<input type="checkbox"/> Chronic	<input type="checkbox"/> Chronic	<input checked="" type="checkbox"/> Chronic	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> Chronic	<input type="checkbox"/> Chronic
<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 96 Hour
<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 48 Hour
<input checked="" type="checkbox"/> 24 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 24 Hour	<input checked="" type="checkbox"/> 24 Hour		<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 24 Hour

Notes: May-October RWC = 3%  
 (BG)

Sample ID or Location: (Outfall No. or Name)	Sample Type: E = Effluent RS = Rec. Stream S = Sediment	Sample Date		Sample Time (military)		Grab or Composite	Sampled By: (Sign and Print Name)	Number Of Containers Shipped
		From	To	From	To			
Mendenhall 1 WWTP	E	6-23-15	6-24-15	0915	0915	C	Karen A Sewell - Karen A. Sewell	1
2								
3								

Relinquished By:	Date	Time	Received By:	Date	Time
2					
3			<i>[Signature]</i>	6-25-15	13:20

**Bio-Aquatic Sample Login**

BAT sample personnel:  Yes  No

Check for Ammonia:  Yes  No

Dechlorinate Sample:  Yes  No

Dilution Water:  Receiving Stream  Synthetic Lab

Date: <b>6-25-15</b>	Time: <b>1320</b>	By: <i>[Signature]</i>
Temperature: <b>4 (C)</b>	IR#: <b>002</b>	int. Salinity: _____ ppt
Chlorine: <b>6.2 mg/l</b>	Ammonia: <b>29.9</b>	Other: _____
pH: <b>7.3</b>	DO: <b>9.9 mg/l</b>	Condition: <b>Good</b>

1st use 6-26-15