

96-Hour Marine Sediment Bioassay  
Suspended Particulate Phase

Water Quality Measurements  
& Test Organism Survival

Client/Project ID: Anchor QEA / LNB Federal Channels  
Sample ID: MCN5-COMP  
Test No.: 1802-5148

Test Species: M. beryllina  
Start Date/Time: 2/22/2018 1025  
End Date/Time: 2/26/2018 1540

Concentration %	Rep	Number of Live Organisms			Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Percent Survival								
		0*	48	96*	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96									
Lab	A	10	10	10	32.5	32.8	32.6	32.9	33.3	24.1	24.2	24.9	24.7	25.1	6.2	6.7	5.9	5.7	5.2	8.03	7.40	7.91	7.88	7.87	100								
Control #2	B	10	10	10																					100								
	C	10	10	10																						100							
	D	10	10	10																						100							
	E	10	10	10																						100							
	Site Water	A	10	7	7	34.0	33.8	33.6	34.2	35.0	24.6	24.2	24.9	24.4	24.7	6.7	6.2	5.9	5.9	5.9	7.99	7.71	7.92	7.92	7.91	70							
Control #2	B	10	10	10																						100							
	C	10	9	9																						90							
	D	10	9	9																						90							
	E	10	10	10																						100							
	10	A	10	10	10	32.6	32.6	32.7	33.1	34.1	24.0	24.1	24.8	24.5	24.5	6.2	6.3	5.9	5.8	5.5	8.01	7.96	7.95	7.90	7.95	100							
50	B	10	9	9																						90							
	C	10	8	8																						80							
	D	10	8	8																						80							
	E	10	10	10	32.6					24.1					6.3					7.94						100							
	A	10	9	8	33.8	32.9	32.4	33.6	34.6	24.8	24.1	24.7	24.2	24.2	6.3	6.3	5.9	5.8	5.6	7.92	7.98	7.97	7.97	8.00	80								
100	B	10	10	10																						100							
	C	10	9	9																						90							
	D	10	10	10																						100							
	E	10	10	10																						100							
	Tech Initials (counts)	IAP RT DM																							Tech Initials (readings)					BO	RT	RT	RT

QC: RT/EG/DM

Animal Source/Date Received: APB/ 2-22-18 Q23

Age at Initiation: 10d

Comments: Organisms fed prior to initiation, circle one (y / n)  
\*Collect NH<sub>3</sub> sub-sample  
(A) Q18 ACS 2/23/18 (B) Q18 2/25/18

Feeding Times (hr):

	0	24	48	72	96
...	0835	0830	0820	0835	
...	--	--	--	--	--

QC Check: ES 3/5/18

Final Review: EG 3/6/18

**Standard Elutriate Preparation**

Client: Anchor QEA/LNB Federal Channels Test Species: M. galloprovincialis

Sample IDs: BIMW, BIME, TB, BIS M. beryllina

Analyst: ACS A. bahia

Test IDs: 1802-5069 to 5080

Protocols: EPA-503/8-91/001 Feb 1991 (ITM) & EPA-823/B-98/004 Feb 1998 (OTM)

Water used to prepare elutriate (circle): Lab SW or Site Water

Salinity (ppt): 33.9

Ratio 1:4 (Sediment:Water): Example: 2 L Sediment : 8 L Water

Site ID:	Sediment Volume:	Water Volume:
BIMW-COMP-T-M	<u>3L per bucket (x2)</u>	<u>12 L per bucket (x2)</u>
BIME-COMP-T-M	<u>3L per bucket (x2)</u>	<u>12 L per bucket (x2)</u>
TB-COMP	<u>3L per bucket (x2)</u>	<u>12 L per bucket (x2)</u>
BIS-COMP	<u>3L per bucket (x2)</u>	<u>12 L per bucket (x2)</u>

Mix sediment and water in polyethylene plastic-lined 5-gallon bucket with stainless steel mixing blade for a total of 30 min.

Every 10 minutes, use a stainless steel spoon to manually suspend settled sediment.

Site ID:	Settling Start Date/Time:	Settling End Date/Time:
BIMW-COMP-T-M	<u>2/14/18 0950</u>	<u>2/14/18 1320</u>
BIME-COMP-T-M	<u>2/14/18 0955</u>	<u>2/14/18 1020</u>
TB-COMP	<u>2/14/18 1055</u>	<u>2/14/18 1325</u>
BIS-COMP	<u>2/14/18 1235</u>	<u>2/14/18 1415</u>

Settle for 1-hour at room temperature. (See project manager if settling is insufficient)  
 Siphon overlying water (elutriate) into a new container without disturbing the sediment  
 If necessary, centrifuge elutriate to remove particulates (especially for larval testing).

Check Dissolved Oxygen (DO) before preparing dilutions (aerate if < 6.0 mg/L).

Site ID:	Initial DO (mg/L):	Final DO (mg/L):
BIMW-COMP-T-M	<u>3.3</u>	<u>7.6</u>
BIME-COMP-T-M	<u>2.6</u>	<u>8.4</u>
TB-COMP	<u>2.0</u>	<u>7.5</u>
BIS-COMP	<u>1.9</u>	<u>7.1</u>

Prepare dilutions if necessary and collect ammonia subsamples

Comments: (#) QIC ACS 2/14/18

QC Check: VS 3/5/18 Final Review: EG 4/20/18

**Standard Elutriate Preparation**

Anchor QEA/LNB Federal  
Channels

Test Species: M. galloprovincialis

Client:

Sample IDs:

MCN1, MCN2, BIN, EC

M. beryllina

Analyst:

ARS

A. bahia

Test IDs:

1802-5121 to 5132

Protocols :

EPA-503/8-91/001 Feb 1991 (ITM) & EPA-823/B-98/004 Feb 1998 (OTM)

Water used to prepare elutriate (circle): Lab SW or Site Water

Salinity (ppt): 33.8

Ratio 1:4 (Sediment:Water):

Example: 2 L Sediment : 8 L Water

Site ID:	Sediment Volume:	Water Volume:
MCN1-COMP-T	3L (x2 buckets)	12L (x2 buckets)
MCN2-COMP-T	3L (x2 buckets)	12L (x2 buckets)
BIN-COMP-T	3L (x2 buckets)	12L (x2 buckets)
EC ES-COMP	3L	12L

Mix sediment and water in polyethylene plastic-lined 5-gallon bucket with stainless steel mixing blade for a total of 30 min.

Every 10 minutes, use a stainless steel spoon to manually suspend settled sediment.

Site ID:	Settling Start Date/Time:	Settling End Date/Time:
MCN1-COMP-T	2/20/18 0945	2/20/18 1315
MCN2-COMP-T	2/20/18 1101	2/20/18 1355
BIN-COMP-T	2/20/18 0900	2/20/18 1125
EC ES-COMP	2/20/18 1140	2/20/18 1410

Settle for 1-hour at room temperature. (See project manager if settling is insufficient)  
Siphon overlying water (elutriate) into a new container without disturbing the sediment  
If necessary, centrifuge elutriate to remove particulates (especially for larval testing).

Check Dissolved Oxygen (DO) before preparing dilutions (aerate if < 6.0 mg/L).

Site ID:	Initial DO (mg/L):	Final DO (mg/L):
MCN1-COMP-T	3.0	8.3
MCN2-COMP-T	3.3	7.4
BIN-COMP-T	2.9	8.5
EC ES-COMP	9.4	9.4

Prepare dilutions if necessary and collect ammonia subsamples

Comments:

① circ ARS 2/20/18

QC Check:

B 3/5/18

Final Review:

En 4/20/18

### Standard Elutriate Preparation

Client: Anchor QEA/LNB Federal Channels Test Species: M. galloprovincialis

Sample IDs: MCN3, MCN4, MCN5 M. beryllina

Analyst: ACS A. bahia

Test IDs: 1802 - S143 to - S151

Protocols: EPA-503/8-91/001 Feb 1991 (ITM) & EPA-823/B-98/004 Feb 1998 (OTM)

Water used to prepare elutriate (circle): Lab SW or Site Water

Salinity (ppt): 33.9

Ratio 1:4 (Sediment:Water): Example: 2 L Sediment : 8 L Water

Site ID:	Sediment Volume:	Water Volume:
MCN3-COMP	<u>3L (x 2 buckets)</u>	<u>12L (x 2 buckets)</u>
MCN4-COMP	<u>3L (x 2 buckets)</u>	<u>12L (x 2 buckets)</u>
MCN5-COMP	<u>3L (x 2 buckets)</u>	<u>12L (x 2 buckets)</u>

Mix sediment and water in polyethylene plastic-lined 5-gallon bucket with stainless steel mixing blade for a total of 30 min.

Every 10 minutes, use a stainless steel spoon to manually suspend settled sediment.

Site ID:	Settling Start Date/Time:	Settling End Date/Time:
MCN3-COMP	<u>2/22/18 0905</u>	<u>2/22/18 1055</u>
MCN4-COMP	<u>2/22/18 0940</u>	<u>2/22/18 1140</u>
MCN5-COMP	<u>2/22/18 1040</u>	<u>2/22/18 1210</u>

Settle for 1-hour at room temperature. (See project manager if settling is insufficient)  
 Siphon overlying water (elutriate) into a new container without disturbing the sediment  
 If necessary, centrifuge elutriate to remove particulates (especially for larval testing).

Check Dissolved Oxygen (DO) before preparing dilutions (aerate if < 6.0 mg/L).

Site ID:	Initial DO (mg/L):	Final DO (mg/L):
MCN3-COMP	<u>3.8</u>	<u>8.1</u>
MCN4-COMP	<u>3.6</u>	<u>8.2</u>
MCN5-COMP	<u>4.2</u>	<u>8.2</u>

Prepare dilutions if necessary and collect ammonia subsamples

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

QC Check: 18 3/5/18 Final Review: EG 3/6/18

*Macoma* and *Nereis* BP 28-day

# Water Quality Measurements

## 28-Day Marine Sediment Bioassay Bioaccumulation

Client: Anchor QEA  
 Test Species: M. nasuta and N. virens

Project ID: \_\_\_\_\_  
 Site ID: \_\_\_\_\_

Lower Newport Bay Federal  
 Channels  
 Lab Control

Start Date/Time: 1/24/2018 1130  
 End Date/Time: 2/21/2018 0905

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0*	15.5	15.4	15.2	15.3	15.0	8.2	8.2	8.3	8.1	8.2	7.97	7.99	8.00	8.00	8.09	33.7	33.8	33.9	33.8	33.9	VS/ACS
1 Q1	16.4	16.3	16.0	16.1	15.8	7.6	7.5	7.6	7.5	7.7	7.92	7.92	7.91	7.88	7.98	33.8	33.7	33.7	33.7	33.8	RT/N
2 Q1	16.4	16.3	16.4	15.7	16.2	7.9	7.8	7.8	7.7	7.8	7.92	7.92	7.92	7.90	7.97	34.1	34.1	34.2	34.3	34.4	BO/RT
3 Q1	13.4	14.1	14.8	15.0	13.4	8.4	8.1	7.9	7.8	8.3	7.99	7.97	7.96	7.93	8.01	33.9	33.9	34.0	34.0	33.9	BO/RT
4 Q1	13.9	14.4	15.1	15.3	14.5	8.3	8.1	7.8	7.8	8.1	7.96	7.95	7.94	7.92	7.99	33.7	33.9	33.9	33.9	33.9	CH/ACS
5 Q1	16.5	14.9	15.4	15.6	14.9	7.7	8.0	7.9	7.8	8.0	7.99	7.98	7.96	7.94	8.00	33.9	33.9	34.0	34.0	33.8	DM/TN
6 Q1	16.1	15.6	16.1	16.1	15.7	8.3	8.2	8.1	8.0	8.2	7.90	7.91	7.92	7.90	7.95	33.7	33.8	33.9	34.0	33.9	LTP/CH
7*	16.0	15.3	16.0	15.9	16.0	8.0	8.1	7.9	7.8	8.0	7.99	7.96	7.97	7.95	7.98	33.9	34.0	34.2	34.0	34.0	RT/RT
8	15.4	15.5	15.5	15.5	15.5	8.2	8.0	8.0	8.0	8.0	7.97	7.96	7.97	7.95	7.98	33.9	34.1	34.2	34.1	34.1	LTP/DM
9 Q1	15.8	16.0	16.1	15.9	15.9	7.6	7.7	7.6	7.6	7.7	7.97	7.95	7.97	7.95	7.98	34.0	34.2	33.9	34.1	34.1	BO/RT
10	15.6	15.7	15.0	15.5	15.6	7.6	7.5	7.7	8.0	7.6	7.94	8.02	8.04	8.00	8.03	34.0	34.2	33.9	34.2	34.2	DM/ACS
11 Q1	16.3	15.9	15.4	15.7	15.9	7.7	8.1	8.2	8.0	8.1	7.90	7.91	7.93	7.88	7.93	34.1	34.1	33.9	34.2	34.2	DM/TN
12 Q1	14.6	16.0	15.8	15.7	16.2	8.2	7.9	7.9	7.7	7.8	8.03	7.96	7.97	7.95	7.99	33.6	34.0	34.0	34.0	34.1	DM/TN
13 Q1	16.1	16.4	16.0	16.2	16.3	8.4	7.7	8.1	7.8	8.0	7.97	7.96	7.98	7.92	7.99	33.7	34.0	34.1	33.9	34.0	DM/TN
14*	15.0	15.7	15.9	14.8	15.7	8.0	7.8	7.7	7.9	7.7	7.91	7.90	7.90	7.97	7.94	33.7	34.0	34.1	33.8	34.1	BO/DM
15	14.3	16.4	15.4	14.1	15.1	7.5	7.3	7.3	7.4	7.4	7.98	7.94	7.93	8.00	7.96	33.8	34.1	34.1	33.8	34.0	BO/AD
16	14.7	15.7	15.9	15.1	15.7	8.3	8.1	8.0	8.2	8.1	7.88	7.88	7.88	7.91	7.92	33.9	34.2	34.3	33.8	34.0	BO/EG
17 Q1	15.1	16.0	16.2	15.6	15.9	7.9	7.6	7.6	7.7	7.7	7.99	7.99	7.96	7.97	8.00	34.0	34.5	34.6	34.2	34.3	BO/EG
18 Q1	15.5	14.5	14.5	15.6	16.2	8.2	8.5	8.4	8.0	7.8	7.97	8.03	8.03	7.96	8.00	33.9	34.0	34.0	33.9	34.1	DM/TN
19	15.1	14.5	14.4	15.3	15.1	8.0	8.2	8.2	8.1	8.0	8.08	8.03	8.02	8.05	8.08	33.7	33.7	33.9	34.0	33.9	KEP/LTP
20	15.4	15.0	14.8	15.1	15.6	8.0	8.1	8.1	7.8	7.9	7.99	8.00	8.01	8.00	8.00	33.8	34.0	34.0	33.9	34.0	DM/DM
21*	15.3	15.0	14.8	14.9	15.3	8.3	8.2	8.3	8.2	8.1	7.97	8.01	8.02	8.00	8.01	33.9	34.0	33.9	33.9	34.1	BO/RT
22	16.0	15.9	15.8	15.7	16.0	7.5	7.5	7.4	7.5	7.5	8.01	8.02	8.02	8.00	8.02	34.1	34.1	34.1	33.9	34.1	BO/RT
23	15.6	15.8	15.8	15.8	15.8	7.7	7.6	7.6	7.5	7.5	7.97	7.95	7.95	7.91	7.96	33.9	34.1	34.3	34.1	34.1	BO/RT
24	14.8	14.1	14.3	14.6	14.9	8.0	8.2	8.0	7.9	7.8	7.93	7.98	8.01	7.97	7.99	34.0	34.0	34.2	34.4	34.5	RT/EG
25	14.4	14.1	14.0	14.4	14.2	7.9	7.9	7.9	7.9	7.8	7.97	8.00	8.01	8.01	8.03	33.8	34.0	34.1	34.2	34.2	ACS
26	14.8	14.3	14.3	14.6	14.2	8.1	8.1	8.1	8.0	8.1	8.01	8.04	8.04	8.02	8.05	34.0	34.1	34.1	34.1	34.1	LTP
27	15.2	15.0	15.1	15.1	14.8	8.0	8.0	8.0	8.0	8.1	7.96	8.00	8.00	7.99	8.02	33.5	33.4	33.4	33.4	33.6	BO/RT
28*	15.9	15.9	16.0	15.9	15.5	8.3	8.3	8.2	8.2	8.4	7.94	7.99	7.97	7.94	8.00	33.45	33.5	33.6	33.5	33.5	ACS

Comments: \* Collect NH<sub>3</sub> Samples (A) RHO180210/18 - pH of rep A = 7.97 (B) Q18 LTP 2/18 (C) R18 ACS 2/21/18  
 QC Check: VS 3/7/18  
 Final Review: EG 4/20/18

**28-Day Marine Sediment Bioassay  
Bioaccumulation**

**Water Quality Measurements**

Client: Anchor QEA  
Test Species: M. nasuta and N. virens

Project ID: \_\_\_\_\_  
Site ID: \_\_\_\_\_

Lower Newport Bay Federal  
Channels  
Start Date/Time: 1/24/2018 1130  
End Date/Time: 2/21/2018 0905

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0*	15.4	15.4	16.8	15.3	15.0	8.1	8.1	8.0	8.1	8.2	8.00	8.02	8.03	8.02	8.04	33.9	33.9	34.0	34.0	34.0	YS/AS
1 Q1	16.1	16.3	16.0	15.1	15.4	7.6	7.5	7.5	7.8	7.8	7.98	7.96	7.94	8.02	7.98	34.0	34.1	34.0	33.9	34.0	RT/TV
2 Q1	16.2	16.4	16.6	15.8	15.8	7.9	7.7	7.6	7.9	7.9	7.95	7.96	7.93	8.01	7.97	34.8	34.9	34.9	34.7	34.7	BO/RT
3 Q1	12.6	13.9	13.2	15.2	15.2	8.5	8.1	8.2	7.9	7.8	8.08	8.01	8.05	8.04	8.00	33.8	34.1	33.9	34.3	34.0	BO/RT
4 Q1	13.0	14.5	14.0	15.4	15.3	8.4	7.9	8.0	7.9	7.8	8.03	7.98	8.00	8.03	7.99	33.7	34.0	33.9	34.1	34.1	AS/CH
5	15.7	15.0	14.5	15.6	15.3	7.8	7.9	8.0	7.8	7.8	7.98	7.97	7.99	8.01	7.97	33.9	33.9	33.9	34.1	34.0	DM/TJ
6 Q1	16.3	16.6	16.6	16.3	16.0	8.0	8.1	8.1	8.1	8.1	7.96	7.95	7.95	7.98	7.96	34.1	33.9	33.9	34.2	34.0	LP/CH
7 Q1	16.4	16.0	16.2	15.9	16.0	7.8	7.8	7.7	7.9	7.8	7.99	7.98	7.96	8.01	7.98	34.1	34.0	34.0	34.0	33.9	BO/RT
8	15.3	15.6	15.3	15.7	15.9	8.0	8.0	8.0	8.0	8.1	7.90	7.98	7.98	8.01	7.99	34.0	34.1	33.9	34.1	34.0	RT/RT
9 Q1	15.7	15.9	15.9	16.2	15.8	7.6	7.6	7.5	7.4	7.7	8.00	7.97	7.96	8.01	7.99	33.9	34.1	34.0	34.1	33.9	LP/DM
10	15.3	15.6	15.5	14.2	15.2	7.6	7.5	7.6	7.8	7.7	8.04	8.01	8.00	8.08	8.04	34.0	34.1	34.0	33.9	34.0	BO/RT
11	15.6	15.9	15.7	14.7	15.5	8.1	8.0	7.9	8.4	8.0	7.93	7.90	7.90	7.98	7.92	33.9	34.1	33.9	33.9	34.0	RT/AS
12 Q1	15.9	16.2	16.1	15.0	15.8	7.9	7.9	7.6	8.0	7.8	8.01	7.97	7.97	8.04	8.00	34.3	34.4	34.2	34.2	34.2	DM/TJ
13	16.0	15.6	14.9	15.1	16.0	8.0	8.0	8.2	8.3	8.0	7.99	7.99	8.02	8.04	7.99	33.9	33.9	33.9	34.0	34.0	DM/TJ
14*	15.6	15.6	15.6	15.6	15.9	7.7	7.7	7.6	7.8	7.7	7.96	7.94	7.95	7.97	7.97	34.0	33.9	33.9	33.9	34.1	DM/TJ
15	15.0	15.1	15.0	15.1	15.5	7.4	7.4	7.4	7.4	7.3	7.97	7.94	7.95	7.98	7.94	33.8	33.8	33.8	33.9	34.0	BO/DM
16	15.4	15.4	15.5	15.5	15.9	8.2	8.1	8.0	8.2	8.0	7.93	7.91	7.90	7.93	7.90	33.8	33.8	33.8	33.9	34.0	BO/AD
17 Q1	15.8	15.8	15.9	16.0	16.2	7.8	7.7	7.7	7.6	7.7	8.01	8.00	7.95	8.02	7.99	34.1	34.2	34.2	34.3	34.0	BO/ES
18 Q1	15.9	15.8	15.5	15.5	15.7	8.1	8.1	8.5	8.7	8.4	8.00	7.98	8.02	8.06	8.05	33.8	33.9	33.9	34.0	34.0	RT/TV
19	15.5	15.6	15.8	15.0	14.9	7.8	7.8	7.7	8.0	8.0	8.09	8.07	7.97	8.10	8.03	34.0	34.0	34.3	34.2	34.2	RT/RT
20 Q1	15.8	15.8	16.3	16.2	15.8	7.8	7.9	7.6	7.7	7.9	8.01	7.99	7.98	8.00	7.99	34.1	34.1	34.1	34.0	34.0	RT/DM
21*	15.6	15.6	15.6	14.6	15.5	8.1	8.1	8.1	8.0	8.0	8.02	8.01	8.01	8.01	8.01	34.0	34.1	34.0	34.0	34.0	BO/RT
22 Q1	16.1	16.2	16.4	16.2	16.2	7.4	7.4	7.3	7.3	7.4	8.02	8.01	7.99	8.02	8.02	34.2	34.1	34.3	34.1	34.1	RT/RT
23 Q1	15.6	15.4	16.2	16.0	16.0	7.4	7.6	7.4	7.4	7.5	7.97	7.97	7.93	7.96	7.96	34.1	33.9	34.2	34.0	34.1	BO/RT
24	14.8	14.4	14.5	14.2	14.4	7.7	7.8	7.9	8.0	7.7	7.99	8.00	8.01	8.01	8.01	34.5	33.9	34.5	34.4	34.5	RT/EG
25 Q1	14.5	13.9	14.2	14.5	14.2	7.8	7.9	7.8	7.7	7.8	8.03	8.04	8.03	8.03	8.04	34.1	34.1	34.2	34.2	34.1	AS
26	14.4	14.4	14.8	15.1	14.8	8.0	8.1	7.9	7.9	7.9	8.05	8.04	8.03	8.04	8.03	34.1	34.1	34.1	34.1	34.1	RT
27	15.0	15.0	15.6	15.8	15.8	8.0	8.0	7.8	7.8	7.8	8.03	8.02	8.01	8.03	8.02	33.5	33.5	33.5	33.6	33.5	BO/RT
28* Q2	16.0	16.2	16.5	16.5	16.5	8.2	8.1	8.0	8.1	8.1	7.99	7.98	7.97	8.01	7.99	33.6	33.6	33.7	33.8	33.7	DM

Comments: \* Collect NH<sub>3</sub> Samples @ 1/24/18 @ 1/25/18 @ 1/26/18 @ 1/27/18 @ 1/28/18 @ 1/29/18 @ 1/30/18 @ 1/31/18 @ 2/1/18 @ 2/2/18 @ 2/3/18 @ 2/4/18 @ 2/5/18 @ 2/6/18 @ 2/7/18 @ 2/8/18 @ 2/9/18 @ 2/10/18 @ 2/11/18 @ 2/12/18 @ 2/13/18 @ 2/14/18 @ 2/15/18 @ 2/16/18 @ 2/17/18 @ 2/18/18 @ 2/19/18 @ 2/20/18 @ 2/21/18

QC Check: YS 3/7/18

Final Review: EG 4/20/18

**28-Day Marine Sediment Bioassay  
Bioaccumulation**

**Water Quality Measurements**

Client: Anchor QEA Project ID: Lower Newport Bay Federal Channels Start Date/Time: 1/24/2018 1130  
 Test Species: M. nasuta and N. virens Site ID: TB-Comp End Date/Time: 2/21/2018 0905

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0*	15.6	15.7	15.6	15.4	15.0	7.9	7.9	8.0	8.1	8.2	8.01	8.03	8.03	8.04	8.03	33.9	34.0	34.0	33.9	34.0	VS/AS
1 Q1	15.7	15.8	15.8	16.1	15.9	7.5	7.5	7.6	7.6	7.7	7.94	7.98	8.02	8.04	8.04	33.9	34.1	34.1	34.1	34.0	RT/TN
2 Q1	16.3	16.4	16.5	16.2	16.2	7.8	7.7	7.6	7.8	8.0	7.93	7.98	8.01	8.02	8.04	34.5	34.6	34.6	34.7	34.7	BO/RT
3 Q1	13.8	14.3	14.2	13.7	13.9	8.0	7.9	7.9	8.2	8.1	8.01	8.01	8.02	8.04	8.04	33.7	34.0	34.0	33.9	34.0	BO/RT
4 Q1	14.0	14.4	14.3	13.6	14.1	7.9	7.9	8.0	8.3	8.1	7.99	8.00	8.02	8.03	8.02	33.8	34.0	33.9	33.9	34.0	ACS/CH
5	14.9	14.8	14.8	15.9	14.4	7.7	7.8	7.9	7.7	8.0	7.95	7.98	7.99	7.98	8.01	34.0	34.0	34.0	34.1	34.0	DM/TN
6 Q1	15.9	15.6	15.6	16.5	15.2	7.8	8.0	8.1	7.9	8.3	7.91	7.95	7.96	7.98	7.99	33.9	33.9	33.9	34.3	33.8	CTP/CH
7 Q1	16.6	16.0	16.1	16.2	15.3	7.3	7.7	7.8	7.8	8.0	7.94	7.97	7.99	8.01	8.01	34.0	33.9	33.9	34.1	33.9	BO/RT
8	15.4	15.9	15.5	16.0	15.7	7.8	7.8	7.8	7.9	8.0	7.98	7.97	7.99	8.00	8.00	33.9	34.0	33.9	33.8	34.0	RT/KN
9 Q1	15.9	16.2	16.0	16.5	16.0	7.5	7.4	7.6	7.5	7.7	7.97	7.96	7.99	7.99	8.00	33.9	34.0	34.0	34.3	34.0	TP/DM
10	15.6	14.6	15.4	14.6	15.7	7.6	7.7	7.6	7.8	7.6	7.99	8.00	8.03	8.07	8.04	34.0	33.9	34.1	33.6	34.3	BO/RT
11	15.9	14.9	15.6	14.8	15.9	7.7	8.1	8.1	8.3	8.0	7.85	7.95	7.93	7.96	7.94	34.0	33.9	34.1	34.1	34.2	RH/ACS
12 Q1	16.3	15.2	15.8	15.1	16.2	7.4	7.8	7.9	7.9	7.8	7.94	8.01	7.99	8.02	8.04	34.3	34.1	34.2	34.1	34.4	DM/TN
13 Q1	16.5	15.6	16.0	15.2	14.9	7.5	8.1	8.0	8.2	8.3	7.91	7.99	7.99	8.02	8.03	34.0	33.8	33.9	33.8	33.9	DM/TN
14*	15.8	15.8	15.7	15.3	15.2	7.4	7.5	7.6	7.8	7.8	7.92	7.94	7.94	7.97	7.98	33.9	33.9	34.0	33.8	33.9	DM/TN
15	15.3	16.2	15.3	14.6	14.7	7.2	7.3	7.3	7.4	7.4	7.93	7.95	7.95	7.98	7.98	33.8	33.9	33.8	33.9	33.9	BO/DM
16 Q1	16.1	15.7	15.6	14.7	15.2	7.6	7.9	8.0	7.0	8.1	7.84	7.89	7.90	7.92	7.92	33.9	33.9	33.9	33.9	34.0	BO/AD
17 Q1	16.4	16.0	16.0	15.6	15.7	7.5	7.6	7.6	7.8	7.8	7.96	7.97	7.99	8.01	8.02	34.5	34.4	34.4	34.4	34.4	BO/EG
18 Q1	13.7	14.3	14.0	16.2	14.9	8.6	8.3	8.2	6.7	8.2	8.06	8.03	8.02	7.92	8.03	33.8	34.0	34.0	34.0	33.9	RH/TN
19	14.9	14.5	14.9	14.4	15.0	8.0	8.0	7.9	8.0	7.9	8.00	7.96	8.09	8.00	8.04	34.2	34.2	34.2	34.0	34.0	KFP/GFP
20 Q1	14.9	15.4	15.9	15.0	15.6	7.8	7.9	7.8	8.1	8.0	7.97	8.00	7.98	8.01	8.01	34.0	34.0	34.0	33.9	34.0	KH/DM
21*	15.2	15.1	14.2	14.6	15.5	8.0	8.1	8.3	8.3	8.1	8.01	8.01	8.05	8.02	8.01	33.9	33.9	33.8	34.0	34.1	BO/RT
22 Q1	16.2	16.0	15.7	15.6	16.3	7.3	7.4	7.4	7.4	7.3	7.98	7.99	8.00	8.02	8.01	33.9	33.6	34.0	34.0	34.2	RH/RT
23 Q1	16.0	16.3	16.1	16.1	16.0	7.5	7.3	7.4	7.5	7.5	7.92	7.91	7.91	7.94	7.94	34.0	34.1	34.1	34.1	34.0	BO/RT
24	14.3	14.1	14.0	14.8	14.3	7.9	8.0	8.1	7.8	7.9	8.01	8.03	8.04	7.99	8.01	34.4	33.9	34.3	34.5	34.5	RT/EG
25 Q1	13.8	13.8	14.2	15.0	14.3	7.8	7.8	7.8	7.6	7.8	8.03	8.04	8.03	8.02	8.04	33.9	34.1	34.0	34.2	34.1	AS
26	15.3	15.4	14.8	15.2	15.1	7.7	7.7	8.0	7.8	7.9	8.00	8.00	8.03	8.03	8.03	34.1	34.0	34.1	34.1	34.1	GFP
27	15.9	15.8	15.6	15.5	15.6	8.1	7.9	8.0	8.0	8.1	7.99	8.00	8.01	8.02	8.02	33.6	33.5	33.4	33.5	33.6	BO/RT
28* Q1	16.6	16.5	16.3	16.4	16.0	7.9	7.9	7.9	8.1	8.1	7.93	7.95	7.93	7.99	8.00	33.7	33.7	33.7	33.7	33.7	DM/ACS

Comments: \* Collect NH<sub>3</sub> Samples ① 2/13/18  
 QC Check: VS 3/7/18 Final Review: EG 4/20/18



# Water Quality Measurements

## Jay Marine Sediment Bioassay Accumulation

Client: Anchor QEA  
 Test Species: M. nasuta and N. virens

Project ID: \_\_\_\_\_  
 Site ID: \_\_\_\_\_

Lower Newport Bay Federal  
 Channels  
 MCN1-Comp-T

Start Date/Time: 1/24/2018 1130  
 End Date/Time: 2/21/2018 0905

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0*	15.1	15.8	14.5	14.4	14.2	8.1	8.0	8.1	8.1	8.2	8.03	8.04	8.05	8.05	8.04	33.9	34.0	34.1	33.9	34.0	YS/ACS
1 Q1	16.0	16.1	15.1	15.5	15.4	7.6	7.3	7.7	7.7	7.8	7.98	7.91	8.00	8.01	8.03	34.1	34.3	33.9	34.0	34.0	RT/TW
2 Q1	16.3	16.2	15.5	16.1	15.9	7.6	7.7	8.0	7.8	7.9	7.98	7.93	8.02	8.02	8.01	34.7	34.6	34.7	34.9	34.8	BO/RT
3 Q1	13.5	13.8	14.9	14.4	15.4	8.1	8.1	7.9	8.0	7.9	8.03	8.03	8.07	8.03	8.07	34.0	34.0	34.0	34.0	34.0	BO/RT
4	14.0	14.1	15.0	14.6	15.2	8.0	7.9	7.9	7.9	7.8	8.00	8.00	8.03	7.99	8.03	33.9	34.0	33.9	34.0	34.0	ACS/CH
5 Q1	13.1	14.2	15.2	14.9	15.4	8.4	8.0	7.9	8.0	7.9	8.05	7.99	8.03	7.98	8.03	33.9	34.1	34.1	34.1	34.1	DM/TW
6 Q1	16.0	16.2	15.0	15.6	15.9	8.0	7.8	8.0	8.1	7.9	7.93	7.90	8.02	7.97	8.03	33.9	34.0	34.0	34.0	34.0	LTP/CH
7* Q1	16.6	16.3	16.0	15.9	16.2	7.5	7.5	7.9	7.9	7.9	7.97	7.94	8.04	7.99	8.06	34.1	34.1	34.1	34.0	34.1	BO/RT
8	15.6	16.0	15.3	15.5	15.8	8.0	7.9	8.3	8.2	8.1	7.99	7.95	7.98	7.96	8.02	34.0	34.1	33.7	33.9	34.0	RTRH
9 Q1	16.1	16.0	15.4	15.9	16.1	7.2	7.6	7.9	7.7	7.7	7.97	7.98	8.01	7.98	8.03	34.0	34.0	33.9	34.1	34.1	RTRH
10	15.3	15.5	15.1	15.7	15.0	7.8	7.7	8.0	7.8	7.9	8.07	8.07	8.01	7.97	8.02	33.9	34.1	33.6	34.0	33.8	RT
11	15.0	15.8	15.3	15.9	15.3	8.1	8.1	8.1	7.9	8.2	7.95	7.95	7.93	7.91	7.95	34.0	34.1	33.8	34.2	33.9	RT/ACS
12 Q1	16.0	16.3	15.2	15.4	15.2	7.8	7.8	8.0	7.9	8.0	8.07	8.02	8.01	7.99	8.02	34.2	34.2	34.1	34.1	34.1	DM/TW
13 Q1	16.1	15.5	15.6	15.8	15.5	8.1	8.4	8.1	8.1	8.1	8.02	8.03	8.02	7.99	8.02	34.1	34.0	33.9	34.0	33.8	DM/TW
14*	16.0	15.7	15.5	15.9	15.4	7.7	7.6	7.8	7.6	7.8	7.97	7.97	7.96	7.92	7.96	34.1	34.0	33.9	34.0	33.9	BO/DW
15 Q1	13.7	14.6	15.2	15.6	15.1	7.7	7.5	7.3	7.3	7.4	8.03	8.02	7.97	7.98	8.01	33.9	34.0	34.0	34.1	33.9	AD/BO
16	15.8	15.1	15.4	15.7	15.3	8.1	8.2	8.3	8.2	8.4	7.92	7.94	8.01	7.89	8.04	34.1	33.9	33.9	34.0	33.8	EG/BO
17 Q1	16.4	15.5	15.7	16.0	15.7	7.6	7.8	7.8	7.8	7.8	8.04	8.04	8.18	8.13	8.15	34.6	34.3	34.1	34.3	34.2	RT/ACS
18	16.0	15.4	15.7	15.7	15.7	8.1	8.2	7.8	7.8	7.8	8.03	8.03	8.00	7.97	8.03	34.1	33.9	33.5	34.0	33.9	RT/ACS
19 Q1	16.2	16.3	15.4	15.7	15.7	7.7	7.9	8.1	7.9	8.0	8.08	8.12	8.01	7.96	8.02	34.2	34.0	33.7	34.0	33.9	RT/ACS
20 Q1	16.4	15.9	15.2	15.7	15.8	7.8	8.0	8.0	7.8	7.8	7.99	8.01	8.00	7.98	8.00	34.4	34.0	33.9	34.0	34.0	RH/DM
21*	15.8	15.2	15.0	15.5	15.5	8.0	8.2	8.1	8.0	8.1	8.01	8.03	8.01	7.99	8.01	34.0	33.9	34.0	34.1	34.0	BO/RT
22 Q1	16.4	15.5	15.8	16.1	15.9	7.4	7.4	7.6	7.3	7.5	8.03	8.04	7.97	7.99	8.01	34.4	34.1	33.9	34.1	34.1	RT/BO
23 Q1	16.3	15.8	16.0	15.3	15.9	7.5	7.6	7.8	7.9	7.6	7.96	7.97	7.98	7.98	7.95	33.6	34.2	33.6	33.7	33.8	EG/RT
24 Q1	14.4	14.6	14.4	14.6	14.5	8.0	7.9	8.0	7.9	7.6	8.04	8.04	8.18	8.13	8.15	34.2	34.3	34.0	34.1	34.1	TW/ACS
25 Q1	15.5	15.2	14.0	14.0	13.9	7.9	7.6	8.0	7.9	7.9	8.05	8.05	8.01	8.02	8.02	34.4	34.1	33.9	34.1	34.1	LTP
26	15.9	15.5	14.5	14.2	14.7	7.8	7.9	7.9	8.0	7.8	8.05	8.05	8.01	8.02	8.02	34.1	33.6	33.4	33.5	33.5	RT/RT
27	15.8	15.8	14.8	14.7	15.2	8.1	8.1	8.5	8.4	8.2	8.02	8.03	8.02	8.02	8.04	34.3	33.8	33.6	33.6	33.6	DM
28* Q2	16.1	16.1	15.4	15.4	15.7	8.1	8.0	8.3	8.1	7.9	8.02	8.02	7.94	7.94	7.96	34.3	33.8	33.6	33.6	33.6	

Comments: \* Collect NH<sub>3</sub> Samples

Final Review: EG 4/20/18

QC Check: YS 3/7/18

① D18 B0112618 ② Q18 ACS 1/24/18  
 ③ GK 2/1/18 RT ④ Q18 2/6/18 ⑤ TW 02/07/18 ⑥ RH 1/8/18 ⑦ 10.3

# 28-Day Marine Sediment Bioassay Bioaccumulation

# Water Quality Measurements

Client: Anchor QEA  
 Test Species: M. nasuta and N. virens

Project ID: Lower Newport Bay Federal Channels  
 Site ID: MCN2-Comp-T

Start Date/Time: 1/24/2018 1130  
 End Date/Time: 2/21/2018 0905

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0*	14.4	14.3	14.2	14.3	14.5	8.0	8.1	8.1	8.2	8.1	8.01	8.04	8.05	8.06	8.09	33.9	34.0	34.0	34.0	34.1	ACS
1	15.0	15.6	15.5	15.4	15.3	7.7	7.7	7.7	7.7	7.8	7.98	8.05	8.03	7.94	8.05	33.9	34.0	34.1	33.9	33.9	RT/TN
2	15.5	15.9	16.0	15.9	15.8	8.0	7.9	7.9	8.0	7.8	7.95	8.06	8.05	8.00	8.05	34.3	34.5	34.5	34.4	34.4	BO/RT
3	15.1	15.2	15.2	15.3	15.2	7.7	7.8	7.8	7.6	7.9	7.98	8.01	8.08	8.00	8.08	33.9	34.1	34.1	34.0	34.0	BO/RT
4	15.2	15.2	15.0	15.0	15.1	7.5	7.8	7.8	7.6	7.7	7.94	8.08	8.05	7.98	8.07	33.9	34.1	34.0	34.1	34.1	ACS
5	15.4	15.5	15.4	15.3	15.3	7.7	7.9	7.8	7.8	7.8	7.95	8.08	8.03	7.97	8.05	33.9	34.0	34.0	34.0	34.1	OM/TN
6	15.9	16.0	15.9	15.9	15.9	7.7	8.0	8.0	7.8	8.0	7.93	8.06	8.02	7.96	8.03	33.9	34.1	34.1	34.0	34.1	LTP
7* Q1	16.0	16.2	16.2	16.3	16.2	7.7	7.9	7.8	7.4	7.8	7.98	8.08	8.04	7.98	8.05	34.0	34.2	34.1	34.0	34.2	BO/RT
8	15.6	15.4	15.7	15.6	15.8	7.9	8.1	8.1	7.9	8.0	7.96	8.03	8.01	7.96	8.04	33.9	34.1	34.1	34.0	34.2	RT
9 Q1	15.9	15.8	16.2	16.0	16.2	7.6	7.7	7.7	7.5	7.6	7.92	7.99	7.98	7.92	8.01	33.9	34.0	34.2	34.0	34.1	LTP
10	15.6	15.6	15.6	15.7	15.5	7.6	7.6	7.7	7.6	7.7	7.97	8.04	8.03	8.01	8.05	34.0	34.0	34.0	34.1	34.0	RT
11	15.7	15.8	15.8	15.9	15.7	7.8	7.9	7.9	7.8	7.9	7.89	7.95	7.94	7.93	7.95	34.6	34.0	34.6	34.0	34.0	ACS
12	15.7	15.9	16.0	16.0	15.9	7.8	7.9	7.8	8.8	7.8	8.00	8.01	7.99	7.98	8.02	34.1	34.0	34.0	33.9	33.9	TN/DM
13 Q1	16.0	16.1	16.2	16.1	16.1	7.8	7.9	7.9	7.9	7.9	7.93	8.01	8.00	7.99	8.01	33.9	34.0	34.0	33.9	33.9	DM
14*	15.8	15.5	15.0	15.5	15.3	7.5	7.7	7.9	7.7	7.8	7.89	7.96	7.96	7.93	7.96	34.0	33.9	33.8	34.0	33.8	DM/TN
15	15.5	15.2	14.7	15.5	15.0	7.3	7.4	7.5	7.3	7.4	7.94	7.98	7.98	7.95	7.97	34.0	33.9	33.9	34.0	33.9	BO/DM
16	15.8	15.4	15.0	15.5	15.2	7.9	8.3	8.6	8.2	8.4	7.95	7.92	7.97	7.97	8.02	33.9	33.9	33.8	34.0	33.9	AD
17	15.9	16.0	15.9	15.9	15.5	7.6	7.8	7.8	7.8	7.8	7.95	8.03	8.09	8.08	8.12	34.4	34.4	34.4	34.5	34.4	EG
18	15.9	15.8	15.9	15.8	15.4	7.6	7.8	7.6	7.6	7.8	7.94	8.02	8.00	7.98	8.02	34.0	34.3	34.2	34.3	34.2	KFP
19	15.8	15.2	15.6	15.8	15.5	7.6	7.8	7.9	7.8	7.8	7.92	8.02	8.01	7.98	8.02	34.0	33.9	33.9	34.0	33.9	KFP
20 Q1	16.1	15.8	16.0	15.8	15.9	7.5	7.8	7.7	7.8	7.8	7.93	7.99	7.98	7.98	7.98	34.1	34.1	34.0	33.9	34.0	DM
21*	14.5	15.3	14.7	15.6	15.7	8.0	8.1	8.3	8.0	8.0	8.01	8.01	8.02	7.98	8.00	34.0	34.0	33.9	34.1	34.0	RT
22 Q1	15.6	15.9	15.6	16.2	16.1	7.5	7.4	7.5	7.3	7.3	7.95	7.99	8.01	7.98	8.01	33.8	34.1	34.0	34.2	34.1	RT
23 Q1	16.2	16.0	16.0	15.8	15.9	7.4	7.5	7.6	7.6	7.6	7.88	7.95	7.94	7.92	7.95	34.1	34.1	34.0	34.0	34.2	RT
24	14.3	15.0	14.9	14.4	14.8	7.9	7.6	7.8	7.9	7.7	7.96	7.96	8.00	7.99	7.99	33.8	34.1	33.7	33.9	34.1	EG
25 Q1	13.6	14.4	13.3	13.7	14.1	7.8	7.7	8.0	7.9	7.8	8.01	8.01	8.04	8.04	8.04	34.1	34.2	34.0	34.1	34.1	TN
26	14.7	15.0	14.4	14.7	14.7	7.7	7.8	7.9	7.9	7.9	7.97	8.01	8.01	8.01	8.03	34.1	34.1	34.1	34.1	34.1	LTP
27	15.5	15.1	15.2	15.3	15.4	8.0	8.2	8.1	8.1	8.1	7.98	8.03	8.00	8.02	8.03	33.3	33.4	33.4	33.4	33.4	TN
28*	15.8	15.4	15.8	15.7	15.8	8.1	8.0	8.1	8.1	8.0	7.89	7.96	7.94	7.94	7.97	33.6	33.6	33.6	33.6	33.6	DM

Comments: \* Collect NH<sub>3</sub> Samples @ 16 ACS 1/28/18 @ Q17 60 2/18/18

QC Check: ✓ 3/7/18

Final Review: EG 4/20/18

**28-Day Marine Sediment Bioassay  
Bioaccumulation**

**Water Quality Measurements**

Client: Anchor QEA  
Test Species: M. nasuta and N. virens

Project ID: Lower Newport Bay Federal Channels  
Site ID: MCN3-Comp

Start Date/Time: 1/24/2018 1130  
End Date/Time: 2/21/2018 0905

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0*	14.5	14.5	14.3	14.5	14.4	8.1	8.1	8.1	8.1	8.2	8.04	8.05	8.06	8.09	8.06	34.0	34.0	33.9	34.0	34.0	AC
1	15.6	15.3	15.2	15.7	15.9	7.7	7.7	7.6	7.7	7.7	8.04	8.01	7.96	8.00	8.04	34.0	34.0	33.9	33.9	34.0	RT/AN
2 Q1	16.0	16.0	15.5	16.1	16.2	7.8	7.8	7.9	7.7	7.7	8.04	7.98	7.95	7.99	8.04	34.5	34.4	34.3	34.4	34.6	BORT
3 Q1	14.8	13.3	14.8	15.4	14.9	7.7	8.2	7.8	7.7	7.9	8.05	8.03	8.00	8.02	8.04	34.0	33.9	34.0	34.2	34.0	BORT
4 Q1	14.8	13.8	14.7	15.5	14.9	7.6	7.4	7.6	7.1	7.7	7.99	8.00	7.94	8.01	8.02	34.0	34.0	34.1	34.2	34.0	AC
5	15.4	15.3	15.0	15.7	15.1	7.8	7.8	7.7	7.7	7.8	7.99	7.95	7.96	8.00	7.99	33.9	33.9	33.9	34.2	33.9	on/tn
6 Q1	16.0	16.9	16.5	16.2	16.6	8.0	7.9	8.0	2.4 <sup>0.0</sup>	8.0	7.97	7.95	7.94	7.92	7.96	33.9	34.0	33.9	34.1	33.9	LTP
7* Q1	16.3	16.3	15.7	16.2	15.8	7.8	7.5	7.9	7.7	7.9	7.99	7.97	7.97	8.01	7.98	34.0	34.0	33.9	34.1	34.0	BORT
8	15.7	15.7	15.7	15.9	15.7	8.1	8.0	8.0	8.0	8.0	7.98	7.98	7.97	7.99	7.99	34.0	34.0	34.0	34.1	34.0	RT
9 Q1	16.0	16.3	16.0	16.2	16.0	7.6	7.5	7.7	7.5	7.7	7.99	7.97	7.96	7.98	7.98	34.0	34.1	33.9	34.1	34.0	UP/DN
10	14.9	14.0	15.3	14.8	15.4	7.8	7.4	7.6	7.7	7.6	8.03	8.05	8.00	8.02	8.02	33.9	33.9	34.0	34.0	34.0	RT
11	15.4	15.2	15.6	15.1	15.6	7.9	8.0	7.9	8.0	8.0	7.93	7.93	7.90	7.93	7.93	34.0	33.9	34.0	33.9	34.0	AC
12	15.9	15.5	15.8	15.3	15.8	7.8	7.9	7.8	7.8	7.8	7.98	7.98	7.97	7.98	7.98	33.9	33.8	33.9	33.9	33.9	on/tn
13 Q1	16.1	15.9	15.9	15.6	15.9	7.8	7.9	7.9	8.0	8.0	7.99	7.98	7.98	8.00	8.00	34.0	33.8	33.9	33.8	34.0	DM
14*	14.5	15.9	15.6	15.7	15.8	7.9	7.5	7.7	7.6	7.6	7.98	7.90	7.93	7.93	7.93	33.9	34.1	33.9	33.9	34.0	on/tn
15	14.0	15.8	15.1	15.3	15.4	7.5	7.2	7.3	7.3	7.3	7.99	8.01	8.00	8.01	8.03	33.9	34.1	33.8	33.9	33.9	BOLDW
16	14.2	15.8	15.3	15.5	15.6	8.5	7.9	8.3	8.2	8.2	8.01	7.94	8.05	8.05	7.95	33.9	34.1	33.8	33.9	33.9	AD
17	15.0	15.9	15.6	15.8	15.9	8.0	7.6	7.8	7.7	7.7	8.11	8.06	8.09	8.10	8.11	34.1	34.6	34.3	34.5	34.5	EG
18	14.7	15.7	15.6	15.7	15.7	7.9	7.5	7.9	7.8	7.7	8.03	7.96	8.00	8.00	8.01	34.0	34.5	34.0	34.1	34.1	LTP
19	14.7	15.2	15.2	15.8	15.8	7.9	7.8	7.9	7.7	7.7	8.03	8.01	7.97	7.98	7.99	34.3	34.5	34.3	34.4	34.5	LTP
20 Q1	15.6	15.8	15.5	16.2	16.2	7.8	7.7	7.9	7.8	7.6	7.99	7.95	7.99	7.97	7.97	33.9	34.0	33.9	34.0	34.0	DM
21*	15.2	15.6	15.4	14.9	14.8	8.1	8.0	8.1	8.1	8.1	8.01	7.97	8.00	8.01	8.01	33.8	34.1	33.9	34.1	34.0	RT
22 Q1	15.8	16.2	15.6	15.9	15.6	7.4	7.2	7.4	7.3	7.4	8.00	7.96	8.00	8.00	8.01	34.0	34.2	34.0	34.0	34.0	RT
23 Q1	16.3	15.9	15.7	16.1	16.1	7.4	7.4	7.5	7.5	7.5	7.91	7.90	7.93	7.92	7.92	34.1	34.0	33.9	34.1	34.0	RT
24	14.7	14.5	14.8	14.5	14.7	7.7	7.8	7.7	7.9	7.7	8.00	7.98	7.98	8.01	7.97	34.6	34.5	34.4	34.4	34.5	EG
25 Q1	13.7	13.5	13.7	13.4	13.6	7.5	7.7	7.7	7.9	7.9	8.03	8.03	8.04	8.05	8.04	34.0	34.1	34.1	34.0	34.1	TO
26	16.1	16.4	15.1	15.3	15.2	7.8	7.6	7.8	7.7	7.7	8.02	7.97	8.00	8.01	8.00	34.1	34.1	34.1	34.1	34.0	LTP
27	15.6	15.7	15.3	15.6	15.6	8.1	7.9	8.1	8.0	8.0	8.03	7.99	8.03	8.03	8.03	33.4	33.5	33.4	33.6	33.4	TW
28* Q1	16.0	16.1	15.7	15.9	16.0	8.0	7.8	8.2	8.0	8.0	7.96	7.91	7.96	7.97	7.95	33.6	33.7	33.6	33.7	33.6	DM

Comments: \* Collect NH<sub>3</sub> Samples ~~23 Q1~~ 18 B0 1/31/18 ~~20 Q1~~ 18 LTP 1/31/18

QC Check: vs 3/7/18

Final Review: EG 4/20/18

# 28-Day Marine Sediment Bioassay Bioaccumulation

# Water Quality Measurements

Client: Anchor QEA  
Test Species: M. nasuta and N. virens

Project ID: \_\_\_\_\_  
Site ID: \_\_\_\_\_

Lower Newport Bay Federal  
Channels  
MCN4-Comp

Start Date/Time: 1/24/2018 1130  
End Date/Time: 2/21/2018 0905

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0*	14.4	14.3	14.5	14.8	14.1	7.9	8.0	8.1	8.0	8.3	8.05	8.04	8.07	8.07	8.08	34.0	34.0	34.0	34.1	34.0	ACS
1 Q1	15.6	15.6	15.8	16.1	15.4	7.7	7.7	7.7	7.3	7.7	8.02	8.05	8.07	7.99	8.07	34.0	33.9	34.0	34.1	34.0	BT/TN
2 Q1	16.1	16.1	16.2	16.5	15.8	7.9	7.9	7.8	7.8	7.9	8.01	8.04	8.05	7.94	8.11	34.5	34.6	34.6	34.6	34.7	BO/RT
3 Q1	14.6	13.6	13.8	13.8	15.2	7.9	8.1	8.0	8.1	7.6	8.03	8.05	8.05	8.02	8.16	34.1	34.0	34.0	34.0	34.3	BO/RT
4	14.8	14.8	14.4	14.6	15.0	7.6	7.8	7.9	7.6	7.8	7.98	8.01	8.02	7.99	8.13	34.1	34.0	33.9	34.0	34.3	ACS
5	15.0	14.8	14.6	15.0	15.3	7.8	7.9	8.0	7.9	7.9	7.97	7.99	8.01	7.97	8.08	33.9	34.0	34.0	34.0	34.3	DN/TN
6	16.9	16.7	16.6	16.8	16.7	7.9	8.1	8.2	8.0	8.0	7.92	7.96	7.97	7.96	8.00	33.8	33.9	33.9	34.0	34.2	UTP
7* Q1	16.2	16.1	15.9	16.2	15.8	7.7	7.8	7.9	7.7	7.9	7.98	8.00	8.01	7.97	8.01	34.0	34.0	34.0	34.0	34.2	BO/RT
8	15.6	15.8	15.9	15.6	15.8	8.1	8.0	8.0	8.0	8.1	7.98	7.99	8.01	7.99	8.07	33.9	34.1	34.1	33.9	34.3	RT
9 Q1	15.9	16.1	16.3	16.0	15.9	7.6	7.6	7.6	7.7	7.8	7.99	8.00	8.01	7.97	8.07	34.0	34.1	34.2	34.0	34.2	DN/DM
10	15.5	14.7	14.9	15.6	15.4	7.6	7.8	7.8	7.7	7.7	8.02	8.06	8.06	8.02	8.11	34.0	33.9	34.0	34.1	34.1	RT
11	15.8	15.1	15.2	15.8	15.5	7.8	8.0	8.1	7.9	8.0	7.91	7.96	7.96	7.93	7.99	33.9	33.9	34.0	34.1	34.2	ACS
12	15.9	15.3	15.6	16.0	15.6	7.8	7.9	7.9	7.8	7.9	7.99	8.01	8.01	7.98	8.04	33.9	33.8	34.3	34.5	34.5	DN/TN
13 Q1	16.0	15.5	15.8	16.2	16.0	7.9	8.1	8.0	7.9	8.0	7.99	8.03	8.03	7.98	8.04	33.9	33.8	33.9	34.0	34.0	DM
14*	15.4	15.7	15.9	15.8	15.6	7.6	7.7	7.8	7.6	7.9	7.95	7.96	7.96	7.95	7.97	33.9	33.9	34.0	33.9	34.0	DN/TN
15	15.0	15.3	15.4	15.2	15.3	7.9	7.3	7.3	7.3	7.4	8.02	8.00	8.01	8.02	8.05	33.8	33.9	34.0	33.9	34.1	BO/DM
16	15.3	15.5	15.6	15.6	15.3	8.2	8.2	8.2	8.2	8.4	8.05	8.08	8.05	8.07	8.04	33.8	33.9	33.9	33.9	33.8	AD
17	15.7	15.9	16.0	15.9	15.6	7.8	7.8	7.6	7.5	7.9	8.04	7.91	7.82	7.93	7.91	34.2	34.4	34.6	34.5	34.1	EG
18	15.6	15.3	15.5	15.7	15.5	7.6	7.8	7.8	7.7	7.8	8.02	8.03	8.04	8.01	8.02	34.0	34.0	34.1	34.1	34.0	KFP
19	15.5	15.6	15.9	15.9	15.5	7.8	7.8	7.8	7.8	7.9	7.99	8.01	8.09	7.98	8.02	34.2	34.3	34.2	34.1	34.1	KFP
20 Q1	16.1	15.8	15.9	16.3	15.6	7.6	7.8	7.7	7.7	8.0	7.99	8.00	8.00	7.98	7.99	34.1	34.0	34.2	34.1	34.0	DM
21*	15.3	15.6	15.7	15.7	15.4	8.1	8.0	8.0	7.9	8.1	8.01	8.00	8.01	8.00	8.00	33.9	34.0	34.0	34.0	34.0	RT
22 Q1	16.2	16.2	16.3	16.5	15.8	7.9	7.3	7.3	7.3	7.5	7.98	8.01	8.02	7.94	8.02	34.0	34.2	34.2	34.1	34.1	RT
23 Q1	16.5	16.4	16.2	16.4	15.7	7.5	7.4	7.5	7.3	7.6	7.96	7.93	7.97	7.92	7.97	34.2	34.3	34.1	34.4	34.0	RT
24	15.0	14.4	14.4	14.3	14.2	7.8	7.9	7.9	7.9	7.9	8.02	8.03	8.03	8.02	8.01	34.6	34.5	34.5	34.4	34.4	EG
25 Q1	14.3	13.7	13.8	14.4	13.7	7.5	7.7	7.8	7.7	7.9	8.02	8.04	8.05	8.03	8.04	34.1	34.1	34.1	34.1	34.0	TN
26	15.5	16.5	16.7	15.2	14.9	7.7	7.7	7.7	7.8	7.9	8.04	8.04	8.04	8.03	8.02	34.1	34.1	34.2	34.0	34.1	UTP
27	15.7	15.7	15.8	15.5	15.2	8.0	8.0	7.9	8.0	8.0	8.05	8.05	8.05	8.05	8.04	33.6	33.5	33.5	33.6	33.5	TN
28* Q2	16.1	16.0	16.0	16.0	15.5	8.0	8.0	8.0	8.1	8.0	7.99	7.99	7.99	7.99	7.98	34.0	33.8	33.9	33.8	33.6	DM

Comments: \* Collect NH<sub>3</sub> Samples

QC Check: vs 3/7/18

Final Review: En 4/20/18

**28-Day Marine Sediment Bioassay  
Bioaccumulation**

**Water Quality Measurements**

Client: Anchor QEA  
Test Species: M. nasuta and N. virens

Project ID: \_\_\_\_\_  
Site ID: \_\_\_\_\_

Lower Newport Bay Federal  
Channels  
MCN5-Comp

Start Date/Time: 1/24/2018 1130  
End Date/Time: 2/21/2018 0905

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0* Q1	14.0	14.0	14.0	13.8	13.7	8.1	8.2	8.2	8.1	8.3	8.05	8.07	8.08	8.07	8.08	34.0	34.0	34.0	34.0	34.0	ACS
1	15.6	15.6	15.5	15.5	15.3	7.5	7.5	7.5	7.7	7.6	7.98	7.95	7.98	8.05	8.00	34.0	34.0	34.0	34.0	34.1	TN
2	15.8	15.8	15.8	15.8	15.6	7.8	7.7	7.7	7.8	7.8	7.99	7.98	7.99	8.06	7.99	34.6	34.6	34.5	34.7	34.5	BO
3	15.3	15.5	15.3	15.4	15.4	7.4	7.6	7.7	7.6	7.6	8.05	8.06	8.05	8.09	8.02	34.1	34.2	34.0	34.2	34.1	RT
4	15.2	15.2	15.2	15.3	15.2	7.5	7.5	7.5	7.7	7.7	8.00	8.03	7.99	8.08	8.01	34.0	34.1	34.0	34.2	34.1	ACS
5	15.3	15.4	15.4	15.5	15.4	7.5	7.7	7.7	7.7	7.7	8.00	8.02	7.96	8.06	8.00	34.1	34.1	34.1	34.3	34.2	DM/TN
6	15.7	15.9	15.9	15.9	15.8	8.0	7.7	7.9	7.9	8.0	7.99	8.00	7.96	8.04	8.00	34.0	34.1	34.1	34.3	34.1	LTP
7* Q1	15.8	16.0	16.0	16.2	16.2	7.7	7.7	7.7	7.8	7.5	8.01	8.01	7.98	8.06	8.02	34.0	34.2	34.1	34.4	34.2	PH
8	15.8	15.9	15.9	15.4	15.9	7.9	7.8	7.8	8.1	7.9	8.00	7.99	7.97	8.03	8.01	34.0	34.3	34.0	34.1	34.2	RT
9 Q1	15.9	16.1	15.9	15.7	16.0	7.6	7.5	7.6	7.7	7.6	8.01	8.00	7.97	8.01	8.01	34.1	34.2	34.1	34.1	34.1	LTP
10	15.3	15.2	15.4	15.4	15.6	7.6	7.6	7.5	7.6	7.5	8.04	8.03	7.99	8.05	8.03	34.0	34.0	34.0	34.0	34.0	RT
11	15.6	15.4	15.5	15.5	15.7	7.9	7.9	7.8	7.9	7.8	7.91	7.91	7.91	7.93	7.92	33.9	34.0	34.0	34.0	34.1	ACS
12	15.4	15.4	15.6	15.7	15.8	7.9	7.9	7.9	7.8	7.8	8.00	7.98	7.97	8.00	7.99	34.3	34.4	33.5	33.8	33.9	DM/TN
13 Q1	15.8	15.7	15.8	15.9	16.1	7.8	8.0	7.9	8.0	8.1	8.00	7.99	7.96	8.02	8.00	34.0	33.9	33.9	34.0	34.0	DM
14*	15.8	15.7	15.8	15.8	15.6	7.5	7.5	7.5	7.5	7.6	7.94	7.92	7.90	7.94	7.94	34.0	34.0	34.0	34.0	33.9	DM
15	15.5	15.4	15.6	15.4	15.4	7.2	7.2	7.2	7.2	7.3	8.02	8.01	8.00	8.03	8.02	34.0	33.9	33.9	34.0	33.9	DM
16	15.5	15.2	15.2	15.3	15.3	8.2	8.2	8.2	8.3	8.2	8.01	7.99	8.00	8.01	8.02	33.9	33.8	33.9	34.0	33.9	AD
17	15.7	15.5	15.6	15.7	15.7	7.7	7.7	7.7	7.8	7.8	7.95	7.95	7.94	8.00	8.01	34.2	34.1	34.1	34.3	34.2	EG
18	15.6	15.3	15.6	15.7	15.6	7.5	7.8	7.5	7.8	7.7	7.99	8.00	7.97	8.02	8.03	34.0	33.9	34.0	34.6	34.0	KFP
19	15.6	15.3	15.7	15.6	15.7	7.7	7.8	7.7	7.8	7.8	7.93	8.04	8.02	8.08	8.08	34.1	33.9	34.1	34.1	33.8	KFP
20	15.3	15.3	15.7	15.6	15.8	7.8	7.9	7.8	7.8	7.8	7.92	7.99	7.97	7.98	7.99	33.9	33.9	34.0	34.0	34.1	DM
21*	15.3	15.2	15.5	15.4	15.4	8.0	8.1	8.0	8.0	8.0	7.95	7.96	7.95	7.97	7.99	33.9	33.9	34.0	34.0	34.0	RT
22	15.8	15.8	15.4	15.8	15.8	7.5	7.4	7.3	7.3	7.4	7.99	7.98	7.97	7.99	8.02	34.0	34.0	34.0	34.1	34.1	RT
23 Q1	16.0	16.0	16.2	16.2	16.2	7.2	7.4	7.3	7.4	7.4	7.90	7.90	7.89	7.92	7.95	34.1	34.1	34.1	34.2	34.1	RT
24	14.4	14.3	14.0	14.2	14.8	7.7	7.8	7.9	7.9	7.7	7.99	8.00	8.02	8.00	8.01	34.5	34.4	34.2	34.3	34.4	EG
25 Q1	13.5	13.7	13.7	13.5	14.0	7.7	7.7	7.8	7.9	7.8	8.00	8.01	8.01	8.03	8.04	34.0	34.1	34.1	34.1	34.2	TN
26	16.0	15.0	15.1	14.9	14.7	7.7	7.7	7.7	7.8	7.9	7.99	7.99	7.98	8.02	8.04	34.1	34.1	34.1	34.1	34.1	LTP
27	15.3	15.4	15.5	15.4	15.1	8.0	8.0	7.9	8.0	8.1	8.01	8.01	7.99	8.02	8.05	33.5	33.5	33.5	33.5	33.4	TN
28*	15.6	15.7	15.7	15.7	15.6	7.9	7.9	7.8	8.0	8.0	7.94	7.94	7.92	7.96	7.98	33.7	33.6	33.6	33.7	33.6	DM

Comments: \* Collect NH<sub>3</sub> Samples (PH) DM 1/31/18 (LTP) LTP 02/02/18

QC Check: VS 3/7/18

Final Review: EG 4/20/18

**28-Day Marine Sediment Bioassay  
Bioaccumulation**

**Water Quality Measurements**

Client: Anchor QEA  
Test Species: M. nasuta and N. virens

Project ID: \_\_\_\_\_  
Site ID: \_\_\_\_\_

Lower Newport Bay Federal  
Channels  
EC-Comp

Start Date/Time: 1/24/2018 1130  
End Date/Time: 2/21/2018 0905

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0* Q1	13.8	13.8	13.7	14.0	14.2	8.2	8.3	8.3	8.3	8.1	8.00	8.01	8.03	8.02	8.02	34.0	34.1	34.0	34.0	34.0	ACS
1	15.6	15.5	15.6	15.7	15.9	7.7	7.7	7.5	7.6	7.5	7.98	7.99	7.92	7.98	7.91	33.8	34.0	33.8	33.9	33.9	TN
2	15.7	15.7	15.7	15.9	16.0	7.6	7.7	7.8	7.7	7.8	7.95	7.99	7.93	7.99	7.93	34.5	34.6	34.4	34.4	34.4	BO
3	15.4	15.4	15.4	15.5	15.6	7.8	7.8	7.5	7.7	7.5	7.99	8.01	8.00	8.02	7.96	33.8	34.2	34.0	34.1	34.1	RT
4	15.0	15.2	14.9	15.3	15.3	7.7	7.8	7.4	7.6	7.4	7.99	8.02	7.92	8.01	7.94	34.1	34.2	34.0	34.3	34.1	ACS
5	15.2	15.4	15.1	15.6	15.6	7.7	7.8	7.7	7.7	7.7	7.92	7.98	7.89	7.99	7.99	34.0	34.2	34.0	34.2	34.1	DM/TN
6	15.6	15.8	15.6	15.9	15.8	7.5	8.0	7.8	7.9	7.7	7.85	7.99	7.92	7.99	7.92	34.0	34.3	34.0	34.3	34.1	UTP
7*	15.8	15.9	15.8	16.0	16.0	7.5	7.9	7.6	7.7	7.5	7.93	8.03	7.95	8.02	7.94	34.0	34.3	34.0	34.4	34.2	PH
8	15.9	15.9	15.8	16.0	15.9	7.7	7.9	7.8	7.9	7.8	7.92	8.02	7.95	8.02	7.95	33.9	34.3	34.0	34.4	34.1	RT
9 Q1	16.0	16.2	16.0	16.2	16.0	7.4	7.6	7.4	7.6	7.4	7.96	8.03	7.95	8.02	7.94	34.1	34.3	34.0	34.3	34.1	UTP
10	15.6	15.3	15.4	15.5	15.5	7.5	7.5	7.5	7.5	7.5	7.18	8.06	7.99	8.05	7.99	33.4	34.1	34.0	34.2	34.0	RT
11	15.7	15.5	15.6	15.8	15.7	7.7	7.8	7.4	7.8	7.8	7.89	7.96	7.96	7.95	7.91	34.0	34.0	34.0	34.2	34.1	ACS
12	15.7	15.6	15.7	15.9	15.7	7.6	7.7	7.7	7.9	7.7	7.96	8.02	7.96	8.00	7.94	33.9	33.9	33.9	34.1	33.9	DM/TN
13 Q1	15.9	15.9	15.9	16.1	16.1	7.8	8.0	7.9	7.8	7.6	7.96	8.04	7.97	8.01	7.91	33.9	33.9	33.9	34.1	33.9	DM
14*	15.7	15.8	15.8	15.4	15.5	7.6	7.7	7.5	7.5	7.6	7.96	7.97	7.93	7.96	7.92	33.9	34.1	33.9	33.9	33.9	DM
15	15.4	15.5	15.4	15.1	15.2	7.3	7.3	7.3	7.4	7.3	8.01	8.00	7.98	8.03	7.97	33.9	33.9	33.9	33.8	33.9	DM
16	15.6	15.3	15.4	15.2	15.4	8.3	8.3	8.1	8.3	8.2	7.92	7.93	7.90	7.92	7.90	33.9	34.0	34.0	33.9	33.9	AB
17	15.9	15.6	15.7	15.6	15.7	7.8	7.8	7.6	7.7	7.6	7.99	8.01	7.98	8.01	7.99	34.2	34.2	34.1	34.1	34.1	EG
18	15.8	15.7	15.5	15.6	15.7	7.7	7.8	7.7	7.7	7.6	8.04	8.05	8.01	8.03	8.00	34.0	34.0	34.0	34.0	34.0	KFP
19	15.8	15.7	15.6	15.5	15.5	7.9	7.9	7.8	7.7	7.8	8.00	8.02	8.06	8.08	8.06	34.1	34.2	34.2	34.3	34.2	KFP
20	15.8	15.7	15.7	15.9	16.0	7.9	7.9	7.8	7.7	7.7	8.01	8.01	8.00	8.00	7.99	34.0	34.1	34.0	34.0	34.0	DM
21*	15.5	15.6	15.6	15.3	14.5	8.0	8.0	8.0	8.1	8.3	8.02	8.02	8.00	8.01	8.02	34.1	34.0	34.0	34.0	33.9	RT
22	16.0	16.0	15.9	15.9	15.5	7.5	7.4	7.4	7.4	7.5	8.04	8.04	8.01	8.03	8.01	34.1	34.1	34.1	34.1	33.9	RT
23 Q1	16.2	16.3	16.2	16.3	16.2	7.5	7.3	7.4	7.4	7.4	7.97	7.97	7.95	7.96	7.94	34.1	34.2	34.1	34.1	34.0	RT
24	15.0	14.6	14.9	14.8	14.4	7.9	7.8	7.7	7.7	7.8	8.02	8.03	8.00	8.02	8.02	34.4	34.3	34.5	34.4	34.2	EG
25 Q1	14.3	14.1	14.2	14.1	13.8	7.5	7.7	7.7	7.8	7.8	8.03	8.03	8.02	8.03	8.03	34.1	34.1	34.2	34.1	34.1	TN
26	14.9	15.0	14.9	15.1	15.3	7.9	7.9	7.8	7.8	7.7	8.04	8.03	8.01	8.03	8.03	34.0	34.0	34.0	34.1	34.0	UTP
27	15.2	15.4	15.3	15.5	15.6	8.1	8.1	8.1	8.0	8.0	8.06	8.06	8.05	8.05	8.04	33.4	33.5	33.5	33.5	33.5	TN
28*	15.6	15.7	15.7	15.8	15.8	8.0	7.9	7.9	7.9	7.9	8.01	8.01	7.99	7.99	7.98	33.7	33.7	33.6	33.7	33.7	DM

Comments: \* Collect NH<sub>3</sub> Samples

QC Check: VS 3/7/18

Final Review: EG 4/20/18

**28-Day Marine Sediment Bioassay  
Bioaccumulation**

**Water Quality Measurements**

Client: Anchor QEA  
Test Species: M. nasuta and N. virens

Project ID: \_\_\_\_\_  
Site ID: \_\_\_\_\_

Lower Newport Bay Federal Channels  
Start Date/Time: 1/24/2018 1130  
End Date/Time: 2/21/2018 0905

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0*	14.1	14.0	14.2	14.2	14.2	8.1	8.2	8.1	8.1	8.2	8.05	8.08	8.08	8.09	8.10	34.0	34.0	34.0	34.0	34.0	ACS
1 Q1	15.8	16.0	16.1	16.1	16.1	7.6	7.4	7.4	7.3	7.5	8.04	8.03	8.03	8.03	8.10	34.0	34.0	34.0	34.0	34.0	TN
2 Q1	16.1	16.1	16.0	15.9	15.8	7.6	7.5	7.6	7.6	7.7	8.06	8.11	8.06	8.06	8.09	34.4	34.5	34.4	34.4	34.4	BO
3	15.6	14.8	15.4	15.5	15.2	7.6	7.5	7.6	7.6	7.7	8.08	8.07	8.11	8.14	8.12	34.0	34.0	34.1	34.1	34.1	RT
4	15.4	14.8	15.1	15.2	15.3	7.5	7.5	7.6	7.6	7.5	8.10	8.03	8.07	8.13	8.12	34.1	34.0	34.1	34.1	34.1	ACS
5	15.7	15.6	15.4	15.6	15.6	7.4	7.7	7.6	7.6	7.7	8.06	7.99	8.01	8.09	8.10	34.2	33.9	34.0	34.1	34.1	AM/TN
6	16.0	16.5	16.8	16.0	16.9	7.8	8.1	7.9	7.8	7.9	8.07	8.00	8.02	8.07	8.09	34.1	34.0	34.1	34.2	34.1	LTP
7* Q1	16.2	15.5	15.6	16.0	15.4	7.5	7.7	7.8	7.7	7.9	8.08	8.03	8.01	8.08	8.04	34.1	34.1	34.0	34.2	34.0	RH
8	15.7	16.5	15.8	16.0	15.5	8.0	8.0	7.9	7.9	8.0	8.04	8.03	8.00	8.04	8.02	33.9	34.0	34.1	34.2	33.9	RT
9	16.7	16.8	16.0	16.5	16.7	7.6	7.6	7.5	7.7	7.6	8.01	8.02	7.99	8.02	8.00	34.0	34.0	34.0	34.0	34.0	LTP
10	15.4	15.5	15.9	15.3	15.4	7.6	7.6	7.5	7.6	7.6	8.03	8.06	8.03	8.05	8.04	33.8	34.0	34.0	33.9	34.0	RT
11 Q1	15.6	15.7	16.2	15.6	15.6	7.8	7.9	7.7	7.9	7.9	7.91	7.95	7.95	7.95	7.94	34.0	34.0	34.1	34.0	34.0	ACS
12	15.7	15.7	14.8	15.6	15.8	7.7	7.7	7.9	7.8	7.7	7.93	8.01	8.01	8.00	7.99	33.9	34.0	33.9	34.0	34.0	DM
13	15.8	16.0	15.2	15.7	15.9	7.8	7.9	8.1	8.0	7.9	7.97	8.02	7.99	8.01	8.00	34.0	34.0	33.8	34.0	34.0	DM
14* Q1	16.1	16.1	15.5	15.8	15.8	7.4	7.5	7.6	7.6	7.6	7.91	7.95	7.94	7.95	7.94	34.0	34.0	33.8	34.0	34.0	DM
15	14.5	14.6	14.8	15.5	15.4	7.5	7.6	7.4	7.3	7.3	8.03	8.10	8.14	8.13	8.11	33.9	33.9	33.9	34.0	33.9	DM
16	14.7	14.3	14.9	15.2	15.6	8.2	8.5	8.2	8.1	8.1	7.89	7.92	7.89	7.91	7.90	33.9	33.9	33.9	34.0	34.0	AD
17	16.1	15.8	15.5	16.6	15.9	7.7	7.8	7.7	7.7	7.7	7.99	8.02	7.98	8.02	8.01	34.0	34.1	34.1	34.3	34.2	EG
18	15.1	15.1	15.3	15.9	15.7	7.7	7.9	7.7	7.7	7.7	8.00	8.03	7.99	8.02	8.01	34.2	34.2	34.3	34.5	34.4	KFP
19	15.4	15.2	15.7	15.9	15.6	7.8	7.8	7.7	7.6	7.7	7.95	7.96	7.92	7.87	8.02	34.1	34.1	34.2	34.4	34.2	KFP
20	15.7	15.6	15.7	16.0	16.0	7.7	7.9	7.8	7.8	7.8	7.97	7.99	7.96	7.98	7.98	33.9	33.9	34.0	34.1	34.0	DM
21*	15.5	15.4	15.5	14.9	15.3	8.0	8.0	8.0	8.2	8.1	7.97	8.00	7.97	8.01	7.99	34.0	34.0	34.0	34.0	34.1	RT
22	16.0	16.0	15.9	15.6	15.9	7.4	7.4	7.4	7.4	7.4	7.98	8.01	7.98	8.01	8.01	34.0	34.1	34.1	34.0	34.1	RT
23 Q1	16.5	16.3	16.2	16.0	16.1	7.4	7.3	7.4	7.4	7.4	7.90	7.94	7.99	7.87	7.91	34.1	34.1	34.1	34.1	34.2	RT
24	16.3	14.8	14.1	14.7	14.7	7.6	7.7	7.8	7.7	7.7	7.97	8.00	7.99	7.99	8.00	34.4	34.3	34.3	34.4	34.4	EG
25 Q1	14.4	14.1	13.4	14.3	15.2	7.4	7.6	7.9	7.7	7.5	7.98	8.01	8.01	8.02	8.00	34.0	34.1	34.0	34.2	34.4	TN
26	15.3	15.1	15.5	15.2	15.8	7.7	7.8	7.6	7.8	7.6	7.95	8.02	7.95	8.02	7.99	34.1	34.1	34.1	34.1	34.4	LTP
27	15.7	15.5	15.7	15.6	15.7	7.8	8.0	7.9	8.0	7.9	7.96	8.03	8.00	8.04	8.02	33.5	33.5	33.5	33.6	33.9	TN
28*	15.7	15.6	15.6	16.0	16.0	7.7	7.9	7.8	7.8	7.8	7.92	7.93	7.94	7.97	7.95	33.6	33.7	33.7	33.7	34.0	DM

Comments: \* Collect NH<sub>3</sub> Samples

QC Check: vs 3/7/18

Final Review: EG 4/20/18

**28-Day Marine Sediment Bioassay  
Bioaccumulation**

**Water Quality Measurements**

Client: Anchor QEA  
Test Species: M. nasuta and N. virens

Project ID: \_\_\_\_\_  
Site ID: \_\_\_\_\_

Lower Newport Bay Federal Channels  
Start Date/Time: 1/24/2018 1130  
End Date/Time: 2/21/2018 0905

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0* Q1	14.5	13.9	13.8	13.5	13.5	8.0	8.2	8.3	8.3	8.3	8.08	8.09	8.11	8.10	8.10	34.0	34.0	34.1	34.0	34.0	ATS
1 Q1	16.2	15.2	15.2	15.1	15.1	7.4	7.8	7.7	7.8	7.7	8.0	8.11	8.04	8.12	8.03	33.9	34.0	34.1	34.0	34.1	TN
2 Q1	16.2	15.5	15.6	15.5	15.6	7.4	7.8	7.7	7.8	7.8	8.12	8.11	8.08	8.14	8.13	34.4	34.2	34.4	34.4	34.3	BC
3	14.4	15.2	15.4	15.4	15.4	8.1	7.8	7.6	7.7	7.6	8.04	8.14	8.15	8.20	8.18	33.9	34.2	34.2	34.2	34.1	RT
4	14.5	15.0	15.0	15.1	15.1	7.9	7.8	7.6	7.4	7.5	7.99	8.14	8.13	8.08	8.17	34.0	34.1	34.2	34.1	34.1	ACC
5	14.7	15.1	15.2	15.2	15.2	7.9	7.9	7.8	7.7	7.8	7.98	8.13	8.11	8.05	8.16	34.0	34.1	34.2	34.1	34.1	om/TN
6	15.6	15.5	15.6	15.6	15.6	8.0	8.0	8.0	7.7	7.9	7.97	8.11	8.11	8.05	8.15	33.8	34.1	34.2	34.1	34.1	UTP
7*	15.9	15.6	15.7	15.6	15.8	7.8	7.8	7.7	7.6	7.5	8.00	8.13	8.13	8.07	8.17	34.0	34.0	34.2	34.1	34.1	RH
8	16.0	15.6	15.5	15.3	15.6	8.0	8.1	8.0	7.9	7.9	8.01	8.09	8.09	8.05	8.15	34.0	33.9	34.1	34.0	34.1	RT
9 Q1	16.3	15.7	15.6	15.9	15.7	8.0	7.7	7.6	7.5	7.5	8.01	8.10	8.06	8.02	8.09	34.1	34.0	34.1	34.0	34.0	UTP
10	15.7	15.4	15.2	15.1	15.5	7.6	7.7	7.7	7.5	7.5	8.06	8.11	8.07	8.02	8.10	33.9	34.0	34.0	34.0	34.0	RT
11	15.9	15.6	15.4	15.3	15.3	7.8	8.1	8.0	7.8	7.9	7.91	7.98	7.94	7.92	7.96	33.9	33.7	34.0	34.0	34.1	ACC
12 Q1	16.2	15.6	15.4	15.3	15.6	7.5	7.8	7.8	7.3	7.7	7.99	8.03	8.06	7.97	8.02	34.6	33.8	33.9	33.9	34.0	DM
13	15.4	15.9	15.8	15.6	15.9	8.3	8.1	8.0	7.9	7.9	7.93	8.02	7.96	7.95	8.00	33.7	33.9	34.0	34.0	34.0	DM
14*	15.7	15.6	15.7	15.7	15.4	7.6	7.7	7.5	7.4	7.5	7.95	7.98	7.94	7.92	7.95	33.9	33.9	34.1	33.9	33.9	DM
15	15.4	15.3	15.5	15.5	14.8	7.3	7.3	7.2	7.2	7.3	8.11	8.14	8.14	8.11	8.12	33.9	33.9	34.1	33.9	33.9	DM
16	15.8	15.2	15.1	15.1	14.9	8.1	8.4	8.2	8.1	8.3	7.91	7.92	7.89	7.90	7.89	33.9	33.9	34.0	33.9	33.9	AD
17	16.0	15.4	15.3	15.5	15.4	7.6	7.9	7.8	7.8	7.6	8.01	8.03	8.0	8.00	7.99	34.2	34.1	34.1	34.2	34.1	EG
18	14.6	15.4	15.3	15.3	15.3	8.1	7.7	7.8	7.6	7.6	8.05	8.01	7.99	8.00	7.99	34.0	34.2	34.4	34.3	34.1	KFP
19	14.8	15.4	15.3	15.3	15.2	7.9	7.9	7.8	7.8	7.7	8.09	8.00	8.01	7.97	7.96	34.0	34.1	34.0	34.1	34.0	KFP
20	15.6	15.5	15.4	15.4	15.3	7.8	7.9	7.8	7.9	7.8	8.00	7.98	7.98	7.98	7.97	34.0	33.9	34.0	33.9	34.0	DM
21*	15.3	15.3	15.2	15.0	15.2	8.1	8.1	8.0	8.1	8.0	8.01	7.98	7.98	7.99	7.97	33.4	33.9	34.0	33.9	34.0	RT
22 Q1	16.0	15.7	15.5	15.5	15.6	7.4	7.4	7.5	7.4	7.4	8.03	8.06	8.01	7.99	7.96	34.1	34.0	34.1	33.9	34.0	RT
23 Q1	16.3	15.9	15.9	15.9	15.9	7.5	7.6	7.4	7.4	7.4	7.95	7.93	7.91	7.90	7.89	34.1	34.0	34.1	34.1	34.0	RT
24	14.9	14.7	14.1	14.4	14.3	7.7	7.8	7.9	7.8	7.8	8.01	7.99	8.01	7.98	7.97	34.4	34.2	34.2	34.2	34.2	EG
25 Q1	14.5	14.0	13.5	13.5	13.4	7.6	7.9	7.9	7.8	7.9	8.03	8.00	8.03	8.02	8.02	34.0	34.1	34.1	34.1	34.1	TN
26	16.0	14.8	15.0	14.8	14.9	7.8	7.8	7.8	7.9	7.9	8.03	8.00	8.02	8.02	8.03	34.0	34.1	34.1	34.1	34.1	UTP
27	15.3	15.2	15.2	15.2	15.3	8.0	8.0	8.0	7.9	7.9	8.06	8.02	8.04	8.01	7.99	33.4	33.4	33.6	33.5	33.4	TN
28*	15.9	15.4	15.4	15.4	15.4	7.9	8.0	8.0	7.9	7.8	8.00	7.96	7.97	7.95	7.92	33.6	33.7	33.7	33.6	33.6	DM

Comments: \* Collect NH<sub>3</sub> Samples @ Q18 UTP 1/21/18 @ Q18 UTP 2/21/18 ☺ Q18 2/15/18 RT  
QC Check: vs 3/7/18 Final Review: EG 4/20/18



**28-Day Marine Sediment Bioassay  
Bioaccumulation**

**Water Quality Measurements**

Client: Anchor QEA  
Test Species: M. nasuta and N. virens

Project ID: \_\_\_\_\_  
Site ID: BIN-Comp-T

Lower Newport Bay Federal Channels  
Start Date/Time: 1/24/2018 1130  
End Date/Time: 2/21/2018 0905

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0*	13.7	13.7	13.6	13.6	13.7	8.3	8.3	8.3	8.3	8.1	8.09	8.10	8.08	8.08	8.10	34.0	34.1	34.1	34.0	34.1	AK
1	15.2	16.3	15.3	15.4	15.4	7.7	7.7	7.7	7.7	7.6	8.10	8.09	8.04	8.04	8.05	34.1	34.1	34.1	34.0	34.1	TW
2	15.7	15.7	15.7	15.8	15.8	7.7	7.8	7.8	7.7	7.7	8.09	8.10	8.07	8.06	8.07	34.4	34.5	34.4	34.3	34.5	BO
3	<del>15.4</del>	15.4	15.4	15.6	15.6	<del>7.7</del>	7.7	7.6	7.5	7.6	<del>8.10</del>	8.15	8.10	8.09	8.11	<del>34.7</del>	34.2	34.2	34.1	34.2	RT
4	15.2	15.0	15.0	15.1	15.0	7.7	7.7	7.6	7.5	7.6	8.14	8.10	8.07	8.09	8.09	34.7	34.2	34.1	34.1	34.1	ACS
5	15.3	15.1	15.1	15.3	15.1	7.8	7.8	7.8	7.7	7.7	8.10	8.06	8.04	8.05	8.04	33.9	34.1	34.1	34.2	34.0	DM/TW
6	15.6	15.5	15.6	15.7	15.5	8.0	8.0	7.9	7.9	8.0	8.10	8.04	8.02	8.03	8.02	34.1	34.1	34.1	34.2	34.2	LTP
7*	15.7	15.7	15.7	15.9	15.6	7.8	7.8	7.7	7.7	7.4	8.13	8.06	8.06	8.06	8.03	34.2	34.2	34.1	34.2	34.1	PH
8	15.7	15.7	15.7	15.5	15.6	8.1	8.0	7.9	7.8	7.9	8.05	8.02	8.03	8.05	8.03	34.0	34.1	34.1	34.2	34.0	DM/BO/PH
9	15.8	15.9	15.9	15.9	15.5	7.7	7.6	7.5	7.6	7.7	8.07	8.04	8.02	8.03	8.01	34.1	34.1	34.1	34.2	34.0	LTP
10	15.6	15.7	15.6	15.4	15.3	7.6	7.5	7.5	7.6	7.6	8.10	8.08	8.05	8.05	8.05	34.0	34.2	34.0	34.0	33.9	RT
11	15.8	15.8	15.8	15.6	15.3	7.8	7.9	7.9	7.9	7.9	7.96	7.98	7.96	7.94	7.95	34.0	34.1	34.1	34.0	33.9	ACS
12	15.7	15.4	15.7	15.6	15.3	7.7	7.8	7.6	7.7	7.7	8.04	8.02	8.00	7.99	7.99	34.0	34.0	34.0	34.0	33.9	DM
13	16.0	15.7	15.9	15.9	15.6	8.0	8.1	7.9	7.9	8.1	8.04	8.01	7.98	7.97	8.00	34.0	33.9	34.0	34.0	33.8	DM
14*	15.5	15.5	15.6	15.5	15.4	7.6	7.6	7.6	7.6	7.7	7.97	7.95	7.92	7.94	7.95	34.0	34.0	34.0	34.0	33.9	DM
15	15.1	15.3	15.4	15.3	15.1	7.2	7.3	7.2	7.2	7.2	8.13	8.11	7.97	7.97	7.98	34.1	34.0	34.0	33.9	33.9	DM
16	15.4	15.3	15.4	15.3	15.0	8.2	8.3	7.9	8.3	8.2	7.91	7.90	7.88	7.91	7.73	33.9	34.9	34.0	34.0	33.9	AD
17	15.5	15.5	15.5	15.0	15.1	7.8	7.6	7.6	7.8	7.8	8.04	8.02	8.00	8.03	8.02	34.1	34.2	34.2	34.1	34.1	EG
18	15.4	15.2	15.3	14.6	14.7	7.8	7.8	7.8	8.0	7.9	8.02	8.01	7.98	8.03	8.03	34.0	34.0	34.1	33.9	34.0	KFP
19	15.3	15.3	15.3	14.7	14.8	7.7	7.6	7.6	7.9	7.9	8.00	7.98	7.98	8.00	8.02	33.9	34.0	34.0	33.8	33.9	KFP
20	15.5	15.6	15.6	15.2	15.2	7.8	7.8	7.7	7.9	7.9	7.91	7.92	7.96	7.99	7.99	33.9	33.9	33.9	33.8	33.8	DM
21*	15.1	15.2	15.3	15.1	15.1	8.1	8.1	8.0	8.0	8.0	8.00	7.99	7.97	8.00	8.00	33.9	34.0	34.0	33.9	33.9	RT
22	15.6	15.7	15.7	15.6	15.7	7.4	7.4	7.3	7.4	7.4	8.01	8.00	7.97	8.01	8.00	34.0	34.1	34.1	34.1	34.1	RT
23	16.0	16.0	16.0	16.0	16.0	7.6	7.4	7.4	7.5	7.4	7.94	7.91	7.89	7.97	7.97	34.1	33.8	34.1	34.0	34.0	RT
24	<del>15.7</del>	<del>15.6</del>	<del>15.7</del>	<del>15.7</del>	<del>15.7</del>	<del>7.5</del>	<del>7.5</del>	<del>7.4</del>	<del>7.5</del>	<del>7.5</del>	<del>7.87</del>	<del>7.87</del>	<del>7.89</del>	<del>7.89</del>	<del>7.84</del>	<del>33.9</del>	<del>34.0</del>	<del>34.1</del>	<del>34.0</del>	<del>34.0</del>	<del>RT</del>
25	13.7	13.5	13.8	13.7	13.9	7.6	7.8	7.8	7.9	8.0	8.01	8.03	8.01	8.04	8.03	33.4	34.1	34.1	34.1	33.7	TW
26	15.0	15.0	15.0	14.9	15.0	7.7	7.8	7.7	7.7	7.8	8.00	8.00	7.99	8.01	8.00	34.2	34.1	34.0	34.1	34.0	KFP
27	15.3	15.3	15.3	15.3	15.3	8.0	7.9	7.9	7.9	7.8	8.02	8.02	8.01	8.04	8.03	33.6	33.5	33.5	33.5	33.5	TW
28*	15.5	15.5	15.5	15.6	15.6	7.6	7.9	7.9	7.9	8.0	7.97	7.97	7.95	7.97	7.97	33.7	33.7	33.6	33.6	33.6	DM

Comments: \* Collect NH<sub>3</sub> Samples

QC Check: vs 3/7/18

Q18 BO 1/26/18

Final Review: EG 4/20/18

**28-Day Marine Sediment Bioassay  
Bioaccumulation**

**Water Quality Measurements**

Client: Anchor QEA  
Test Species: M. nasuta and N. virens

Project ID: \_\_\_\_\_  
Site ID: \_\_\_\_\_

Lower Newport Bay Federal  
Channels  
Start Date/Time: 1/24/2018 1130  
End Date/Time: 2/21/2018 0905

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0*	13.5	13.7	13.8	13.9	14.1	8.1	8.2	8.1	8.2	8.0	8.11	8.06	8.06	8.07	8.06	34.0	34.0	34.0	34.0	34.0	ACS
1 Q1	15.5	15.6	16.0	16.1	16.2	7.7	7.6	7.3	7.4	7.4	8.07	8.00	7.91	7.98	7.98	33.9	34.0	34.0	34.0	34.0	TN
2 Q1	15.8	16.0	16.0	16.1	16.3	7.6	7.7	7.7	7.6	7.5	8.15	8.01	7.98	8.00	7.97	34.8	34.7	34.7	34.7	34.8	BO
3	15.7	15.7	15.7	14.6	14.5	7.7	7.6	7.6	7.7	7.8	8.20	8.09	8.08	7.98	7.99	34.2	34.1	34.0	33.9	34.0	RT
4	15.0	14.8	15.0	14.6	14.6	7.6	7.8	7.6	7.8	7.7	8.13	8.04	8.04	7.97	7.96	34.1	34.0	34.0	34.0	34.0	ACS
5	15.2	14.7	15.2	14.8	14.9	7.6	7.8	7.6	7.7	7.8	8.12	8.02	8.01	7.96	7.96	34.2	34.0	34.0	34.0	34.0	DM/TN
6	15.0	15.1	15.8	15.5	15.6	8.0	8.0	7.9	8.0	7.9	8.08	7.95	7.97	7.95	7.95	34.1	33.9	34.0	33.9	34.0	LTP
7*	15.8	15.4	15.9	16.0	16.0	7.8	7.8	7.7	7.7	7.8	8.11	7.98	7.99	7.97	7.95	34.1	33.9	34.0	34.0	34.2	RH
8	15.8	15.1	15.5	15.7	15.9	8.0	8.0	7.7	7.9	7.9	8.05	7.95	7.97	7.94	7.96	34.1	33.9	34.0	34.0	34.1	RT
9 Q1	16.5	14.0	15.6	15.9	16.2	7.6	7.9	7.6	7.6	7.5	8.06	8.00	7.99	7.99	7.96	34.1	34.0	34.1	34.0	34.1	LTP
10	15.1	14.3	15.2	15.3	15.2	7.7	7.8	7.6	7.6	7.6	8.07	8.03	8.01	8.02	8.04	33.4	33.4	34.1	34.0	34.0	RT
11	15.3	14.6	15.3	15.4	15.4	8.0	8.1	7.9	7.9	7.8	7.93	7.91	7.90	7.91	7.93	33.8	33.8	34.0	34.0	34.0	ACS
12	15.7	14.5	15.4	15.5	15.6	7.8	7.9	7.6	7.7	7.7	7.99	7.99	7.97	7.97	7.99	33.9	33.9	34.0	33.9	33.9	DM
13	15.7	14.9	15.5	15.7	15.8	8.1	8.1	8.1	8.0	8.0	7.96	7.95	7.96	7.96	7.99	33.9	33.8	34.0	33.9	33.9	DM
14*	15.6	14.9	15.8	15.9	15.7	7.5	7.8	7.5	7.5	7.6	7.93	7.95	7.91	7.91	7.94	34.0	33.8	34.1	34.0	33.9	DM
15	17.3	14.3	15.5	15.5	15.4	7.2	7.2	7.1	7.1	7.2	8.02	8.03	7.99	8.01	8.02	33.9	33.9	34.0	33.9	33.9	DM
16	15.0	14.8	15.0	15.0	15.2	8.2	8.3	8.2	8.2	8.1	7.89	7.90	7.89	7.89	7.90	33.9	34.0	33.9	33.8	34.0	AD
17	15.2	15.1	15.5	15.4	15.7	7.7	7.8	7.8	7.6	7.7	7.99	8.01	7.99	7.98	8.01	34.0	34.1	34.2	34.1	34.2	EG
18	15.3	15.0	15.2	15.5	15.6	7.9	7.8	7.8	7.6	7.6	7.98	8.00	7.98	7.97	8.00	34.0	34.0	34.1	34.1	34.2	KFO
19	15.2	14.9	15.6	15.6	15.8	7.8	7.8	7.6	7.6	7.5	7.97	8.00	7.98	8.00	7.93	33.9	33.9	34.1	34.4	34.3	KFP
20	15.2	15.2	15.8	15.8	16.0	8.0	7.9	7.7	7.7	7.7	7.98	7.98	7.96	7.96	7.98	33.9	33.8	34.0	33.9	34.0	DM
21*	14.8	14.9	15.1	14.8	15.0	8.2	8.1	8.0	8.1	8.1	7.99	7.99	7.98	7.99	8.00	33.8	34.0	34.0	34.0	34.0	RT
22	15.5	15.3	15.8	15.6	16.0	7.5	7.5	7.4	7.4	7.3	7.98	8.01	7.98	7.98	8.00	34.0	34.0	34.1	34.0	34.1	RT
23 Q1	16.0	15.6	16.2	16.2	16.3	7.5	7.5	7.4	7.3	7.3	7.87	7.87	7.89	7.89	7.89	33.9	34.0	34.1	34.0	34.1	RT
24	14.4	14.3	14.1	14.0	14.8	7.8	7.8	7.8	8.0	7.9	7.99	8.00	8.01	8.01	7.99	34.1	34.1	34.1	34.1	34.1	EG
25 Q1	13.5	13.2	13.5	13.6	13.9	7.6	7.8	7.8	7.8	7.8	8.00	8.04	8.04	8.03	8.04	33.9	34.0	34.1	34.1	34.1	TN
26	14.2	14.0	14.1	14.5	14.8	7.7	7.8	7.8	7.8	7.7	8.00	8.03	8.02	8.00	8.02	34.1	34.1	34.1	34.1	34.1	LTP
27	15.0	15.0	15.0	15.2	15.5	8.0	7.9	7.9	7.8	7.8	8.01	8.04	8.03	8.02	8.03	33.4	33.4	33.7	33.4	33.5	TN
28*	15.5	15.5	15.7	15.7	16.0	7.9	8.0	7.9	7.9	7.9	7.95	7.98	7.97	7.96	7.98	33.5	33.5	33.5	33.5	33.8	DM

Comments: \* Collect NH<sub>3</sub> Samples  
QC Check: vs 3/7/18 Final Review: EG 4/20/18

# 28-Day Marine Sediment Bioassay Bioaccumulation

# Observations

Client: Anchor QEA  
 Lower Newport Bay Federal  
 Project ID: Channels  
 Site ID: Lab Control

Start Date/Time: 1/24/2018 1130  
 End Date/Time: 2/21/2018 0905  
 Test Species: M. nasuta and N. virens

Day	Rep	Mortalities	Flow Adjustments	Additional Comments	Tech Initials
1	A,B,C,D		flow ↑	8 clams, 1 worm on surface	RT/TN
2	A,B,C,E		flow ↑	clams on surface	BO/RT
3	A,E		flow ↓	clams on surface	BO/RT
4	A,C	—	A, = flow ↓	A=1 clam, 1 worm on surface C=1 clam on surface - D,E	ACS
5	A		A=flow ↑	clams on surface	TN
6	ABCD	—	A&D=flow ↑	A/C=clam on surface	LTP
7	A,C,D,E,B	D=1 clam	ABDE=flow ↑ (pm)	A,C,E=clams on surface	BO/RH/LTP
8	A,C,E	—	—	A,C,E=1 clam on each surface	RH/RT
9	A,C,E	—	C=flow ↑	A,C,E=clam on surface	LTP
10	E	—	—	E=clams on surface	BO/RT
11	A,C,D	—	A=flow ↑	clams on surface A=2, C=1, D=1	RH/ACS
12	E	—	E=flow ↑	clams on surface A=1	DM
13	A,B,C,D,E	—	B,D,E=flow ↑	clams on surface A,C,E=1	DM/ACS LTP
14	A,B,C,D	—	D=flow ↑	A=1 clam on surface = A,B,C D=2 clams on surface A=3 clams on surface	ACS/TN
15	A,B,C,D	—	—	A,B,C=1 clam on surface D=2 clams on surface	DM
16	A,B,C	—	—	A,B=3 clams on surface C=2 clams on surface	BO/AD
17	A,B,C	—	B,C=flow ↑	A=1 clam, 1 worm on surface	BO/EG
18	A,B,C,D,E	—	E=flow ↑	A=3 clams, 1 worm on surface B,C=2 clams, D,E=1 clam on surface	TN
19	A,B,C,E	E=1 clam	—	A=1 clam on surface = 3 clams C=2 clams on surface	B
20	A,B,C,D	—	—	A=1 clam on surface B=3 clams, C=2 clams, D=2 clams	RH/DM
21	A,B,C,D,E	—	—	A=2 clams, B=3 clams, C=1 clam D=2 clams, E=2 clams on surface	BO/RT/LTP
22	A,B,C,D,E	—	A,B,E=flow ↑	clams on surface - A=1, B=2, C=2, D=3, E=2	RH/RT
23	A,B,C,D,E	—	—	A=1 clam, B=2 clams D=3 clams	BO/RT
24	—	—	—	—	ES
25	A-E	—	flow ↑ - C=flow ↓	A,C,D,E=2 clams on surface B=3 clams on surface	TN/ACS
26	A,B,C,E	—	—	clams on surface: A=3 B=3 C=2 E=1	ACS
27	A,B,C,E	—	—	clams on surface A=3, B=3 C=2, E=1	BO/RH
28	A,B,C,D,E	A=1 clam	—	clams on surface A=3 B=2 C=2, D=1, E=1	ACS/DM

QC Check: YS3/7/18

Final Review: ELH 4/20/18

Nautilus Environmental. 4340 Vandever Avenue. San Diego, CA 92120.

Ⓢ Q18 ACS V28/18 Ⓢ DM Q18 2/15/18 Ⓢ Q18 ACS 2/7/18 Ⓢ DM Q18 2/13/18  
 Ⓢ Q18 ACS 2/15/18

# 28-Day Marine Sediment Bioassay Bioaccumulation

# Observations

Client: Anchor QEA  
 Lower Newport Bay Federal  
 Project ID: Channels  
 Site ID: LA-3-Ref

Start Date/Time: 1/24/2018 1130  
 End Date/Time: 2/21/2018 0905  
 Test Species: M. nasuta and N. virens

Day	Rep	Mortality	Flow Adjustments	Additional Comments	Tech Initials
1	A,B,C		Flow ↑	cloudy, clams on surface	RT/TN
2	A,C,B		Flow ↑	cloudy, clams on surface	BO/RT
3	A,B,C		Flow ↓	cloudy, clams on surface	BO/RT
4	A,C	-	A - flow ↓	A - 2 clams on surface C - 1 clam on surface CLOUDY WATER	A/C
5	A,C	-		A = 2 CLAMS, C = 1 clam	TW
6	A/D	-	A/D = Flow ↑	All reps cloudy	LTP
7	A,C,E	-	A,C = flow ↑	A = clam on surface	BO/RT/H
8	A,C	C = 1 clam		A = 1 clam on surface	RT/RT
9	A,D	-	D = Flow ↑	A = clam on surface	LTP
10	A	-		A = 1 clam on surface	BO/RT
11	A	-		A = 1 clam on surface	RH/ACS
12	A,C,B		C,B = Flow ↑	A = 1 clam on surface	DM
13	A	-		A = 1 clam on surface	DM
14	A	-		A = 1 clam on surface	ACS/DM
15	A	-		A = 1 clam on surface	DM
16	A,C,D,E	-		A = 1 clam on surface C,D,E = cloudy	BO/AD
17	D,E	-	D,E = flow ↑		BO/EG
18	A,C,D,E	-	E,C,D = flow ↓	A = 1 clam on surface	TW/RH
19	A	-		A = 1 clam on surface	VS
20	C,D,A	-	C,D = flow ↑	A = 1 worm on surface	RH/DM
21	A	-		A = 1 clam on surface	BO/RT
22	A,B,C,D,E	-	A,B,C,D,E = flow ↑		RH/RT
23	C	-	A/D = flow ↑ C = flow ↑		BO/RT
24		-			EG
25	A,B	-	B = flow ↓	A = 1 clam, 1 worm on surface	TW
26	A	-		A = 1 clam on surface	ACS
27	A,B	-		A = 1 clam + 1 worm on surface B = 1 clam on surface	BO/RT/H
28	A	-		A = 1 clam + 1 worm on surface	DM

QC Check: VS 3/7/18

Final Review: EG 4/20/18

Nautilus Environmental. 4340 Vandever Avenue. San Diego, CA 92120.

Ⓞ Q14 ACS 1/28/18  
 Ⓞ P1018 2/15/18  
 Ⓞ P18 BO 2/16/18

# 28-Day Marine Sediment Bioassay Bioaccumulation

# Observations

Client: Anchor QEA  
 Lower Newport Bay Federal  
 Project ID: Channels  
 Site ID: TB-Comp

Start Date/Time: 1/24/2018 1130  
 End Date/Time: 2/21/2018 0905  
 Test Species: M. nasuta and N. virens

Day	Rep	Mortality	Flow Adjustments	Additional Comments	Tech Initials
1	D		flow ↑	cloudy, clams on surface	RT/M
2	A,B,C,D,E		flow ↑	cloudy, clams on surface	BO/RT
3	A, E, D		flow ↓	cloudy	BO/RT
4	A, D, B, C, E	-	A, D - flow ↓	all reps cloudy	ACS
5	A, B, C, D, E			collect water in all reps	W
6	D	—	D = Flow ↑	All reps cloudy	LTP
7	all	-	A, C, D = flow ↑	All reps cloudy	BO/RT LTP
8	A, B, C, D, E	-	—	all reps cloudy	RH/RT
9	A → E	—	B, D - Flow ↑	All reps cloudy	LTP
10	all	-	—	All reps cloudy	BO/RT
11	A, B, C, D, E	-	—	All reps cloudy	RH/ACS
12	A → E	-	A, E - Flow ↑	All reps cloudy	DM
13	A → E	-	C, D, A = Flow ↑	All reps cloudy	DM/ACS, LTP
14	A-E	-	—	All reps cloudy	ACS
15	A-E	-	—	All reps cloudy	DM
16	A, D	—	A = flow ↑	D = air off, D.P = 3.0 all reps cloudy	BO/AD
17	A, E	—	—	cloudy	W
18	B, A, D	—	A = flow ↓, D = flow ↑	B = 1 clam on surface D = air off, turned back on.	W/RT
19	B	—	—	B = 1 clam on surface	VS
20	A, B, C, D, E	-	A, C = flow ↑	All reps cloudy	RH/DM
21	B, A, C, D, E	-	—	All reps cloudy B = 1 clam on surface	BO/RT
22	A, B, E	-	A, B, E = flow ↑	all reps cloudy	RH/RT
23	B, C, D	-	B, C, D = flow ↑	All reps cloudy	BO/RT
24	—	—	—	—	EG
25	B, C, A	—	A, B — flow ↓	B, C = 1 clam on surface	W/ACS
26	A-E	-	—	All reps cloudy	ACS
27	A-E	—	—	All reps cloudy	BO/RT
28	A-E	D = 1 clam dead	—	All reps cloudy	DM

QC Check: VS 3/7/18

Final Review: EG 4/20/18

# 28-Day Marine Sediment Bioassay Bioaccumulation

# Observations

Client: Anchor QEA

Start Date/Time: 1/24/2018 1130

Lower Newport Bay Federal

Project ID: Channels

End Date/Time: 2/21/2018 0905

Site ID: MCN1-Comp-T

Test Species: M. nasuta and N. virens

Day	Rep	Mortalities	Flow Adjustments	Additional Comments	Tech Initials
1	A,B		flow ↑	cloudy, clams on surface	RT/TV
2	A,B,D		flow ↑	cloudy	BO/RT
3	A,B		flow ↓	cloudy, clams on surface	BO/RT
4	B, A, D, E	-	A - flow ↓	b - surface with out of sediment D - 2 clams on surface E - 1 clam on surface D - 2 CLAMS ON SURFACE E - 2 CLAMS ON SURFACE	ACS
5	A, D, E		A - flow ↓		TW
6	B	-	B = flow ↑	All reps cloudy	LTP
7	A, B, D, E, C	-	A, B, E = flow ↑ / ↑ (pm)	D, E = 1 clam on surface	BO/RT/TP
8	D, E	-	-	D, E = 1 clam on each surface	RH/RT
9	A → E	-	A, E - flow ↑	All reps cloudy	LTP
10	All	-	-	All reps cloudy	BO/RT
11	A, B, C, D, E	-	-	All reps cloudy E - 1 clam on surface	RH/ACS
12	All	-	B - flow ↑	All reps cloudy E - 1 clam on surface	DM
13	All	-	A - flow ↑	All reps cloudy	DM
14	A - E	-	-	All reps cloudy	ACS
15	A - E	-	A - flow ↓	All reps clouds	DM
16	A - E	-	-	cloudy	BO/AD
17	A, B, C	-	A, B, C = flow ↑	cloudy all reps	BO/EG
18	All	-	-	cloudy in all reps	TW
19	A - E	-	A - flow ↑	cloudy in all reps	VB
20	A - E	-	A, B = flow ↑	cloudy in all reps.	RH/DM
21	A - E	-	-	cloudy in all reps	BO/RT
22	A, B, C, D, E	-	A, B, D = flow ↑	cloudy in all reps	RH/RT
23	A	-	A = flow ↑	All reps cloudy	BO/RT
24	-	-	-	-	EG
25	E	-	E = flow ↓	All reps cloudy	TW/ACS
26	A - E	-	-	All reps cloudy	ACS
27	A - E	-	-	All reps cloudy	BO/RT
28	A - E	E=1 clam, C=2 clams, b=1 clam	-	All reps cloudy	BO/DM

QC Check: VS 3/7/18

Final Review: EH 4/20/18

# 28-Day Marine Sediment Bioassay Bioaccumulation

# Observations

Client: Anchor QEA  
 Lower Newport Bay Federal  
 Project ID: Channels  
 Site ID: MCN2-Comp-T

Start Date/Time: 1/24/2018 1130  
 End Date/Time: 2/21/2018 0905  
 Test Species: M. nasuta and N. virens

Day	Rep	Mortality	Flow Adjustments	Additional Comments	Tech Initials
1	A,B,C,D,E			cloudy, clams on surface	RT/AN
2	A,B,C,D,E			cloudy, clams on surface	BO/RT
3	A,B,C,D,E			cloudy, clams on surface	BO/RT
4	B,A,C,D,E	B = 1 clam	-	cloudy - all reps <sup>D-1 clam on surface</sup>	ACS
5	A,B,C,D,E			cloudy in all reps C-1 clam on surface	TW
6	C	-	-	C-dam on surface	UTP
7	B,C,D,E	-	B,C,D,E = ↑ BCD ↑ (pm)	C-1 clam on surface	BO/RH/UTP
8	C	-	-	C-1 clam on surface	RH/RT/ACS
9	A,B,C,D,E	-	C, E - Flow ↑	All reps cloudy	UTP
10	C	-	-	C-1 clam on surface	RT
11	A,B,C,D,E	-	-	all cloudy	ACS
12	A → E	-	-	All cloudy	DM
13	A → E	-	B,C,D,E = Flow ↑	All cloudy	DM
14	C	-	-	C-1 clam on surface	ACS
15	A → E	-	-	All reps cloudy	DM
16	A-E	-	-	cloudy = all	MD
17	A-E	-	A = Flow ↑	cloudy	BO/EG
18	ALL	-	-	cloudy in all reps	TW
19	A-E	-	-	cloudy in all reps	ES
20	A-E	-	C, A = Flow ↑	cloudy in all reps	DM
21	A-E	-	-	cloudy in all reps	RT
22	A-E	-	D, E = flow ↑	cloudy all reps	RT
23	A-E	-	A = flow ↑	cloudy all reps	RT
24	-	-	-	-	EG
25	A,C,D,E,B	-	B,C,D = Flow ↓	D-1 clam on surface ALL REPS CLOUDY	TW
26	A-E	-	-	All reps cloudy	ACS
27	A-E	-	-	ALL REPS CLOUDY	TW
28	A-E	1 dead clam = A,C,B	-	All reps cloudy	DM

QC Check: Yes 3/7/18

Final Review: EG 4/20/18

# 28-Day Marine Sediment Bioassay Bioaccumulation

# Observations

Client: Anchor QEA

Start Date/Time: 1/24/2018 1130

Project ID: Lower Newport Bay Federal Channels

End Date/Time: 2/21/2018 0905

Site ID: MCN3-Comp

Test Species: M. nasuta and N. virens

Day	Rep	Mortality	Flow Adjustments	Additional Comments	Tech Initials
1	A,B,C,D,E			cloudy, clams on surface	RT/TN
2	D,E		flow ↑	clams on surface	BU/ET
3	B		flow ↓	cloudy	BC/RT
4	B, A, C, D, E	—	B-flow ↓	All reps cloudy A, D - 1 clam on surface	ACS
5	A,B,C,D,E			cloudy in all reps A, E - 1 clam on surface	TN
6	D		D = Flow ↑ / aeration ↑	D - aeration off, tube detached checked @ 1300, DE 8.1	LTP
7	A, B, D		A, B, D = flow ↑	cloudy = all reps	BC/RH
8	D, E	—	—	D, E - cloudy	RH/RTA
9	B, D	—	B, D - flow ↑	cloudy	LTP
10	—	—	—	all reps cloudy	KT
11	A, B, C, D, E	—	—	All cloudy	ACS
12	A → E	—	—	All reps cloudy	DM
13	A → E	—	A = Flow ↑	All reps cloudy	DM
14	A → E	—	A = flow ↑	All reps cloudy	ACS
15	A → E	—	—	All reps cloudy	DM
16	A-E	—	—	Cloudy	AD
17	A-E	—	—	Cloudy	AD
18	ALL	—	—	cloudy in all reps	TN
19	A-E	—	—	cloudy in all reps	VS
20	A-E	—	D, E = Flow ↑	cloudy in all reps	DM
21	A-E	—	—	cloudy in all reps	RT
22	A-E	—	B = flow ↑	cloudy all reps	RT
23	A-E	—	A, D, E = flow ↑	cloudy all reps	RT
24	—	—	—	—	EQ
25	A-E	—	A-E = flow ↓	All reps cloudy	TN
26	A-E	—	—	All reps cloudy	AD
27	A-E	—	—	All reps cloudy	TN
28	A-E	C-1 clam	—	All reps cloudy	DM

QC Check: YS 3/7/18

Final Review: EG 4/20/18

Nautilus Environmental. 4340 Vandever Avenue. San Diego, CA 92120.

Ⓐ Q18 ACS 1/28/18

Ⓑ Q19 ACS 2/4/18

Ⓒ DM

Ⓓ Q18 2/16/18



# 28-Day Marine Sediment Bioassay Bioaccumulation

# Observations

Client: Anchor QEA  
 Lower Newport Bay Federal  
 Project ID: Channels  
 Site ID: MCN4-Comp

Start Date/Time: 1/24/2018 1130  
 End Date/Time: 2/21/2018 0905  
 Test Species: M. nasuta and N. virens

Day	Rep	Mortalities	Flow Adjustments	Additional Comments	Tech Initials
1	D		flow ↑	cloudy, clams on surface	RT/RT
2	A,B,C,D		flow ↑	cloudy, clams on surface	BO/RT
3	B,C,D		flow ↓	cloudy, clams on surface	BO/RT
4	A,E	-	-	A-3 clams on surface E-2 clams on surface, cloudy	AS
5	A,B,C,E			cloudy in all reps A-1 clam on surface	TW
6	A/B	-	-	A/B - clam on surface	LTP
7	A,B,D	-	A,B,D = ↑ flow	A,E = 1 clam on surface	BO/RT
8	E	-	-	E = 1 clam on surface	RT/RT
9	B,C	-	B,C - flow ↑		LTP
10	B,E	-	-	B/E clam on surface	RT
11	C,E	-	-	C,E - 1 clam on surface	AS
12	A → E	-	-	All reps cloudy	DM
13	A → E	-	D - flow ↑	All reps cloudy	DM
14	A → E	-	-	All reps cloudy	AS
15	A → E	-	-	All reps cloudy	DM
16	A-E	-	-	cloudy	AD
17	A-E	-	-	cloudy	AD
18	ALL	-	-	cloudy in all reps	TW
19	A-E	-	-	cloudy in all reps	VS
20	A-E	-	A,D = flow ↑	cloudy in all reps	DM
21	A-E	-	-	cloudy in all reps	RT
22	A-E	-	A-D = flow ↑	cloudy all reps	RT
23	A-E	-	A-D = flow ↑	cloudy in all reps	RT
24	-	-	-	-	EG
25	B,C,E,DA	-	B,C,E = flow ↓	All reps cloudy	TW
26	A-E	-	-	All reps cloudy	AS
27	A-E	-	-	All reps cloudy	TW
28	A-E	E = 1 clam	-	All reps cloudy	DM

QC Check: PS 3/7/18

Final Review: EG 4/20/18

# 28-Day Marine Sediment Bioassay Bioaccumulation

# Observations

Client: Anchor QEA  
 Lower Newport Bay Federal  
 Project ID: Channels  
 Site ID: MCN5-Comp

Start Date/Time: 1/24/2018 1130  
 End Date/Time: 2/21/2018 0905  
 Test Species: M. nasuta and N. virens

Day	Rep	Mortalities	Flow Adjustments	Additional Comments	Tech Initials
1	A,B,C,D,E			cloudy, clams on surface	RT/TN
2	A,B,C,D,E			cloudy, clams on surface	BO
3	A,B,C,D,E			cloudy, clams on surface	RT
4	B,E	-	-	B,E - 1 clam on surface	ACS
5	A,E			A,E - 1 clam on surface	TN
6	E	-	-	E - clam on surface	LTP
7	D	-	D: flow ↑ DT (rpm)	-	RH/LTP
8	E	-	-	E - clam on surface	RH/RT/ACS
9	B	-	B Flow ↑	-	UP
10	-	-	-	-	RT
11	-	-	-	-	ACS
12	-	-	-	-	DM
13	E	-	E Flow ↑	cloudy water in all reps	TN
14	A-E	-	-	cloudy in all reps	ACS
15	A-E	-	-	cloudy in all reps	DM
16	A-E	-	-	cloudy	ADD
17	A-E	-	-	cloudy	ADD
18	A,B	-	-	cloudy in all reps B - 1 clam on surface	TN
19	A-E	-	-	cloudy in all reps	YS
20	A-E	-	-	cloudy in all reps	DM
21	A-E	-	-	cloudy in all reps	RT
22	A-E	-	-	cloudy all reps	RT
23	A-E	-	C-E = flow ↑	cloudy all reps	RT
24	-	-	-	-	EG
25	A-D,E	-	A-D = flow ↑	all reps cloudy	TN
26	A-E	-	-	all reps cloudy	ACS
27	A-E	-	-	D - 1 clam on surface all reps cloudy	TN
28	A-E	- 2 3 clams	-	all reps cloudy	DM

QC Check: YS 3/7/18

Final Review: EG 4/28/18

② 2/21/18

# 28-Day Marine Sediment Bioassay Bioaccumulation

# Observations

Client: Anchor QEA

Start Date/Time: 1/24/2018 1130

Lower Newport Bay Federal

Project ID: Channels

End Date/Time: 2/21/2018 0905

Site ID: EC-Comp

Test Species: M. nasuta and N. virens

Day	Rep	Mortalities	Flow Adjustments	Additional Comments	Tech Initials
1	A,B,C,D,E			clams on surface	RT/AN
2	A,B,C,D,E			clams on surface	BO
3	A,B,C,D,E			clams on surface	RT
4	A,B,E	-	-	A,B,E 1 clam on surface E - 2 clams on surface	ACS
5	A,B,E			A,B,E - 1 clam on surface	TW
6	A/E	A - 1 clam	-	E - clam on surface	UP
7	A,B,E	-	A = flow ↑	A = 1 clam on surface, B = 2 clams on surface, E = 1 clam on surface	RH
8	A,B,E	-	-	clams on surface - A=1, B=2, E=2	RT/RT
9	B,D,E	-	B,D - Flow ↑	B,E = clam on surface	UP
10	B,E	-	-	B,E = clam on surface	RT
11	B,D,E	-	-	A,B,D,E - 1 clam on surface - 2 on B D - 1 clam on surface	AS
12	A,B,D,E	-	-	A,B,D,E - 1 clam on surface	DM
13	A,B,D,E	E = 1 clam	D,E = flow ↑	A,B,D,E - 1 clam on surface B = 2 clams	TW/AS
14	A,D,B,E	-	-	A,B,D,E - 1 clam on surface	AS
15	A,B,D	-	-	A,B,D = 1 clam on surface	DM
16	A,D,E	-	-	A,D,E = 1 clam on surface	PRO
17	A,E	A - 1 clam	-	D,E = 2 clams on surface	AD
18	B,D,E	-	-	B,E = 2 clams on surface D = 1 clam on surface	TW
19	B,D,E	-	-	B = 1 clam on surface D,E = 2 clams on surface	VS
20	B,D,E,A	-	A,D,E = Flow ↑	B,D = 1 clam on surface E = 2 clams on surface	DM/AS
21	<del>A,B,D,E</del> B,D,E	B,D,E	-	B,D = 1 clam on surface	RT/AS
22	B,D,E	-	-	B,D,E = 1 clam on surface	RT
23	A-E	-	A-E = flow ↑	B,D = 1 clam on surface	RT
24	-	-	-	-	EG
25	E,B,D	-	E = flow ↓	B,D,E = 2 clams on surface	TW
26	B,C,D,E	-	-	clams on surface: B=3, C=1, D=2, E=2	AS
27	B,C,D,E	-	-	B = 3 clams on surface C,D,E = 2 clams on surface	TW
28	B,C,D,E	-	-	B = 3 clams on surface C,D,E = 1 clam on surface	DM

QC Check: VS 3/7/18

Final Review: EG 4/20/18

Nautilus Environmental. 4340 Vandever Avenue. San Diego, CA 92120.

RT AD 01/8 2/10/18  
 RT QU 2/14/18  
 QU AS 2/19/18

**28-Day Marine Sediment Bioassay  
Bioaccumulation**

**Observations**

Client: Anchor QEA  
 Lower Newport Bay Federal  
 Project ID: Channels  
 Site ID: BIME-Comp-T-M

Start Date/Time: 1/24/2018 1130  
 End Date/Time: 2/21/2018 0905  
 Test Species: M. nasuta and N. virens

Day	Rep	Mortality	Flow Adjustments	Additional Comments	Tech Initials
1	B,C,D,E		Flow ↑	cloudy, clams on surface	RT/MN
2	A,B		Flow ↑	cloudy, clams on surface	BO
3	A,B,C,D,E			cloudy, clams on surface	RT
4	A,C,E,D			C,E - 1 clam on surface D - cloudy A - 2 clams on surface	AS
5	A,C,E			A, C, E - 2 clams on surface	TW
6	A-E			All reps cloudy	LTP
7	A,C,D,E		A = flow ↑	C, D, E = 1 clam on each surface	RH
8	B,C,E			clams on surface - B,C = 1, E = 1	RH/RT/AS
9	C			C - clam on surface	LTP
10	B,C			B,C = 1 clam on surface	RT
11	C		c = flow ↑	C - 2 clams on surface	AS
12	C			C - 1 clam on surface	DM
13	C			C - 1 clam on surface cloudy in all reps	TW
14	A,B		A,B = Flow ↑	C - 1 clam on surface cloudy in all reps	AS/TW
15	A-E			cloudy in all reps C - 1 clam on surface	DM
16	A-E			cloudy	AD
17	A-E			cloudy	AD
18	A-E			cloudy in all reps	TW
19	A-E			cloudy in all reps	WB
20	A-E		D, E = Flow ↓	cloudy in all reps	DM
21	A-E			All reps cloudy	BO
22	A-E			1 clam on surface in A, cloudy	RT
23	A-E		A, B, C, E = flow ↑	cloudy all reps	RT
24					EG
25	C, A, B, D, E		C = Flow ↓	cloudy in all reps	TW
26	A-E			All reps cloudy	AS
27	A-E			ALL REPS CLOUDY	TW
28	A-E	A = 3 DEAD CLAMS D = 1 DEAD CLAM		All reps cloudy	DM

QC Check: YS 3/7/18

Final Review: EG 4/20/18

**28-Day Marine Sediment Bioassay  
Bioaccumulation**

**Observations**

Client: Anchor QEA

Start Date/Time: 1/24/2018 1130

Project ID: Lower Newport Bay Federal Channels

End Date/Time: 2/21/2018 0905

Site ID: BIMW-Comp-T-M

Test Species: M. nasuta and N. virens

Day	Rep	Mortality	Flow Adjustments	Additional Comments	Tech Initials
1	A		flow ↑	cloudy, clams on surface	RT/KN
2	A		flow ↑	cloudy, clams on surface	BO
3	A,B,C,D,E			cloudy, clams on surface	RT
4	B,D,E	-	-	B,D - 1 clam on surface E - 2 clams on surface cloudy	ACS
5	B,D,E	-	-	B,D - 1 clam on surface E - 2 clams on surface	TW
6	B/D	-	-	B,D - clam on surface All reps cloudy	LTP
7	D	-	-	D - 1 clam on surface	RT
8	A	-	-	A - cloudy	RH/RT/ACS
9	A	-	A flow ↑		LTP
10	-	-	-		RT
11	-	-	-		ACS
12	A	-	A flow ↑		DM
13	A-E	-	-	cloudy water in all reps	TW
14	-	-	-		ACS
15	-	-	-		DM
16	A-E	-	-	cloudy in all reps	ADD
17	A-E	-	-	cloudy	ADD
18	ALL	-	-	cloudy in all reps	TW
19	A-E	-	-	cloudy in all reps	WB
20	A-E	-	-	clouds in all reps	DM
21	A-E	-	-	All reps cloudy	BO
22	A-E	-	-	all reps cloudy	RT
23	A-E	-	A = flow ↑	all reps cloudy	RT
24	-	-	-		FG
25	C,D,E,AB	-	C,D,E = flow ↓	cloudy in all reps	TW
26	A-E	-	-	All reps cloudy	ACS
27	A-E	-	-	all reps cloudy	TW
28	A-E	E - 1 clam on surface	-	All reps cloudy	DM

QC Check: PS 3/7/18

Final Review: EL 4/20/18

# 28-Day Marine Sediment Bioassay Bioaccumulation

# Observations

Client: Anchor QEA

Start Date/Time: 1/24/2018 1130

Project ID: Lower Newport Bay Federal Channels

End Date/Time: 2/21/2018 0905

Site ID: BIN-Comp-T

Test Species: M. nasuta and N. virens

Day	Rep	Mortalities	Flow Adjustments	Additional Comments	Tech Initials
1	<del>AB</del>		<del>Flow ↑</del> (A)	cloudy, clams on surface	RT/TN
2	ABC, D, E			cloudy, clams on surface	BO
3	ABC, D, E			cloudy, clams on surface	RT
4	B, D, E	—	—	B, E - 3 clams on surface D - 1 clam on surface - L	ACS
5	B, C, E	—	—	cloudy in all reps B, C, E - 3 clams on surface	TN
6	B	—	—	B - clam on surface	LTP
7	B, E	—	—	B, E = 1 clam on each surface	PH
8	B, E	—	—	clams on surface B=1, E=1	PH/RT
9	—	—	—	—	LTP
10	—	—	—	—	RT
11	E	—	—	E - 1 clam on surface	ACS
12	E	—	—	E - 1 clam on surface	DM
13	AB, C, D, E	—	—	cloudy in all reps	TN
14	A, E	—	—	cloudy in all reps	ACS
15	A, E	—	—	cloudy in all reps	DM
16	A-E	—	—	cloudy	AD
17	A-E	—	—	cloudy	AD
18	A-E	—	—	cloudy in all reps	TN
19	A-E	—	—	cloudy in all reps	ACS
20	A-E	—	—	cloudy in all reps	DM
21	A-E	—	—	All reps cloudy	BO
22	A-E	—	—	All reps cloudy	RT
23	A-E	—	—	All reps cloudy	RT
24	—	—	—	—	EG
25	A-E	—	A-E = FLOW ↓	cloudy in all reps	TN
26	A-E	—	—	All reps cloudy	ACS
27	A-E	—	—	All reps cloudy	TN
28	A-E	B, C, A = 1 clam	—	All reps cloudy	DM

(A) Q18 1/25/18 RT

QC Check: YS 3/7/18

Final Review: EG 4/20/18

# 28-Day Marine Sediment Bioassay Bioaccumulation

# Observations

Client: Anchor QEA  
 Lower Newport Bay Federal  
 Project ID: Channels  
 Site ID: BIS-Comp

Start Date/Time: 1/24/2018 1130  
 End Date/Time: 2/21/2018 0905  
 Test Species: M. nasuta and N. virens

Day	Rep	Mortality	Flow Adjustments	Additional Comments	Tech Initials
1	D, E		flow ↑	cloudy, clams on surface	RT/TW
2	D, E		flow ↑	cloudy, clams on surface	BO
3	A, B, C, D, E			cloudy, clams on surface	RT
4	B, C, E	-	-	B-1 clam on surface, E-3 clams on surface	AS
5	B, C, E			cloudy in all reps B-C-1 clam E-3 clams	TW
6	C, E	-	-	C-1 clam on surface E-2 clams on surface	LTP
7	C, E	-	-	C-1 clam on surface E-2 clams on surface	RH
8	C, E	-	-	clams on surface C=1, E=2	RH/RT
9	E	-	E Flow ↑	E-2 clams on surface	WP
10	C, E	-	-	clams on surface C=1, E=2	RT
11	C, E	-	-	C-1 clam on surface E-2 clams	AS
12	C, E	-	-	C-E-1 clam on surface	DM
13	E	-	-	E-2 clams on surface	TW
14	E	-	-	E-1 clam on surface	AS
15	E	-	-	E-1 clam on surface	DM
16	E	-	-	E-1 clam on surface	DATA
17	E	-	-	E-1 clam on surface	AD
18	E	-	-	E-1 clam on surface	TW
19	A-E	-	-	E-1 clam on surface cloudy in all reps	YS
20	A-E	-	C, D, E = Flow ↑	E-1 clam on surface	DM
21	A-E	-	-	All vials cloudy E-1 clam on surface	BO
22	A-E	-	-	E-1 clam surface; all cloudy	RT
23	A-E	-	C-E = flow ↑	E-1 clam surface; all cloudy	RT
24	-	-	-	-	EG
25	A-E	-	A-E = Flow ↓	cloudy in all reps	TW
26	A-E	-	-	All reps cloudy	AS
27	A-E	-	-	all reps cloudy	TW
28	A-E	1 clam - 1 clam = A	-	All vials cloudy	DM

QC Check: YS 3/7/18

Final Review: EG 4/20/18

DATA 2/19/18

**28-Day Marine Sediment Bioassay  
Bioaccumulation (24-hr depuration water quality)**

**Water Quality Measurements**

Client: Anchor QEA  
Test Species: M. nasuta and N. virens

Project ID: Lower Newport Bay  
Federal Channels

Start Date/Time: 2/21/18 0905  
End Date/Time: 2/22/18 0905

Q2

Site	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (pH units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
LC	15.0	15.2	14.9	14.8	14.9	8.2	8.1	8.0	8.1	8.1	7.99	8.01	8.03	8.05	8.01	33.8	33.8	33.9	34.0	34.0	DM/RT
LA-3-Ref	14.9	14.9	15.2	15.2	15.1	8.1	8.1	8.0	8.0	8.0	8.02	8.05	8.03	8.00	8.00	33.8	34.0	34.1	34.0	33.9	DM/RT
TB-Comp-011218	15.0	14.9	15.0	14.9	14.3	7.6	8.0	7.9	8.0	8.1	7.92	8.01	8.02	8.05	8.06	34.0	34.0	34.1	34.1	34.0	DM/RT
MCN1-Comp-T-011518	14.3	14.9	13.7	14.0	13.9	8.0	8.0	8.2	8.2	8.2	8.04	8.05	8.05	8.05	8.06	34.1	34.0	33.8	33.9	33.7	DM/RT
MCN2-Comp-T-011618	13.9	14.0	14.1	14.1	14.1	8.2	8.2	8.1	8.0	8.1	8.02	8.04	8.02	8.04	8.01	33.8	33.9	33.9	33.9	33.8	RT
MCN3-Comp-011918	14.2	14.3	14.1	14.2	13.7	8.1	8.1	8.1	8.0	8.2	8.02	8.05	8.04	7.98	8.02	33.9	34.0	33.9	33.9	33.9	RT
MCN4-Comp-011918	14.0	14.2	14.1	14.5	13.4	8.2	8.0	8.1	8.0	8.3	8.04	7.99	8.02	8.04	8.01	33.9	33.9	33.9	33.9	33.7	RT
MCN5-Comp-011818	13.3	13.4	13.4	13.4	13.0	8.3	8.3	8.2	8.2	8.3	8.03	8.03	8.02	8.04	8.05	33.9	33.9	33.9	33.9	33.9	RT
EC-Comp-011718	13.3	13.5	13.3	13.4	13.7	8.2	8.2	8.2	8.2	8.1	8.02	8.04	8.04	8.05	8.05	33.9	34.0	33.9	34.0	33.9	RT
BIME-Comp-T-M-012218	13.7	13.7	13.8	13.6	13.5	8.2	8.2	8.1	8.2	8.2	8.04	8.02	8.00	8.03	8.03	33.9	33.8	33.9	33.9	33.9	RT
BIMW-Comp-T-M-011918	4.3	13.2	13.2	13.1	12.9	8.0	8.4	8.3	8.3	8.3	8.01	8.02	8.02	8.02	8.02	33.9	33.8	33.9	33.9	33.9	RT
BIN-Comp-T-011718	13.2	13.1	12.9	13.1	13.4	8.3	8.3	8.3	8.3	8.0	8.02	8.00	8.04	8.00	8.01	33.8	33.9	33.9	33.9	33.9	RT
BIS-Comp-011218	13.1	13.3	13.3	13.6	14.2	8.2	8.2	8.0	8.0	8.0	8.04	8.03	8.04	8.04	7.98	33.8	33.4	33.9	33.9	34.0	RT

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

QC Check: vs 2/7/18

Final Review: EG 4/20/18



**28-Day Marine Sediment Bioassay  
Bioaccumulation**

**Organism Survival**

Client: Anchor QEA  
Project ID: Lower Newport Bay Federal Channels

Start Date/Time: 1/24/2018 1130  
End Date/Time: 2/21/2018 0905

Worm Species: Nereis virens  
Clam Species: Macoma nasuta

Initial Number of: 10 worms  
Each Species: 25 clams

Time zero organism collected? \_\_\_\_\_ Tech Initials VK

Site	Rep	Number of Surviving Worms	Number of Surviving Clams
Lab Control	A	10	24
	B	10	25
	C	10	25
	D	10	23
	E	10	24
LA-3-Ref	A	9	(B) 25 24
	B	10	25
	C	10	23
	D	10	25
	E	10	25
TB-Comp-011218	A	ⓐ 10 9 (B) 10	25
	B	10	25
	C	10	25
	D	10	24
	E	10	25
MCN1-Comp-T-011518	A	9	25
	B	9	25
	C	9	23
	D	9	24
	E	9	24
MCN2-Comp-T-011618	A	10	24
	B	10	24 (B) 22
	C	10	24
	D	10	ⓐ 25 24 25
	E	10	25
MCN3-Comp-011918	A	10	25
	B	10	25
	C	10	24
	D	10	25
	E	10	25
MCN4-Comp-011918	A	9	25
	B	10	25
	C	10	25
	D	10	25
	E	10	24

Tech Initials: VK/EL/DM/KC/TN/RH/DC/RT/SC/AS

QC Check: 133/7/18

Final Review: EG 4/20/18

Nautilus Environmental, 4340 Vandever Avenue, San Diego, CA 92120.

ⓐ Q18 2/22/18 RT  
ⓑ Q18 2/22/18 ACJ

ⓐ 2 worms recovered outside of full depuration tank. 15 worms not in chemistry analysis. B.

**28-Day Marine Sediment Bioassay  
Bioaccumulation**

**Organism Survival**

Client: Anchor QEA  
Project ID: Lower Newport Bay Federal Channels

Start Date/Time: 1/24/2018 1130  
End Date/Time: 2/21/2018 0905

Worm Species: Nereis virens  
Clam Species: Macoma nasuta

Initial Number of 10 worms  
Each Species: 25 clams

Time zero organism collected? \_\_\_\_\_ Tech Initials VB

Site	Rep	Number of Surviving Worms	Number of Surviving Clams
MCN5-Comp-011818	A	10	21
	B	9	25
	C	10	24
	D	10	25
	E	10	24
EC-Comp-011718	A	10	23
	B	10	23
	C	10	25
	D	10	25
	E	10	24
BIME-Comp-T-M-012218	A	10	24 (A) 23
	B	10	25
	C	10	22
	D	10	24
	E	10	25
BIMW-Comp-T-M-011918	A	10	24
	B	10	25
	C	10	25
	D	9	25
	E	10	24
BIN-Comp-T-011718	A	10	24
	B	10	24
	C	10	24
	D	10	25
	E	9	25
BIS-Comp-011218	A	10	24
	B	10	25
	C	10	25
	D	10	24
	E	10	25

Tech Initials:

RS/EC/DM/KC/TN/  
RH/BO/KR/SC/AS

QC Check: VB 3/7/18

Final Review: En 4/20/18

(A) Q18 2/21/18 KL

## Ammonia Analyses

**Total Ammonia Analysis  
Marine**

**Pore Water**

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Various

DI Blank: 0.0      Test Start Date: Variable      Analyst: UTP  
 SW Blank: 0.0      Analysis Date: 01/19/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	pH (units)	Salinity (ppt) <sup>ⓑ</sup>	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	7.10	9.3
LA3-REF	1	1/18/2018	pre-test	8.01	36	1.4	1.7
TB-Comp-011218	2	1/18/2018	pre-test	8.08	34	9.3	11.3
BIS-Comp-011218	3	1/19/2018	pre-test	7.84	34	21.4	26.1
MCN1-Comp-011518	4	1/18/2018	pre-test	7.91	35	13.6	16.6
MCN2-Comp-011618	5	1/19/2018	pre-test	7.99	34	12.7	15.5
BIN-Comp-011718	6	1/19/2018	pre-test	7.91	34	17.8	21.7
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA		
Sample Duplicate <sup>a</sup>	6	NA	NA	NA	NA	17.5	21.4
Sample Duplicate + Spike <sup>a</sup>		NA	NA	NA	NA	25.1	30.6
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA		

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$       Acceptable Range: 0-20%  
 Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$       Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.3	10	NA	93.0
6	21.7	21.4	30.6	10	1.4	89.0

Comments: Duplicate @ measured using refractometer

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.  
<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.  
<sup>c</sup> Calculation not performed due to one or more values below the method detection limit.  
 Method Detection Limit (MDL) = 0.5 mg/L

QC Check: ✓ 3/14/18      Final Review: EG 4/16/18

**Total Ammonia Analysis  
Marine**

**Pore Water**

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Various

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: Variable

Analyst: SG  
 Analysis Date: 1/23/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	pH (units)	Salinity (ppt) <sup>(6)</sup>	NH <sub>3</sub> -N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	8.0	9.8
BIMW-Comp-T-M-011918	8	01/22/18	pre-test	7.108	34	22.8	27.8
BIME-Comp-T-M-012218	9	01/22/18	pre-test	7.60	35	21.4	26.1
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	8.0	9.8
Sample Duplicate <sup>a</sup>	9	NA	NA	NA	NA	21.1	25.7
Sample Duplicate + Spike <sup>a</sup>		NA	NA	NA	NA	28.9	35.3
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	8.0	9.8

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal spike} (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.8	10	NA	98
9	26.1	25.7	35.3	10	1.5	92

Comments: Measured using refractometer

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or more values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: Yes 3/14/18

Final Review: EG 4/16/18

**Total Ammonia Analysis  
Marine**

**Pore Water**

Client: Anchor QEA  
Project: Lower Newport Bay Federal Channels  
Test Type: Various

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: Variable

Analyst: SG  
Analysis Date: 1/23/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	pH (units)	Salinity (ppt) <sup>(B)</sup>	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	8.0	9.8
MCN3-Comp-011918	10	01/22/18	pre-test	7.02	35	(B) 27.6	14.5
MCN4-Comp-011918	11	01/22/18	pre-test	7.74	34	13.4	16.3
MCN5-Comp-011818	12	01/22/18	pre-test	7.70	35	11.3	13.8
EC-Comp-011718	13	01/22/18	pre-test	(A)	(A)	(A)	
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	8.0	9.8
Sample Duplicate <sup>a</sup>	12	NA	NA	NA	NA	11.0	13.4
Sample Duplicate + Spike <sup>a</sup>		NA	NA	NA	NA	18.9	23.1
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	8.0	9.8

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.8	10	NA	98
12	13.8	13.4	23.1	10	2.9	93

Comments: <sup>(A)</sup>Unable to collect pore water due to insufficient volume <sup>(B)</sup>measured using refractometer

Notes: <sup>a</sup>Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>(B)</sup>Q18 SG 1/23/18

<sup>b</sup>Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup>Calculation not performed due to one or more values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: YS 3/14/18

Final Review: EH 4/16/18

**Total Ammonia Analysis  
Marine**

**Pore Water**

**Client:** Anchor QEA  
**Project:** Lower Newport Bay Federal Channels  
**Test Type:** Ampelisca 10-day Survival

**DI Blank:** 0.0      **Test Start Date:** 1/30/2018      **Analyst:** SG  
**SW Blank:** 0.0      **Analysis Date:** 1/30/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	pH (units)	Salinity (ppt)	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	7.8	9.5
Ampelisca Lab Control EC 4/18 4/16/18	115	1/29/2018	pre-test	8.52	27.8	4.7	5.7
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	7.8	9.5
Sample Duplicate <sup>a</sup>	115	NA	NA	NA	NA	4.6	5.6
Sample Duplicate + Spike <sup>a</sup>		NA	NA	NA	NA	12.2	14.9
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	7.8	9.5

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{\text{average ammonia} (\text{mg/L})} \times 100$       Acceptable Range: 0-20%  
Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal [spike]} (\text{mg/L})} \times 100$       Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.5	10	NA	95
115	5.7	5.6	14.9	10	1.8	92

Comments: QC 18 SG 1/30/18

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.  
<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.  
<sup>c</sup> Calculation not performed due to one or more values below the method detection limit.  
Method Detection Limit (MDL) = 0.5 mg/L

QC Check: VS 3/14/18      Final Review: EC 4/16/18

Total Ammonia Analysis  
Marine

Overlying Water

Client: Anchor QEA  
Project: Lower Newport Bay Federal Channels  
Test Type: *Ampelisca* 10-day Survival - Acclimation

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 1/30/2018

Analyst: SG  
Analysis Date: 1/29/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	7.8	9.5
BIS-Comp	107	1/28/2018	-2	0.6	0.7
BiN-Comp-T	106	1/28/2018	-2	0.4	<0.5
BIMW-Comp-T-M	109	1/28/2018	-2	0.6	0.7
BIME-Comp-T-M	110	1/28/2018	-2	1.0	1.2
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	7.8	9.5
Sample Duplicate <sup>a</sup>	110	NA	NA	1.2	1.5
Sample Duplicate + Spike <sup>a</sup>		NA	NA	8.7	10.6
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	7.8	9.5

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.5	10	NA	95
110	1.2	1.5	10.6	10	22.2 <sup>c</sup>	94

Comments: Sample setup for acclimation with twice daily renewals on 3/24/14

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

<sup>d</sup> RPD outside of acceptable range due to values being near the method detection limit.

QC Check: EG 3/14/18

Final Review:

SG 3/16/18



**Total Ammonia Analysis  
Marine**

**Pore Water**

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Ampelisca 10-day Survival - Acclimation

DI Blank: 0.0 Test Start Date: 1/30/2018  
 SW Blank: 0.0

Analyst: SG  
 Analysis Date: 1/29/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	pH (units)	Salinity (ppt)	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	7.8	9.5
BIS-Comp	111	1/28/2018	-2	7.61	30.6	14.5	17.7
BIN-Comp-T	112	1/28/2018	-2	7.58	30.0	11.2	13.7
BIMW-Comp-T-M	113	1/28/2018	-2	7.70	30.6	14.3	17.4
BIME-Comp-T-M	114	1/28/2018	-2	7.70	30.9	15.2	18.5
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	7.8	9.5
Sample Duplicate <sup>a</sup>	114	NA	NA	NA	NA	14.8	18.1
Sample Duplicate + Spike <sup>a</sup>		NA	NA	NA	NA	22.8	27.8
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	7.8	9.5

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.5	10	NA	95
114	18.5	18.1	27.8	10	2.2	93

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or more values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: EG 3/14/18

Final Review: vs 3/16/18

**Total Ammonia Analysis**  
**Marine**

**Pore Water**

Client: Anchor QEA  
Project: Lower Newport Bay Federal Channels  
Test Type: Ampelisca 10-day Survival - Acclimation

DI Blank: 0.0 Test Start Date: 1/30/2018  
SW Blank: 0.0

Analyst: SG  
Analysis Date: 2/14/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	pH (units)	Salinity (ppt)	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	7.8	9.5
BIS-Comp	144	1/30/2018	0	7.81	27.5	15.7	19.2
BIN-Comp-T	145	1/30/2018	0	7.84	27.6 30.6	11.5	14.0
BIMW-Comp-T-M	146	1/30/2018	0	7.82	30.6	14.9	18.2
BIME-Comp-T-M	147	1/30/2018	0	7.92	30.6	14.1	17.2
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	7.8	9.5
Sample Duplicate <sup>a</sup>	147	NA	NA	NA	NA	13.8	16.8
Sample Duplicate + Spike <sup>a</sup>		NA	NA	NA	NA	21.6	26.4
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	7.8	9.5

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.5	10	NA	95
147	17.2	16.8	26.4	10	2.4	92

Comments: B) TWC 2/13/18

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or more values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: VS 3/14/18

Final Review:

EG 4/16/18

Total Ammonia Analysis  
Marine

Pore Water

Client: Anchor QEA  
Project: Lower Newport Bay Federal Channels  
Test Type: Ampelisca 10-day Survival - Acclimation

DI Blank: 0.0 Test Start Date: 1/30/2018  
SW Blank: 0.0

Analyst: SG  
Analysis Date: 2/14/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	pH (units)	Salinity (ppt)	NH <sub>3</sub> -N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	7.8	9.5
BIS-Comp	148	2/9/2018	10	7.49	28.1	8.4	10.9
BIN-Comp-T	149	2/9/2018	10	7.61	27.8	7.9	9.6
BIMW-Comp-T-M	150	2/9/2018	10	7.54	25.5	8.7	10.6
BIME-Comp-T-M	151	2/9/2018	10	7.58	28.9	9.3	11.3
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	7.8	9.5
Sample Duplicate <sup>a</sup>	151	NA	NA	NA	NA	9.2	11.2
Sample Duplicate + Spike <sup>a</sup>		NA	NA	NA	NA	16.9	20.6
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	7.8	9.5

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.5	10	NA	95
151	11.3	11.2	20.6	10	0.9	93

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or more values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: vs 3/14/18

Final Review: EG 4/16/18

**Total Ammonia Analysis  
Marine**

Overlying Water

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Ampelisca 10-day Survival

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 1/30/2018

Analyst: SG  
 Analysis Date: 4/18/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.4	10.2
Lab Control #1	116	1/30/2018	0	1.1	1.3
LA3-REF	117	1/30/2018	0	0.2	0.5
TB-Comp	118	1/30/2018	0	1.6	2.0
MCN1-Comp-T	119	1/30/2018	0	2.6	3.2
MCN2-Comp-T	120	1/30/2018	0	2.4	2.9
MCN3-Comp	121	1/30/2018	0	2.2	2.7
MCN4-Comp	122	1/30/2018	0	2.5	3.1
Lab Control #2	123	1/30/2018	0	1.0	1.2
MCN5-Comp	124	1/30/2018	0	2.3	2.8
EC-Comp	125	1/30/2018	0	0.6	0.7
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.4	10.2
BIME-Comp-T-M	126	1/30/2018	0	1.4	1.7
BIMW-Comp-T-M	127	1/30/2018	0	0.9	1.1
BIN-Comp-T	128	1/30/2018	0	0.6	0.7
BIS-Comp	129	1/30/2018	0	1.1	1.3
Sample Duplicate <sup>a</sup>	129	NA	NA	0.7	0.9
Sample Duplicate + Spike <sup>a</sup>		NA	NA	9.6	11.7
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.4	10.2

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.2	10	NA	102
① 0.6 129	1.3	0.9	11.7	10	② 36.4	104

Comments: Sample setup for acclimation with twice daily renewals on 3/24/18 ① Q18 SG 4/18/18

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L ② RPD High due to values being near the method detection limit.

QC Check: EH 4/18/18

Final Review:

VS 4/19/18

**Total Ammonia Analysis  
Marine**

Overlying Water

Client: Anchor QEA  
Project: Lower Newport Bay Federal Channels  
Test Type: Ampelisca 10-day Survival

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 1/30/2018

Analyst: SG  
Analysis Date: 4/18/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.1	9.9
Lab Control #1	130	2/9/2018	10	8.6	10.5
LA3-REF	131	2/9/2018	10	0.1	<0.5
TB-Comp	132	2/9/2018	10	1.5	1.8
MCN1-Comp-T	133	2/9/2018	10	2.5	3.1
MCN2-Comp-T	134	2/9/2018	10	0.0	<0.5
MCN3-Comp	135	2/9/2018	10	2.6	3.2
MCN4-Comp	136	2/9/2018	10	1.1	1.3
Lab Control #2	137	2/9/2018	10	9.5	11.6
MCN5-Comp	138	2/9/2018	10	0.2	<0.5
EC-Comp	139	2/9/2018	10	0.5	0.6
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.1	9.9
BIME-Comp-T-M	140	2/9/2018	10	0.3	<0.5
BIMW-Comp-T-M	141	2/9/2018	10	0.0	<0.5
BIN-Comp-T	142	2/9/2018	10	0.0	<0.5
BIS-Comp	143	2/9/2018	10	0.2	<0.5
Sample Duplicate <sup>a</sup>	143	NA	NA	0.0	<0.5
Sample Duplicate + Spike <sup>a</sup>		NA	NA	8.4	10.2
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.1	9.9

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.9	10	NA	99
143	<0.5	<0.5	10.2	10	C	C

Comments: Sample setup for acclimation with twice daily renewals on 3/24/18 - 4/18 vs 4/25/18

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: vs 4/25/18

Final Review: EG 4/26/18

**Total Ammonia Analysis  
Marine**

Overlying Water

Client: Anchor QEA  
Project: Lower Newport Bay Federal Channels  
Test Type: Neanthes 10-day Survival

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 1/26/2018

Analyst: SG  
Analysis Date: 4/13/18  
N x 1.22 4/13/18

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.0	9.8
Lab Control #1	79	1/26/18	0	0.5	0.6
LA3-REF	80		0	0.2	<0.5
TB-Comp	81		0	1.5	1.8
MCN1-Comp-T	82		0	1.8	2.2
MCN2-Comp-T	83		0	1.9	2.3
MCN3-Comp	84		0	2.1	2.6
MCN4-Comp	85		0	2.2	2.7
Lab Control #2	86		0	0.3	<0.5
MCN5-Comp	87		0	1.9	2.3
EC-Comp	88	↓	0	0.6	0.7
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.0	9.8
BIME-Comp-T-M	89	1/26/18	0	3.7	4.5
BIMW-Comp-T-M	90		0	3.6	4.4
BIN-Comp-T	91		0	2.8	3.4
BIS-Comp	92	↓	0	4.1	5.0
Sample Duplicate <sup>a</sup>	92	NA	NA	4.0	4.9
Sample Duplicate + Spike <sup>a</sup>		NA	NA	11.8	14.4
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.0	9.8

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.8	10	NA	98
92	5.0	4.9	14.4	10	2.0	94

Comments: Sample setup for acclimation with twice daily renewals on 3/24/14 @ Q18 SG 4/13/18

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: EQ 4/16/18

Final Review: 15 4/18/18

**Total Ammonia Analysis**  
Marine

Overlying Water

Client: Anchor QEA  
Project: Lower Newport Bay Federal Channels  
Test Type: Neanthes 10-day Survival

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 1/26/2018

Analyst: SG  
Analysis Date: 4/13/18 (A)  
4/13/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
<b>Blank Spike (10 mg/L NH<sub>3</sub>)</b>					
Blank Spike		NA	NA	7.8	9.5
Lab Control	93	2/5/18	10	0.3	<0.5
LA3-REF	94		10	0.4	1.1
TB-Comp	95		10	2.6	3.2
MCN1-Comp-T	96		10	2.8	3.4
MCN2-Comp-T	97		10	1.0	1.2
MCN3-Comp	98		10	2.8	3.4
MCN4-Comp	99		10	2.8	3.4
Lab Control #2	100		10	0.1	<0.5
MCN5-Comp	101		10	0.7	0.9
EC-Comp	102	↓	10	0.3	<0.5
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>					
Spike Check		NA	NA	7.8	9.5
BIME-Comp-T-M	103	2/5/18	10	6.9	8.4
BIMW-Comp-T-M	104		10	4.4	5.4
BIN-Comp-T	105		10	3.8	4.6
BIS-Comp	106	↓	10	7.4	9.0
Sample Duplicate <sup>a</sup>	106	NA	NA	7.1	8.7
Sample Duplicate + Spike <sup>a</sup>		NA	NA	15.2	18.5
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	7.8	9.5

$$\text{Relative Percent Difference (RPD)} = \frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$$

Acceptable Range: 0-20%

$$\text{Percent Recovery} = \frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.5	10	NA	95
106	9.0	8.7	18.5	10	3.4	95

Comments: Sample setup for acclimation with twice daily renewals on 3/24/18 Q18 SG 4/13/18

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: EG 4/16/18

Final Review: VS 4/18/18

**Total Ammonia Analysis  
Marine**

Overlying Water

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Bivalve 48-Hr. SET SPP; Samples BIMW-COMP-T-M, BIME-COMP-T-M, TB-COMP, and BIS-COMP

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 2/14/2018

Analyst: SG  
 Analysis Date: 2/23/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
<b>Blank Spike (10 mg/L NH<sub>3</sub>)</b>		NA	NA	9.0	11.0
Lab Control #1	216	2/14/18	0	0.0	<0.5
Site Water Control #1	217		0	0.0	<0.5
BIMW-COMP-T-M; 1	218		0	0.0	<0.5
BIMW-COMP-T-M; 10	219		0	0.0	<0.5
BIMW-COMP-T-M; 50	220		0	2.7	3.3
BIMW-COMP-T-M; 100	221		0	6.1	7.4
BIME-COMP-T-M; 1	222		0	0.0	<0.5
BIME-COMP-T-M; 10	223		0	0.0	<0.5
BIME-COMP-T-M; 50	224		0	2.9	3.5
BIME-COMP-T-M; 100	225		0	6.8	8.3
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	9.0	11.0
Lab Control #2	226	2/14/18	0	0.0	<0.5
Site Water Control #2	227		0	0.0	<0.5
TB-COMP; 1	228		0	0.0	<0.5
TB-COMP; 10	229		0	0.0	<0.5
TB-COMP; 50	230		0	0.8	1.0
TB-COMP; 100	231		0	2.4	2.9
BIS-COMP; 1	232		0	0.0	<0.5
BIS-COMP; 10	233		0	0.4	<0.5
BIS-COMP; 50	234		0	3.7	4.5
BIS-COMP; 100	235		0	8.8	10.5
Sample Duplicate <sup>a</sup>	ⓐ 225	NA	NA	8.3	10.1
Sample Duplicate + Spike <sup>a</sup>	235	NA	NA	17.0	20.1
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	9.0	11.0

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal [spike]} (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	11.0	10	NA	110
ⓐ 225 235	10.5	10.1	20.1	10	3.9	96

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L ⓐ EG Q18 3/14/18

QC Check: EG 3/14/18

Final Review: EG 3/14/18



**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Bivalve 48-Hr. SET SPP; Samples BIMW-COMP-T-M, BIME-COMP-T-M, TB-COMP, and BIS-COMP

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 2/14/2018

Analyst: SG  
 Analysis Date: 3/2/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.5	10.4
Lab Control #1	236	2/16/18	2	0.3	<0.5
Site Water Control #1	237		2	0.2	<0.5
BIMW-COMP-T-M; 1	238		2	0.2	<0.5
BIMW-COMP-T-M; 10	239		2	0.6	0.7
BIMW-COMP-T-M; 50	240		2	3.4	4.1
BIMW-COMP-T-M; 100	241		2	6.6	8.1
BIME-COMP-T-M; 1	242		2	0.2	<0.5
BIME-COMP-T-M; 10	243		2	0.7	0.9
BIME-COMP-T-M; 50	244		2	3.5	4.3
BIME-COMP-T-M; 100	245		2	7.2	8.8
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.5	10.4
Lab Control #2	246	2/16/18	2	0.1	<0.5
Site Water Control #2	247		2	0.1	<0.5
TB-COMP; 1	248		2	0.3	<0.5
TB-COMP; 10	249		2	0.3	<0.5
TB-COMP; 50	250		2	1.5	1.8
TB-COMP; 100	251		2	2.9	3.5
BIS-COMP; 1	252		2	0.3	<0.5
BIS-COMP; 10	253		2	0.8	1.0
BIS-COMP; 50	254		2	4.1	5.0
BIS-COMP; 100	255		2	8.6	10.5
Sample Duplicate <sup>a</sup>	255	NA	NA	8.1	9.9
Sample Duplicate + Spike <sup>a</sup>		NA	NA	16.7	20.4
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.5	10.4

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.4	10	NA	104
255	10.5	9.9	20.4	10	5.9	99

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: VS 3/14/18

Final Review:

EG 4/16/18

**Total Ammonia Analysis  
Marine**

Overlying Water

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Bivalve 48-Hr. SET SPP; Samples MCN1-COMP-T, MCN2-COMP-T, BIN-COMP-T, and ES-COMP

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 2/20/2018

Analyst: SG  
 Analysis Date: 2/23/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6
Lab Control #1	320	2/20/18	0	0.1	<0.5
Site Water Control #1	321		0	0.1	<0.5
MCN1-COMP-T; 1	322		0	0.5	0.6
MCN1-COMP-T; 10	323		0	1.0	1.2
MCN1-COMP-T; 50	324		0	3.3	4.0
MCN1-COMP-T; 100	325		0	7.1	7.4
MCN2-COMP-T; 1	326		0	0.6	0.7
MCN2-COMP-T; 10	327		0	0.9	1.1
MCN2-COMP-T; 50	328		0	3.1	3.8
MCN2-COMP-T; 100	329		0	5.7	7.0
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6
Lab Control #2	330	2/20/18	0	0.5	0.6
Site Water Control #2	331		0	0.6	0.7
BIN-COMP-T; 1	332		0	0.6	0.7
BIN-COMP-T; 10	333		0	1.1	1.3
BIN-COMP-T; 50	334		0	3.8	4.6
BIN-COMP-T; 100	335		0	7.1	8.7
ES-COMP; 1	336		0	0.5	0.6
ES-COMP; 10	337		0	0.5	0.506
ES-COMP; 50	338		0	0.9	1.1
ES-COMP; 100	339		0	1.2	1.5
Sample Duplicate <sup>a</sup>	339	NA	NA	1.0	1.2
Sample Duplicate + Spike <sup>a</sup>		NA	NA	4.6	11.7
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6

Q18 vs 3/14/18

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.6	10	NA	106
339	1.5	1.2	11.7	10	22.2	162

Q18 vs 3/14/18

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: vs 3/14/18

Final Review: KFP 3/23/18

**Total Ammonia Analysis  
Marine**

Overlying Water

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Bivalve 48-Hr. SET SPP; Samples MCN1-COMP-T, MCN2-COMP-T, BIN-COMP-T, and ES-COMP

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 2/20/2018

Analyst: SG  
 Analysis Date: 4/19/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.6	10.5
Lab Control #1	340	2/22/18	2	0.0	<0.5
Site Water Control #1	341		2	0.2	<0.5
MCN1-COMP-T; 1	342		2	0.3	<0.5
MCN1-COMP-T; 10	343		2	0.6	0.7
MCN1-COMP-T; 50	344		2	3.3	4.0
MCN1-COMP-T; 100	345		2	5.9	7.2
MCN2-COMP-T; 1	346		2	1.1	1.3
MCN2-COMP-T; 10	347		2	0.7	0.9
MCN2-COMP-T; 50	348		2	2.9	3.5
MCN2-COMP-T; 100	349		2	5.4	6.6
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.6	10.5
Lab Control #2	350	2/22/18	2	0.2	<0.5
Site Water Control #2	351		2	0.1	<0.5
BIN-COMP-T; 1	352		2	0.1	<0.5
BIN-COMP-T; 10	353		2	0.7	0.9
BIN-COMP-T; 50	354		2	3.4	4.1
BIN-COMP-T; 100	355		2	7.0	8.5
ES-COMP; 1	356		2	0.2	<0.5
ES-COMP; 10	357		2	0.4	<0.5
ES-COMP; 50	358		2	0.6	0.7
ES-COMP; 100	359		2	1.2	1.5
Sample Duplicate <sup>a</sup>	359	NA	NA	1.1	1.3
Sample Duplicate + Spike <sup>a</sup>		NA	NA	9.9	12.1
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.6	10.5

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.5	10	NA	105
359	1.5	1.3	12.1	10	14.3	106

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: 4/25/18

Final Review: EG 4/26/18

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Bivalve 48-Hr. SET SPP; Samples MCN3-COMP, MCN4-COMP, and MCN5-COMP

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 2/22/2018

Analyst: SG  
 Analysis Date: 2/23/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6
Lab Control #1	412	2/22/18	0	0.3	<0.5
Site Water Control #1	413		0	0.0	<0.5
MCN3-COMP; 1	414		0	0.0	<0.5
MCN3-COMP; 10	415		0	0.3	<0.5
MCN3-COMP; 50	416		0	2.6	3.2
MCN3-COMP; 100	417		0	5.1	6.2
MCN4-COMP; 1	418		0	0.0	<0.5
MCN4-COMP; 10	419		0	0.0	<0.5
MCN4-COMP; 50	420		0	2.0	2.4
MCN4-COMP; 100	421		0	3.1	3.8
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6
Lab Control #2	422	2/22/18	0	0.0	<0.5
Site Water Control #2	423		0	0.0	<0.5
MCN5-COMP-T; 1	424		0	0.0	<0.5
MCN5-COMP-T; 10	425		0	0.0	<0.5
MCN5-COMP-T; 50	426		0	1.4	1.7
MCN5-COMP-T; 100	427		0	4.1	5.0
Sample Duplicate <sup>a</sup>	427	NA	NA	3.8	4.6
Sample Duplicate + Spike <sup>a</sup>		NA	NA	12.6	15.4
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.6	10	NA	106
427	5.0	4.6	15.4	10	8.3	104

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: 3/14/18

Final Review: EH 3/21/18

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Bivalve 48-Hr. SET SPP; Samples MCN3-COMP, MCN4-COMP, and MCN5-COMP

DI Blank: 0.0 Test Start Date: 2/22/2018 Analyst: SG  
 SW Blank: 0.0 Analysis Date: 3/2/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.5	10.4
Lab Control #1	428	2/24/18	2	0.0	<0.5
Site Water Control #1	429		2	0.0	<0.5
MCN3-COMP; 1	430		2	0.0	<0.5
MCN3-COMP; 10	431		2	0.4	<0.5
MCN3-COMP; 50	432		2	3.2	3.9
MCN3-COMP; 100	433		2	6.3	7.7
MCN4-COMP; 1	434		2	0.2	<0.5
MCN4-COMP; 10	435		2	0.6	0.7
MCN4-COMP; 50	436		2	2.8	3.4
MCN4-COMP; 100	437		2	5.4	6.6
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.5	10.4
Lab Control #2	438	2/24/18	2	0.3	<0.5
Site Water Control #2	439		2	0.0	<0.5
MCN5-COMP-T; 1	440		2	0.1	<0.5
MCN5-COMP-T; 10	441		2	0.3	<0.5
MCN5-COMP-T; 50	442		2	1.9	2.3
MCN5-COMP-T; 100	443		2	4.1	5.0
Sample Duplicate <sup>a</sup>	443	NA	NA	3.9	4.8
Sample Duplicate + Spike <sup>a</sup>		NA	NA	12.8	15.6
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.5	10.4

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.4	10	NA	104
443	5.0	4.8	15.6	10	4.7	106

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: 45 3/14/18

Final Review: EG 4/16/18

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Mysid 96-Hr. SET SPP; Samples BIMW-COMP-T-M, BIME-COMP-T-M, TB-COMP, and BIS-COMP

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 2/14/2018

Analyst: SG  
 Analysis Date: 4/12/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	7.8	9.5
Lab Control #1	152	2/14/18	0	0.0	<0.5
Site Water Control #1	153		0	0.0	<0.5
BIMW-COMP-T-M; 10	154		0	0.5	0.6
BIMW-COMP-T-M; 50	155		0	3.1	3.8
BIMW-COMP-T-M; 100	156		0	6.3	7.7
BIME-COMP-T-M; 10	157		0	0.5	0.6
BIME-COMP-T-M; 50	158		0	3.5	4.3
BIME-COMP-T-M; 100	159		0	6.7	8.2
Lab Control #2	160		0	0.0	<0.5
Site Water Control #2	161		0	0.0	<0.5
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	7.8	9.5
TB-COMP; 10	162	2/14/18	0	0.3	<0.5
TB-COMP; 50	163		0	1.2	1.5
TB-COMP; 100	164		0	2.6	3.2
BIS-COMP; 10	165		0	0.7	0.9
BIS-COMP; 50	166		0	4.0	4.9
BIS-COMP; 100	167		0	7.8	9.5
Sample Duplicate <sup>a</sup>	167	NA	NA	7.4	9.0
Sample Duplicate + Spike <sup>a</sup>		NA	NA	16.0	19.5
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	7.8	9.5

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{(\text{average ammonia}) (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal [spike]} (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.5	10	NA	95
167	9.5	9.0	19.5	10	5.4	100

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: Feb 4/16/18

Final Review: VS 4/18/18

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Mysid 96-Hr. SET SPP; Samples BIMW-COMP-T-M, BIME-COMP-T-M, TB-COMP, and BIS-COMP

DI Blank: 0.0 Test Start Date: 2/14/2018 Analyst: SG  
 SW Blank: 0.0 Analysis Date: 4/19/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	9.3	11.3
Lab Control #1	168	2/18/18	4	1.7	2.1
Site Water Control #1	169		4	0.6	0.7
BIMW-COMP-T-M; 10	170		4	2.3	2.8
BIMW-COMP-T-M; 50	171		4	4.5	5.5
BIMW-COMP-T-M; 100	172		4	6.9	8.4
BIME-COMP-T-M; 10	173		4	1.5	1.8
BIME-COMP-T-M; 50	174		4	4.6	5.6
BIME-COMP-T-M; 100	175		4	8.7	10.6
Lab Control #2	176		4	0.7	0.9
Site Water Control #2	177		4	0.7	0.9
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	9.3	11.3
TB-COMP; 10	178	2/18/18	4	0.9	1.1
TB-COMP; 50	179		4	2.3	2.8
TB-COMP; 100	180		4	3.7	4.5
BIS-COMP; 10	181		4	1.6	2.0
BIS-COMP; 50	182		4	5.0	6.1
BIS-COMP; 100	183		4	8.1	9.9
Sample Duplicate <sup>a</sup>	183	NA	NA	7.9	9.6
Sample Duplicate + Spike <sup>a</sup>		NA	NA	15.9	19.4
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	9.3	11.3

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	11.3	10	NA	113
183	9.9	9.6	19.4	10	3.1	95

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: VS 4/25/18

Final Review:

EG 4/26/18

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Mysid 96-Hr. SET SPP; Samples MCN1-COMP-T, MCN2-COMP-T, BIN-COMP-T, and ES-COMP

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 2/21/2018

Analyst: SG  
 Analysis Date: 3/12/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	9.0	11.0
Lab Control #1	256	02/21/18	0	1.1	1.3
Site Water Control #1	257	↓	0	0.7	0.9
MCN1-COMP-T; 10	258	↓	0	1.4	1.7
MCN1-COMP-T; 50	259	↓	0	3.4	4.1
MCN1-COMP-T; 100	260	↓	0	6.3	7.7
MCN2-COMP-T; 10	261	↓	0	1.4	1.7
MCN2-COMP-T; 50	262	↓	0	2.5	3.1
MCN2-COMP-T; 100	263	↓	0	5.8	7.1
Lab Control #2	264	↓	0	0.7	0.9
Site Water Control #2	265	↓	0	0.7	0.9
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	9.0	11.0
BIN-COMP-T; 10	266	02/21/18	0	1.4	1.7
BIN-COMP-T; 50	267	↓	0	4.0	4.9
BIN-COMP-T; 100	268	↓	0	7.1	8.7
ES-COMP; 10	269	↓	0	0.7	0.9
ES-COMP; 50	270	↓	0	1.0	1.2
ES-COMP; 100	271	↓	0	0.9	1.1
Sample Duplicate <sup>a</sup>	271	NA	NA	1.3	1.6
Sample Duplicate + Spike <sup>a</sup>		NA	NA	9.7	11.8
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	9.0	11.0

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	11.0	10	NA	110
271	1.1	1.6	11.8	10	Ⓢ 37.0	107

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L (Ⓢ) RPD values high due to values being near method detection limit.

QC Check: vs 3/23/18

Final Review: EG 4/16/18



**Total Ammonia Analysis  
Marine**

Overlying Water

Client: Anchor QEA  
Project: Lower Newport Bay Federal Channels  
Test Type: Mysid 96-Hr. SET SPP; Samples MCN3-COMP, MCN4-COMP, and MCN5-COMP

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 2/22/2018

Analyst: SG  
Analysis Date: 4/23/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.1	9.9
Lab Control #1	360	2/22/18	0	0.9	1.1
Site Water Control #1	361		0	0.0	<0.5
MCN3-COMP; 10	362		0	0.2	<0.5
MCN3-COMP; 50	363		0	2.1	2.6
MCN3-COMP; 100	364		0	6.1	7.4
MCN4-COMP; 10	365		0	0.5	0.6
MCN4-COMP; 50	366		0	2.9	3.5
MCN4-COMP; 100	367		0	5.4	6.6
			(A)	0.0	<0.5
			(A)	0.0	<0.5
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.1	9.9
Lab Control #2	368	2/22/18	0	0.2	<0.5
Site Water Control #2	369		0	0.0	<0.5
MCN5-COMP-T; 10	370		0	0.0	<0.5
MCN5-COMP-T; 50	371		0	1.5	1.8
MCN5-COMP-T; 100	372		0	4.1	5.0
Sample Duplicate <sup>a</sup>	372	NA	NA	4.0	4.9
Sample Duplicate + Spike <sup>a</sup>		NA	NA	11.6	14.2
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.1	9.9

$$\text{Relative Percent Difference (RPD)} = \frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$$

Acceptable Range: 0-20%

$$\text{Percent Recovery} = \frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.9	10	NA	99
372	5.0	4.9	14.2	10	2.0	92

Comments: (A) Q18 SG 4/23/18

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: 4/25/18

Final Review:

EG 4/26/18

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
Project: Lower Newport Bay Federal Channels  
Test Type: Menidia 96-Hr. SET SPP; Samples BIMW-COMP-T-M, BIME-COMP-T-M, TB-COMP, and BIS-COMP

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 2/14/2018

Analyst: SG  
Analysis Date: 4/17/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.0	9.8
Lab Control #1	184	2/18/18	0	0.1	<0.5
Site Water Control #1	185	4/15/18	0	0.0	<0.5
BIMW-COMP-T-M; 10	186		0	0.5	0.6
BIMW-COMP-T-M; 50	187		0	3.2	3.9
BIMW-COMP-T-M; 100	188		0	7.0	8.5
BIME-COMP-T-M; 10	189		0	0.6	0.7
BIME-COMP-T-M; 50	190		0	3.6	4.4
BIME-COMP-T-M; 100	191		0	7.1	8.7
Lab Control #2	192		0	0.0	<0.5
Site Water Control #2	193		0	0.0	<0.5
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.0	9.8
TB-COMP; 10	194	2/18/18	0	0.2	<0.5
TB-COMP; 50	195	4/15/18	0	1.3	1.6
TB-COMP; 100	196		0	3.9	3.8
BIS-COMP; 10	197		0	0.8	1.0
BIS-COMP; 50	198		0	4.2	5.1
BIS-COMP; 100	199		0	8.4	10.2
Sample Duplicate <sup>a</sup>	199	NA	NA	8.0	9.8
Sample Duplicate + Spike <sup>a</sup>		NA	NA	18.5	20.1
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.0	9.8

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.8	10	NA	98
199	10.2	9.8	20.1	10	4.0	99

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: vs 4/25/18

Final Review:

EG 4/26/18

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Menidia 96-Hr. SET SPP; Samples BIMW-COMP-T-M, BIME-COMP-T-M, TB-COMP, and BIS-COMP

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 2/14/2018

Analyst: SG  
 Analysis Date: 4/23/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.0	9.8
Lab Control #1	200	2/10/18	4	0.5	0.6
Site Water Control #1	201		4	0.5	0.6
BIMW-COMP-T-M; 10	202		4	1.5	1.8
BIMW-COMP-T-M; 50	203		4	3.4	4.1
BIMW-COMP-T-M; 100	204		4	6.3	7.7
BIME-COMP-T-M; 10	205		4	1.0	1.2
BIME-COMP-T-M; 50	206		4	3.8	4.6
BIME-COMP-T-M; 100	207		4	6.3	7.7
Lab Control #2	208		4	0.5	0.6
Site Water Control #2	209		4	0.3	<0.5
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.0	9.8
TB-COMP; 10	210	2/10/18	4	0.5	0.6
TB-COMP; 50	211		4	1.9	2.3
TB-COMP; 100	212		4	3.0	3.7
BIS-COMP; 10	213		4	1.7	2.1
BIS-COMP; 50	214		4	4.2	5.1
BIS-COMP; 100	215		4	7.9	9.6
Sample Duplicate <sup>a</sup>	215	NA	NA	8.0	9.8
Sample Duplicate + Spike <sup>a</sup>		NA	NA	15.6	19.0
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.0	9.8

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal [spike]} (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.8	10	NA	98
215	9.6	9.8	19.0	10	2.1	94

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: Yes 4/25/18

Final Review: EL 4/26/18

**Total Ammonia Analysis  
Marine**

Overlying Water

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Menidia 96-Hr. SET SPP; Samples MCN1-COMP-T, MCN2-COMP-T, BIN-COMP-T, and ES-COMP

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 2/21/2018

Analyst: SG  
 Analysis Date: 4/23/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.2	10.0
Lab Control #1	288	02/21/18	0	0.8	1.0
Site Water Control #1	289	↓	0	0.0	<0.5
MCN1-COMP-T; 10	290	↓	0	0.7	0.9
MCN1-COMP-T; 50	291	↓	0	2.7	3.3
MCN1-COMP-T; 100	292	↓	0	5.4	6.6
MCN2-COMP-T; 10	293	↓	0	0.7	0.9
MCN2-COMP-T; 50	294	↓	0	2.3	2.8
MCN2-COMP-T; 100	295	↓	0	4.3	5.2
Lab Control #2	296	↓	0	0.0	<0.5
Site Water Control #2	297	↓	0	0.0	<0.5
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.2	10.0
BIN-COMP-T; 10	298	02/21/18	0	0.0	<0.5
BIN-COMP-T; 50	299	↓	0	3.2	3.9
BIN-COMP-T; 100	300	↓	0	5.6	6.8
ES-COMP; 10	301	↓	0	0.0	<0.5
ES-COMP; 50	302	↓	0	0.1	<0.5
ES-COMP; 100	303	↓	0	0.6	0.7
Sample Duplicate <sup>a</sup>	303	NA	NA	0.4	<0.5
Sample Duplicate + Spike <sup>a</sup>		NA	NA	8.5	10.4
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.2	10.0

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.0	10	NA	100
303	0.7	<0.5	10.4	10	C	C

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: VS 4/25/18

Final Review: EG 4/26/18

**Total Ammonia Analysis  
Marine**

Overlying Water

Client: Anchor QEA  
Project: Lower Newport Bay Federal Channels  
Test Type: Menidia 96-Hr. SET SPP; Samples MCN3-COMP, MCN4-COMP, and MCN5-COMP

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 2/22/2018

Analyst: SG  
Analysis Date: 4/24/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.1	9.9
Lab Control #1	386	2/22/18	0	0.0	<0.5
Site Water Control #1	387		0	0.1	<0.5
MCN3-COMP; 10	388		0	0.6	0.7
MCN3-COMP; 50	389		0	3.0	3.7
MCN3-COMP; 100	390		0	5.5	6.7
MCN4-COMP; 10	391		0	0.6	0.7
MCN4-COMP; 50	392		0	2.9	3.5
MCN4-COMP; 100	393	↓	0	5.4	6.6
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.1	9.9
Lab Control #2	394	2/22/18	0	0.2	<0.5
Site Water Control #2	395		0	0.1	<0.5
MCN5-COMP-T; 10	396		0	0.4	<0.5
MCN5-COMP-T; 50	397		0	1.9	2.3
MCN5-COMP-T; 100	398	↓	0	3.0	3.7
Sample Duplicate <sup>a</sup>	398	NA	NA	3.6	4.4
Sample Duplicate + Spike <sup>a</sup>		NA	NA	12.7	14.8
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.1	9.9

$$\text{Relative Percent Difference (RPD)} = \frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$$

Acceptable Range: 0-20%

$$\text{Percent Recovery} = \frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.9	10	NA	99
398	3.7	4.4	14.8	10	17.3	111

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: 5/4/18

Final Review: EG 4/26/18

**Total Ammonia Analysis  
Marine**

Overlying Water

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Macoma and Nereis 28-day Bioaccumulation

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 1/24/2017<sup>2018</sup>

Analyst: SG  
 Analysis Date: 3/22/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6
Lab Control	14	1/24/2018	0	1.1	1.3
LA3-REF	15	1/24/2018	0	0.6	0.7
TB-Comp	16	1/24/2018	0	1.9	2.3
MCN1-Comp-T	17	1/24/2018	0	1.5	1.8
MCN2-Comp-T	18	1/24/2018	0	1.9	2.3
MCN3-Comp	19	1/24/2018	0	1.8	2.2
MCN4-Comp	20	1/24/2018	0	1.6	2.0
MCN5-Comp	21	1/24/2018	0	1.8	2.2
EC-Comp	22	1/24/2018	0	1.0	1.2
BIME-Comp-T-M	23	1/24/2018	0	1.9	2.3
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6
BIMW-Comp-T-M	24	1/24/2018	0	2.5	3.1
BIN-Comp-T	25	1/24/2018	0	1.7	2.1
BIS-Comp	26	1/24/2018	0	2.0	2.4
Sample Duplicate <sup>a</sup>	26	NA	NA	1.9	2.3
Sample Duplicate + Spike <sup>a</sup>		NA	NA	10.3	12.6
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.6	10	NA	106
26	2.4	2.3	12.6	10	4.3	102

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L @ Q18 AS 2/2/18

QC Check: EL 4/16/18

Final Review: YS 4/18/18

**Total Ammonia Analysis**  
Marine

Overlying Water

Client: Anchor QEA  
Project: Lower Newport Bay Federal Channels  
Test Type: *Macoma* and *Nereis* 28-day Bioaccumulation

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: <sup>2018</sup> 1/24/2017<sup>(A)</sup>

Analyst: SG  
Analysis Date: 3/20/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.2	10.0
Lab Control	27	1/31/2018	7	0.6	0.7
LA3-REF	28	1/31/2018	7	0.4	5.5
TB-Comp	29	1/31/2018	7	0.8	1.0
MCN1-Comp-T	30	1/31/2018	7	1.9	2.3
MCN2-Comp-T	31	1/31/2018	7	2.8	3.4
MCN3-Comp	32	1/31/2018	7	1.7	2.1
MCN4-Comp	33	1/31/2018	7	1.7	2.1
MCN5-Comp	34	1/31/2018	7	3.2	3.9
EC-Comp	35	1/31/2018	7	1.3	1.6
BIME-Comp-T-M	36	1/31/2018	7	2.1	2.6
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.2	10.0
BIMW-Comp-T-M	37	1/31/2018	7	5.2	6.3
BIN-Comp-T	38	1/31/2018	7	3.8	4.6
BIS-Comp	39	1/31/2018	7	2.9	3.5
Sample Duplicate <sup>a</sup>	39	NA	NA	3.0	3.7
Sample Duplicate + Spike <sup>a</sup>		NA	NA	10.8	13.2
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.2	10.0

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{(\text{average ammonia}) (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal [spike]} (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.0	10	NA	100
39	3.5	3.7	13.2	10	5.6	97

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L @ RIKALS 2/21/18

QC Check: EQ 4/16/18

Final Review: \_\_\_\_\_

VS 4/18/18

**Total Ammonia Analysis  
Marine**

Overlying Water

Client: Anchor QEA  
Project: Lower Newport Bay Federal Channels  
Test Type: *Macoma* and *Nereis* 28-day Bioaccumulation

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: <sup>2018</sup> 1/24/2017<sup>(A)</sup>

Analyst: CG  
Analysis Date: 3/20/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.3	10.1
Lab Control	40	2/7/2018	14	0.4	<0.5
LAS-REF	41	2/7/2018	14	0.2	<0.5
TB-Comp	42	2/7/2018	14	0.0	<0.5
MCN1-Comp-T	43	2/7/2018	14	0.4	<0.5
MCN2-Comp-T	44	2/7/2018	14	1.1	1.3
MCN3-Comp	45	2/7/2018	14	0.2	<0.5
MCN4-Comp	46	2/7/2018	14	0.7	0.9
MCN5-Comp	47	2/7/2018	14	0.9	1.1
EC-Comp	48	2/7/2018	14	0.1	<0.5
BIME-Comp-T-M	49	2/7/2018	14	1.4	1.7
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.3	10.1
BIMW-Comp-T-M	50	2/7/2018	14	1.8	2.2
BIN-Comp-T	51	2/7/2018	14	1.9	2.3
BIS-Comp	52	2/7/2018	14	1.4	1.7
Sample Duplicate <sup>a</sup>	52	NA	NA	0.9	1.1
Sample Duplicate + Spike <sup>a</sup>		NA	NA	9.5	11.6
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.3	10.1

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.1	10	NA	101
52	1.7	1.1	11.6	10	42.4(B)	99

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L (A) 0.8 1.5 2.1/18 (B) RPD high due to values being near the Method detection limit

QC Check: EG 4/16/18

Final Review: \_\_\_\_\_

YB 4/18/18



**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
 Project: Lower Newport Bay Federal Channels  
 Test Type: Macoma and Nereis 28-day Bioaccumulation

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 1/24/2017 <sup>2018</sup> <sub>(6)</sub>

Analyst: SG  
 Analysis Date: 3/23/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6
Lab Control	53	2/14/2018	21	0.5	0.6
LA3-REF	54	2/14/2018	21	0.6	0.7
TB-Comp	55	2/14/2018	21	0.5	0.6
MCN1-Comp-T	56	2/14/2018	21	0.6	0.7
MCN2-Comp-T	57	2/14/2018	21	0.4	<0.5
MCN3-Comp	58	2/14/2018	21	0.5	0.6
MCN4-Comp	59	2/14/2018	21	0.8	1.0
MCN5-Comp	60	2/14/2018	21	0.7	0.9
EC-Comp	61	2/14/2018	21	0.4	<0.5
BIME-Comp-T-M	62	2/14/2018	21	0.8	1.0
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6
BIMW-Comp-T-M	63	2/14/2018	21	1.1	1.3
BIN-Comp-T	64	2/14/2018	21	0.8	1.0
BIS-Comp	65	2/14/2018	21	0.7	0.9
Sample Duplicate <sup>a</sup>	65	NA	NA	0.7	0.9
Sample Duplicate + Spike <sup>a</sup>		NA	NA	9.2	11.2
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$       Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$       Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.6	10	NA	106
65	0.9	0.9	11.2	10	0.0	103

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L <sup>(4) DRB A/C 2/21/18</sup>

QC Check: EG 4/16/18

Final Review: 4/18/18

**Total Ammonia Analysis  
Marine**

Overlying Water

Client: Anchor QEA  
Project: Lower Newport Bay Federal Channels  
Test Type: Macoma and Nereis 28-day Bioaccumulation

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: <sup>2018</sup> 1/24/2017 <sup>(3)</sup>

Analyst: SG  
Analysis Date: 4/13/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.5	10.4
Lab Control	66	2/21/2018	28	0.7	0.9
LA3-REF	67	2/21/2018	28	0.4	<0.5
TB-Comp	68	2/21/2018	28	0.8	1.0
MCN1-Comp-T	69	2/21/2018	28	0.2	<0.5
MCN2-Comp-T	70	2/21/2018	28	0.8	1.0
MCN3-Comp	71	2/21/2018	28	0.3	<0.5
MCN4-Comp	72	2/21/2018	28	0.6	0.7
MCN5-Comp	73	2/21/2018	28	0.8	1.0
EC-Comp	74	2/21/2018	28	0.6	0.7
BIME-Comp-T-M	75	2/21/2018	28	0.6	0.7
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.5	10.4
BIMW-Comp-T-M	76	2/21/2018	28	0.6	<del>0.7</del> 0.7
BIN-Comp-T	77	2/21/2018	28	0.4	<0.5
BIS-Comp	78	2/21/2018	28	0.8	1.0
Sample Duplicate <sup>a</sup>	78	NA	NA	0.9	1.1
Sample Duplicate + Spike <sup>a</sup>		NA	NA	9.2	11.2
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.5	10.4

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.4	10	NA	104
78	1.0	1.1	11.2	10	9.5	102

Comments: (A) Q18 SG 4/13/18

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check. (A) Q18 NCS 2/21/18

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: EL 4/16/18

Final Review: 4/18/18

**Appendix E**  
**Reference Toxicant Results**

*Ampelisca*

**CETIS Summary Report**

Report Date: 13 Feb-18 10:32 (p 1 of 1)  
 Test Code: 180130abra | 12-9651-0869

Acute Amphipod Survival Test							Nautilus Environmental (CA)				
Batch ID:	11-9404-2973	Test Type:	Survival (96h)	Analyst:							
Start Date:	30 Jan-18 15:10	Protocol:	ASTM E1367-99 (1999)	Diluent:	Diluted Natural Seawater						
Ending Date:	03 Feb-18 14:55	Species:	Ampelisca abdita	Brine:	Not Applicable						
Duration:	96h	Source:	Aquatic Research Organisms, NH	Age:	Size 3-5 mm						
Sample ID:	04-0357-8133	Code:	180130abra	Client:	Internal						
Sample Date:	30 Jan-18	Material:	Cadmium chloride	Project:							
Receive Date:	30 Jan-18	Source:	Reference Toxicant								
Sample Age:	15h	Station:	Cadium Chloride								
Comparison Summary											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
19-6504-5527	96h Survival Rate	<0.25	0.25	NA	26.0%		Dunnett Multiple Comparison Test				
Point Estimate Summary											
Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method				
15-5205-7015	96h Survival Rate	EC25	0.125	0.08056	0.225		Linear Interpolation (ICPIN)				
		EC50	0.25	0.1611	0.3643						
96h Survival Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	0.65	0.4446	0.8554	0.5	0.8	0.06455	0.1291	19.86%	0.0%
0.25		4	0.325	0.1727	0.4773	0.2	0.4	0.04787	0.09574	29.46%	50.0%
0.5		4	0.05	0	0.1419	0	0.1	0.02887	0.05774	115.5%	92.31%
1		4	0	0	0	0	0	0	0		100.0%
2		4	0	0	0	0	0	0	0		100.0%
4		4	0	0	0	0	0	0	0		100.0%
96h Survival Rate Detail											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	0.5	0.8	0.7	0.6						
0.25		0.4	0.4	0.2	0.3						
0.5		0	0.1	0	0.1						
1		0	0	0	0						
2		0	0	0	0						
4		0	0	0	0						

Q 018 J 211318

90% test acceptability criterion for mean control survival not met (65% survival).

**CETIS Analytical Report**

Report Date: 13 Feb-18 10:29 (p 1 of 1)  
 Test Code: 180130abra | 12-9651-0869

**Acute Amphipod Survival Test** Nautilus Environmental (CA)

Analysis ID: 19-6504-5527      Endpoint: 96h Survival Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 13 Feb-18 9:53      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	26.0%	<0.25	0.25	NA	

**Dunnett Multiple Comparison Test**

Control	vs C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control	0.25*	4.204	2.18	0.176	6	0.0021	CDF	Significant Effect
	0.5*	8.701	2.18	0.176	6	<0.0001	CDF	Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.9864858	0.4932429	2	37.87	<0.0001	Significant Effect
Error	0.1172212	0.01302458	9			
Total	1.103707		11			

**Distributional Tests**

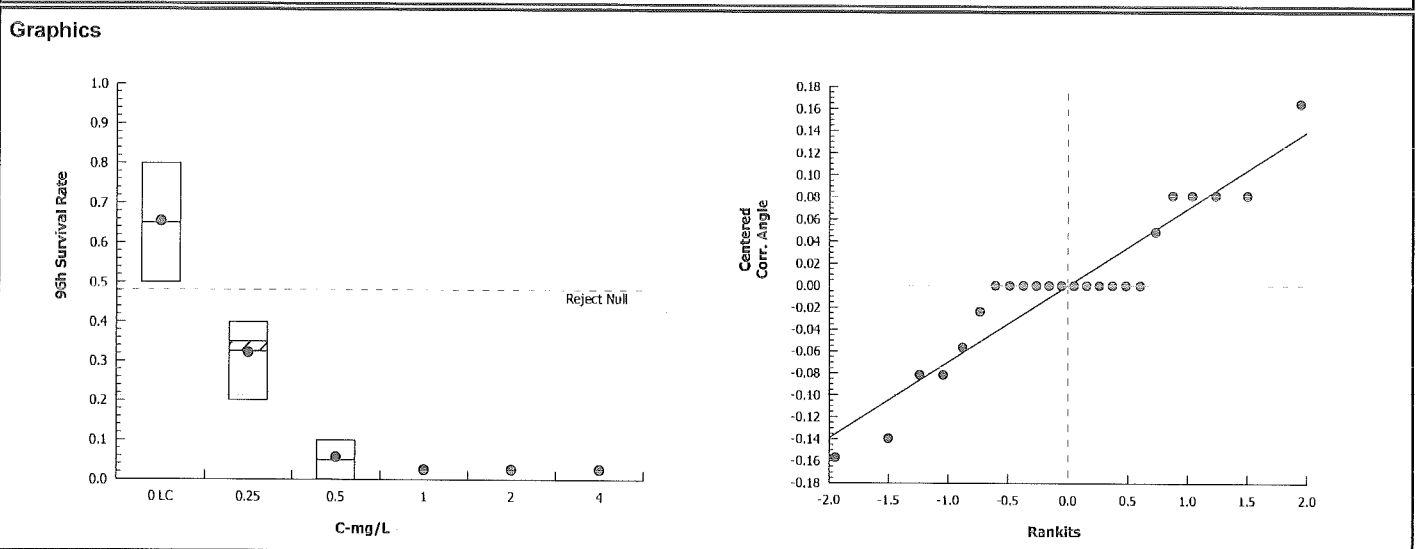
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	0.4227	9.21	0.8095	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9218	0.8025	0.3013	Normal Distribution

**96h Survival Rate Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	0.65	0.4446	0.8554	0.65	0.5	0.8	0.06455	19.86%	0.0%
0.25		4	0.325	0.1727	0.4773	0.35	0.2	0.4	0.04787	29.46%	50.0%
0.5		4	0.05	0	0.1419	0.05	0	0.1	0.02887	115.5%	92.31%
1		4	0	0	0	0	0	0	0		100.0%
2		4	0	0	0	0	0	0	0		100.0%
4		4	0	0	0	0	0	0	0		100.0%

**Angular (Corrected) Transformed Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	0.9424	0.7225	1.162	0.9386	0.7854	1.107	0.06913	14.67%	0.0%
0.25		4	0.6032	0.4355	0.7709	0.6322	0.4636	0.6847	0.05269	17.47%	36.0%
0.5		4	0.2403	0.09055	0.39	0.2403	0.1588	0.3218	0.04705	39.16%	74.51%
1		4	0.1588	0.1588	0.1588	0.1588	0.1588	0.1588	0	0.0%	83.15%
2		4	0.1588	0.1588	0.1588	0.1588	0.1588	0.1588	0	0.0%	83.15%
4		4	0.1588	0.1588	0.1588	0.1588	0.1588	0.1588	0	0.0%	83.15%



**CETIS Analytical Report**

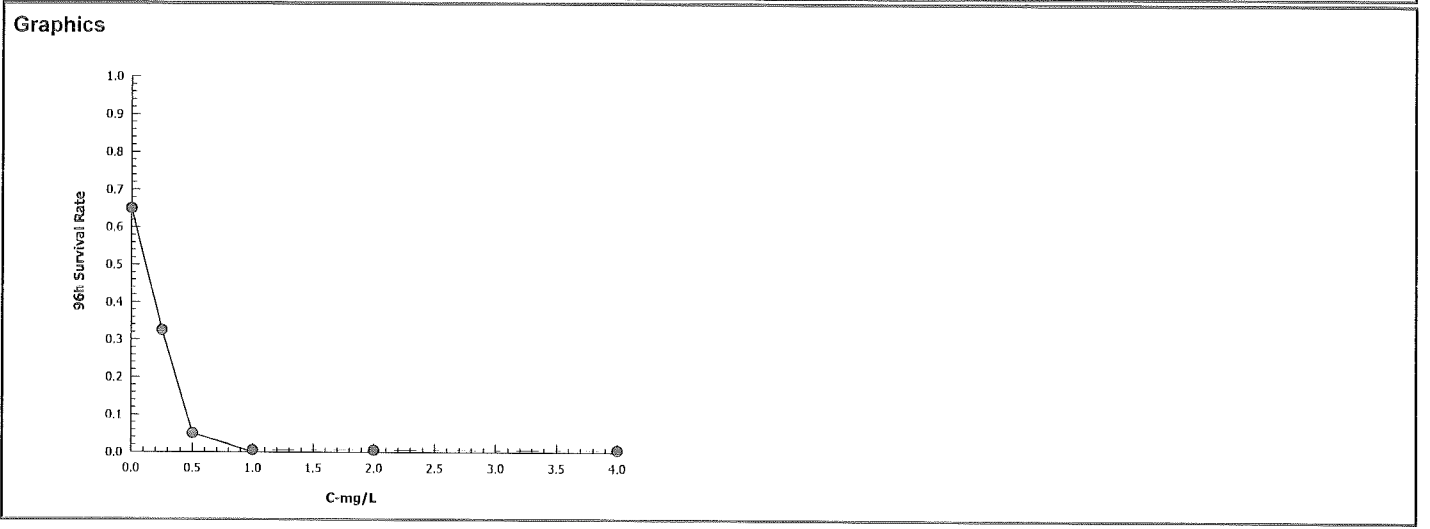
Report Date: 13 Feb-18 10:29 (p 1 of 1)  
 Test Code: 180130abra | 12-9651-0869

<b>Acute Amphipod Survival Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 15-5205-7015	<b>Endpoint:</b> 96h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 13 Feb-18 9:54	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Official Results:</b> Yes			

<b>Linear Interpolation Options</b>					
<b>X Transform</b>	<b>Y Transform</b>	<b>Seed</b>	<b>Resamples</b>	<b>Exp 95% CL</b>	<b>Method</b>
Linear	Linear	558973	1000	Yes	Two-Point Interpolation

<b>Point Estimates</b>			
<b>Level</b>	<b>mg/L</b>	<b>95% LCL</b>	<b>95% UCL</b>
EC25	0.125	0.08056	0.225
EC50	0.25	0.1611	0.3643

<b>96h Survival Rate Summary</b>			<b>Calculated Variate(A/B)</b>								
<b>C-mg/L</b>	<b>Control Type</b>	<b>Count</b>	<b>Mean</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	<b>A</b>	<b>B</b>
0	Lab Control	4	0.65	0.5	0.8	0.06455	0.1291	19.86%	0.0%	26	40
0.25		4	0.325	0.2	0.4	0.04787	0.09574	29.46%	50.0%	13	40
0.5		4	0.05	0	0.1	0.02887	0.05774	115.5%	92.31%	2	40
1		4	0	0	0	0	0		100.0%	0	40
2		4	0	0	0	0	0		100.0%	0	40
4		4	0	0	0	0	0		100.0%	0	40



Acute Amphipod Survival Test

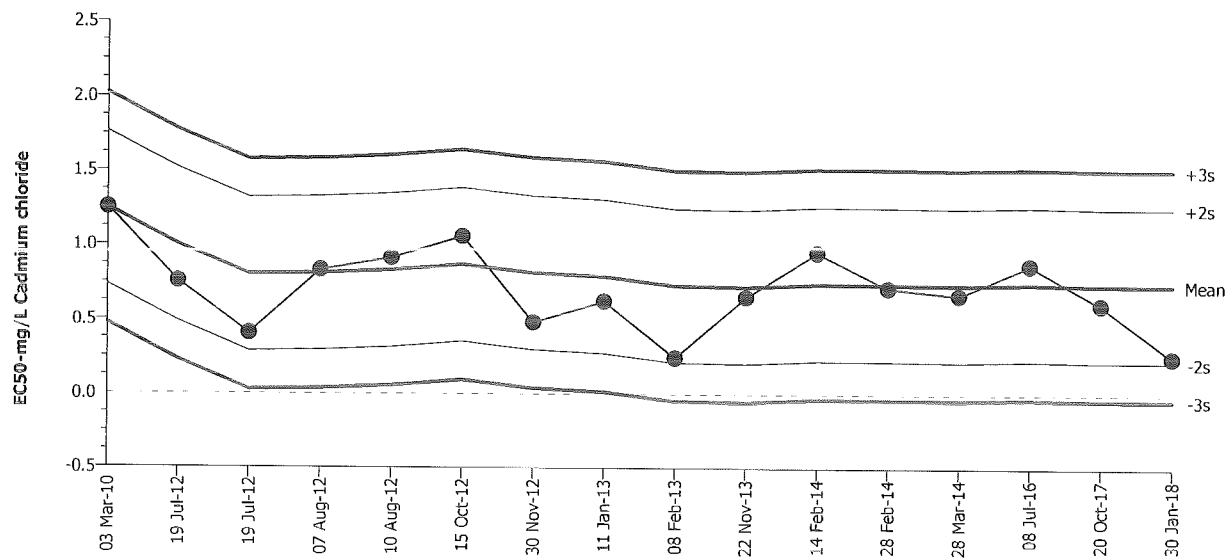
Nautilus Environmental (CA)

Test Type: Survival (96h)  
Protocol: ASTM E1367-99 (1999)

Organism: Ampelisca abdita (Amphipod)  
Endpoint: 96h Survival Rate

Material: Cadmium chloride  
Source: Reference Toxicant-REF

Acute Amphipod Survival Test



Mean: 0.7344      Count: 15      -2s Warning Limit: 0.218      -3s Action Limit: -0.0402  
Sigma: 0.2582      CV: 35.20%      +2s Warning Limit: 1.251      +3s Action Limit: 1.509

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2010	Mar	3	15:30	1.25	0.5153	1.996			07-5724-3236	06-4468-4449
2	2012	Jul	19	18:20	0.7558	0.02144	0.08304			12-7643-0557	08-4931-2236
3			19	18:30	0.4051	-0.3293	-1.275			02-8276-4382	00-7398-7319
4		Aug	7	17:00	0.8319	0.09755	0.3778			12-1585-1493	17-3963-0595
5			10	15:45	0.9128	0.1784	0.6911			11-5893-9604	11-2241-5585
6		Oct	15	14:15	1.058	0.3235	1.253			15-8471-0783	06-6319-8135
7		Nov	30	15:15	0.4798	-0.2546	-0.986			20-3386-7863	11-2233-7083
8	2013	Jan	11	15:40	0.6226	-0.1118	-0.433			04-7802-1286	06-7086-8887
9		Feb	8	14:30	0.2438	-0.4906	-1.9			10-0132-0688	11-6648-1752
10		Nov	22	16:00	0.6515	-0.08289	-0.321			19-3444-6218	07-2363-9639
11	2014	Feb	14	15:10	0.9522	0.2178	0.8434			18-9460-4808	13-4246-9357
12			28	13:00	0.715	-0.01939	-0.07508			12-9234-4868	05-9883-9375
13		Mar	28	16:50	0.6657	-0.06873	-0.2662			01-2364-3505	03-5001-3560
14	2016	Jul	8	14:05	0.8689	0.1345	0.5208			01-5765-3505	01-7702-6157
15	2017	Oct	20	16:25	0.6033	-0.1311	-0.5079			05-4737-9496	04-0516-3248
16	2018	Jan	30	15:10	0.25	-0.4844	-1.876			12-9651-0869	15-5205-7015



96-hour Marine Acute Bioassay  
Static Conditions

Water Quality Measurements  
& Test Organism Survival

Client: Internal  
Sample ID: CdCl<sub>2</sub>  
Test No.: 180130 abra

Test Species: A. abdita  
Start Date/Time: 1/30/2018 1510  
End Date/Time: 2/3/2018 1455

Tech Initials				
0	24	48	72	96
ACS/TIP				AD
Counts:				
Readings:	RT	BO	RT	D/RT
Dilutions made by:	DM			
High conc. made (mg/L):	4.0			
Vol. Cd stock added (mL):	16.1			
Final Volume (mL):	4000			

Cd stock concentration (mg/L): 994

Concentration mg/L	Rand #	Number of Live Organisms		Salinity (ppt)					Temperature (°C)				Dissolved Oxygen (mg/L)					pH (units)					
		0	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	24	10	5	30.0	30.0	30.2	30.3	30.6	20.7	19.1	18.1	19.4	19.5	6.9	7.3	7.4	6.9	6.9	7.5	7.86	7.94	7.94	7.89
	6	10	8																7.95				
	2	10	7																				
	11	10	6																				
0.25	15	10	4	30.1	30.1	30.3	30.4	30.6	21.0	19.2	18.2	19.4	19.6	7.1	7.3	7.4	6.8	6.8	7.97	7.89	7.94	7.95	7.91
	8	10	4								18.3												
	9	10	2																				
	21	10	3																				
0.5	14	10	0	29.9	30.1	30.2	30.4	30.6	21.0	19.0	18.3	19.1	19.7	7.1	7.4	7.5	6.2	6.8	7.98	7.90	7.94	7.95	7.91
	19	10	1																				
	10	10	0																				
	17	10	1																				
1.0	1	10	0	29.8	30.1	30.1	30.4	30.6	21.0	19.3	18.7	19.2	19.4	7.1	7.3	7.4	6.8	6.8	7.98	7.91	7.95	7.95	7.91
	5	10	0																				
	22	10	0																				
	20	10	0																				
2.0	3	10	0	30.0	30.1	30.3	30.4	30.5	20.8	19.1	18.4	19.1	19.2	7.1	7.4	7.4	7.0	6.9	7.98	7.91	7.89	7.96	7.92
	12	10	0																				
	4	10	0																				
	13	10	0																				
4.0	18	10	0	29.7	30.0	30.3	30.4	30.3	21.0	19.0	18.6	19.4	19.8	7.1	7.2	7.5	7.0	6.8	7.99	7.93	7.90	7.96	7.93
	16	10	0																				
	7	10	0																				
	23	10	0																				

Rand # QC: RT

Initial Count QC: LTP

Initiated: ACS

Animal Source/Date Received: ARO 01/26/18

Size at Initiation: 3-5 mm

Comments:

(A) Q18 1/30/18 RT (B) RT Q18 2/10/18  
\* test acceptability criterion for mean survival not met.

Check: KRP 2/13/18

Final Review: MS 4/19/18

**CETIS Summary Report**

Report Date: 13 Feb-18 15:45 (p 1 of 1)  
 Test Code: 180130abra(NH3) | 11-4070-8549

Acute Amphipod Survival Test							Nautilus Environmental (CA)					
Batch ID:	04-1424-4879	Test Type:	Survival (96h)	Analyst:								
Start Date:	30 Jan-18 15:25	Protocol:	ASTM E1367-99 (1999)	Diluent:	Diluted Natural Seawater							
Ending Date:	03 Feb-18 15:35	Species:	Ampelisca abdita	Brine:	Not Applicable							
Duration:	4d 0h	Source:	Aquatic Research Organisms, NH	Age:	Size 3-5 mm							
Sample ID:	14-7339-7073	Code:	180130abra(NH3)	Client:	Internal							
Sample Date:	30 Jan-18	Material:	Total Ammonia	Project:								
Receive Date:	30 Jan-18	Source:	Reference Toxicant									
Sample Age:	15h	Station:	Ammonia									
Comparison Summary												
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method					
14-9115-3454	96h Survival Rate	59.2	120	84.29	27.7%		Dunnett Multiple Comparison Test					
Point Estimate Summary												
Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method					
00-7788-5092	96h Survival Rate	EC50	97.71	85.64	111.5		Spearman-Kärber					
96h Survival Rate Summary												
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
0	Lab Control	4	0.8	0.575	1	0.6	0.9	0.07071	0.1414	17.68%	0.0%	
14.9		4	0.975	0.8954	1	0.9	1	0.025	0.05	5.13%	-21.88%	
27.3		4	0.825	0.5863	1	0.7	1	0.075	0.15	18.18%	-3.13%	
59.2		4	0.825	0.6727	0.9773	0.7	0.9	0.04787	0.09574	11.61%	-3.13%	
120		4	0.325	0.08632	0.5637	0.2	0.5	0.075	0.15	46.15%	59.38%	
230		4	0	0	0	0	0	0	0		100.0%	
96h Survival Rate Detail												
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4							
0	Lab Control	0.9	0.8	0.6	0.9							
14.9		1	1	1	0.9							
27.3		1	0.7	0.7	0.9							
59.2		0.9	0.7	0.8	0.9							
120		0.2	0.2	0.4	0.5							
230		0	0	0	0							

Ⓐ Q18 of 2/13/18

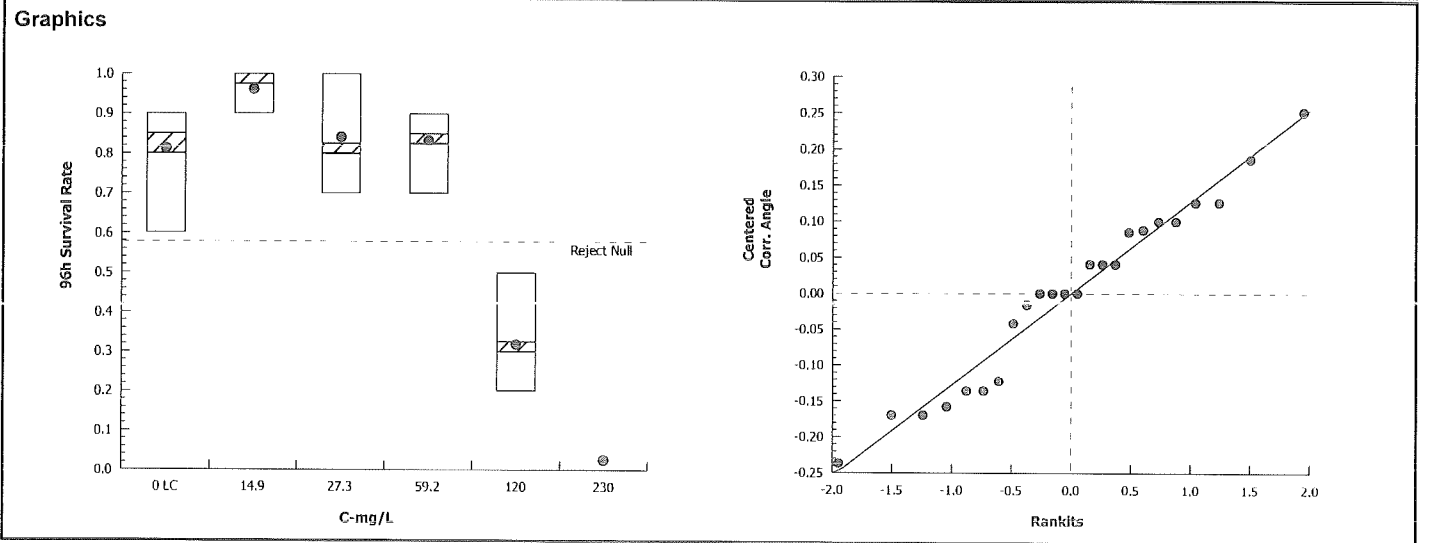
90% test acceptability criterion for survival not met (80% survival) <sup>mean control</sup>

**CETIS Analytical Report**

Report Date: 13 Feb-18 15:45 (p 1 of 2)  
 Test Code: 180130abra(NH3) | 11-4070-8549

Acute Amphipod Survival Test										Nautilus Environmental (CA)	
Analysis ID: 14-9115-3454		Endpoint: 96h Survival Rate			CETIS Version: CETISv1.8.7						
Analyzed: 13 Feb-18 10:50		Analysis: Parametric-Control vs Treatments			Official Results: Yes						
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corrected)	NA	C > T	NA	NA	27.7%	59.2	120	84.29			
Dunnett Multiple Comparison Test											
Control	vs	C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)		
Lab Control		14.9	-2.262	2.356	0.259	6	0.9992	CDF	Non-Significant Effect		
		27.3	-0.3461	2.356	0.259	6	0.8924	CDF	Non-Significant Effect		
		59.2	-0.2392	2.356	0.259	6	0.8680	CDF	Non-Significant Effect		
		120*	4.766	2.356	0.259	6	0.0004	CDF	Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)			
Between	1.316016		0.3290041		4	13.63	<0.0001	Significant Effect			
Error	0.3619492		0.02412995		15						
Total	1.677966				19						
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Bartlett Equality of Variance		2.315	13.28	0.6781	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.9432	0.866	0.2760	Normal Distribution					
96h Survival Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	0.8	0.575	1	0.85	0.6	0.9	0.07071	17.68%	0.0%
14.9		4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	-21.88%
27.3		4	0.825	0.5863	1	0.8	0.7	1	0.075	18.18%	-3.13%
59.2		4	0.825	0.6727	0.9773	0.85	0.7	0.9	0.04787	11.61%	-3.13%
120		4	0.325	0.08632	0.5637	0.3	0.2	0.5	0.075	46.15%	59.38%
230		4	0	0	0	0	0	0	0		100.0%
Angular (Corrected) Transformed Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.123	0.8501	1.396	1.178	0.8861	1.249	0.08571	15.27%	0.0%
14.9		4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	-22.13%
27.3		4	1.161	0.8316	1.49	1.12	0.9912	1.412	0.1035	17.83%	-3.39%
59.2		4	1.149	0.9506	1.348	1.178	0.9912	1.249	0.06237	10.86%	-2.34%
120		4	0.5994	0.3416	0.8571	0.5742	0.4636	0.7854	0.081	27.03%	46.62%
230		4	0.1588	0.1588	0.1588	0.1588	0.1588	0.1588	0	0.0%	85.86%

Acute Amphipod Survival Test		Nautilus Environmental (CA)	
Analysis ID: 14-9115-3454	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7	
Analyzed: 13 Feb-18 10:50	Analysis: Parametric-Control vs Treatments	Official Results: Yes	



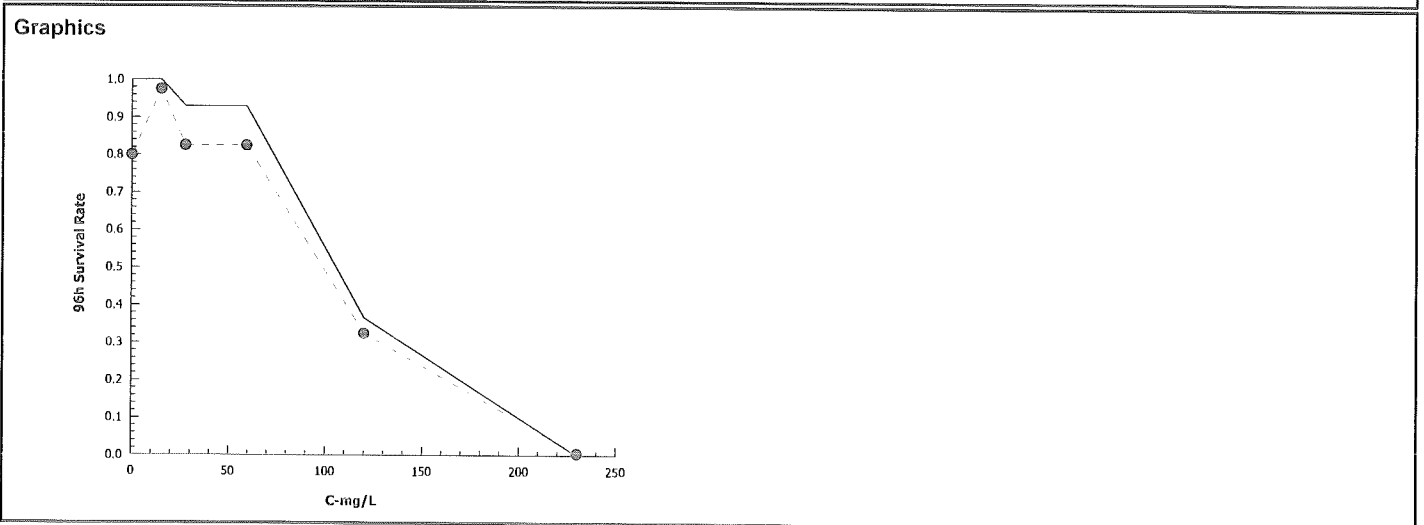
# CETIS Analytical Report

Report Date: 13 Feb-18 15:45 (p 1 of 1)  
 Test Code: 180130abra(NH3) | 11-4070-8549

Acute Amphipod Survival Test			Nautilus Environmental (CA)		
Analysis ID: 00-7788-5092	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7			
Analyzed: 13 Feb-18 10:51	Analysis: Untrimmed Spearman-Kärber	Official Results: Yes			

Spearman-Kärber Estimates							
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0.2	0.00%	1.99	0.02864	97.71	85.64	111.5

96h Survival Rate Summary		Calculated Variate(A/B)									
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	0.8	0.6	0.9	0.07071	0.1414	17.68%	0.0%	32	40
14.9		4	0.975	0.9	1	0.025	0.05	5.13%	-21.88%	39	40
27.3		4	0.825	0.7	1	0.075	0.15	18.18%	-3.13%	33	40
59.2		4	0.825	0.7	0.9	0.04787	0.09574	11.61%	-3.13%	33	40
120		4	0.325	0.2	0.5	0.075	0.15	46.15%	59.38%	13	40
230		4	0	0	0	0	0	100.0%		0	40



Acute Amphipod Survival Test

Nautilus Environmental (CA)

Test Type: Survival (96h)

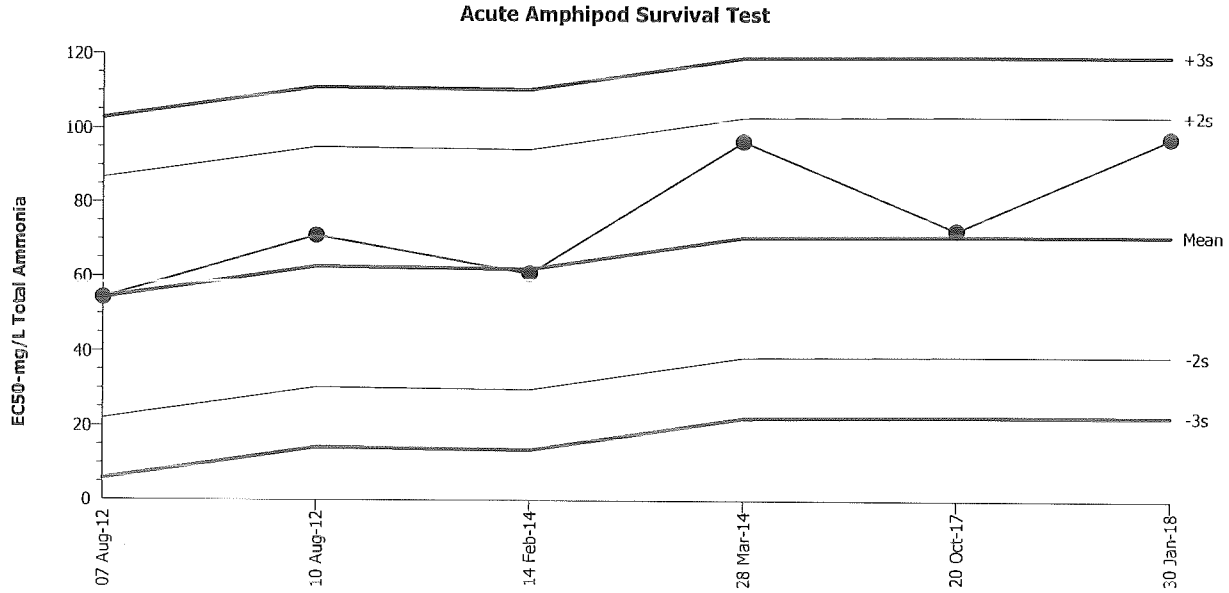
Organism: Ampelisca abdita (Amphipod)

Material: Total Ammonia

Protocol: ASTM E1367-99 (1999)

Endpoint: 96h Survival Rate

Source: Reference Toxicant-REF



Mean: 71.13      Count: 5      -2s Warning Limit: 38.81      -3s Action Limit: 22.65  
 Sigma: 16.16      CV: 22.70%      +2s Warning Limit: 103.5      +3s Action Limit: 119.6

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2012	Aug	7	17:00	54.3	-16.83	-1.042			10-4856-6533	02-5259-5412
2			10	16:10	71.06	-0.0749	-0.00464			07-1889-3736	15-9028-9408
3	2014	Feb	14	15:10	60.91	-10.22	-0.6321			06-6683-2829	14-1750-0762
4		Mar	28	16:40	96.7	25.57	1.583			20-9627-2169	01-1321-1902
5	2017	Oct	20	16:15	72.69	1.559	0.09648			13-0635-7278	02-7696-9474
6	2018	Jan	30	15:25	97.71	26.58	1.645			11-4070-8549	00-7788-5092

96-hour Marine Acute Bioassay  
Static Conditions

Water Quality Measurements  
& Test Organism Survival

Client: Internal Test Species: A. abdita  
 Sample ID: NH<sub>3</sub> Start Date/Time: 1/30/2018 1525  
 Test No.: 180130a.bra. (NH<sub>3</sub>) End Date/Time: 2/3/2018 1535

Tech Initials				
0	24	48	72	96
Counts: <u>43/M</u>				<u>AD</u>
Readings: <u>RT</u>	<u>BO</u>	<u>RT</u>	<u>DM</u>	<u>RT</u>
Dilutions made by: <u>DM</u>				
High conc. made (mg/L): <u>240</u>				
Vol. NH <sub>3</sub> stock added (mL): <u>46.8</u>				
Final Volume (mL): <u>2000</u>				

NH<sub>3</sub> stock concentration (mg/L): 10,248

Nominal Concentration mg/L	Rand #	Number of Live Organisms		Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	24	10	9	30.0	30.5	30.3	30.4	30.5	20.7	19.6	19.2	19.1	19.1	6.9	7.1	7.4	6.9	7.0	7.96	7.87	7.95	7.77	7.90
	6	10	8																				
	2	10	6																				
	11	10	9																				
15 (14.4)	15	10	10	30.1	30.7	30.4	30.6	30.7	20.3	19.4	19.1	19.0	19.0	7.0	7.2	7.3	7.0	7.1	7.90	7.87	7.93	7.93	7.91
	8	10	10																				
	9	10	10																				
	21	10	9																				
30 (27.3)	14	10	10	30.1	30.7	30.5	30.7	30.0	20.2	19.2	19.2	19.0	19.0	7.1	7.2	7.3	6.9	7.1	7.86	7.86	7.91	7.96	7.89
	19	10	7																				
	10	10	7																				
	17	10	9																				
60 (59.2)	1	10	9	30.2	30.7	30.2	30.3	30.2	20.7	19.2	19.4	19.1	19.2	6.9	7.2	7.3	7.0	7.1	7.79	7.82	7.86	7.74	7.84
	5	10	7																				
	22	10	8																				
	20	10	9																				
120 (120)	3	10	2	30.3	30.8	30.3	30.4	30.3	20.7	19.2	19.3	19.3	19.1	6.9	7.3	7.1	6.7	6.9	7.6	7.77	7.82	7.83	7.81
	12	10	2																				
	4	10	4																				
	13	10	5																				
240 (230)	18	10	0	30.5	31.0	30.6	30.8	31.1	19.8	19.4	19.2	19.1	19.1	7.2	7.1	7.3	6.9	6.6	7.51	7.67	7.75	7.75	7.68
	16	10	0																				
	7	10	0																				
	23	10	0																				

Rand # QC: RT  
 Initial Count QC: LTP  
 Initiated: LTP

Animal Source/Date Received: ARO 01/20/18 Size at Initiation: 3-5mm

Comments: \* 90% acceptability criterion for survival not met (80%).  
(measured ammonia)

QC Check: KFP 2/23/18 Final Review: 24/19/18

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Internal  
 Project: Ammonia Reference Toxicant  
 Test Type: Ampelisca 96-hour

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 1/30/2018

Analyst: SG  
 Analysis Date: 2/5/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	7.6	9.3
Lab Control	1	1/30/2018	0	0.0	20.5
15	2	1/30/2018	0	12.2	14.9
30	3	1/30/2018	0	22.4	27.3
60	(A) 4	1/30/2018	0	24.3	29.6
120	5	1/30/2018	0	24.6	30.0
240	6	1/30/2018	0	23.6	28.8
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	7.6	9.3
Sample Duplicate <sup>a</sup>	2	NA	NA	12.1	14.8
Sample Duplicate + Spike <sup>a</sup>		NA	NA	19.6	23.9
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	7.6	(A) 9.3

→ (x2) = 59.2  
 → (x4) = 120.0  
 → (x8) = 230.4

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.3	10	NA	93
2	14.9	14.8	23.9	10	0.7	90

Comments: (A) Q18 2/5/18 SG

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: MP 2/13/18

Final Review: SG 2/19/18



**CETIS Summary Report**

Report Date: 13 Feb-18 10:30 (p 1 of 1)  
 Test Code: 180205abra | 01-9704-5341

Acute Amphipod Survival Test							Nautilus Environmental (CA)				
Batch ID:	17-0304-0523	Test Type:	Survival (96h)	Analyst:							
Start Date:	05 Feb-18 16:30	Protocol:	ASTM E1367-99 (1999)	Diluent:	Diluted Natural Seawater						
Ending Date:	09 Feb-18 14:35	Species:	Ampelisca abdita	Brine:	Not Applicable						
Duration:	94h	Source:	Aquatic Research Organisms, NH	Age:	Size 3-5 mm						
Sample ID:	04-7009-8891	Code:	180205abra	Client:	Internal						
Sample Date:	05 Feb-18	Material:	Cadmium chloride	Project:							
Receive Date:	05 Feb-18	Source:	Reference Toxicant								
Sample Age:	16h	Station:	Cadium Chloride								
Comparison Summary											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
18-5001-5895	96h Survival Rate	0.25	0.5	0.3536	16.1%		Dunnnett Multiple Comparison Test				
Point Estimate Summary											
Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method				
01-4553-0777	96h Survival Rate	EC50	0.7071	0.5981	0.836		Trimmed Spearman-Kärber				
96h Survival Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	0.875	0.7954	0.9546	0.8	0.9	0.025	0.05	5.71%	0.0%
0.25		4	0.825	0.6727	0.9773	0.7	0.9	0.04787	0.09574	11.61%	5.71%
0.5		4	0.6	0.375	0.825	0.4	0.7	0.07071	0.1414	23.57%	31.43%
1		4	0.275	0.1227	0.4273	0.2	0.4	0.04787	0.09574	34.82%	68.57%
2		4	0.05	0	0.1419	0	0.1	0.02887	0.05774	115.5%	94.29%
4		4	0	0	0	0	0	0	0		100.0%
96h Survival Rate Detail											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	0.8	0.9	0.9	0.9						
0.25		0.8	0.7	0.9	0.9						
0.5		0.7	0.6	0.7	0.4						
1		0.2	0.2	0.4	0.3						
2		0.1	0	0	0.1						
4		0	0	0	0						

Ⓐ Q18 J 2/13/18

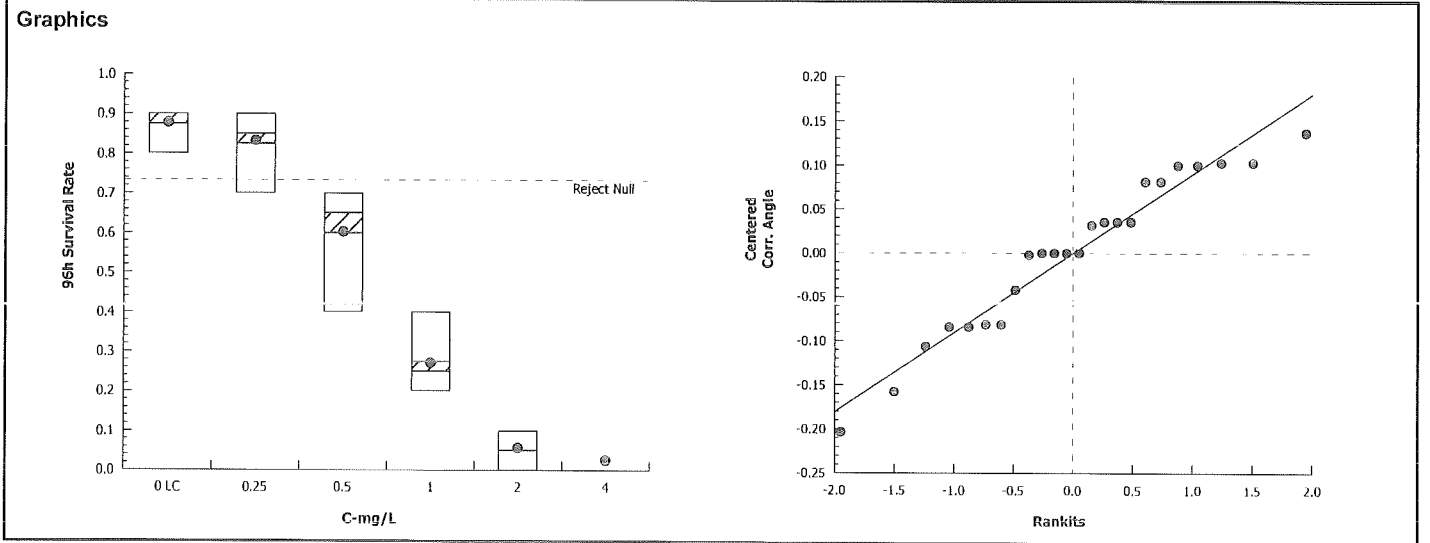
90% test acceptability criterion for mean control survival not met (87.5% survival).

**CETIS Analytical Report**

Report Date: 13 Feb-18 10:30 (p 1 of 2)  
 Test Code: 180205abra | 01-9704-5341

Acute Amphipod Survival Test										Nautilus Environmental (CA)	
Analysis ID: 18-5001-5895		Endpoint: 96h Survival Rate				CETIS Version: CETISv1.8.7					
Analyzed: 13 Feb-18 9:57		Analysis: Parametric-Control vs Treatments				Official Results: Yes					
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corrected)	NA	C > T	NA	NA	16.1%	0.25	0.5	0.3536			
Dunnett Multiple Comparison Test											
Control	vs	C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)		
Lab Control		0.25	0.8213	2.356	0.185	6	0.4606	CDF	Non-Significant Effect		
		0.5*	4.144	2.356	0.185	6	0.0015	CDF	Significant Effect		
		1*	8.479	2.356	0.185	6	<0.0001	CDF	Significant Effect		
		2*	12.4	2.356	0.185	6	<0.0001	CDF	Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)			
Between	2.708995		0.6772488		4	54.95	<0.0001	Significant Effect			
Error	0.1848776		0.01232518		15						
Total	2.893873				19						
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Bartlett Equality of Variance		1.463	13.28	0.8332	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.9246	0.866	0.1218	Normal Distribution					
96h Survival Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	0.875	0.7954	0.9546	0.9	0.8	0.9	0.025	5.71%	0.0%
0.25		4	0.825	0.6727	0.9773	0.85	0.7	0.9	0.04787	11.61%	5.71%
0.5		4	0.6	0.375	0.825	0.65	0.4	0.7	0.07071	23.57%	31.43%
1		4	0.275	0.1227	0.4273	0.25	0.2	0.4	0.04787	34.82%	68.57%
2		4	0.05	0	0.1419	0.05	0	0.1	0.02887	115.5%	94.29%
4		4	0	0	0	0	0	0	0		100.0%
Angular (Corrected) Transformed Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.214	1.101	1.326	1.249	1.107	1.249	0.03547	5.85%	0.0%
0.25		4	1.149	0.9506	1.348	1.178	0.9912	1.249	0.06237	10.86%	5.31%
0.5		4	0.8883	0.6584	1.118	0.9386	0.6847	0.9912	0.07223	16.26%	26.8%
1		4	0.5479	0.3787	0.7171	0.5216	0.4636	0.6847	0.05317	19.41%	54.85%
2		4	0.2403	0.09055	0.39	0.2403	0.1588	0.3218	0.04705	39.16%	80.2%
4		4	0.1588	0.1588	0.1588	0.1588	0.1588	0.1588	0	0.0%	86.92%

<b>Acute Amphipod Survival Test</b>		<b>Nautilus Environmental (CA)</b>	
<b>Analysis ID:</b> 18-5001-5895	<b>Endpoint:</b> 96h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7	
<b>Analyzed:</b> 13 Feb-18 9:57	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Official Results:</b> Yes	



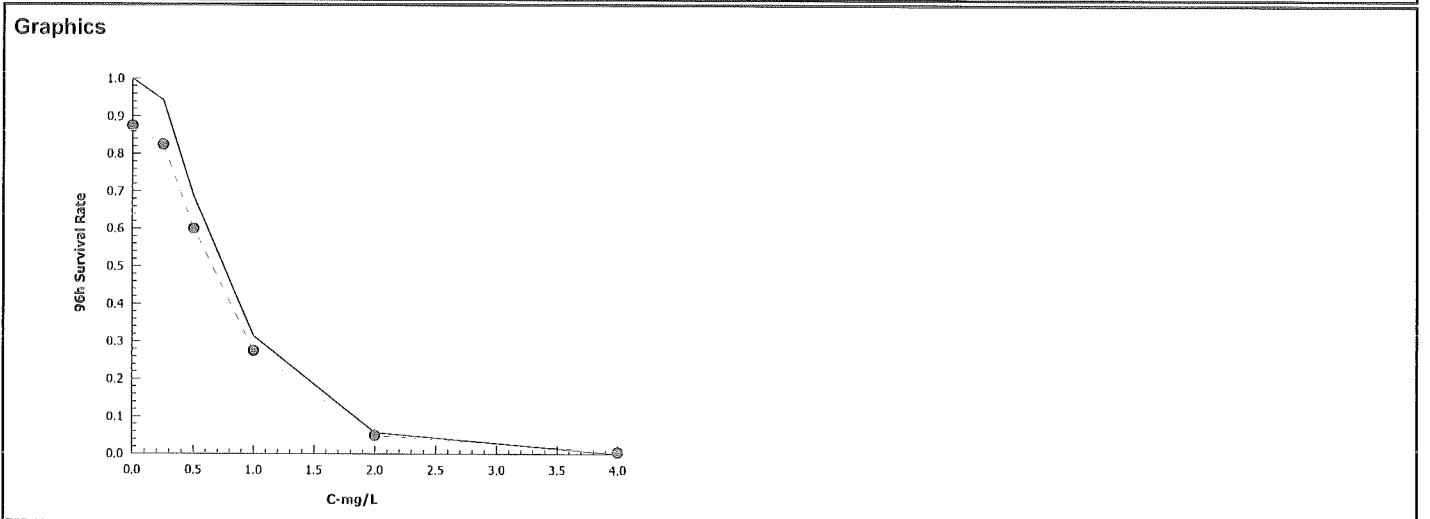
**CETIS Analytical Report**

Report Date: 13 Feb-18 10:30 (p 1 of 1)  
 Test Code: 180205abra | 01-9704-5341

<b>Acute Amphipod Survival Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 01-4553-0777	<b>Endpoint:</b> 96h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 13 Feb-18 9:57	<b>Analysis:</b> Trimmed Spearman-Kärber	<b>Official Results:</b> Yes			

Trimmed Spearman-Kärber Estimates							
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0.125	5.71%	-0.1505	0.03637	0.7071	0.5981	0.836

96h Survival Rate Summary			Calculated Variate(A/B)								
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	0.875	0.8	0.9	0.025	0.05	5.71%	0.0%	35	40
0.25		4	0.825	0.7	0.9	0.04787	0.09574	11.61%	5.71%	33	40
0.5		4	0.6	0.4	0.7	0.07071	0.1414	23.57%	31.43%	24	40
i		4	0.275	0.2	0.4	0.04787	0.09574	34.82%	68.57%	11	40
2		4	0.05	0	0.1	0.02887	0.05774	115.5%	94.29%	2	40
4		4	0	0	0	0	0		100.0%	0	40



Acute Amphipod Survival Test

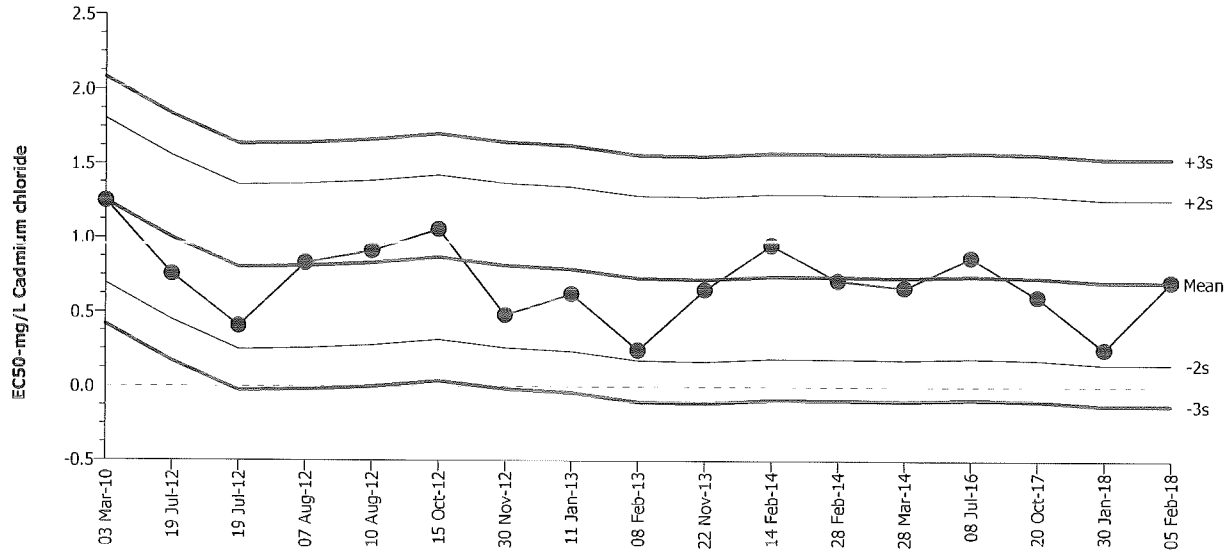
Nautilus Environmental (CA)

Test Type: Survival (96h)  
Protocol: ASTM E1367-99 (1999)

Organism: Ampelisca abdita (Amphipod)  
Endpoint: 96h Survival Rate

Material: Cadmium chloride  
Source: Reference Toxicant-REF

Acute Amphipod Survival Test



Mean: 0.7041      Count: 16      -2s Warning Limit: 0.1495      -3s Action Limit: -0.1278  
 Sigma: 0.2773      CV: 39.40%      +2s Warning Limit: 1.259      +3s Action Limit: 1.536

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2010	Mar	3	15:30	1.25	0.5456	1.967			07-5724-3236	06-4468-4449
2	2012	Jul	19	18:20	0.7558	0.05174	0.1866			12-7643-0557	08-4931-2236
3			19	18:30	0.4051	-0.299	-1.078			02-8276-4382	00-7398-7319
4		Aug	7	17:00	0.8319	0.1278	0.4611			12-1585-1493	17-3963-0595
5			10	15:45	0.9128	0.2087	0.7527			11-5893-9604	11-2241-5585
6		Oct	15	14:15	1.058	0.3538	1.276			15-8471-0783	06-6319-8135
7		Nov	30	15:15	0.4798	-0.2243	-0.8088			20-3386-7863	11-2233-7083
8	2013	Jan	11	15:40	0.6226	-0.08151	-0.2939			04-7802-1286	06-7086-8887
9		Feb	8	14:30	0.2438	-0.4603	-1.66			10-0132-0688	11-6648-1752
10		Nov	22	16:00	0.6515	-0.05259	-0.1897			19-3444-6218	07-2363-9639
11	2014	Feb	14	15:10	0.9522	0.2481	0.8946			18-9460-4808	13-4246-9357
12			28	13:00	0.715	0.01091	0.03936			12-9234-4868	05-9883-9375
13		Mar	28	16:50	0.6657	-0.03843	-0.1386			01-2364-3505	03-5001-3560
14	2016	Jul	8	14:05	0.8689	0.1648	0.5942			01-5765-3505	01-7702-6157
15	2017	Oct	20	16:25	0.6033	-0.1008	-0.3637			05-4737-9496	04-0516-3248
16	2018	Jan	30	15:10	0.25	-0.4541	-1.638			12-9651-0869	15-5205-7015
17		Feb	5	16:30	0.7071	0.003007	0.01084			01-9704-5341	01-4553-0777

96-hour Marine Acute Bioassay  
Static Conditions

Water Quality Measurements  
& Test Organism Survival

Client: Internal  
Sample ID: CdCl<sub>2</sub>  
Test No.: 180205 abra

Test Species: A. abdita  
Start Date/Time: 2/5/2018 1630  
End Date/Time: 2/9/2018 1435

Tech Initials				
0	24	48	72	96
ACS	DM	TJ	TJ	VB
ACS	DM	TJ	PO	ACS
Counts:				
Readings:				
Dilutions made by:				
High conc. made (mg/L):				
Vol. Cd stock added (mL):				
Final Volume (mL):				

Cd stock concentration (mg/L): 1000

Concentration mg/L	Rand #	Number of Live Organisms					Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	
Lab Control	24	10	10	10	9	8	29.9	30.0	29.9	29.8	30.4	20.7	19.7	19.2	19.3	19.3	8.2	7.0	7.4	6.6	6.6	8.01	7.92	7.85	7.79	7.92	
	6	10	10	10	9	9																					
	2	10	10	10	9	9																					
	11	10	10	10	10	9																					
0.25	15	10	10	10	8	8	29.9	30.0	30.0	29.9	30.5	19.9	19.5	19.0	19.2	19.1	6.4	7.0	7.3	6.7	6.7	8.01	7.94	7.85	7.84	7.90	
	8	10	10	10	9	7																					
	9	10	10	10	10	9																					
	21	10	10	9	9	9																					
0.5	14	10	10	10	10	7	29.9	29.9	29.9	29.8	30.2	20.7	19.6	19.1	19.2	19.5	8.2	7.2	7.4	6.7	6.8	8.02	7.98	7.91	7.87	7.91	
	19	10	10	8	7	6																					
	10	10	10	10	9	7																					
	17	10	10	9	8	4																					
1.0	1	10	10	8	4	2	29.9	30.0	30.0	29.8	30.5	20.4	19.4	19.1	19.1	19.4	8.2	7.0	7.4	6.8	6.8	8.02	7.99	7.88	7.89	7.91	
	5	10	10	9	5	2																					
	22	10	10	9	9	4																					
	20	10	10	9	9	3																					
2.0	3	10	10	6	3	1	29.8	29.8	29.9	29.9	30.3	20.4	19.6	19.1	19.2	19.1	8.2	7.0	7.4	6.7	6.8	8.03	8.01	7.98	7.89	7.92	
	12	10	10	3	1	0																					
	4	10	10	5	3	0																					
	13	10	10	5	2	1																					
4.0	18	10	10	6	1	0	29.8	29.9	30.0	29.9	30.2	20.7	19.8	19.0	19.2	19.5	8.3	7.1	7.3	6.8	6.9	8.03	8.00	7.87	7.87	7.91	
	16	10	8	5	2	0																					
	7	10	9	3	0	-																					
	23	10	8	4	0	-																					

Rand # QC: TJ

Initial Count QC: ACS

Entered: ACS

Animal Source/Date Received: ARO / 01/26/18

Size at Initiation: 3-5 mm

Comments: \_\_\_\_\_

QC Check: KP 2/13/18

Final Review: 4/19/18

**CETIS Summary Report**

Report Date: 13 Feb-18 15:46 (p 1 of 1)  
 Test Code: 180205abra(NH3) | 14-3335-3050

Acute Amphipod Survival Test				Nautilus Environmental (CA)			
Batch ID: 11-9774-8961	Test Type: Survival (96h)	Analyst:		Start Date: 05 Feb-18 16:40	Protocol: ASTM E1367-99 (1999)	Diluent: Diluted Natural Seawater	
Ending Date: 09 Feb-18 15:00	Species: Ampelisca abdita	Brine: Not Applicable		Duration: 94h	Source: Aquatic Research Organisms, NH	ⓐ Age: Size 3-5mm	
Sample ID: 18-2284-3624	Code: 180205abra(NH3)	Client: Internal		Sample Date: 05 Feb-18	Material: Total Ammonia	Project:	
Receive Date: 05 Feb-18	Source: Reference Toxicant			Sample Age: 17h	Station: Ammonia		

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
05-1612-6866	96h Survival Rate	62.2	119	86.03	27.3%		Dunnett Multiple Comparison Test

Point Estimate Summary							
Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
00-0257-9275	96h Survival Rate	EC50	84.56	76.37	93.63		Spearman-Kärber

96h Survival Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	0.775	0.5363	1	0.6	0.9	0.075	0.15	19.35%	0.0%
16.3		4	0.75	0.6581	0.8419	0.7	0.8	0.02887	0.05774	7.7%	3.23%
32.2		4	0.95	0.8581	1	0.9	1	0.02887	0.05774	6.08%	-22.58%
62.2		4	0.7	0.3818	1	0.4	0.8	0.1	0.2	28.57%	9.68%
119		4	0.1	0	0.2299	0	0.2	0.04082	0.08165	81.65%	87.1%
241		4	0	0	0	0	0	0	0		100.0%

96h Survival Rate Detail					
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Control	0.7	0.9	0.6	0.9
16.3		0.7	0.8	0.7	0.8
32.2		1	0.9	0.9	1
62.2		0.8	0.8	0.4	0.8
119		0.1	0.1	0	0.2
241		0	0	0	0

ⓐ Q18 J 2/13/18

mean control  
 90% test acceptability criterion for survival not met (17.5% survival).  
 J  
 2/23/18

**CETIS Analytical Report**

Report Date: 13 Feb-18 15:46 (p 1 of 2)  
 Test Code: 180205abra(NH3) | 14-3335-3050

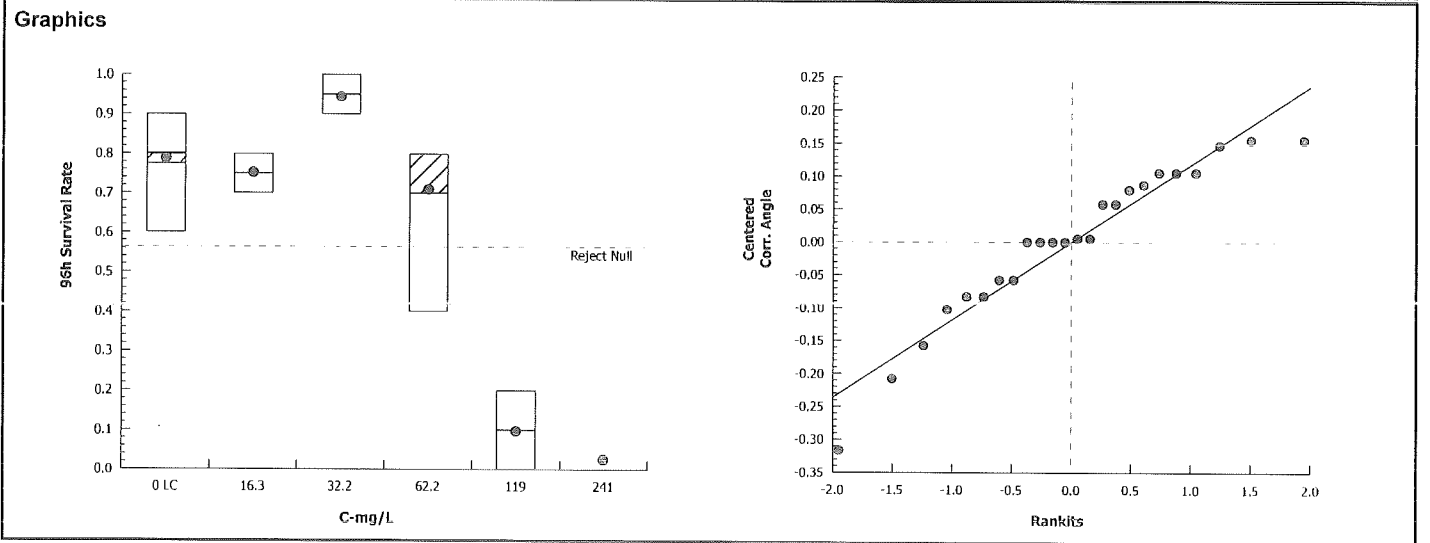
Acute Amphipod Survival Test										Nautilus Environmental (CA)	
Analysis ID: 05-1612-6866		Endpoint: 96h Survival Rate				CETIS Version: CETISv1.8.7					
Analyzed: 13 Feb-18 10:57		Analysis: Parametric-Control vs Treatments				Official Results: Yes					
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corrected)	NA	C > T	NA	NA	27.3%	62.2	119	86.03			
Dunnett Multiple Comparison Test											
Control	vs	C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)		
Lab Control		16.3	0.4302	2.356	0.245	6	0.6349	CDF	Non-Significant Effect		
		32.2	-2.297	2.356	0.245	6	0.9993	CDF	Non-Significant Effect		
		62.2	0.8886	2.356	0.245	6	0.4309	CDF	Non-Significant Effect		
		119*	7.485	2.356	0.245	6	<0.0001	CDF	Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)			
Between	2.32147		0.5803675		4	26.9	<0.0001	Significant Effect			
Error	0.3235739		0.02157159		15						
Total	2.645044				19						
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Bartlett Equality of Variance		4.138	13.28	0.3876	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.9219	0.866	0.1077	Normal Distribution					
96h Survival Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	0.775	0.5363	1	0.8	0.6	0.9	0.075	19.35%	0.0%
16.3		4	0.75	0.6581	0.8419	0.75	0.7	0.8	0.02887	7.7%	3.23%
32.2		4	0.95	0.8581	1	0.95	0.9	1	0.02887	6.08%	-22.58%
62.2		4	0.7	0.3818	1	0.8	0.4	0.8	0.1	28.57%	9.68%
119		4	0.1	0	0.2299	0.1	0	0.2	0.04082	81.65%	87.1%
241		4	0	0	0	0	0	0	0		100.0%
Angular (Corrected) Transformed Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.094	0.8006	1.387	1.12	0.8861	1.249	0.09214	16.85%	0.0%
16.3		4	1.049	0.9426	1.156	1.049	0.9912	1.107	0.03348	6.38%	4.09%
32.2		4	1.332	1.179	1.486	1.331	1.249	1.419	0.04814	7.23%	-21.81%
62.2		4	1.002	0.6655	1.338	1.107	0.6847	1.107	0.1056	21.09%	8.44%
119		4	0.3165	0.1182	0.5148	0.3218	0.1588	0.4636	0.06231	39.37%	71.07%
241		4	0.1588	0.1588	0.1588	0.1588	0.1588	0.1588	0	0.0%	85.48%



CETIS Analytical Report

Report Date: 13 Feb-18 15:46 (p 2 of 2)  
Test Code: 180205abra(NH3) | 14-3335-3050

Acute Amphipod Survival Test		Nautilus Environmental (CA)	
Analysis ID: 05-1612-6866	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7	
Analyzed: 13 Feb-18 10:57	Analysis: Parametric-Control vs Treatments	Official Results: Yes	



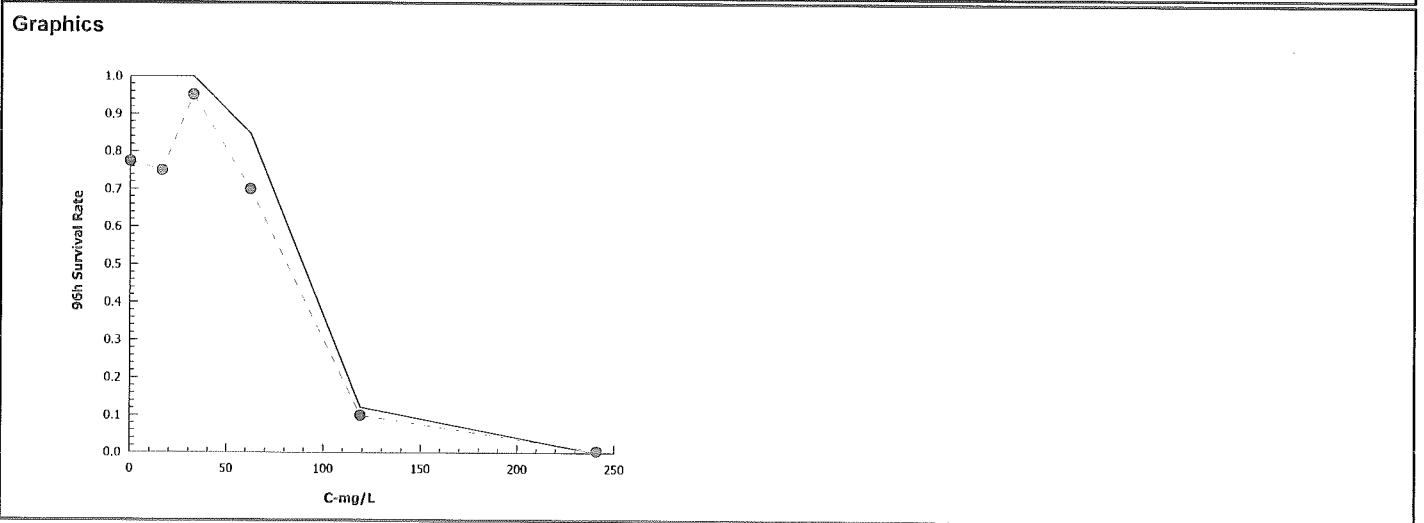
**CETIS Analytical Report**

Report Date: 13 Feb-18 15:46 (p 1 of 1)  
 Test Code: 180205abra(NH3) | 14-3335-3050

Acute Amphipod Survival Test			Nautilus Environmental (CA)		
Analysis ID: 00-0257-9275	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7			
Analyzed: 13 Feb-18 10:57	Analysis: Untrimmed Spearman-Kärber	Official Results: Yes			

Spearman-Kärber Estimates							
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0.225	0.00%	1.927	0.02213	84.56	76.37	93.63

96h Survival Rate Summary			Calculated Variate(A/B)								
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	0.775	0.6	0.9	0.075	0.15	19.35%	0.0%	31	40
16.3		4	0.75	0.7	0.8	0.02887	0.05774	7.7%	3.23%	30	40
32.2		4	0.95	0.9	1	0.02887	0.05773	6.08%	-22.58%	39	41
62.2		4	0.7	0.4	0.8	0.1	0.2	28.57%	9.68%	28	40
119		4	0.1	0	0.2	0.04082	0.08165	81.65%	87.1%	4	40
241		4	0	0	0	0	0	100.0%	0	0	40



Acute Amphipod Survival Test

Nautilus Environmental (CA)

Test Type: Survival (96h)

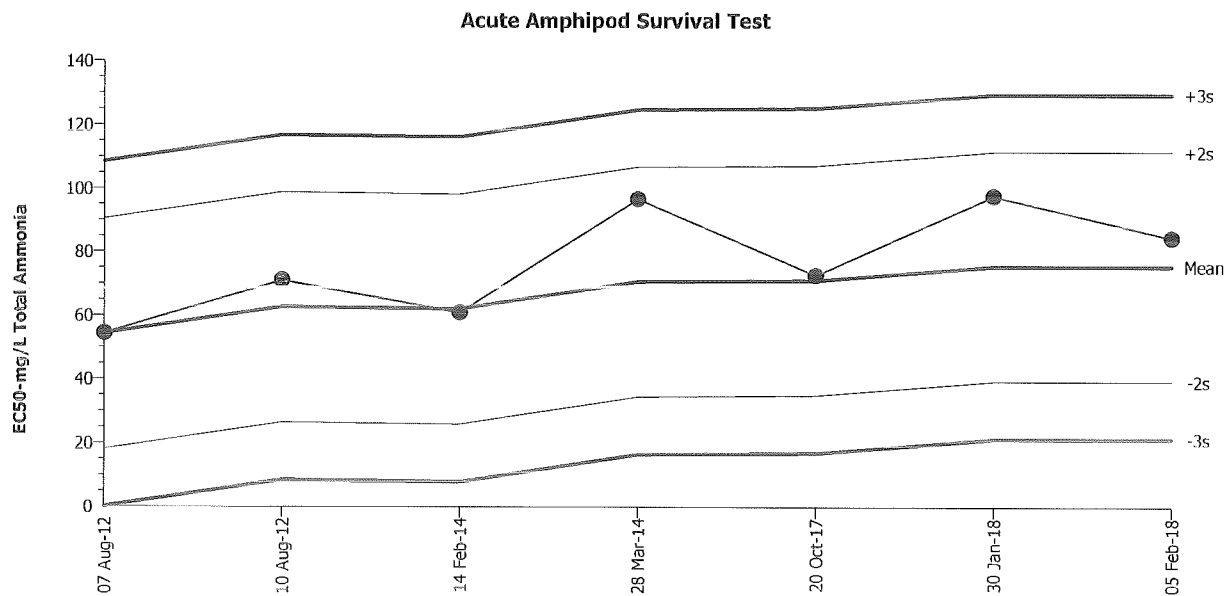
Organism: Ampelisca abdita (Amphipod)

Material: Total Ammonia

Protocol: ASTM E1367-99 (1999)

Endpoint: 96h Survival Rate

Source: Reference Toxicant-REF



Mean: 75.56      Count: 6      -2s Warning Limit: 39.42      -3s Action Limit: 21.35  
 Sigma: 18.07      CV: 23.90%      +2s Warning Limit: 111.7      +3s Action Limit: 129.8

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2012	Aug	7	17:00	54.3	-21.26	-1.177			10-4856-6533	02-5259-5412
2			10	16:10	71.06	-4.505	-0.2493			07-1889-3736	15-9028-9408
3	2014	Feb	14	15:10	60.91	-14.65	-0.8105			06-6683-2829	14-1750-0762
4		Mar	28	16:40	96.7	21.14	1.17			20-9627-2169	01-1321-1902
5	2017	Oct	20	16:15	72.69	-2.871	-0.1589			13-0635-7278	02-7696-9474
6	2018	Jan	30	15:25	97.71	22.15	1.226			11-4070-8549	00-7788-5092
7		Feb	5	16:40	84.56	9.002	0.4982			14-3335-3050	00-0257-9275

96-hour Marine Acute Bioassay  
Static Conditions

Water Quality Measurements  
& Test Organism Survival

Client: Internal  
Sample ID: NH<sub>3</sub>  
Test No.: 180205 abra (NH<sub>3</sub>)

Test Species: A. abdita  
Start Date/Time: 2/5/2018 1640  
End Date/Time: 2/9/2018 1500

Tech Initials				
0	24	48	72	96
ACS	DM	TN	ACS	83
ACS	DM	TN	BD	ACS
Dilutions made by: <u>ACS</u>				
High conc. made (mg/L): <u>240</u>				
Vol. NH3 stock added (mL): <u>46.8</u>				
Final Volume (mL): <u>2000</u>				

NH3 stock concentration (mg/L): 10,248

Nominal Concentration mg/L	Rand #	Number of Live Organisms					Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	24	10	10	10	8	7	27.2	29.2	29.1	28.4	29.3	20.1	19.8	19.5	19.3	19.1	8.4	7.0	7.3	6.7	6.4	8.05	7.96	7.83	7.81	7.92
	6	10	10	10	9	9																				
	2	10	10	10	8	6																				
	11	10	10	10	10	9																				
15 (16.3)	15	10	10	10	7	7	27.4	29.4	29.2	28.8	29.3	20.0	20.0	19.3	19.4	19.3	8.2	7.0	7.3	6.6	6.6	7.95	7.84	7.83	7.82	7.86
	8	10	10	10	9	8																				
	9	10	10	10	9	7																				
	21	10	10	10	9	8																				
30 (32.2)	14	10	10	10	11	11	29.5	29.5	29.4	29.0	29.4	20.1	20.1	19.3	19.4	19.3	8.1	7.0	7.3	6.6	6.7	7.90	7.80	7.81	7.81	7.82
	19	10	10	10	10	9																				
	10	10	10	10	10	9																				
	17	10	10	10	10	10																				
60 (62.2)	1	10	10	10	8	8	29.3	29.4	29.3	29.3	29.9	21.0	20.2	19.1	19.3	19.1	8.2	7.1	7.3	6.6	6.9	7.81	7.87	7.76	7.70	7.82
	5	10	10	10	10	8																				
	22	10	10	10	4	4																				
	20	10	10	10	10	8																				
120 (119)	3	10	10	7	3	1	30.1	29.8	29.8	29.8	30.3	21.0	20.1	19.1	19.3	19.4	8.2	7.1	7.3	6.6	6.9	7.68	7.81	7.73	7.76	7.76
	12	10	10	9	5	1																				
	4	10	10	8	4	0																				
	13	10	10	9	5	2																				
240 (241)	18	10	10	0	0	-	31.0	30.2	30.4	30.5	30.8	21.0	20.1	19.2	19.4	19.1	8.3	7.1	7.1	6.6	6.6	7.54	7.71	7.71	7.71	7.71
	16	10	10	0	1	0																				
	7	10	10	0	0	-																				
	23	10	8	0	0	-																				

Rand # QC: TN

Initial Count QC: ACS  
Initials: ACS

Animal Source/Date Received: ARO / 01/26/18 Size at Initiation: 3-5 mm

Comments: ① Q18 ACS 2/5/18 ② TN 2/6/18 ③ Q18 2/11/18 ④ Q18 2/4/18 Incomat counts performed at 24-72 hrs; \* 90% acceptability criterion for survival not met (77.5%) 11 organisms added at initiation. (measured ammonia values)

QC Check: KFP 2/13/18

Final Review: 2/4/18

**Total Ammonia Analysis  
Marine**

Overlying Water

Client: Internal  
Project: Ammonia Reference Toxicant  
Test Type: *Ampelisca* 96-hour

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 2/5/2018

Analyst: RT  
Analysis Date: 2/9/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	7.8	9.5
Lab Control		2/5/2018	0	0.3	40.5
15		2/5/2018	0	13.4	16.3
30		2/5/2018	0	26.4	32.2
60		2/5/2018	0	25.5	31.1
120		2/5/2018	0	24.4	29.8
240		2/5/2018	0	24.7	30.1
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	7.8	9.5
Sample Duplicate <sup>a</sup>		NA	NA	25.0	30.5
Sample Duplicate + Spike <sup>a</sup>		NA	NA	33.6	41.0
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	7.8	9.5

x2 = 62.2  
x4 = 119.1  
x8 = 241.1

x8 = 244.0  
x8 = 328.0

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.5	10	NA	95
240	(A) 24.7 30.1	30.5	33.6 (A)	10	1.3 (A)	109

Comments: (A) Q18 2/9/18 RT

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: RT 2/13/18

Final Review:

*Neanthes*

**CETIS Summary Report**

Report Date: 07 Feb-18 16:25 (p 1 of 1)  
 Test Code: 180126nara | 05-1130-2847

**Neanthes 96-h Survival Test** **Nautilus Environmental (CA)**

<b>Batch ID:</b> 17-0851-8283	<b>Test Type:</b> Survival	<b>Analyst:</b>
<b>Start Date:</b> 26 Jan-18 14:30	<b>Protocol:</b> ASTM E1611-00 (2000)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 30 Jan-18 14:40	<b>Species:</b> Neanthes arenaceodentata	<b>Brine:</b> Not Applicable
<b>Duration:</b> 4d 0h	<b>Source:</b> Aquatic Tox Support	<b>Age:</b> 2-3 weeks post emergence

<b>Sample ID:</b> 00-2922-8115	<b>Code:</b> 180126nara	<b>Client:</b> Internal
<b>Sample Date:</b> 26 Jan-18	<b>Material:</b> Cadmium chloride	<b>Project:</b>
<b>Receive Date:</b> 26 Jan-18	<b>Source:</b> Reference Toxicant	
<b>Sample Age:</b> 14h	<b>Station:</b> Cadmium chloride	

**Comparison Summary**

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
19-4474-6600	Survival Rate	5	10	7.071	5.24%		Steel Many-One Rank Sum Test

**Point Estimate Summary**

Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
03-6717-5563	Survival Rate	LC50	11.49	10.31	12.8		Spearman-Kärber

**Survival Rate Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
2.5		4	1	1	1	1	1	0	0	0.0%	0.0%
5		4	1	1	1	1	1	0	0	0.0%	0.0%
10		4	0.675	0.5954	0.7546	0.6	0.7	0.025	0.05	7.41%	32.5%
20		4	0.025	0	0.1046	0	0.1	0.025	0.05	200.0%	97.5%
40		4	0	0	0	0	0	0	0		100.0%

**Survival Rate Detail**

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Control	1	1	1	1
2.5		1	1	1	1
5		1	1	1	1
10		0.6	0.7	0.7	0.7
20		0	0	0.1	0
40		0	0	0	0

**CETIS Analytical Report**

Report Date: 07 Feb-18 16:25 (p 1 of 2)  
 Test Code: 180126nara | 05-1130-2847

<b>Neanthes 96-h Survival Test</b>							<b>Nautilus Environmental (CA)</b>				
------------------------------------	--	--	--	--	--	--	------------------------------------	--	--	--	--

Analysis ID: 19-4474-6600	Endpoint: Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 07 Feb-18 16:24	Analysis: Nonparametric-Control vs Treatments	Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	5.24%	5	10	7.071	

<b>Steel Many-One Rank Sum Test</b>									
Control	vs	C-mg/L	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		2.5	18	10	1	6	0.8000	Asymp	Non-Significant Effect
		5	18	10	1	6	0.8000	Asymp	Non-Significant Effect
		10*	10	10	0	6	0.0350	Asymp	Significant Effect
		20*	10	10	0	6	0.0350	Asymp	Significant Effect

<b>ANOVA Table</b>						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	4.476781	1.119195	4	595.3	<0.0001	Significant Effect
Error	0.02820077	0.001880051	15			
Total	4.504982		19			

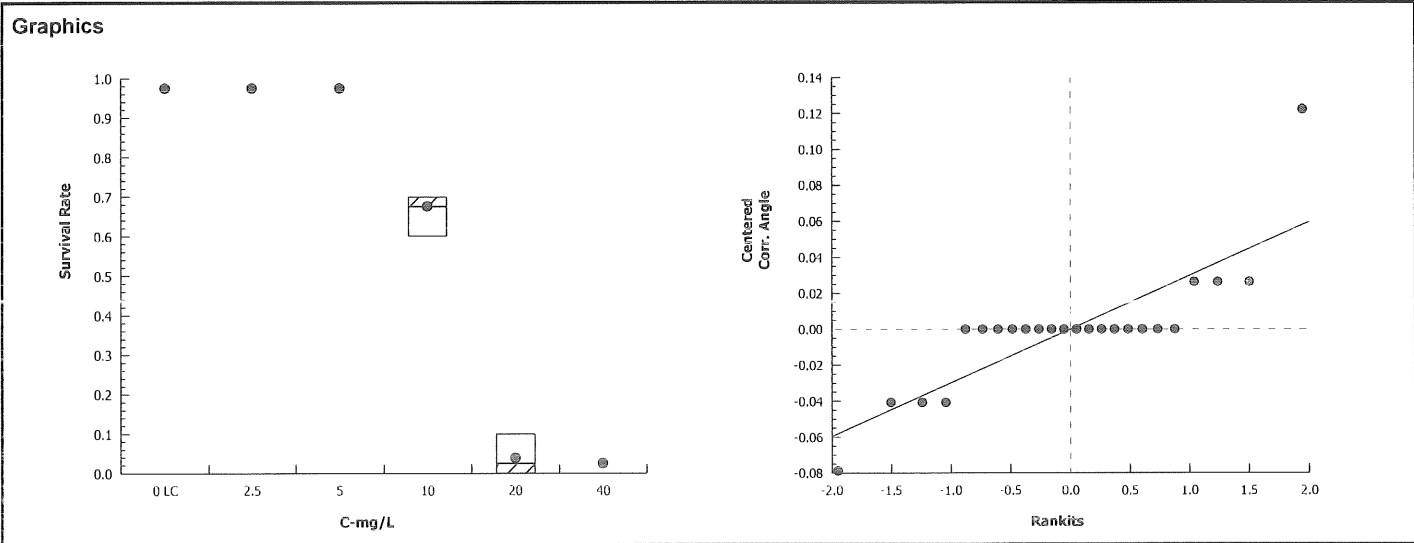
<b>Distributional Tests</b>					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	0.7723	4.893	0.5599	Equal Variances
Variances	Levene Equality of Variance	6.951	4.893	0.0023	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.7748	0.866	0.0004	Non-normal Distribution

<b>Survival Rate Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	1	0	0.0%	0.0%
2.5		4	1	1	1	1	1	1	0	0.0%	0.0%
5		4	1	1	1	1	1	1	0	0.0%	0.0%
10		4	0.675	0.5954	0.7546	0.7	0.6	0.7	0.025	7.41%	32.5%
20		4	0.025	0	0.1046	0	0	0.1	0.025	200.0%	97.5%
40		4	0	0	0	0	0	0	0		100.0%

<b>Angular (Corrected) Transformed Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
2.5		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
5		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
10		4	0.9649	0.8813	1.048	0.9912	0.8861	0.9912	0.02627	5.45%	31.67%
20		4	0.1995	0.06986	0.3292	0.1588	0.1588	0.3218	0.04074	40.84%	85.87%
40		4	0.1588	0.1588	0.1588	0.1588	0.1588	0.1588	0	0.0%	88.76%



Neanthes 96-h Survival Test		Nautilus Environmental (CA)	
Analysis ID: 19-4474-6600	Endpoint: Survival Rate	CETIS Version: CETISv1.8.7	
Analyzed: 07 Feb-18 16:24	Analysis: Nonparametric-Control vs Treatments	Official Results: Yes	



# CETIS Analytical Report

Report Date: 07 Feb-18 16:25 (p 1 of 1)  
Test Code: 180126nara | 05-1130-2847

**Neanthes 96-h Survival Test** **Nautilus Environmental (CA)**

<b>Analysis ID:</b> 03-6717-5563	<b>Endpoint:</b> Survival Rate	<b>CETIS Version:</b> CETISv1.8.7
<b>Analyzed:</b> 07 Feb-18 16:25	<b>Analysis:</b> Untrimmed Spearman-Kärber	<b>Official Results:</b> Yes

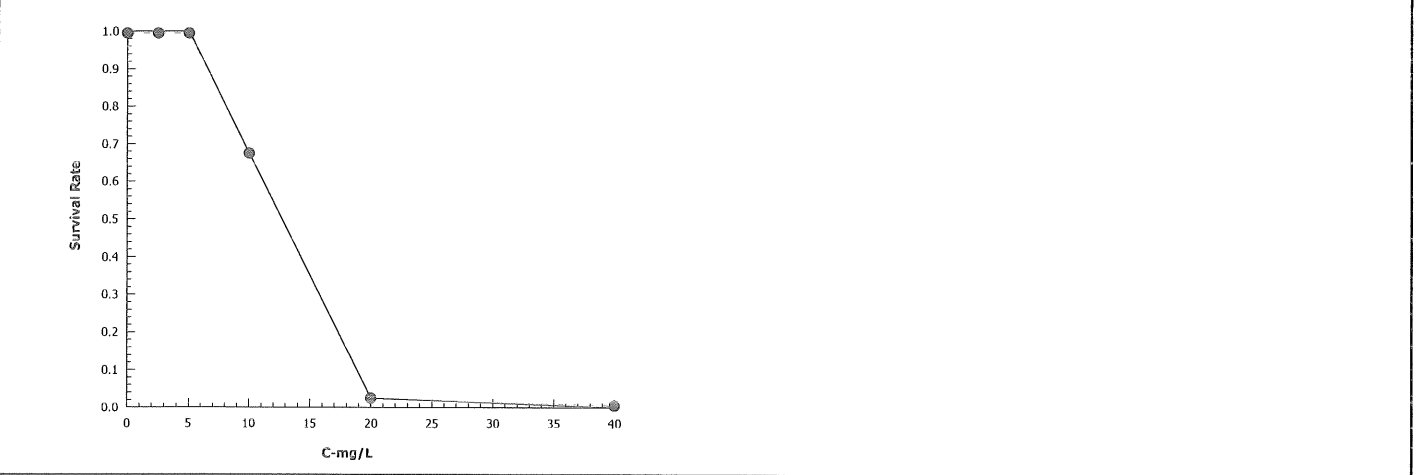
**Spearman-Kärber Estimates**

Threshold Option	Threshold	Trim	Mu	Sigma	LC50	95% LCL	95% UCL
Control Threshold	0	0.00%	1.06	0.0235	11.49	10.31	12.8

**Survival Rate Summary** **Calculated Variate(A/B)**

C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	1	1	1	0	0	0.0%	0.0%	40	40
2.5		4	1	1	1	0	0	0.0%	0.0%	40	40
5		4	1	1	1	0	0	0.0%	0.0%	40	40
10		4	0.675	0.6	0.7	0.025	0.05	7.41%	32.5%	27	40
20		4	0.025	0	0.1	0.025	0.05	200.0%	97.5%	1	40
40		4	0	0	0	0	0		100.0%	0	40

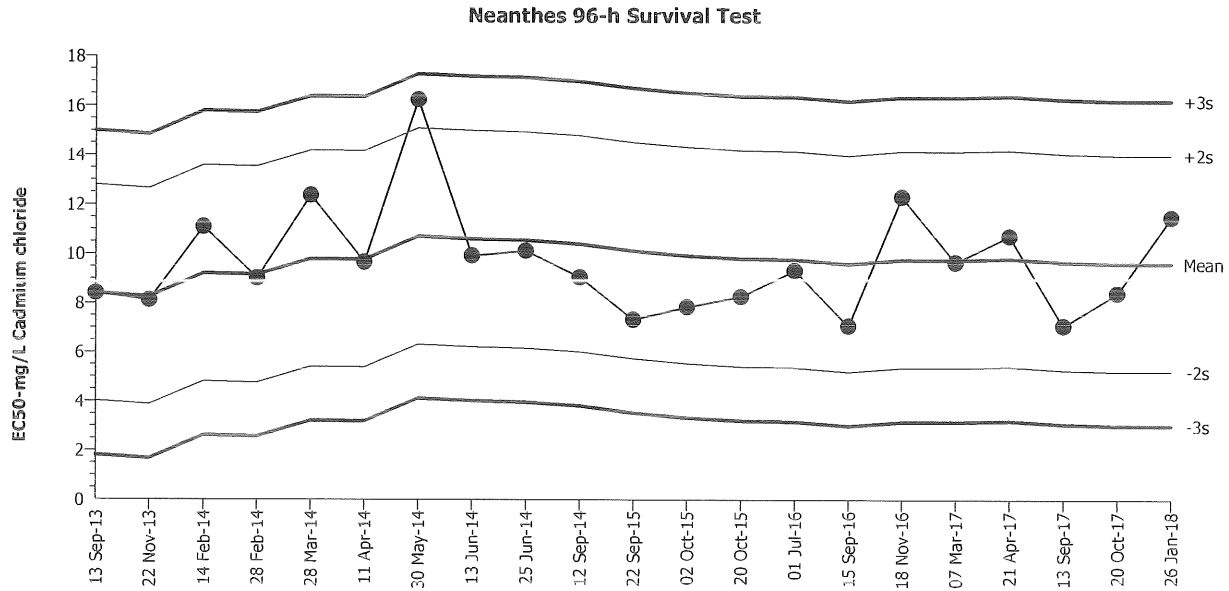
**Graphics**



Neanthes 96-h Survival Test

Nautilus Environmental (CA)

Test Type: Survival Organism: Neanthes arenaceodentata (Polycha Material: Cadmium chloride  
 Protocol: ASTM E1611-00 (2000) Endpoint: Survival Rate Source: Reference Toxicant-REF



Mean: 9.601 Count: 20 -2s Warning Limit: 5.209 -3s Action Limit: 3.013  
 Sigma: 2.196 CV: 22.90% +2s Warning Limit: 13.99 +3s Action Limit: 16.19

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2013	Sep	13	14:30	8.409	-1.192	-0.5428			11-3632-5354	04-1987-0237
2		Nov	22	15:00	8.123	-1.478	-0.6733			12-6706-9068	00-5220-0833
3	2014	Feb	14	15:10	11.1	1.495	0.6806			01-8407-2291	11-6615-0812
4			28	11:40	9.013	-0.5885	-0.268			18-3416-7501	05-9505-9418
5		Mar	28	17:30	12.37	2.772	1.262			11-4554-8066	04-9287-5802
6		Apr	11	13:30	9.659	0.05836	0.02658			19-5430-1817	03-4444-9271
7		May	30	11:50	16.25	6.644	3.026	(+)	(+)	13-1191-8715	03-5109-4595
8		Jun	13	16:30	9.921	0.3202	0.1458			01-2316-9520	05-5854-9451
9			25	13:50	10.12	0.5192	0.2364			16-4307-9977	03-7926-5268
10		Sep	12	16:36	9.05	-0.5514	-0.2511			21-1201-0133	14-2688-4524
11	2015	Oct	22	13:20	7.334	-2.267	-1.032			07-6292-4493	08-7700-7971
12			2	15:25	7.846	-1.755	-0.7993			18-5002-0283	08-3181-1388
13			20	15:50	8.265	-1.336	-0.6086			06-4122-7603	04-4870-4123
14	2016	Jul	1	12:25	9.33	-0.2707	-0.1233			06-7168-8696	02-0891-8017
15		Sep	15	12:45	7.071	-2.53	-1.152			12-6456-8152	03-4194-6241
16		Nov	18	13:50	12.31	2.71	1.234			20-3058-1787	10-5446-8915
17	2017	Mar	7	15:05	9.659	0.05836	0.02658			13-1483-5189	04-6381-1478
18		Apr	21	11:50	10.72	1.117	0.5085			05-9100-7012	17-2733-4925
19		Sep	13	14:25	7.071	-2.53	-1.152			03-7587-5857	09-4288-6161
20		Oct	20	10:40	8.409	-1.192	-0.5428			14-4133-1178	02-0622-1122
21	2018	Jan	26	14:30	11.49	1.886	0.8588			05-1130-2847	03-6717-5563

Marine Acute Bioassay  
Static Conditions

Water Quality Measurements  
& Test Organism Survival

Client: Internal  
Sample ID: CdCl<sub>2</sub>  
Test No.: 180126 nara

Test Species: N. arenaceodentata  
Start Date/Time: 1/26/2018 1430  
End Date/Time: 1/30/2018 1440

Tech Initials				
0	24	48	72	96
TN				UP
BO	RT	ACS	UP	LTP
LTP				
40				
1101				
1000				

Cd stock concentration (mg/L): 994

Counts:  
Readings:  
Dilutions made by:  
High conc. made (mg/L):  
Vol. Cd stock added (mL):  
Final Volume (mL):

Concentration mg/L	Rand #	Number of Live Organisms		Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	3	10	10	30.5	30.1	30.3	30.3	30.3	19.5	19.4	18.6	18.8	18.8	7.4	6.9	6.7	6.7	6.8	7.95	7.90	7.90	7.83	7.88
	4	10	10																				
	2	10	10																				
	9	10	10																				
2.5	22	10	10	30.5	30.0	30.3	30.4	30.5	19.4	19.5	18.6	18.6	18.7	7.4	6.9	6.7	6.8	7.2	7.97	7.92	7.92	7.85	7.88
	23	10	10																				
	19	10	10																				
	15	10	10																				
5	1	10	10	30.5	30.0	30.3	30.4	30.2	19.4	19.6	18.7	18.7	18.8	7.3	6.9	6.6	6.9	7.4	7.98	7.93	7.92	7.86	7.86
	18	10	10																				
	24	10	10																				
	16	10	10																				
10	6	10	10	30.3	29.8	30.0	30.1	30.1	19.3	19.5	18.6	18.6	18.8	7.3	6.9	6.7	6.9	7.3	7.98	7.93	7.92	7.86	7.88
	20	10	7																				
	5	10	10																				
	12	10	7																				
20	10	10	0	30.0	29.5	29.8	29.9	29.9	19.2	19.5	18.6	18.5	18.8	7.4	7.0	6.8	6.9	7.2	7.99	7.95	7.93	7.89	7.80
	7	10	0																				
	13	10	1																				
	17	10	0																				
40	8	10	0	30.0	29.0	29.1	29.3	29.5	19.0	19.6	18.7	18.6	18.8	7.5	6.9	6.9	6.8	7.2	7.99	7.94	7.93	7.85	7.85
	11	10	0																				
	14	10	0																				
	21	10	0																				

Rand # QC: TN  
Initial Count QC'd by: LTP  
Initiated by: TN  
Animal Source/Date Received: ATS/ 01/25/18

Age at Initiation: 2-3 weeks postemergence  
(EURELED JAN 3-5 2018)

Comments: (A) 18 up 12/18 (B) test initiated with 10 organisms 15/30/18 (C) 18 up 1/30/18 due to error

QC Check: EG 2/7/18 Final Review: LTP 2/23/18

*Mytilus*

**CETIS Summary Report**

Report Date: 26 Feb-18 11:51 (p 1 of 3)  
 Test Code: 180214msnh | 07-2826-0236

**Bivalve Larval Survival and Development Test** **Nautilus Environmental (CA)**

<b>Batch ID:</b> 00-4605-5607	<b>Test Type:</b> Development-Survival	<b>Analyst:</b>
<b>Start Date:</b> 14 Feb-18 16:00	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 16 Feb-18 15:00	<b>Species:</b> Mytilus galloprovincialis	<b>Brine:</b> Not Applicable
<b>Duration:</b> 47h	<b>Source:</b> Mission Bay	<b>Age:</b>

<b>Sample ID:</b> 08-1572-7982	<b>Code:</b> 180214msnh	<b>Client:</b> Internal
<b>Sample Date:</b> 14 Feb-18	<b>Material:</b> Total Ammonia	<b>Project:</b>
<b>Receive Date:</b> 14 Feb-18	<b>Source:</b> Reference Toxicant	
<b>Sample Age:</b> 16h	<b>Station:</b> Total Ammonia	

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
16-8309-4169	Combined Development Ra	4	8.3	5.762	6.11%		Dunnett Multiple Comparison Test
09-9791-1353	Development Rate	4	8.3	5.762	4.33%		Steel Many-One Rank Sum Test
03-0473-5474	Survival Rate	32.7	>32.7	NA	10.3%		Steel Many-One Rank Sum Test

Point Estimate Summary							
Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
18-4634-3151	Combined Development Ra	EC25	5.429	5.2	5.678		Linear Interpolation (ICPIN)
		EC50	6.858	6.519	7.362		
12-6715-8810	Development Rate	EC25	5.432	5.223	5.765		Linear Interpolation (ICPIN)
		EC50	6.905	6.522	7.578		
16-6233-5582	Survival Rate	EC25	>32.7	N/A	N/A		Linear Interpolation (ICPIN)
		EC50	>32.7	N/A	N/A		

Test Acceptability							
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision	
09-9791-1353	Development Rate	Control Resp	0.9582	0.9 - NL	Yes	Passes Acceptability Criteria	
12-6715-8810	Development Rate	Control Resp	0.9582	0.9 - NL	Yes	Passes Acceptability Criteria	
03-0473-5474	Survival Rate	Control Resp	0.9597	0.5 - NL	Yes	Passes Acceptability Criteria	
16-6233-5582	Survival Rate	Control Resp	0.9597	0.5 - NL	Yes	Passes Acceptability Criteria	
16-8309-4169	Combined Development Ra	PMSD	0.06112	NL - 0.25	No	Passes Acceptability Criteria	

**CETIS Summary Report**

Report Date: 26 Feb-18 11:51 (p 2 of 3)  
 Test Code: 180214msnh | 07-2826-0236

Bivalve Larval Survival and Development Test											Nautilus Environmental (CA)
<b>Combined Development Rate Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9194	0.8505	0.9883	0.8345	0.9645	0.02481	0.05549	6.04%	0.0%
1.8		5	0.9608	0.9492	0.9723	0.9521	0.9728	0.004168	0.009321	0.97%	-4.5%
4		5	0.9454	0.9191	0.9718	0.9137	0.966	0.009484	0.02121	2.24%	-2.84%
8.3		5	0.2337	0.1318	0.3356	0.1439	0.3669	0.0367	0.08207	35.11%	74.58%
15.7		5	0	0	0	0	0	0	0		100.0%
32.7		5	0	0	0	0	0	0	0		100.0%
<b>Development Rate Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9582	0.9479	0.9684	0.9463	0.9667	0.0037	0.008274	0.86%	0.0%
1.8		5	0.9608	0.9492	0.9723	0.9521	0.9728	0.004168	0.009321	0.97%	-0.27%
4		5	0.9523	0.9375	0.967	0.9353	0.966	0.005301	0.01185	1.25%	0.62%
8.3		5	0.2582	0.1294	0.387	0.1527	0.418	0.04639	0.1037	40.17%	73.05%
15.7		5	0	0	0	0	0	0	0		100.0%
32.7		5	0	0	0	0	0	0	0		100.0%
<b>Survival Rate Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9597	0.8843	1	0.8633	1	0.02717	0.06075	6.33%	0.0%
1.8		5	1	1	1	1	1	0	0	0.0%	-4.2%
4		5	0.9928	0.9728	1	0.964	1	0.007194	0.01609	1.62%	-3.45%
8.3		5	0.9223	0.8119	1	0.7914	1	0.03976	0.0889	9.64%	3.9%
15.7		5	0.9338	0.8497	1	0.8489	1	0.0303	0.06776	7.26%	2.7%
32.7		5	0.9065	0.7692	1	0.7698	1	0.04943	0.1105	12.19%	5.55%
<b>Combined Development Rate Detail</b>											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	0.8921	0.9645	0.8345	0.9595	0.9463					
1.8		0.9728	0.9592	0.9521	0.9521	0.9677					
4		0.966	0.9603	0.9137	0.9521	0.9353					
8.3		0.2133	0.2071	0.3669	0.2374	0.1439					
15.7		0	0	0	0	0					
32.7		0	0	0	0	0					
<b>Development Rate Detail</b>											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	0.9538	0.9645	0.9667	0.9595	0.9463					
1.8		0.9728	0.9592	0.9521	0.9521	0.9677					
4		0.966	0.9603	0.9478	0.9521	0.9353					
8.3		0.2133	0.2071	0.418	0.3	0.1527					
15.7		0	0	0	0	0					
32.7		0	0	0	0	0					
<b>Survival Rate Detail</b>											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	0.9353	1	0.8633	1	1					
1.8		1	1	1	1	1					
4		1	1	0.964	1	1					
8.3		1	1	0.8777	0.7914	0.9424					
15.7		1	0.9353	0.8489	0.8849	1					
32.7		1	1	0.8058	0.9568	0.7698					

**CETIS Summary Report**

Report Date: 26 Feb-18 11:51 (p 3 of 3)  
 Test Code: 180214msnh | 07-2826-0236

Bivalve Larval Survival and Development Test							Nautilus Environmental (CA)
<b>Combined Development Rate Binomials</b>							
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	124/139	136/141	116/139	142/148	141/149	
1.8		143/147	141/147	139/146	139/146	150/155	
4		142/147	145/151	127/139	139/146	130/139	
8.3		32/150	29/140	51/139	33/139	20/139	
15.7		0/162	0/139	0/139	0/139	0/170	
32.7		0/139	0/152	0/139	0/139	0/139	
<b>Development Rate Binomials</b>							
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	124/130	136/141	116/120	142/148	141/149	
1.8		143/147	141/147	139/146	139/146	150/155	
4		142/147	145/151	127/134	139/146	130/139	
8.3		32/150	29/140	51/122	33/110	20/131	
15.7		0/162	0/130	0/118	0/123	0/170	
32.7		0/139	0/152	0/112	0/133	0/107	
<b>Survival Rate Binomials</b>							
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	130/139	139/139	120/139	139/139	139/139	
1.8		139/139	139/139	139/139	139/139	139/139	
4		139/139	139/139	134/139	139/139	139/139	
8.3		139/139	139/139	122/139	110/139	131/139	
15.7		139/139	130/139	118/139	123/139	139/139	
32.7		139/139	139/139	112/139	133/139	107/139	



**CETIS Analytical Report**

Report Date: 26 Feb-18 11:51 (p 1 of 4)  
 Test Code: 180214msnh | 07-2826-0236

**Bivalve Larval Survival and Development Test** **Nautilus Environmental (CA)**

Analysis ID: 16-8309-4169      Endpoint: Combined Development Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 26 Feb-18 11:50      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	6.11%	4	8.3	5.762	

**Dunnett Multiple Comparison Test**

Control	vs C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control	1.8	-1.681	2.227	0.103	8	0.9930	CDF	Non-Significant Effect
	4	-0.9399	2.227	0.103	8	0.9564	CDF	Non-Significant Effect
	8.3*	17.19	2.227	0.103	8	<0.0001	CDF	Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.629623	0.8765411	3	164.1	<0.0001	Significant Effect
Error	0.0854589	0.005341182	16			
Total	2.715082		19			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	7.283	11.34	0.0634	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9801	0.866	0.9350	Normal Distribution

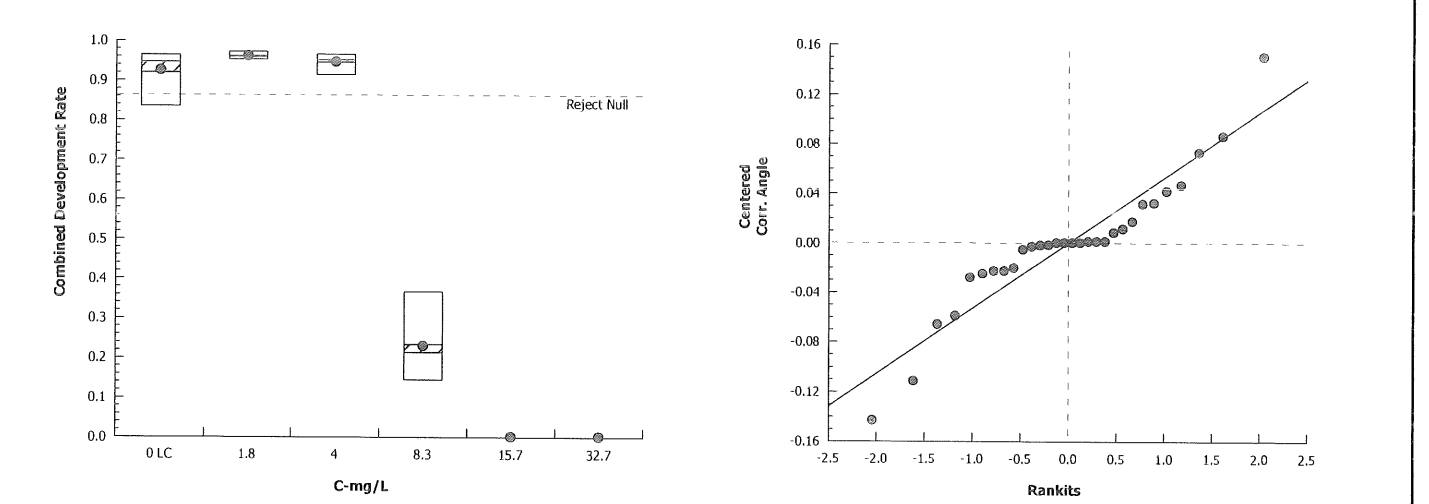
**Combined Development Rate Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9194	0.8505	0.9883	0.9463	0.8345	0.9645	0.02481	6.04%	0.0%
1.8		5	0.9608	0.9492	0.9723	0.9592	0.9521	0.9728	0.004168	0.97%	-4.5%
4		5	0.9454	0.9191	0.9718	0.9521	0.9137	0.966	0.009484	2.24%	-2.84%
8.3		5	0.2337	0.1318	0.3356	0.2133	0.1439	0.3669	0.0367	35.11%	74.58%
15.7		5	0	0	0	0	0	0	0		100.0%
32.7		5	0	0	0	0	0	0	0		100.0%

**Angular (Corrected) Transformed Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.295	1.173	1.417	1.337	1.152	1.381	0.04388	7.58%	0.0%
1.8		5	1.373	1.342	1.403	1.367	1.35	1.405	0.01098	1.79%	-6.0%
4		5	1.338	1.282	1.395	1.35	1.273	1.385	0.02036	3.4%	-3.36%
8.3		5	0.5003	0.3821	0.6185	0.4801	0.3891	0.6507	0.04257	19.03%	61.37%
15.7		5	0.04098	0.0385	0.04346	0.04242	0.03836	0.04242	0.000893	4.87%	96.83%
32.7		5	0.04205	0.04102	0.04308	0.04242	0.04057	0.04242	0.000371	1.97%	96.75%

**Graphics**



**CETIS Analytical Report**

Report Date: 26 Feb-18 11:51 (p 2 of 4)  
 Test Code: 180214msnh | 07-2826-0236

**Bivalve Larval Survival and Development Test** **Nautilus Environmental (CA)**

Analysis ID: 09-9791-1353      Endpoint: Development Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 26 Feb-18 11:50      Analysis: Nonparametric-Control vs Treatments      Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	4.33%	4	8.3	5.762	

**Steel Many-One Rank Sum Test**

Control	vs C-mg/L	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Lab Control	1.8	29	17	0	8	0.8495	Asymp	Non-Significant Effect
	4	24	17	0	8	0.4372	Asymp	Non-Significant Effect
	8.3*	15	17	0	8	0.0123	Asymp	Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.621758	0.8739193	3	226.1	<0.0001	Significant Effect
Error	0.06184362	0.003865226	16			
Total	2.683602		19			

**Distributional Tests**

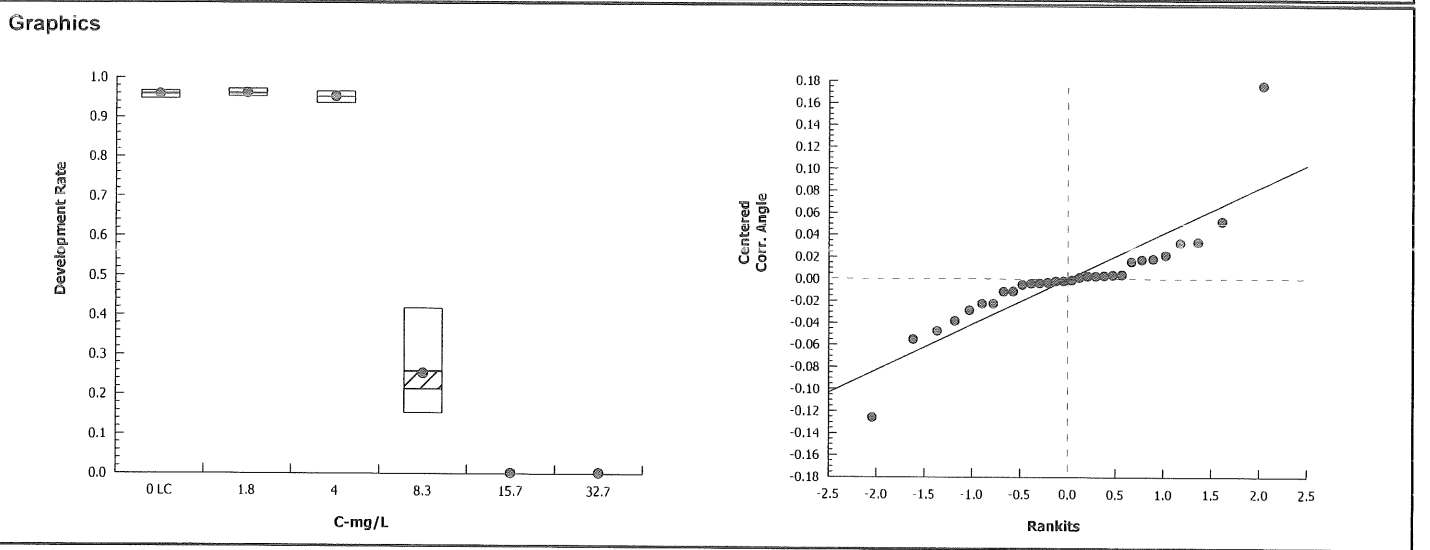
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	16.09	11.34	0.0011	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.8795	0.866	0.0174	Normal Distribution

**Development Rate Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9582	0.9479	0.9684	0.9595	0.9463	0.9667	0.0037	0.86%	0.0%
1.8		5	0.9608	0.9492	0.9723	0.9592	0.9521	0.9728	0.004168	0.97%	-0.27%
4		5	0.9523	0.9375	0.967	0.9521	0.9353	0.966	0.005301	1.25%	0.62%
8.3		5	0.2582	0.1294	0.387	0.2133	0.1527	0.418	0.04639	40.17%	73.05%
15.7		5	0	0	0	0	0	0	0		100.0%
32.7		5	0	0	0	0	0	0	0		100.0%

**Angular (Corrected) Transformed Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.366	1.34	1.391	1.368	1.337	1.387	0.009136	1.5%	0.0%
1.8		5	1.373	1.342	1.403	1.367	1.35	1.405	0.01098	1.79%	-0.51%
4		5	1.352	1.317	1.386	1.35	1.314	1.385	0.01237	2.05%	1.01%
8.3		5	0.5274	0.3821	0.6726	0.4801	0.4014	0.7031	0.0523	22.18%	61.38%
15.7		5	0.04253	0.0382	0.04686	0.04387	0.03836	0.04605	0.001559	8.2%	96.89%
32.7		5	0.0444	0.0403	0.04849	0.04337	0.04057	0.04836	0.001475	7.43%	96.75%

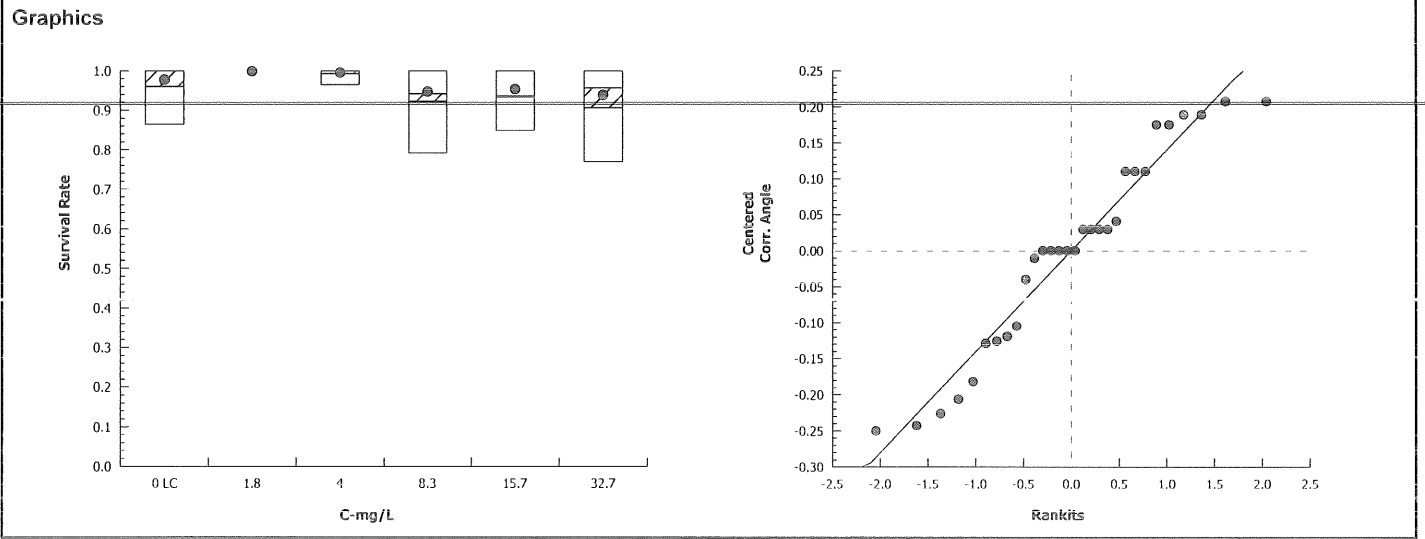


**CETIS Analytical Report**

Report Date: 26 Feb-18 11:51 (p 3 of 4)  
 Test Code: 180214msnh | 07-2826-0236

Bivalve Larval Survival and Development Test										Nautilus Environmental (CA)	
Analysis ID: 03-0473-5474		Endpoint: Survival Rate			CETIS Version: CETISv1.8.7						
Analyzed: 26 Feb-18 11:50		Analysis: Nonparametric-Control vs Treatments			Official Results: Yes						
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corrected)	NA	C > T	NA	NA	10.3%	32.7	>32.7	NA			
Steel Many-One Rank Sum Test											
Control	vs	C-mg/L	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)		
Lab Control		1.8	32.5	16	1	8	0.9870	Asymp	Non-Significant Effect		
		4	31	16	1	8	0.9676	Asymp	Non-Significant Effect		
		8.3	25	16	1	8	0.6353	Asymp	Non-Significant Effect		
		15.7	24.5	16	2	8	0.5880	Asymp	Non-Significant Effect		
		32.7	24	16	1	9	0.5394	Asymp	Non-Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square	DF	F Stat	P-Value	Decision(α:5%)				
Between	0.1909319		0.03818638	5	1.613	0.1947	Non-Significant Effect				
Error	0.5681435		0.02367264	24							
Total	0.7590754			29							
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Bartlett Equality of Variance		115.7	15.09	<0.0001	Unequal Variances					
Distribution	Shapiro-Wilk W Normality		0.9395	0.9031	0.0879	Normal Distribution					
Survival Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9597	0.8843	1	1	0.8633	1	0.02717	6.33%	0.0%
1.8		5	1	1	1	1	1	1	0	0.0%	-4.2%
4		5	0.9928	0.9728	1	1	0.964	1	0.007194	1.62%	-3.45%
8.3		5	0.9223	0.8119	1	0.9424	0.7914	1	0.03976	9.64%	3.9%
15.7		5	0.9338	0.8497	1	0.9353	0.8489	1	0.0303	7.26%	2.7%
32.7		5	0.9065	0.7692	1	0.9568	0.7698	1	0.04943	12.19%	5.55%
Angular (Corrected) Transformed Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.418	1.223	1.613	1.528	1.192	1.528	0.07018	11.07%	0.0%
1.8		5	1.528	1.528	1.529	1.528	1.528	1.528	0	0.0%	-7.77%
4		5	1.499	1.416	1.581	1.528	1.38	1.528	0.02968	4.43%	-5.68%
8.3		5	1.339	1.101	1.577	1.329	1.096	1.528	0.08556	14.29%	5.58%
15.7		5	1.353	1.145	1.561	1.314	1.172	1.528	0.07499	12.39%	4.57%
32.7		5	1.321	1.048	1.593	1.362	1.07	1.528	0.09827	16.64%	6.88%

<b>Bivalve Larval Survival and Development Test</b>		<b>Nautilus Environmental (CA)</b>	
<b>Analysis ID:</b> 03-0473-5474	<b>Endpoint:</b> Survival Rate	<b>CETIS Version:</b> CETISv1.8.7	
<b>Analyzed:</b> 26 Feb-18 11:50	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Official Results:</b> Yes	



**CETIS Analytical Report**

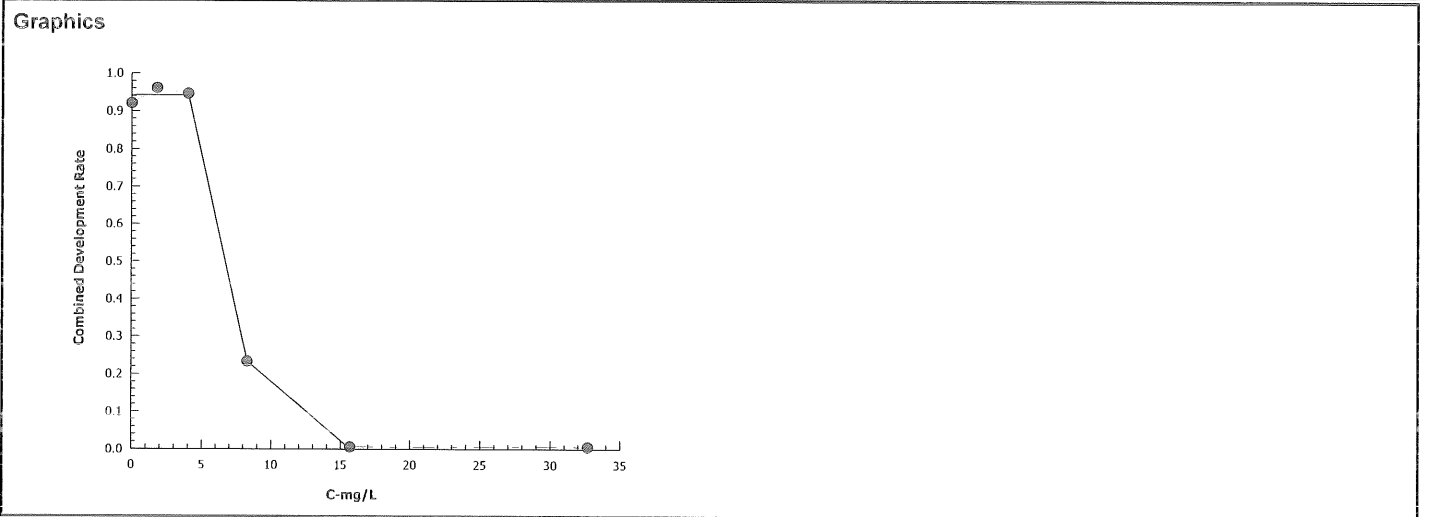
Report Date: 26 Feb-18 11:51 (p 1 of 3)  
 Test Code: 180214msnh | 07-2826-0236

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 18-4634-3151	<b>Endpoint:</b> Combined Development Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 26 Feb-18 11:50	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Official Results:</b> Yes			

<b>Linear Interpolation Options</b>					
<b>X Transform</b>	<b>Y Transform</b>	<b>Seed</b>	<b>Resamples</b>	<b>Exp 95% CL</b>	<b>Method</b>
Linear	Linear	1666584	1000	Yes	Two-Point Interpolation

<b>Point Estimates</b>			
<b>Level</b>	<b>mg/L</b>	<b>95% LCL</b>	<b>95% UCL</b>
EC25	5.429	5.2	5.678
EC50	6.858	6.519	7.362

<b>Combined Development Rate Summary</b>			<b>Calculated Variate(A/B)</b>									
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B	
0	Lab Control	5	0.9194	0.8345	0.9645	0.02481	0.05549	6.04%	0.0%	659	716	
1.8		5	0.9608	0.9521	0.9728	0.004168	0.009319	0.97%	-4.5%	712	741	
4		5	0.9454	0.9137	0.966	0.009484	0.02121	2.24%	-2.84%	683	722	
8.3		5	0.2337	0.1439	0.3669	0.0367	0.08207	35.11%	74.58%	165	707	
15.7		5	0	0	0	0	0		100.0%	0	749	
32.7		5	0	0	0	0	0		100.0%	0	708	



# CETIS Analytical Report

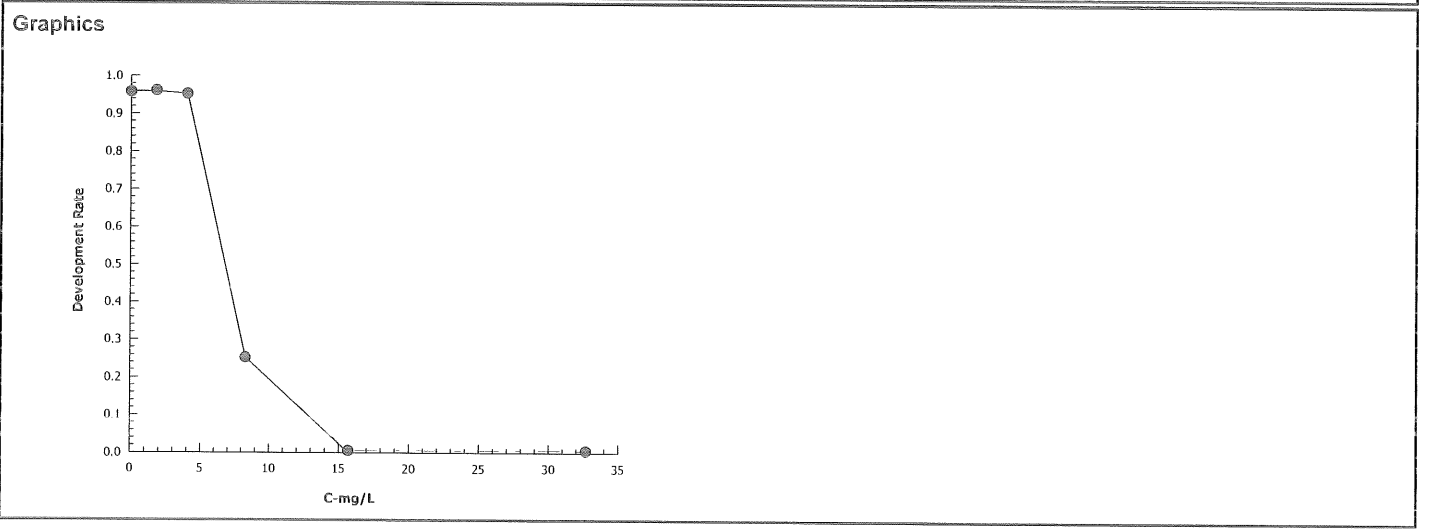
Report Date: 26 Feb-18 11:51 (p 2 of 3)  
 Test Code: 180214msnh | 07-2826-0236

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 12-6715-8810	<b>Endpoint:</b> Development Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 26 Feb-18 11:51	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Official Results:</b> Yes			

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1952284	1000	Yes	Two-Point Interpolation

Point Estimates			
Level	mg/L	95% LCL	95% UCL
EC25	5.432	5.223	5.765
EC50	6.905	6.522	7.578

Development Rate Summary			Calculated Variate(A/B)								
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	0.9582	0.9463	0.9667	0.0037	0.008273	0.86%	0.0%	659	688
1.8		5	0.9608	0.9521	0.9728	0.004168	0.009319	0.97%	-0.27%	712	741
4		5	0.9523	0.9353	0.966	0.005301	0.01185	1.25%	0.62%	683	717
8.3		5	0.2582	0.1527	0.418	0.04639	0.1037	40.17%	73.05%	165	653
15.7		5	0	0	0	0	0		100.0%	0	703
32.7		5	0	0	0	0	0		100.0%	0	643



**CETIS Analytical Report**

Report Date: 26 Feb-18 11:51 (p 3 of 3)  
 Test Code: 180214msnh | 07-2826-0236

**Bivalve Larval Survival and Development Test** **Nautilus Environmental (CA)**

Analysis ID: 16-6233-5582      Endpoint: Survival Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 26 Feb-18 11:51      Analysis: Linear Interpolation (ICPIN)      Official Results: Yes

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1641357	1000	Yes	Two-Point Interpolation

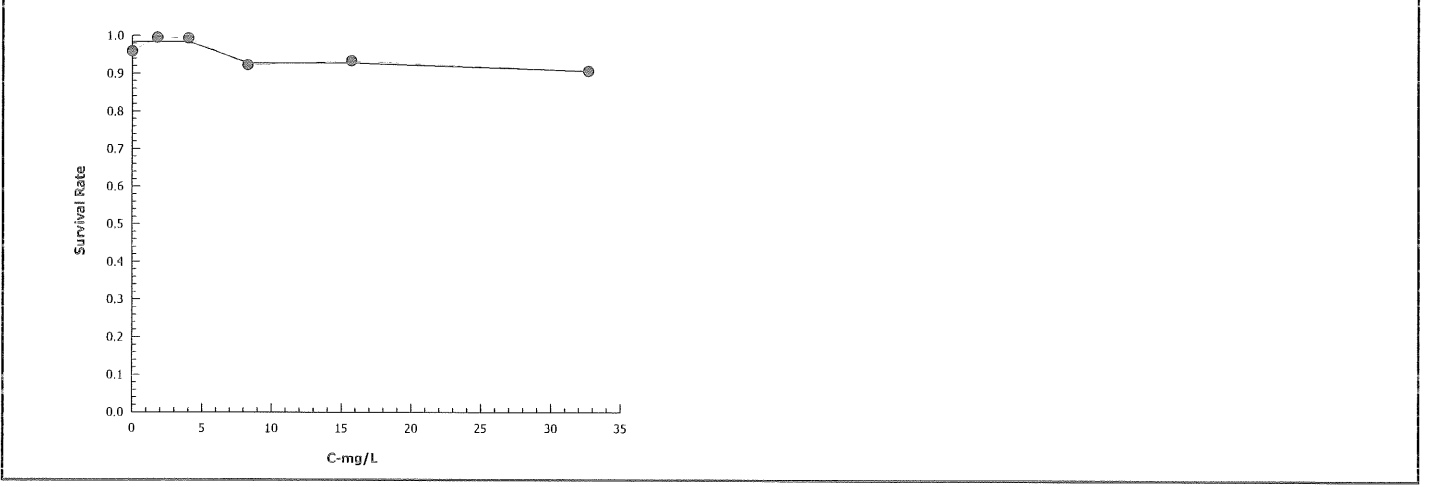
**Point Estimates**

Level	mg/L	95% LCL	95% UCL
EC25	>32.7	N/A	N/A
EC50	>32.7	N/A	N/A

**Survival Rate Summary** Calculated Variate(A/B)

C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	0.9597	0.8633	1	0.02717	0.06075	6.33%	0.0%	666	695
1.8		5	1	1	1	0	0	0.0%	-4.2%	695	695
4		5	0.9928	0.964	1	0.007194	0.01609	1.62%	-3.45%	690	695
8.3		5	0.9223	0.7914	1	0.03976	0.0889	9.64%	3.9%	641	695
15.7		5	0.9338	0.8489	1	0.0303	0.06776	7.26%	2.7%	649	695
32.7		5	0.9065	0.7698	1	0.04943	0.1105	12.19%	5.55%	630	695

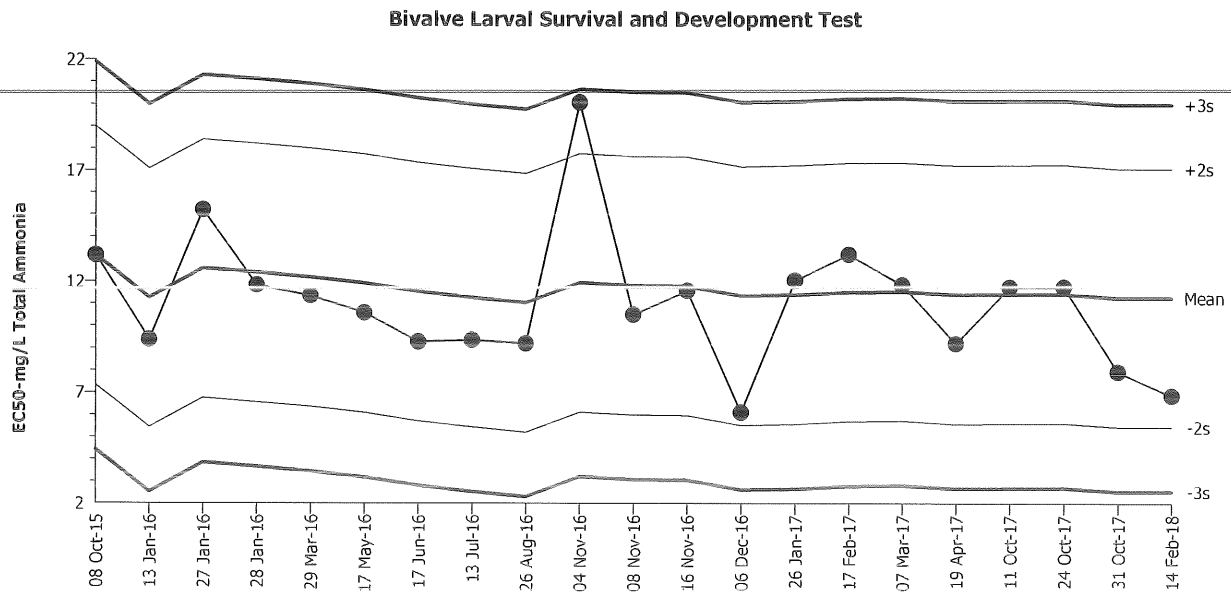
**Graphics**



Bivalve Larval Survival and Development Test

Nautilus Environmental (CA)

Test Type: Development-Survival      Organism: Mytilus galloprovincialis (Bay Mussel)      Material: Total Ammonia  
 Protocol: EPA/600/R-95/136 (1995)      Endpoint: Combined Development Rate      Source: Reference Toxicant-REF



Mean: 11.26      Count: 20      -2s Warning Limit: 5.441      -3s Action Limit: 2.53  
 Sigma: 2.911      CV: 25.90%      +2s Warning Limit: 17.08      +3s Action Limit: 20

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2015	Oct	8	15:00	13.16	1.9	0.6528			08-2144-0907	18-3142-1745
2	2016	Jan	13	16:45	9.367	-1.893	-0.6504			16-1872-3066	15-2094-6122
3			27	19:00	15.21	3.949	1.356			20-6363-9766	20-9983-9864
4			28	16:15	11.82	0.5595	0.1922			09-4667-0996	17-4707-8506
5		Mar	29	16:50	11.34	0.07804	0.02681			10-4357-0783	08-2963-9914
6		May	17	16:25	10.58	-0.6831	-0.2347			03-9747-3260	14-8810-8473
7		Jun	17	18:15	9.279	-1.981	-0.6804			20-1939-1176	18-9823-5838
8		Jul	13	16:30	9.347	-1.913	-0.6573			03-4351-7308	19-4586-8662
9		Aug	26	14:00	9.192	-2.068	-0.7104			15-6149-3113	15-7132-2485
10		Nov	4	15:00	20.08	8.816	3.029	(+)	(+)	01-4657-1532	14-9165-5966
11			8	17:00	10.49	-0.7658	-0.2631			15-3853-5607	03-1619-5125
12			16	14:00	11.57	0.3138	0.1078			18-2336-6703	21-0897-2883
13		Dec	6	15:00	6.11	-5.15	-1.769			06-9917-3855	19-2950-6299
14	2017	Jan	26	15:30	12.05	0.7881	0.2707			11-5726-2456	20-0571-9143
15		Feb	17	17:15	13.21	1.946	0.6685			01-2551-7080	11-4287-1999
16		Mar	7	16:00	11.84	0.5819	0.1999			21-2722-6816	19-3306-8336
17		Apr	19	16:45	9.194	-2.066	-0.7098			16-8954-4460	14-3970-5247
18		Oct	11	17:05	11.74	0.4796	0.1647			08-7402-7277	21-1693-8729
19			24	15:25	11.75	0.4929	0.1693			02-0819-0163	19-2502-8946
20			31	15:40	7.927	-3.333	-1.145			01-0309-5599	07-5368-8597
21	2018	Feb	14	16:00	6.858	-4.402	-1.512			07-2826-0236	18-4634-3151

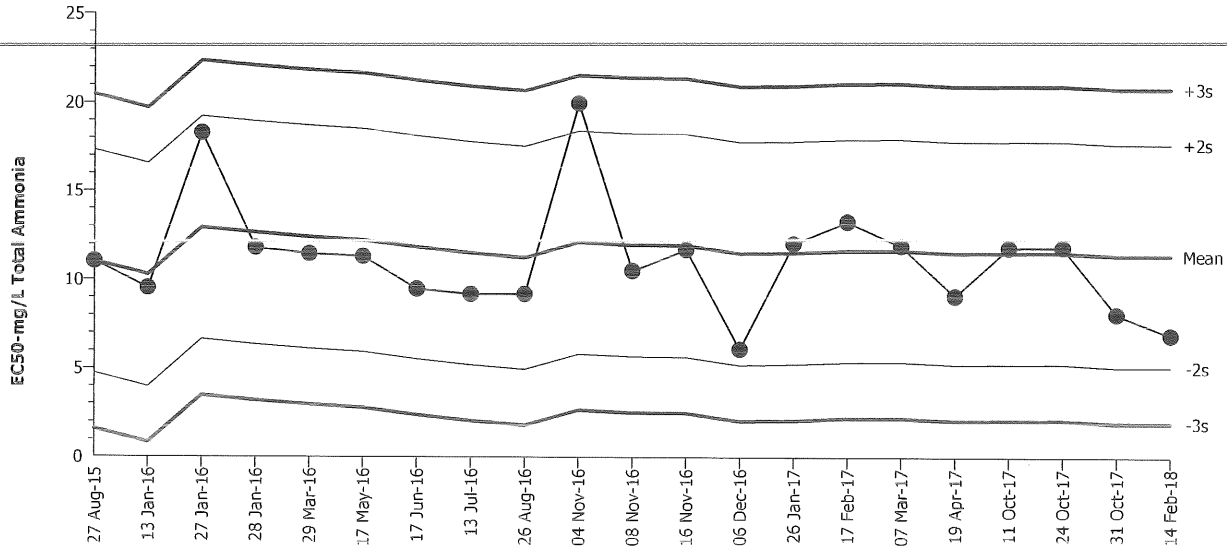


Bivalve Larval Survival and Development Test

Nautilus Environmental (CA)

Test Type: Development-Survival      Organism: Mytilus galloprovincialis (Bay Mussel)      Material: Total Ammonia  
 Protocol: EPA/600/R-95/136 (1995)      Endpoint: Development Rate      Source: Reference Toxicant-REF

Bivalve Larval Survival and Development Test



Mean: 11.39      Count: 20      -2s Warning Limit: 5.089      -3s Action Limit: 1.941  
 Sigma: 3.148      CV: 27.60%      +2s Warning Limit: 17.68      +3s Action Limit: 20.83

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2015	Aug	27	15:20	11.03	-0.3604	-0.1145			10-1088-5720	11-8647-9603
2	2016	Jan	13	16:45	9.514	-1.876	-0.5961			16-1872-3066	06-1342-8554
3			27	19:00	18.28	6.89	2.189	(+)		20-6363-9766	20-1848-6869
4			28	16:15	11.79	0.4039	0.1283			09-4667-0996	08-6717-0821
5		Mar	29	16:50	11.46	0.07272	0.0231			10-4357-0783	10-5662-2561
6		May	17	16:25	11.31	-0.07885	-0.02505			03-9747-3260	12-9787-0109
7		Jun	17	18:15	9.483	-1.907	-0.6059			20-1939-1176	03-8605-9749
8		Jul	13	16:30	9.18	-2.21	-0.7019			03-4351-7308	01-4957-0650
9		Aug	26	14:00	9.188	-2.202	-0.6996			15-6149-3113	11-6898-8949
10		Nov	4	15:00	19.98	8.586	2.728	(+)		01-4657-1532	08-5518-3347
11			8	17:00	10.52	-0.8724	-0.2771			15-3853-5607	10-7282-8669
12			16	14:00	11.71	0.3248	0.1032			18-2336-6703	07-0745-7031
13		Dec	6	15:00	6.096	-5.294	-1.682			06-9917-3855	08-1193-6848
14	2017	Jan	26	15:30	12.06	0.6677	0.2121			11-5726-2456	02-3529-0155
15		Feb	17	17:15	13.3	1.91	0.6067			01-2551-7080	05-4072-5029
16		Mar	7	16:00	11.92	0.5318	0.1689			21-2722-6816	14-1164-3152
17		Apr	19	16:45	9.106	-2.284	-0.7255			16-8954-4460	08-2921-2011
18		Oct	11	17:05	11.84	0.4458	0.1416			08-7402-7277	11-2843-2936
19			24	15:25	11.86	0.4696	0.1492			02-0819-0163	04-3277-1820
20			31	15:40	8.079	-3.311	-1.052			01-0309-5599	12-0877-7753
21	2018	Feb	14	16:00	6.905	-4.485	-1.425			07-2826-0236	12-6715-8810

**CETIS Test Data Worksheet**

Report Date: 12 Feb-18 16:39 (p 1 of 1)  
 Test Code: 07-2826-0236/180214msnh

**Bivalve Larval Survival and Development Test**

**Nautilus Environmental (CA)**

Start Date: 14 Feb-18  
 End Date: 16 Feb-18  
 Sample Date: 14 Feb-18

Species: *Mytilus galloprovincialis*  
 Protocol: EPA/600/R-95/136 (1995)  
 Material: Total Ammonia

Sample Code: 180214msnh  
 Sample Source: Reference Toxicant  
 Sample Station: Total Ammonia

C-mg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			1			155	150	JK 2/23/18
			2			170	0	
			3			162	0	
			4			141	136	
			5			146	139	
			6			148	142	
			7			146	139	
			8			131	20	
			9			139	0	
			10			130	0	
			11			122	51	
			12			152	0	
			13			133	0	
			14			151	145	
			15			107	0	
			16			118	0	
			17			140	29	
			18			156	32	
			19			147	142	
			20			146	139	
			21			136	124	
			22			149	141	
			23			139	130	
			24			120	116	
			25			123	0	
			26			134	127	
			27			147	143	
			28			112	0	
			29			110	33	
			30			147	141	

**CETIS Test Data Worksheet**

Report Date: 12 Feb-18 16:41 (p 1 of 1)  
 Test Code: 07-2826-0236/180214msnh

**Bivalve Larval Survival and Development Test**

**Nautilus Environmental (CA)**

Start Date: 14 Feb-18      Species: Mytilus galloprovincialis      Sample Code: 180214msnh  
 End Date: 16 Feb-18      Protocol: EPA/600/R-95/136 (1995)      Sample Source: Reference Toxicant  
 Sample Date: 14 Feb-18      Material: Total Ammonia      Sample Station: Total Ammonia

C-mg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	LC	1	21			128	121	vs 2/16/18
0	LC	2	4					
0	LC	3	24					
0	LC	4	6					
0	LC	5	22					
2		1	27			149	146	
2		2	30					
2		3	20					
2		4	7					
2		5	1					
4		1	19			147	145	
4		2	14					
4		3	26					
4		4	5					
4		5	23					
8		1	18			146	58	
8		2	17					
8		3	11					
8		4	29					
8		5	8					
16		1	3			137	0	
16		2	10					
16		3	16					
16		4	25					
16		5	2					
32		1	9			150	0	
32		2	12					
32		3	28					
32		4	13					
32		5	15					

QC: EG

**Marine Chronic Bioassay**

**Water Quality Measurements**

Client: Internal  
 Sample ID: Ammonia  
 Test No.: 180214msnh

Test Species: M. galloprovincialis  
 Start Date/Time: 2/14/2018 1600  
 End Date/Time: 2/16/2018 1500

Concentration ( $\otimes$ ) (mg/L)	Salinity (ppt)			Temperature (°C)			Dissolved Oxygen (mg/L)			pH (pH units)		
	0	24	48	0	24	48	0	24	48	0	24	48
Lab Control	31.1	31.0	31.0	15.0	14.8	14.8	8.3	7.5	7.3	8.04	7.99	7.97
2 (1.8)	31.2	31.4	30.8	14.6	14.6	14.6	8.2	7.7	7.6	8.01	7.99	7.96
4 (4.0)	31.2	31.4	30.8	14.5	14.5	14.6	8.1	7.8	7.6	8.01	7.99	7.97
8 (8.3)	31.2	31.4	30.9	14.6	14.7	14.8	8.1	7.7	7.6	8.01	7.94	7.97
16 (15.7)	31.1	31.3	31.0	14.5	14.7	14.8	8.1	7.8	7.6	7.99	7.94	7.99
32 (32.7)	30.8	31.0	30.8	14.5	14.7	14.7	8.1	7.8	7.6	7.99	7.93	7.98

Technician Initials: \_\_\_\_\_  
 WQ Readings: 

0	24	48
EG	BO	BO
EG	—	—
EG	—	—

  
 Dilutions made by: EG  
 Collect NH<sub>3</sub> Subsample: EG

High conc. made (mg/L):	32
Vol. Ammonia stock added (mL):	13.1
Final Volume (mL):	500
Ammonia stock concentration (mg/L):	<del>1000</del> 1220

Comments: 0 hrs: BO 2/14/18  $\otimes$  Nominal values (measured values)  
 24 hrs: \_\_\_\_\_  
 48 hrs: \_\_\_\_\_

QC Check: EG 2/26/18 Final Review: KFP 3/11/18

Marine Chronic Bioassay

Larval Development Worksheet

Client: Internal  
 Test No.: 180214msnh  
 Test Species: Mytilus galloprovincialis  
 Animal Source: Mission Bay  
 Date Received: 2/12/18  
 Test Chambers: 30ml Shell Vials  
 Sample Volume: 10 ml

Start Date/Time: 2/14/2018 1600  
 End Date/Time: 2/16/2018 1500  
 Technician Initials: YS

Spawn Information

First Gamete Release Time: 11:50

Sex	Number Spawning
Male	4+
Female	5+

Gamete Selection

Sex	Beaker Number(s)	Condition (sperm motility, egg density, color, shape, etc.)
Male	1, 3	excellent motility & density
Female 1	5	excellent density, whitish, mostly round
Female 2	2	excellent density, pale orange, mostly round
Female 3	3	excellent density, pale orange, mostly round

Egg Fertilization Time: 13:20

Embryo Stock Selection

Stock Number	% of embryos at 2-cell division stage
Female 1	100
Female 2	100
Female 3	100

Stock(s) chosen for testing: 3

Embryo Inoculum Preparation

Target count on Sedgwick-Rafter slide for desired density is 6 embryos

Number Counted: 9      8  
8      6  
8      8  
5      9  
5      5

Mean: 7.1

Mean 7.1 X 50 = 355 embryos/ml

Initial Density: 355 = 1.18 (dilution factor)  
 Desired Final Density: 300  
 (to inoculate with 0.5 ml)

Prepare the embryo inoculum according to the calculated dilution factor. For example, if the dilution factor is 2.25, use 100 ml of existing stock (1 part) and 125 ml of dilution water (1.25 parts).

Time Zero Control Counts

Rand. No.	No. Dividing	Total	% Dividing	Mean % Dividing
T01	148	148	100	100
T02	149	149	100	
T03	122	122	100	
T04	140	140	100	
T05	138	138	100	

48-h QC: 137/139 98.6%

Comments:  $\bar{x} = 139.4$

QC Check: EG 2/26/18

Final Review: YS 3/1/18

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Internal  
Project: Ammonia Reference Toxicant  
Test Type: *M. galloprovincialis* 48-Hr

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 2/14/2018

Analyst: SG  
Analysis Date: 2/23/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH <sub>3</sub> -N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6
Lab Control	1	2/14/2018	0	0.1	<0.5
	2	2/14/2018	0	1.5	1.8
	3	2/14/2018	0	3.3	4.0
	4	2/14/2018	0	6.8	8.3
	5	2/14/2018	0	12.9	15.7
	6	2/14/2018	0	26.8	32.7
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6
Sample Duplicate <sup>a</sup>	6	NA	NA	26.8	32.7
Sample Duplicate + Spike <sup>a</sup>		NA	NA	35.3	43.1
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{\text{average ammonia} (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal [spike]} (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.6	10	NA	106
6	32.7	32.7	43.1	10	0.0	104

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: FA 2/26/18

Final Review:

VPF 3/11/18

# CETIS Summary Report

Report Date: 12 Mar-18 15:11 (p 1 of 3)  
 Test Code: 180220msnh | 00-8429-6887

<b>Bivalve Larval Survival and Development Test</b>	<b>Nautilus Environmental (CA)</b>
---	------------------------------------

<b>Batch ID:</b> 06-4392-9296	<b>Test Type:</b> Development-Survival	<b>Analyst:</b>
<b>Start Date:</b> 20 Feb-18 16:05	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 22 Feb-18 15:05	<b>Species:</b> Mytilus galloprovincialis	<b>Brine:</b> Not Applicable
<b>Duration:</b> 47h	<b>Source:</b> Mission Bay	<b>Age:</b>

<b>Sample ID:</b> 15-6710-3089	<b>Code:</b> 180220msnh	<b>Client:</b> Internal
<b>Sample Date:</b> 20 Feb-18	<b>Material:</b> Total Ammonia	<b>Project:</b>
<b>Receive Date:</b> 20 Feb-18	<b>Source:</b> Reference Toxicant	
<b>Sample Age:</b> 16h	<b>Station:</b> Total Ammonia	

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
21-3958-0110	Combined Development Ra	8.7	16.6	12.02	13.1%		Dunnett Multiple Comparison Test
03-9638-9391	Development Rate	8.7	16.6	12.02	2.13%		Dunnett Multiple Comparison Test
15-5254-0859	Survival Rate	32.6	>32.6	NA	14.1%		Dunnett Multiple Comparison Test

Point Estimate Summary							
Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
05-3030-7509	Combined Development Ra	EC25	10.08	8.762	10.65		Linear Interpolation (ICPIN)
		EC50	12.25	11.37	12.64		
15-6081-4246	Development Rate	EC25	10.66	10.52	10.68		Linear Interpolation (ICPIN)
		EC50	12.64	12.55	12.65		
01-2494-8108	Survival Rate	EC25	>32.6	N/A	N/A		Linear Interpolation (ICPIN)
		EC50	>32.6	N/A	N/A		

Test Acceptability							
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision	
03-9638-9391	Development Rate	Control Resp	0.9681	0.9 - NL	Yes	Passes Acceptability Criteria	
15-6081-4246	Development Rate	Control Resp	0.9681	0.9 - NL	Yes	Passes Acceptability Criteria	
01-2494-8108	Survival Rate	Control Resp	0.9703	0.5 - NL	Yes	Passes Acceptability Criteria	
15-5254-0859	Survival Rate	Control Resp	0.9703	0.5 - NL	Yes	Passes Acceptability Criteria	
21-3958-0110	Combined Development Ra	PMSD	0.1305	NL - 0.25	No	Passes Acceptability Criteria	

**CETIS Summary Report**

Report Date: 12 Mar-18 15:11 (p 2 of 3)  
 Test Code: 180220msnh | 00-8429-6887

Bivalve Larval Survival and Development Test											Nautilus Environmental (CA)
<b>Combined Development Rate Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9392	0.896	0.9824	0.8851	0.973	0.01556	0.03478	3.7%	0.0%
1.8		5	0.8921	0.7519	1	0.6959	0.974	0.05051	0.1129	12.66%	5.01%
4.9		5	0.85	0.7453	0.9547	0.7365	0.9527	0.0377	0.08431	9.92%	9.5%
8.7		5	0.8527	0.6972	1	0.6824	0.9651	0.05604	0.1253	14.69%	9.2%
16.6		5	0	0	0	0	0	0	0		100.0%
32.6		5	0	0	0	0	0	0	0		100.0%
<b>Development Rate Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9681	0.9461	0.9901	0.9384	0.986	0.007921	0.01771	1.93%	0.0%
1.8		5	0.954	0.9314	0.9765	0.9279	0.974	0.008119	0.01816	1.9%	1.46%
4.9		5	0.9754	0.9618	0.989	0.9646	0.9916	0.004905	0.01097	1.12%	-0.76%
8.7		5	0.9668	0.9556	0.978	0.9608	0.9826	0.004023	0.008997	0.93%	0.13%
16.6		5	0	0	0	0	0	0	0		100.0%
32.6		5	0	0	0	0	0	0	0		100.0%
<b>Survival Rate Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9703	0.9272	1	0.9122	1	0.0155	0.03465	3.57%	0.0%
1.8		5	0.9338	0.8036	1	0.75	1	0.04688	0.1048	11.23%	3.76%
4.9		5	0.8716	0.7614	0.9818	0.7635	0.9865	0.03969	0.08874	10.18%	10.17%
8.7		5	0.8824	0.7175	1	0.7095	1	0.05939	0.1328	15.05%	9.05%
16.6		5	0.9473	0.8573	1	0.8581	1	0.03243	0.07252	7.66%	2.37%
32.6		5	0.9027	0.8014	1	0.8311	1	0.03649	0.08159	9.04%	6.96%
<b>Combined Development Rate Detail</b>											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	0.973	0.8851	0.9527	0.9595	0.9257					
1.8		0.6959	0.974	0.9054	0.9595	0.9257					
4.9		0.9527	0.8716	0.8919	0.7973	0.7365					
8.7		0.7635	0.9651	0.8919	0.9608	0.6824					
16.6		0	0	0	0	0					
32.6		0	0	0	0	0					
<b>Development Rate Detail</b>											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	0.973	0.9704	0.986	0.9726	0.9384					
1.8		0.9279	0.974	0.9571	0.966	0.9448					
4.9		0.9658	0.9773	0.9778	0.9916	0.9646					
8.7		0.9826	0.9651	0.9635	0.9608	0.9619					
16.6		0	0	0	0	0					
32.6		0	0	0	0	0					
<b>Survival Rate Detail</b>											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	1	0.9122	0.9662	0.9865	0.9865					
1.8		0.75	1	0.9459	0.9932	0.9797					
4.9		0.9865	0.8919	0.9122	0.8041	0.7635					
8.7		0.777	1	0.9257	1	0.7095					
16.6		1	1	0.8581	0.8784	1					
32.6		0.9797	1	0.8311	0.8311	0.8716					



**CETIS Summary Report**

Report Date: 12 Mar-18 15:11 (p 3 of 3)  
 Test Code: 180220msnh | 00-8429-6887

Bivalve Larval Survival and Development Test							Nautilus Environmental (CA)
<b>Combined Development Rate Binomials</b>							
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	144/148	131/148	141/148	142/148	137/148	
1.8		103/148	150/154	134/148	142/148	137/148	
4.9		141/148	129/148	132/148	118/148	109/148	
8.7		113/148	166/172	132/148	147/153	101/148	
16.6		0/153	0/148	0/148	0/148	0/150	
32.6		0/148	0/151	0/148	0/148	0/148	
<b>Development Rate Binomials</b>							
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	144/148	131/135	141/143	142/146	137/146	
1.8		103/111	150/154	134/140	142/147	137/145	
4.9		141/146	129/132	132/135	118/119	109/113	
8.7		113/115	166/172	132/137	147/153	101/105	
16.6		0/153	0/148	0/127	0/130	0/150	
32.6		0/145	0/151	0/123	0/123	0/129	
<b>Survival Rate Binomials</b>							
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	148/148	135/148	143/148	146/148	146/148	
1.8		111/148	148/148	140/148	147/148	145/148	
4.9		146/148	132/148	135/148	119/148	113/148	
8.7		115/148	148/148	137/148	148/148	105/148	
16.6		148/148	148/148	127/148	130/148	148/148	
32.6		145/148	148/148	123/148	123/148	129/148	

**CETIS Analytical Report**

Report Date: 12 Mar-18 15:11 (p 1 of 4)  
 Test Code: 180220msnh | 00-8429-6887

**Bivalve Larval Survival and Development Test** Nautilus Environmental (CA)

Analysis ID: 21-3958-0110      Endpoint: Combined Development Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 12 Mar-18 15:10      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	13.1%	8.7	16.6	12.02	

**Dunnett Multiple Comparison Test**

Control	vs C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control	1.8	0.7286	2.227	0.201	8	0.4441	CDF	Non-Significant Effect
	4.9	1.592	2.227	0.201	8	0.1475	CDF	Non-Significant Effect
	8.7	1.375	2.227	0.201	8	0.2038	CDF	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0626647	0.02088823	3	1.028	0.4065	Non-Significant Effect
Error	0.3250683	0.02031677	16			
Total	0.387733		19			

**Distributional Tests**

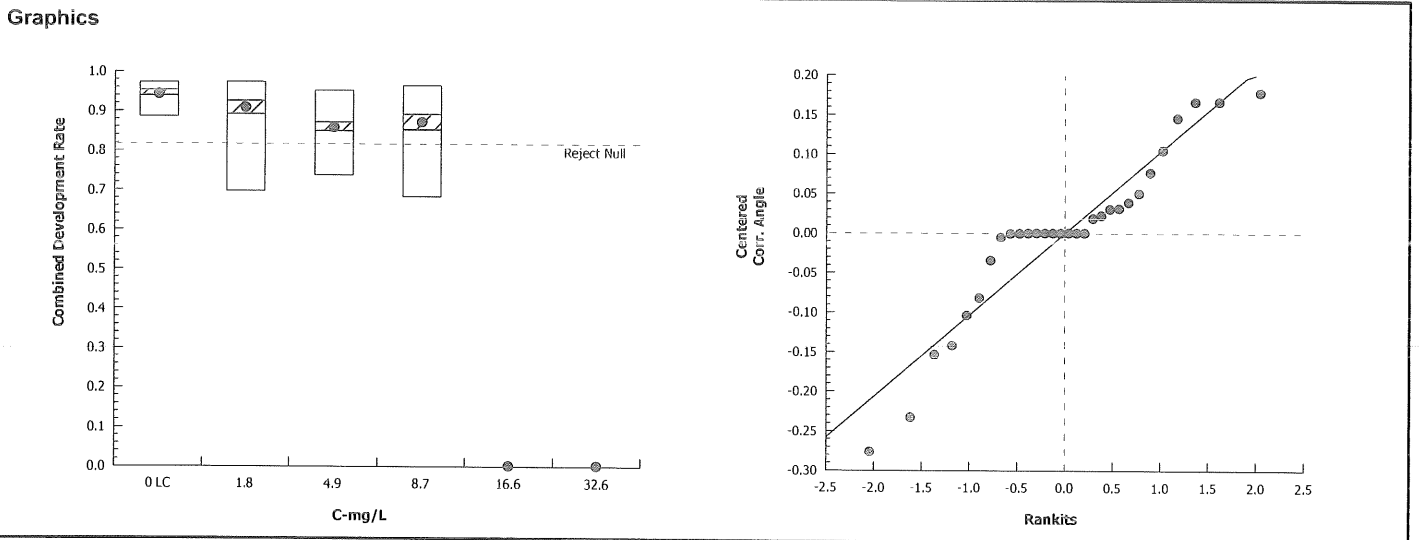
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	3.233	11.34	0.3571	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9442	0.866	0.2880	Normal Distribution

**Combined Development Rate Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9392	0.896	0.9824	0.9527	0.8851	0.973	0.01556	3.7%	0.0%
1.8		5	0.8921	0.7519	1	0.9257	0.6959	0.974	0.05051	12.66%	5.01%
4.9		5	0.85	0.7453	0.9547	0.8716	0.7365	0.9527	0.0377	9.92%	9.5%
8.7		5	0.8527	0.6972	1	0.8919	0.6824	0.9651	0.05604	14.69%	9.2%
16.6		5	0	0	0	0	0	0	0		100.0%
32.6		5	0	0	0	0	0	0	0		100.0%

**Angular (Corrected) Transformed Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.329	1.241	1.417	1.352	1.225	1.406	0.03154	5.31%	0.0%
1.8		5	1.263	1.058	1.469	1.295	0.9867	1.409	0.07405	13.11%	4.94%
4.9		5	1.185	1.032	1.338	1.204	1.032	1.352	0.05513	10.4%	10.8%
8.7		5	1.205	0.9772	1.433	1.236	0.9721	1.383	0.08207	15.23%	9.33%
16.6		5	0.04092	0.04055	0.04129	0.04111	0.04043	0.04111	0.000133	0.73%	96.92%
32.6		5	0.04103	0.0408	0.04126	0.04111	0.0407	0.04111	8.22E-05	0.45%	96.91%



**CETIS Analytical Report**

Report Date: 12 Mar-18 15:11 (p 2 of 4)  
 Test Code: 180220msnh | 00-8429-6887

**Bivalve Larval Survival and Development Test** Nautilus Environmental (CA)

Analysis ID: 03-9638-9391      Endpoint: Development Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 12 Mar-18 15:10      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	2.13%	8.7	16.6	12.02	

**Dunnett Multiple Comparison Test**

Control	vs C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control	1.8	1.502	2.227	0.057	8	0.1693	CDF	Non-Significant Effect
	4.9	-0.8317	2.227	0.057	8	0.9447	CDF	Non-Significant Effect
	8.7	0.2696	2.227	0.057	8	0.6445	CDF	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.009045727	0.003015242	3	1.866	0.1760	Non-Significant Effect
Error	0.02584806	0.001615504	16			
Total	0.03489379		19			

**Distributional Tests**

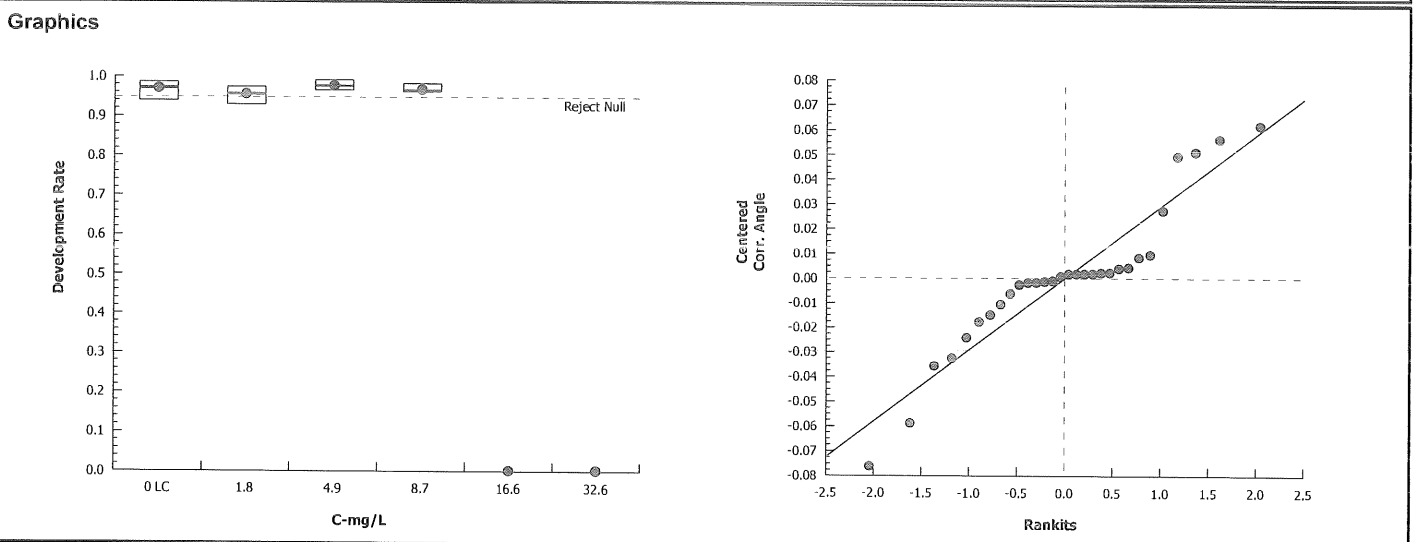
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	1.047	11.34	0.7899	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9632	0.866	0.6106	Normal Distribution

**Development Rate Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9681	0.9461	0.9901	0.9726	0.9384	0.986	0.007921	1.83%	0.0%
1.8		5	0.954	0.9314	0.9765	0.9571	0.9279	0.974	0.008119	1.9%	1.46%
4.9		5	0.9754	0.9618	0.989	0.9773	0.9646	0.9916	0.004905	1.12%	-0.76%
8.7		5	0.9668	0.9556	0.978	0.9635	0.9608	0.9826	0.004023	0.93%	0.13%
16.6		5	0	0	0	0	0	0	0		100.0%
32.6		5	0	0	0	0	0	0	0		100.0%

**Angular (Corrected) Transformed Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.396	1.337	1.455	1.405	1.32	1.452	0.02136	3.42%	0.0%
1.8		5	1.358	1.304	1.411	1.362	1.299	1.409	0.01927	3.17%	2.74%
4.9		5	1.417	1.368	1.466	1.419	1.382	1.479	0.01757	2.77%	-1.51%
8.7		5	1.389	1.354	1.424	1.379	1.371	1.439	0.01249	2.01%	0.49%
16.6		5	0.04213	0.03983	0.04442	0.04111	0.04043	0.04438	0.000827	4.39%	96.98%
32.6		5	0.04329	0.04074	0.04585	0.04404	0.0407	0.0451	0.000919	4.75%	96.9%



**Bivalve Larval Survival and Development Test** **Nautilus Environmental (CA)**

Analysis ID: 15-5254-0859      Endpoint: Survival Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 12 Mar-18 15:10      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	14.1%	32.6	>32.6	NA	

**Dunnett Multiple Comparison Test**

Control	vs	C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		1.8	0.4647	2.362	0.269	8	0.6622	CDF	Non-Significant Effect
		4.9	1.684	2.362	0.269	8	0.1694	CDF	Non-Significant Effect
		8.7	1.158	2.362	0.269	8	0.3516	CDF	Non-Significant Effect
		16.6	0.186	2.362	0.269	8	0.7726	CDF	Non-Significant Effect
		32.6	1.12	2.362	0.269	8	0.3078	CDF	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.1385041	0.02770081	5	0.8542	0.5255	Non-Significant Effect
Error	0.7782689	0.03242787	24			
Total	0.916773		29			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	2.995	15.09	0.7008	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9526	0.9031	0.1978	Normal Distribution

**Survival Rate Summary**

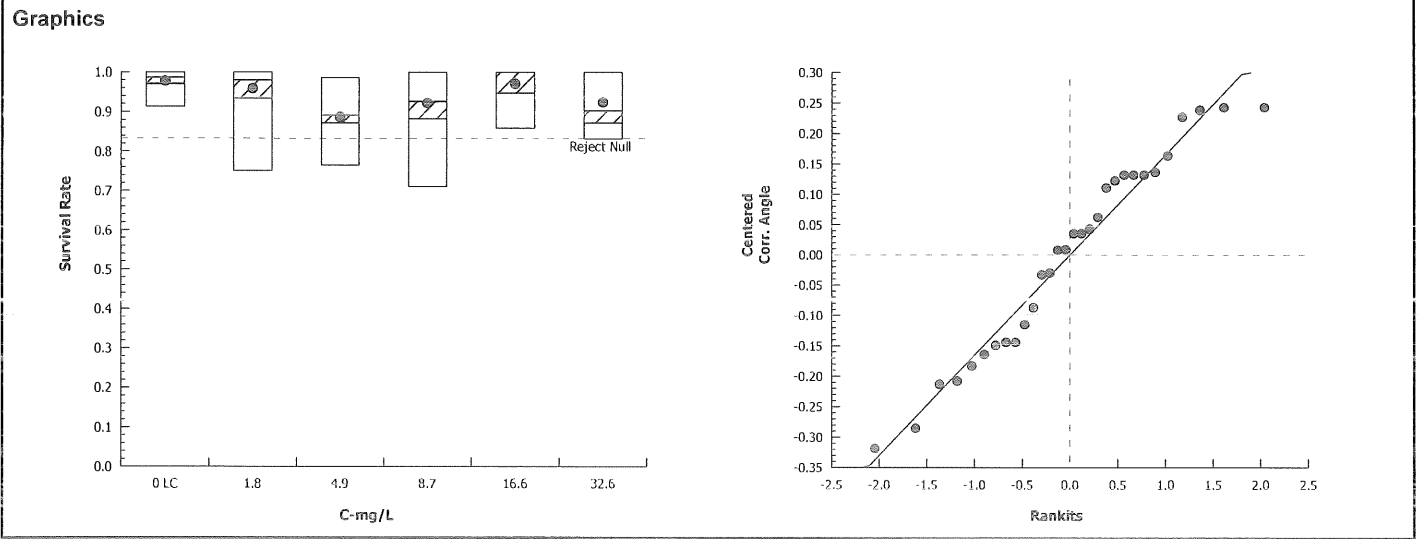
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9703	0.9272	1	0.9865	0.9122	1	0.0155	3.57%	0.0%
1.8		5	0.9338	0.8036	1	0.9797	0.75	1	0.04688	11.23%	3.76%
4.9		5	0.8716	0.7614	0.9818	0.8919	0.7635	0.9865	0.03969	10.18%	10.17%
8.7		5	0.8824	0.7175	1	0.9257	0.7095	1	0.05939	15.05%	9.05%
16.6		5	0.9473	0.8573	1	1	0.8581	1	0.03243	7.66%	2.37%
32.6		5	0.9027	0.8014	1	0.8716	0.8311	1	0.03649	9.04%	6.96%

**Angular (Corrected) Transformed Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.419	1.298	1.54	1.454	1.27	1.53	0.04363	6.88%	0.0%
1.8		5	1.366	1.127	1.605	1.428	1.047	1.53	0.08607	14.09%	3.73%
4.9		5	1.227	1.037	1.417	1.236	1.063	1.454	0.06843	12.47%	13.52%
8.7		5	1.287	0.9811	1.593	1.295	1.002	1.53	0.1101	19.14%	9.3%
16.6		5	1.398	1.173	1.623	1.53	1.185	1.53	0.081	12.96%	1.49%
32.6		5	1.291	1.072	1.51	1.204	1.147	1.53	0.07892	13.67%	8.99%

**Bivalve Larval Survival and Development Test** **Nautilus Environmental (CA)**

Analysis ID: 15-5254-0859      Endpoint: Survival Rate      CETIS Version: CETISv1.8.7  
Analyzed: 12 Mar-18 15:10      Analysis: Parametric-Control vs Treatments      Official Results: Yes



**CETIS Analytical Report**

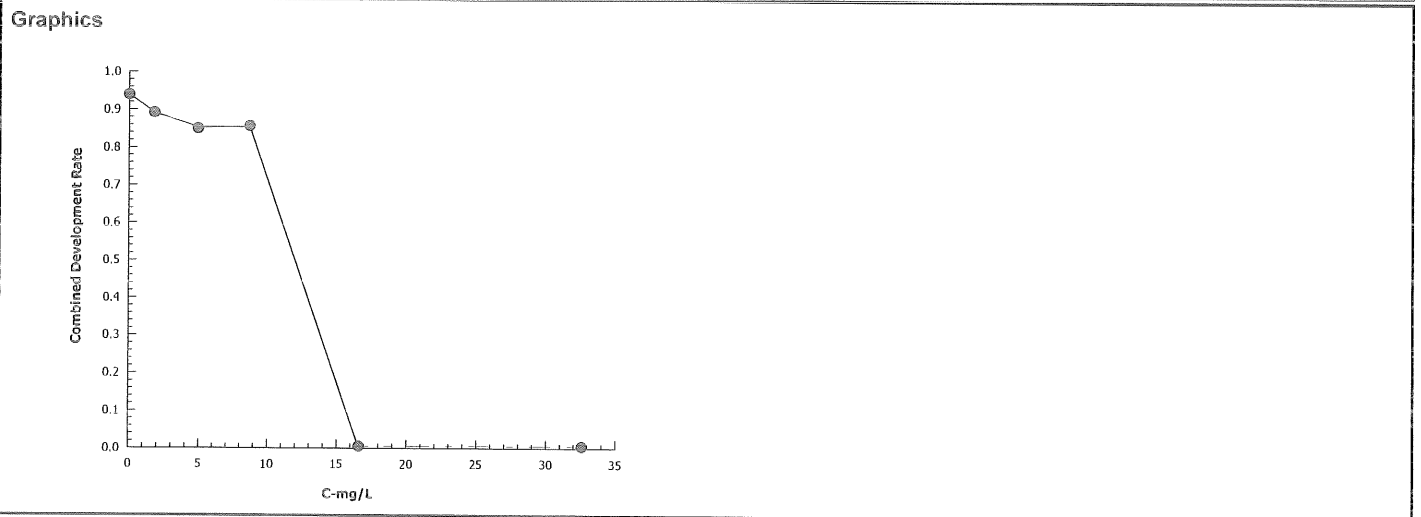
Report Date: 12 Mar-18 15:11 (p 1 of 3)  
 Test Code: 180220msnh | 00-8429-6887

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 05-3030-7509	<b>Endpoint:</b> Combined Development Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 12 Mar-18 15:10	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Official Results:</b> Yes			

<b>Linear Interpolation Options</b>					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1017934	1000	Yes	Two-Point Interpolation

<b>Point Estimates</b>			
Level	mg/L	95% LCL	95% UCL
EC25	10.08	8.762	10.65
EC50	12.25	11.37	12.64

<b>Combined Development Rate Summary</b>			<b>Calculated Variate(A/B)</b>								
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	0.9392	0.8851	0.973	0.01556	0.03478	3.7%	0.0%	695	740
1.8		5	0.8921	0.6959	0.974	0.05051	0.1129	12.66%	5.01%	665	746
4.9		5	0.85	0.7365	0.9527	0.0377	0.08431	9.92%	9.5%	629	740
8.7		5	0.8527	0.6824	0.9651	0.05604	0.1253	14.69%	9.2%	659	769
16.6		5	0	0	0	0	0		100.0%	0	747
32.6		5	0	0	0	0	0		100.0%	0	743



**CETIS Analytical Report**

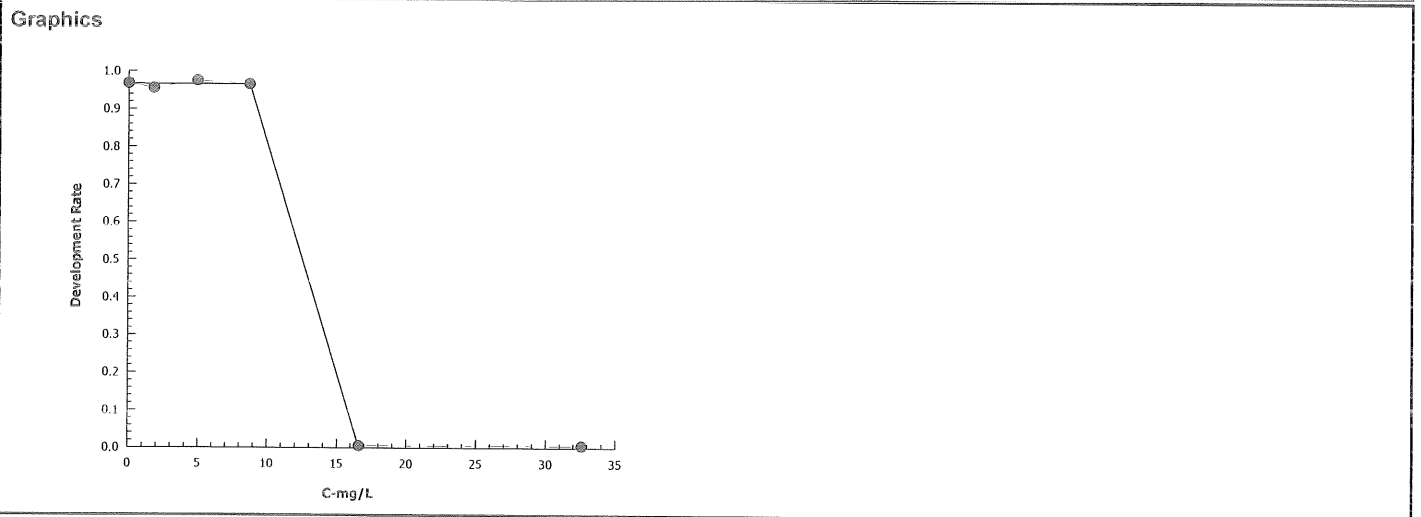
Report Date: 12 Mar-18 15:11 (p 2 of 3)  
 Test Code: 180220msnh | 00-8429-6887

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 15-6081-4246	<b>Endpoint:</b> Development Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 12 Mar-18 15:10	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Official Results:</b> Yes			

<b>Linear Interpolation Options</b>					
<b>X Transform</b>	<b>Y Transform</b>	<b>Seed</b>	<b>Resamples</b>	<b>Exp 95% CL</b>	<b>Method</b>
Linear	Linear	299051	1000	Yes	Two-Point Interpolation

<b>Point Estimates</b>			
<b>Level</b>	<b>mg/L</b>	<b>95% LCL</b>	<b>95% UCL</b>
EC25	10.66	10.52	10.68
EC50	12.64	12.55	12.65

<b>Development Rate Summary</b>			<b>Calculated Variate(A/B)</b>								
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	0.9681	0.9384	0.986	0.007921	0.01771	1.83%	0.0%	695	718
1.8		5	0.954	0.9279	0.974	0.008119	0.01816	1.9%	1.46%	666	697
4.9		5	0.9754	0.9646	0.9916	0.004905	0.01097	1.12%	-0.76%	629	645
8.7		5	0.9668	0.9608	0.9826	0.004023	0.008997	0.93%	0.13%	659	682
16.6		5	0	0	0	0	0		100.0%	0	708
32.6		5	0	0	0	0	0		100.0%	0	671



**CETIS Analytical Report**

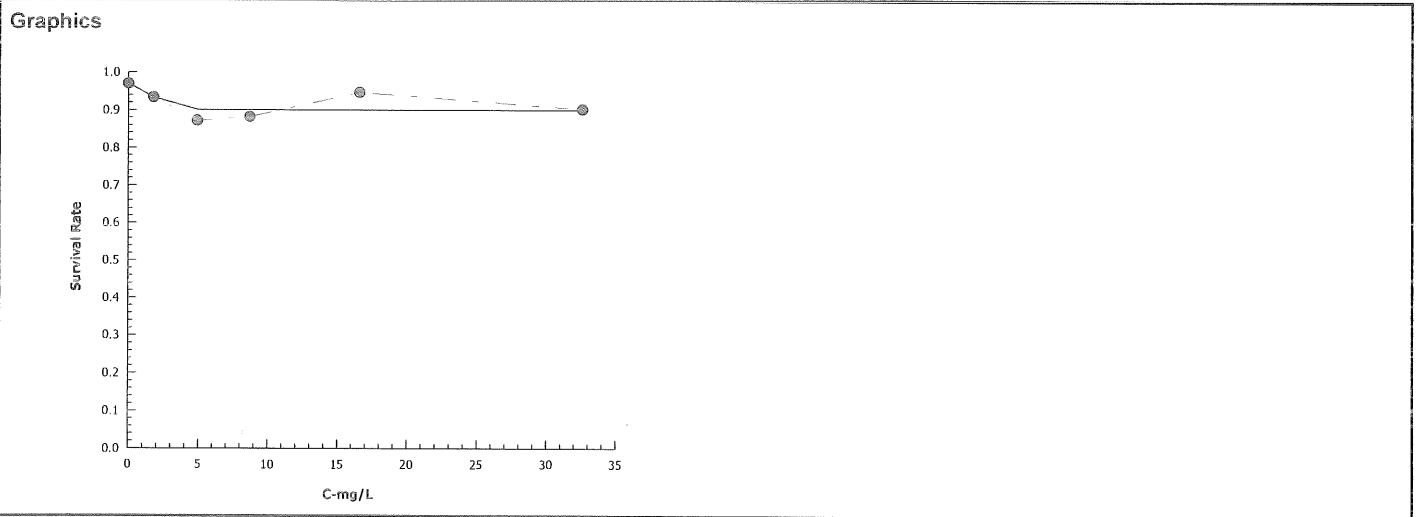
Report Date: 12 Mar-18 15:11 (p 3 of 3)  
 Test Code: 180220msnh | 00-8429-6887

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 01-2494-8108	<b>Endpoint:</b> Survival Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 12 Mar-18 15:10	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Official Results:</b> Yes			

<b>Linear Interpolation Options</b>					
<b>X Transform</b>	<b>Y Transform</b>	<b>Seed</b>	<b>Resamples</b>	<b>Exp 95% CL</b>	<b>Method</b>
Linear	Linear	1948728	1000	Yes	Two-Point Interpolation

<b>Point Estimates</b>			
<b>Level</b>	<b>mg/L</b>	<b>95% LCL</b>	<b>95% UCL</b>
EC25	>32.6	N/A	N/A
EC50	>32.6	N/A	N/A

<b>Survival Rate Summary</b>			<b>Calculated Variate(A/B)</b>									
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B	
0	Lab Control	5	0.9703	0.9122	1	0.0155	0.03465	3.57%	0.0%	718	740	
1.8		5	0.9338	0.75	1	0.04688	0.1048	11.23%	3.76%	691	740	
4.9		5	0.8716	0.7635	0.9865	0.03969	0.08874	10.18%	10.17%	645	740	
8.7		5	0.8824	0.7095	1	0.05939	0.1328	15.05%	9.05%	653	740	
16.6		5	0.9473	0.8581	1	0.03243	0.07252	7.66%	2.37%	701	740	
32.6		5	0.9027	0.8311	1	0.03649	0.08159	9.04%	6.96%	668	740	





Bivalve Larval Survival and Development Test

Nautilus Environmental (CA)

Test Type: Development-Survival

Organism: Mytilus galloprovincialis (Bay Mussel)

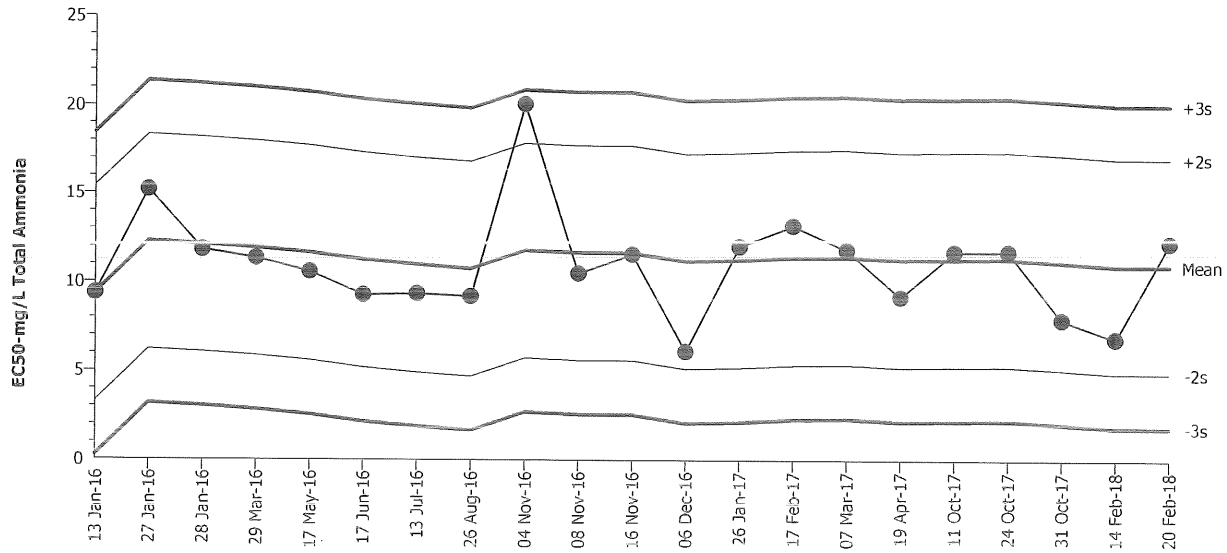
Material: Total Ammonia

Protocol: EPA/600/R-95/136 (1995)

Endpoint: Combined Development Rate

Source: Reference Toxicant-REF

Bivalve Larval Survival and Development Test



Mean: 10.95      Count: 20      -2s Warning Limit: 4.881      -3s Action Limit: 1.848  
 Sigma: 3.033      CV: 27.70%      +2s Warning Limit: 17.01      +3s Action Limit: 20.05

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2016	Jan	13	16:45	9.367	-1.583	-0.522			16-1872-3066	15-2094-6122
2			27	19:00	15.21	4.259	1.404			20-6363-9766	20-9983-9864
3			28	16:15	11.82	0.8695	0.2867			09-4667-0996	17-4707-8506
4		Mar	29	16:50	11.34	0.388	0.1279			10-4357-0783	08-2963-9914
5		May	17	16:25	10.58	-0.3731	-0.123			03-9747-3260	14-8810-8473
6		Jun	17	18:15	9.279	-1.671	-0.5509			20-1939-1176	18-9823-5838
7		Jul	13	16:30	9.347	-1.603	-0.5286			03-4351-7308	19-4586-8662
8		Aug	26	14:00	9.192	-1.758	-0.5796			15-6149-3113	15-7132-2485
9		Nov	4	15:00	20.08	9.126	3.009	(+)	(+)	01-4657-1532	14-9165-5966
10			8	17:00	10.49	-0.4558	-0.1503			15-3853-5607	03-1619-5125
11			16	14:00	11.57	0.6238	0.2057			18-2336-6703	21-0897-2883
12		Dec	6	15:00	6.11	-4.84	-1.596			06-9917-3855	19-2950-6299
13	2017	Jan	26	15:30	12.05	1.098	0.362			11-5726-2456	20-0571-9143
14		Feb	17	17:15	13.21	2.256	0.7438			01-2551-7080	11-4287-1999
15		Mar	7	16:00	11.84	0.8919	0.2941			21-2722-6816	19-3306-8336
16		Apr	19	16:45	9.194	-1.756	-0.579			16-8954-4460	14-3970-5247
17		Oct	11	17:05	11.74	0.7896	0.2603			08-7402-7277	21-1693-8729
18			24	15:25	11.75	0.8029	0.2647			02-0819-0163	19-2502-8946
19			31	15:40	7.927	-3.023	-0.9966			01-0309-5599	07-5368-8597
20	2018	Feb	14	16:00	6.858	-4.092	-1.349			07-2826-0236	18-4634-3151
21			20	16:05	12.25	1.303	0.4297			00-8429-6887	05-3030-7509

Bivalve Larval Survival and Development Test

Nautilus Environmental (CA)

Test Type: Development-Survival

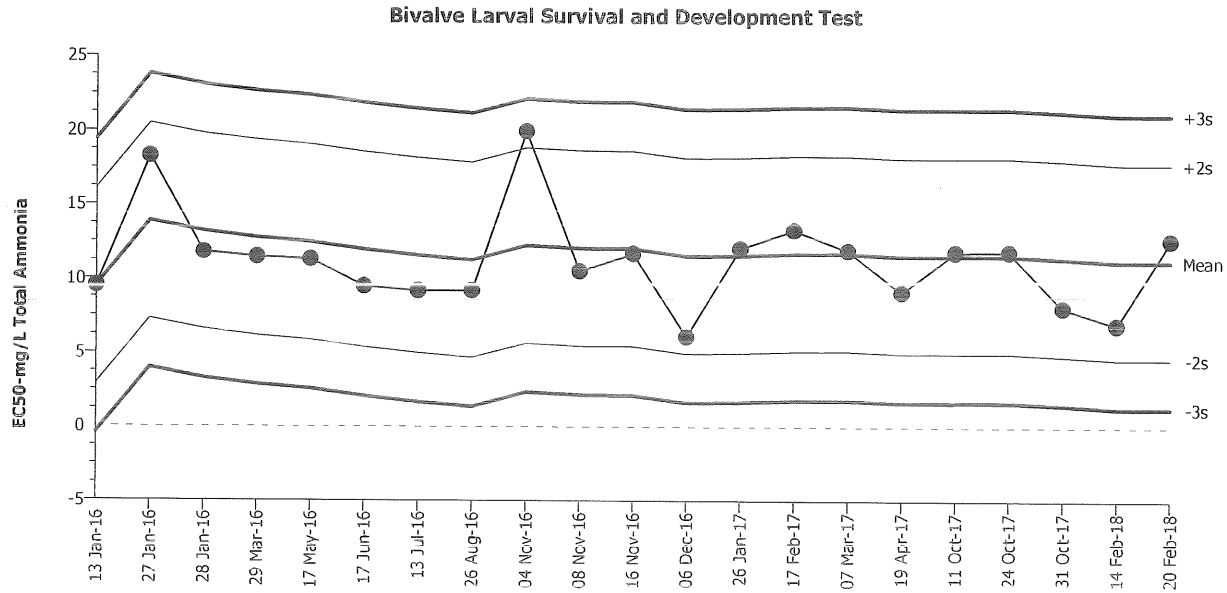
Organism: Mytilus galloprovincialis (Bay Mussel)

Material: Total Ammonia

Protocol: EPA/600/R-95/136 (1995)

Endpoint: Development Rate

Source: Reference Toxicant-REF



Mean: 11.18      Count: 20      -2s Warning Limit: 4.573      -3s Action Limit: 1.27  
 Sigma: 3.303      CV: 29.50%      +2s Warning Limit: 17.79      +3s Action Limit: 21.09

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2016	Jan	13	16:45	9.514	-1.666	-0.5045			16-1872-3066	06-1342-8554
2			27	19:00	18.28	7.1	2.15	(+)		20-6363-9766	20-1848-6869
3			28	16:15	11.79	0.6139	0.1859			09-4667-0996	08-6717-0821
4		Mar	29	16:50	11.46	0.2827	0.08559			10-4357-0783	10-5662-2561
5		May	17	16:25	11.31	0.1312	0.03971			03-9747-3260	12-9787-0109
6		Jun	17	18:15	9.483	-1.697	-0.5139			20-1939-1176	03-8605-9749
7		Jul	13	16:30	9.18	-2	-0.6054			03-4351-7308	01-4957-0650
8		Aug	26	14:00	9.188	-1.992	-0.6032			15-6149-3113	11-6898-8949
9		Nov	4	15:00	19.98	8.796	2.663	(+)		01-4657-1532	08-5518-3347
10			8	17:00	10.52	-0.6624	-0.2005			15-3853-5607	10-7282-8669
11			16	14:00	11.71	0.5348	0.1619			18-2336-6703	07-0745-7031
12		Dec	6	15:00	6.096	-5.084	-1.539			06-9917-3855	08-1193-6848
13	2017	Jan	26	15:30	12.06	0.8777	0.2657			11-5726-2456	02-3529-0155
14		Feb	17	17:15	13.3	2.12	0.6418			01-2551-7080	05-4072-5029
15		Mar	7	16:00	11.92	0.7418	0.2246			21-2722-6816	14-1164-3152
16		Apr	19	16:45	9.106	-2.074	-0.6278			16-8954-4460	08-2921-2011
17		Oct	11	17:05	11.84	0.6558	0.1986			08-7402-7277	11-2843-2936
18			24	15:25	11.86	0.6796	0.2058			02-0819-0163	04-3277-1820
19			31	15:40	8.079	-3.101	-0.9388			01-0309-5599	12-0877-7753
20	2018	Feb	14	16:00	6.905	-4.275	-1.294			07-2826-0236	12-6715-8810
21			20	16:05	12.64	1.461	0.4422			00-8429-6887	15-6081-4246

**CETIS Test Data Worksheet**

Report Date: 16 Feb-18 09:39 (p 1 of 1)  
 Test Code: 00-8429-6887/180220msnh

**Bivalve Larval Survival and Development Test**

**Nautilus Environmental (CA)**

Start Date: 20 Feb-18      Species: *Mytilus galloprovincialis*      Sample Code: 180220msnh  
 End Date: 22 Feb-18      Protocol: EPA/600/R-95/136 (1995)      Sample Source: Reference Toxicant  
 Sample Date: 20 Feb-18      Material: Total Ammonia      Sample Station: Total Ammonia

C-mg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			1			129	∅	KC 3/8/18
			2			143	141	
			3			151	∅ (A)	
			4			146	9/137	
			5			135	132	
			6			153	147	
			7			153	∅	
			8			105	101	
			9			113	109	
			10			123	∅	
			11			145	137	
			12			140	134	
			13			130	∅	
			14			135	131	
			15			150	∅	
			16			123	∅	
			17			137	132	
			18			146	141	
			19			146	142	
			20			148	144	
			21			147	142	
			22			111	103	
			23			132	129	
			24			154	150	
			25			119	118	
			26			115	113	
			27			172	166	
			28			148	∅	
			29			127	∅	
			30			145	∅	

(A) Q18 KC 3/8/18

**CETIS Test Data Worksheet**

Report Date: 16 Feb-18 09:39 (p 1 of 1)  
 Test Code: 00-8429-6887/180220msnh

**Bivalve Larval Survival and Development Test**

**Nautilus Environmental (CA)**

Start Date: 20 Feb-18      Species: *Mytilus galloprovincialis*      Sample Code: 180220msnh  
 End Date: 22 Feb-18      Protocol: EPA/600/R-95/136 (1995)      Sample Source: Reference Toxicant  
 Sample Date: 20 Feb-18      Material: Total Ammonia      Sample Station: Total Ammonia

C-mg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	LC	1	20			147	144	vs 2/22/18
0	LC	2	14					
0	LC	3	2					
0	LC	4	19					
0	LC	5	4					
2		1	22					
2		2	24					
2		3	12					
2		4	21					
2		5	11					
4		1	18					
4		2	23					
4		3	5					
4		4	25					
4		5	9					
8		1	26			114	113	vs 2/22/18
8		2	27					
8		3	17					
8		4	6					
8		5	8					
16		1	7			153	0	vs 2/22/18
16		2	28					
16		3	29					
16		4	13					
16		5	15					
32		1	30			145	0	vs 2/22/18
32		2	3					
32		3	10					
32		4	16					
32		5	1					

QC: VS

**Marine Chronic Bioassay**

**Water Quality Measurements**

Client: Internal  
 Sample ID: Ammonia  
 Test No.: 180220msnh

Test Species: M. galloprovincialis  
 Start Date/Time: 2/20/2018 1605  
 End Date/Time: 2/22/2018 1505

Concentration (mg/L)	Salinity (ppt)			Temperature (°C)			Dissolved Oxygen (mg/L)			pH (pH units)			
	0	24	48	0	24	48	0	24	48	0	24	48	
Lab Control	32.1	31.7	32.0	15.3	14.7	15.3	8.0	8.0	7.6	8.10	7.92	7.88	
2 (1.8)	32.2	32.3	32.0	14.7	14.3	15.0	8.0	8.2	7.5	8.10	7.95	7.89	
4 (4.9)	32.2	31.9	32.2	32.1	14.8	14.3	15.1	8.0	8.0	7.4	8.09	7.96	7.87
8 (8.7)	32.2	32.1	32.4	32.4	14.7	14.2	15.2	8.0	7.9	7.5	8.07	7.94	7.89
16 (16.6)	32.0	31.7	32.0	32.0	14.8	14.1	15.1	7.9	7.8	7.5	8.06	7.95	7.89
32 (32.6)	31.7	31.7	32.0	31.9	14.8	14.0	15.2	8.0	7.8	7.4	8.01	7.89	7.87

Technician Initials: \_\_\_\_\_  
 WQ Readings: 

0	24	48
YS	KFP	DM

  
 Dilutions made by: 

YS	-	-
----	---	---

  
 Collect NH<sub>3</sub> Subsample: 

YS	-	-
----	---	---

High conc. made (mg/L):	32
Vol. Ammonia stock added (mL):	13.1
Final Volume (mL):	500
Ammonia stock concentration (mg/L):	1220

Comments: 0 hrs: \_\_\_\_\_  
 24 hrs: Ⓟ KFP 2/21/18  
 48 hrs: \_\_\_\_\_

QC Check: YS 3/5/18      Ⓟ nominal ammonia (measured ammonia)  
 Final Review: KFP 3/24/18

**Marine Chronic Bioassay**

**Larval Development Worksheet**

Client: Internal  
 Test No.: 180220 monk  
 Test Species: M. galloprovincialis  
 Animal Source: Mission Bay  
 Date Received: 2/12/18  
 Test Chambers: 30 ml shell vials  
 Sample Volume: 10 ml

Start Date/Time: 2/20/2018 1605  
 End Date/Time: 2/22/2018 1505  
 Technician Initials: ES

**Spawn Information**

First Gamete Release Time: 1237

Sex	Number Spawning
Male	8
Female	5

**Gamete Selection**

Sex	Beaker Number(s)	Condition (sperm motility, egg density, color, shape, etc.)
Male	1,5,7	Good Density & Motility
Female 1	1	mostly round, pale color, ok density
Female 2	2	light orange color, ok shape, good density
Female 3	5	light orange color, mostly round, good density

Egg Fertilization Time: 1352

**Embryo Stock Selection**

Stock Number	% of embryos at 2-cell division stage
Female 1	100
Female 2	—
Female 3	100

Stock(s) chosen for testing: 1

**Embryo Inoculum Preparation**

Target count on Sedgwick-Rafter slide for desired density is 6 embryos

Number Counted: 6      6  
~~7~~                      9  
12                      8  
~~7~~                      6  
9                        8

Mean: 7.8

Mean 7.8 X 50 = 390 embryos/ml

Initial Density: 390 = 1.3 (dilution factor)  
 Desired Final Density: 300  
 (to inoculate with 0.5 ml)

Prepare the embryo inoculum according to the calculated dilution factor. For example, if the dilution factor is 2.25, use 100 ml of existing stock (1 part) and 125 ml of dilution water (1.25 parts).

**Time Zero Control Counts**

Rand. No.	No. Dividing	Total	% Dividing	Mean % Dividing
T01	164	167	98.2%	99.07%
T02	169	171	98.8%	
T03	126	126	100%	
T04	143	146	97.9%	
T05	136	136	100%	

48-h QC: 140/144 97.2%

Comments: X = 147.6

QC Check: ✓ 3/5/18

Final Review: KTP 3/24/18

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Internal  
 Project: Mussel Reference Toxicant  
 Test Type: Mussel Development

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 2/20/2018

Analyst: SG  
 Analysis Date: 2/23/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
<b>Blank Spike (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.7	10.6
Lab Control	1	2/20/2018	0	0.0	20.5
2	2	2/20/2018	0	1.5	1.8
4	3	2/20/2018	0	4.0	4.9
8	4	2/20/2018	0	7.1	8.7
16	5	2/20/2018	0	13.6	16.6
32	6	2/20/2018	0	26.7	32.6
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.7	10.6
Sample Duplicate <sup>a</sup>	6	NA	NA	26.9	32.8
Sample Duplicate + Spike <sup>a</sup>		NA	NA	35.3	43.1
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.7	10.6

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.6	10	NA	106
6	32.6	32.8	43.1	10	0.6	105

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: ✓ 3/12/18

Final Review: KRP 3/24/18

**CETIS Summary Report**

Report Date: 13 Mar-18 14:34 (p 1 of 3)  
 Test Code: 180222msnh | 18-8122-6546

**Bivalve Larval Survival and Development Test** **Nautilus Environmental (CA)**

<b>Batch ID:</b> 11-9873-2991	<b>Test Type:</b> Development-Survival	<b>Analyst:</b>
<b>Start Date:</b> 22 Feb-18 15:45	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 24 Feb-18 14:15	<b>Species:</b> Mytilus galloprovincialis	<b>Brine:</b> Not Applicable
<b>Duration:</b> 46h	<b>Source:</b> Mission Bay	<b>Age:</b>

<b>Sample ID:</b> 09-8203-7065	<b>Code:</b> 180222msnh	<b>Client:</b> Internal
<b>Sample Date:</b> 22 Feb-18	<b>Material:</b> Total Ammonia	<b>Project:</b>
<b>Receive Date:</b> 22 Feb-18	<b>Source:</b> Reference Toxicant	
<b>Sample Age:</b> 16h	<b>Station:</b> Total Ammonia	

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
18-9063-4166	Combined Development Ra	3.5	7.4	5.089	5.03%		Dunnett Multiple Comparison Test
12-4964-1680	Development Rate	3.5	7.4	5.089	2.16%		Dunnett Multiple Comparison Test
16-2093-1833	Survival Rate	32.7	>32.7	NA	5.48%		Steel Many-One Rank Sum Test

Point Estimate Summary							
Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
13-1799-5427	Combined Development Ra	EC25	4.527	4.372	4.551		Linear Interpolation (ICPIN)
		EC50	5.554	5.434	5.607		
02-1601-6609	Development Rate	EC25	4.526	4.461	4.55		Linear Interpolation (ICPIN)
		EC50	5.554	5.489	5.606		
12-4426-8348	Survival Rate	EC25	>32.7	N/A	N/A		Linear Interpolation (ICPIN)
		EC50	>32.7	N/A	N/A		

Test Acceptability							
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision	
02-1601-6609	Development Rate	Control Resp	0.9836	0.9 - NL	Yes	Passes Acceptability Criteria	
12-4964-1680	Development Rate	Control Resp	0.9836	0.9 - NL	Yes	Passes Acceptability Criteria	
12-4426-8348	Survival Rate	Control Resp	0.9795	0.5 - NL	Yes	Passes Acceptability Criteria	
16-2093-1833	Survival Rate	Control Resp	0.9795	0.5 - NL	Yes	Passes Acceptability Criteria	
18-9063-4166	Combined Development Ra	PMSD	0.05027	NL - 0.25	No	Passes Acceptability Criteria	



# CETIS Summary Report

Report Date: 13 Mar-18 14:34 (p 2 of 3)

Test Code: 180222msnh | 18-8122-6546

Bivalve Larval Survival and Development Test											Nautilus Environmental (CA)
<b>Combined Development Rate Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9633	0.9433	0.9833	0.937	0.9792	0.007211	0.01612	1.67%	0.0%
1.6		5	0.961	0.9037	1	0.8819	0.9929	0.02063	0.04613	4.8%	0.24%
3.5		5	0.9689	0.9222	1	0.9055	1	0.0168	0.03758	3.88%	-0.58%
7.4		5	0.04933	0.02153	0.07713	0.0315	0.08527	0.01001	0.02239	45.39%	94.88%
15.1		5	0.002868	0	0.007744	0	0.007246	0.001756	0.003927	136.9%	99.7%
32.7		5	0.009002	0	0.02517	0	0.0315	0.005823	0.01302	144.6%	99.07%
<b>Development Rate Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9836	0.9705	0.9966	0.9712	1	0.004701	0.01051	1.07%	0.0%
1.6		5	0.9811	0.9648	0.9974	0.9609	0.9929	0.005878	0.01314	1.34%	0.25%
3.5		5	0.9827	0.9662	0.9992	0.9688	1	0.005959	0.01333	1.36%	0.09%
7.4		5	0.05063	0.0235	0.07776	0.0315	0.08527	0.009772	0.02185	43.16%	94.85%
15.1		5	0.002868	0	0.007744	0	0.007246	0.001756	0.003927	136.9%	99.71%
32.7		5	0.009207	0	0.02592	0	0.03252	0.006021	0.01346	146.2%	99.06%
<b>Survival Rate Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9795	0.9522	1	0.9528	1	0.009835	0.02199	2.25%	0.0%
1.6		5	0.9795	0.9227	1	0.8976	1	0.02047	0.04578	4.67%	0.0%
3.5		5	0.9858	0.9465	1	0.9291	1	0.01417	0.03169	3.22%	-0.64%
7.4		5	0.9717	0.893	1	0.8583	1	0.02835	0.06338	6.52%	0.8%
15.1		5	1	1	1	1	1	0	0	0.0%	-2.09%
32.7		5	0.9937	0.9762	1	0.9685	1	0.006299	0.01409	1.42%	-1.45%
<b>Combined Development Rate Detail</b>											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	0.937	0.9685	0.9712	0.9606	0.9792					
1.6		0.9929	0.9769	0.9609	0.8819	0.9924					
3.5		0.9055	0.9688	1	0.9767	0.9934					
7.4		0.08527	0.03937	0.05674	0.03378	0.0315					
15.1		0	0	0	0.007092	0.007246					
32.7		0.006803	0	0.006711	0.0315	0					
<b>Development Rate Detail</b>											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	0.9835	0.984	0.9712	1	0.9792					
1.6		0.9929	0.9769	0.9609	0.9825	0.9924					
3.5		0.9746	0.9688	1	0.9767	0.9934					
7.4		0.08527	0.04587	0.05674	0.03378	0.0315					
15.1		0	0	0	0.007092	0.007246					
32.7		0.006803	0	0.006711	0.03252	0					
<b>Survival Rate Detail</b>											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	0.9528	0.9843	1	0.9606	1					
1.6		1	1	1	0.8976	1					
3.5		0.9291	1	1	1	1					
7.4		1	0.8583	1	1	1					
15.1		1	1	1	1	1					
32.7		1	1	1	0.9685	1					

# CETIS Summary Report

Report Date: 13 Mar-18 14:34 (p 3 of 3)  
 Test Code: 180222msnh | 18-8122-6546

Bivalve Larval Survival and Development Test							Nautilus Environmental (CA)
<b>Combined Development Rate Binomials</b>							
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	119/127	123/127	135/139	122/127	141/144	
1.6		139/140	127/130	123/128	112/127	130/131	
3.5		115/127	124/128	146/146	126/129	151/152	
7.4		11/129	5/127	8/141	5/148	4/127	
15.1		0/143	0/145	0/142	1/141	1/138	
32.7		1/147	0/139	1/149	4/127	0/132	
<b>Development Rate Binomials</b>							
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	119/121	123/125	135/139	122/122	141/144	
1.6		139/140	127/130	123/128	112/114	130/131	
3.5		115/118	124/128	146/146	126/129	151/152	
7.4		11/129	5/109	8/141	5/148	4/127	
15.1		0/143	0/145	0/142	1/141	1/138	
32.7		1/147	0/139	1/149	4/123	0/132	
<b>Survival Rate Binomials</b>							
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	121/127	125/127	127/127	122/127	127/127	
1.6		127/127	127/127	127/127	114/127	127/127	
3.5		118/127	127/127	127/127	127/127	127/127	
7.4		127/127	109/127	127/127	127/127	127/127	
15.1		127/127	127/127	127/127	127/127	127/127	
32.7		127/127	127/127	127/127	123/127	127/127	

**CETIS Analytical Report**

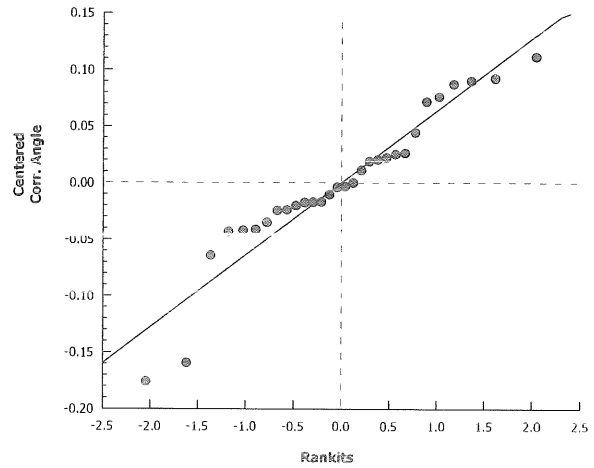
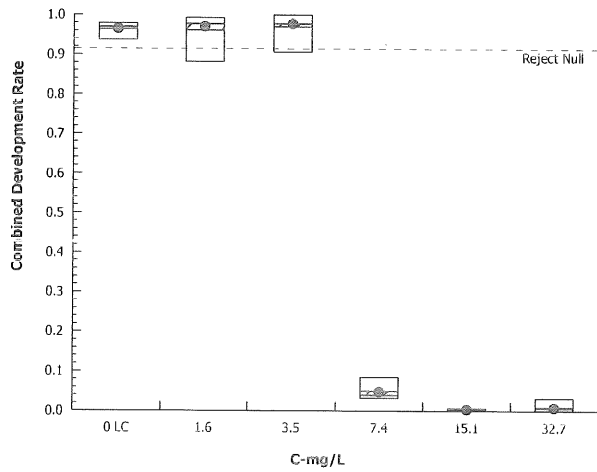
Report Date: 13 Mar-18 14:34 (p 1 of 6)  
 Test Code: 180222msnh | 18-8122-6546

Bivalve Larval Survival and Development Test										Nautilus Environmental (CA)	
Analysis ID: 18-9063-4166		Endpoint: Combined Development Rate				CETIS Version: CETISv1.8.7					
Analyzed: 13 Mar-18 14:33		Analysis: Parametric-Control vs Treatments				Official Results: Yes					
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corrected)	NA	C > T	NA	NA	5.03%	3.5	7.4	5.089			
Dunnett Multiple Comparison Test											
Control	vs	C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)		
Lab Control		1.6	-0.3225	2.362	0.107	8	0.9111	CDF	Non-Significant Effect		
		3.5	-0.8033	2.362	0.107	8	0.9716	CDF	Non-Significant Effect		
		7.4*	25.73	2.362	0.107	8	<0.0001	CDF	Significant Effect		
		15.1*	29.29	2.362	0.107	8	<0.0001	CDF	Significant Effect		
		32.7*	26.7	2.362	0.107	8	<0.0001	CDF	Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)			
Between	12.30293		2.460587		5	482.9	<0.0001	Significant Effect			
Error	0.1222848		0.0050952		24						
Total	12.42522				29						
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Bartlett Equality of Variance		10.84	15.09	0.0547	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.9234	0.9031	0.0330	Normal Distribution					
Combined Development Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9633	0.9433	0.9833	0.9685	0.937	0.9792	0.007211	1.67%	0.0%
1.6		5	0.961	0.9037	1	0.9769	0.8819	0.9929	0.02063	4.8%	0.24%
3.5		5	0.9689	0.9222	1	0.9767	0.9055	1	0.0168	3.88%	-0.58%
7.4		5	0.04933	0.02153	0.07713	0.03937	0.0315	0.08527	0.01001	45.39%	94.88%
15.1		5	0.002868	0	0.007744	0	0	0.007246	0.001756	136.9%	99.7%
32.7		5	0.009002	0	0.02517	0.006711	0	0.0315	0.005823	144.6%	99.07%
Angular (Corrected) Transformed Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.381	1.331	1.432	1.392	1.317	1.426	0.01831	2.96%	0.0%
1.6		5	1.396	1.26	1.532	1.418	1.22	1.486	0.0489	7.83%	-1.05%
3.5		5	1.418	1.288	1.547	1.418	1.258	1.529	0.04671	7.37%	-2.63%
7.4		5	0.22	0.1591	0.2809	0.1997	0.1784	0.2963	0.02193	22.3%	84.08%
15.1		5	0.05897	0.02973	0.08822	0.04197	0.04153	0.08523	0.01053	39.94%	95.73%
32.7		5	0.08579	0.01702	0.1546	0.08202	0.04242	0.1784	0.02477	64.56%	93.79%

Bivalve Larval Survival and Development Test Nautilus Environmental (CA)

Analysis ID: 18-9063-4166      Endpoint: Combined Development Rate      CETIS Version: CETISv1.8.7  
Analyzed: 13 Mar-18 14:33      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Graphics



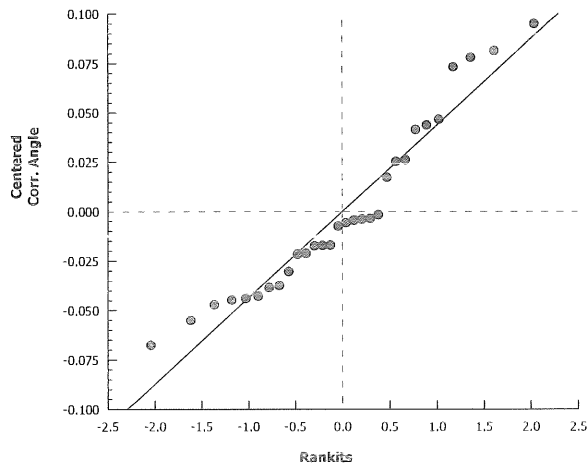
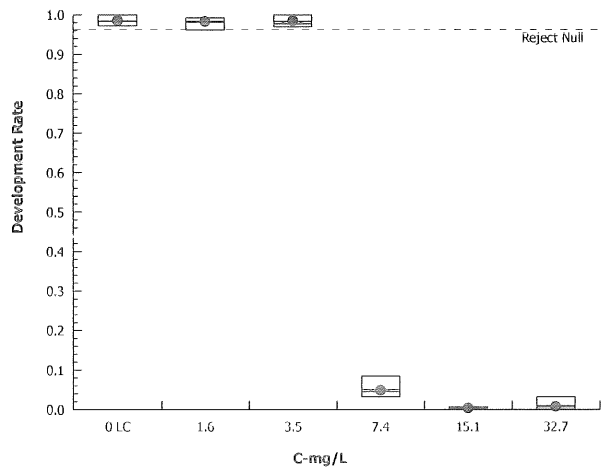
CETIS Analytical Report

Report Date: 13 Mar-18 14:34 (p 3 of 6)  
 Test Code: 180222msnh | 18-8122-6546

Bivalve Larval Survival and Development Test										Nautilus Environmental (CA)	
Analysis ID: 12-4964-1680		Endpoint: Development Rate				CETIS Version: CETISv1.8.7					
Analyzed: 13 Mar-18 14:33		Analysis: Parametric-Control vs Treatments				Official Results: Yes					
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corrected)	NA	C > T	NA	NA	2.16%	3.5	7.4	5.089			
Dunnett Multiple Comparison Test											
Control	vs	C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)		
Lab Control		1.6	0.2626	2.362	0.072	8	0.7443	CDF	Non-Significant Effect		
		3.5	-0.01843	2.362	0.072	8	0.8387	CDF	Non-Significant Effect		
		7.4*	40.13	2.362	0.072	8	<0.0001	CDF	Significant Effect		
		15.1*	45.51	2.362	0.072	8	<0.0001	CDF	Significant Effect		
		32.7*	44.62	2.362	0.072	8	<0.0001	CDF	Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square	DF	F Stat	P-Value	Decision(α:5%)				
Between	13.18919		2.637838	5	1134	<0.0001	Significant Effect				
Error	0.05584444		0.002326851	24							
Total	13.24503		29								
Distributional Tests											
Attribute	Test			Test Stat	Critical	P-Value	Decision(α:1%)				
Variances	Bartlett Equality of Variance			2.974	15.09	0.7039	Equal Variances				
Distribution	Shapiro-Wilk W Normality			0.9335	0.9031	0.0607	Normal Distribution				
Development Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9836	0.9705	0.9966	0.9835	0.9712	1	0.004701	1.07%	0.0%
1.6		5	0.9811	0.9648	0.9974	0.9825	0.9609	0.9929	0.005878	1.34%	0.25%
3.5		5	0.9827	0.9662	0.9992	0.9767	0.9688	1	0.005959	1.36%	0.09%
7.4		5	0.05063	0.0235	0.07776	0.04587	0.0315	0.08527	0.009772	43.16%	94.85%
15.1		5	0.002868	0	0.007744	0	0	0.007246	0.001756	136.9%	99.71%
32.7		5	0.009207	0	0.02592	0.006711	0	0.03252	0.006021	146.2%	99.06%
Angular (Corrected) Transformed Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.448	1.389	1.506	1.442	1.4	1.526	0.021	3.24%	0.0%
1.6		5	1.44	1.38	1.499	1.438	1.372	1.486	0.02136	3.32%	0.55%
3.5		5	1.448	1.375	1.521	1.418	1.393	1.529	0.02616	4.04%	-0.04%
7.4		5	0.2232	0.1637	0.2827	0.2158	0.1784	0.2963	0.02142	21.46%	84.58%
15.1		5	0.05897	0.02973	0.08822	0.04197	0.04153	0.08523	0.01053	39.94%	95.93%
32.7		5	0.08637	0.01609	0.1567	0.08202	0.04242	0.1813	0.02531	65.53%	94.03%

Bivalve Larval Survival and Development Test		Nautilus Environmental (CA)
Analysis ID: 12-4964-1680	Endpoint: Development Rate	CETIS Version: CETISv1.8.7
Analyzed: 13 Mar-18 14:33	Analysis: Parametric-Control vs Treatments	Official Results: Yes

Graphics



CETIS Analytical Report

Report Date: 13 Mar-18 14:34 (p 5 of 6)  
 Test Code: 180222msnh | 18-8122-6546

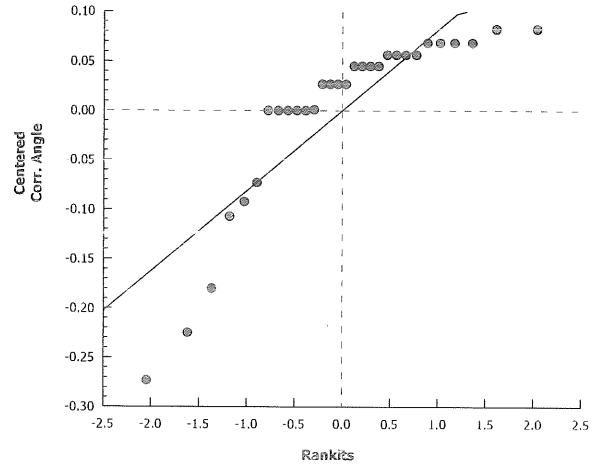
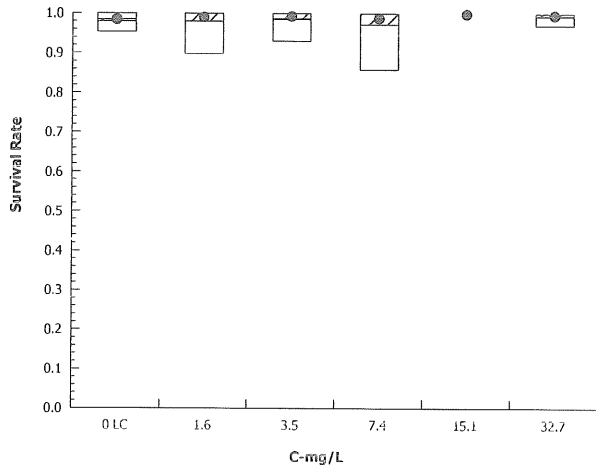
Bivalve Larval Survival and Development Test										Nautilus Environmental (CA)	
Analysis ID: 16-2093-1833		Endpoint: Survival Rate			CETIS Version: CETISv1.8.7						
Analyzed: 13 Mar-18 14:33		Analysis: Nonparametric-Control vs Treatments			Official Results: Yes						
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corrected)	NA	C > T	NA	NA	5.48%	32.7	>32.7	NA			
Steel Many-One Rank Sum Test											
Control	vs	C-mg/L	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)		
Lab Control		1.6	31	16	2	8	0.9676	Asymp	Non-Significant Effect		
		3.5	31	16	2	8	0.9676	Asymp	Non-Significant Effect		
		7.4	31	16	2	8	0.9676	Asymp	Non-Significant Effect		
		15.1	35	16	2	8	0.9979	Asymp	Non-Significant Effect		
		32.7	33	16	2	6	0.9907	Asymp	Non-Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square	DF	F Stat	P-Value	Decision(α:5%)				
Between	0.02202814		0.004405628	5	0.4424	0.8144	Non-Significant Effect				
Error	0.2389778		0.009957407	24							
Total	0.2610059			29							
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Mod Levene Equality of Variance		0.392	4.248	0.8478	Equal Variances					
Variances	Levene Equality of Variance		2.156	3.895	0.0930	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.7617	0.9031	<0.0001	Non-normal Distribution					
Survival Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9795	0.9522	1	0.9843	0.9528	1	0.009835	2.25%	0.0%
1.6		5	0.9795	0.9227	1	1	0.8976	1	0.02047	4.67%	0.0%
3.5		5	0.9858	0.9465	1	1	0.9291	1	0.01417	3.22%	-0.64%
7.4		5	0.9717	0.893	1	1	0.8583	1	0.02835	6.52%	0.8%
15.1		5	1	1	1	1	1	1	0	0.0%	-2.09%
32.7		5	0.9937	0.9762	1	1	0.9685	1	0.006299	1.42%	-1.45%
Angular (Corrected) Transformed Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.444	1.341	1.547	1.445	1.352	1.526	0.03703	5.73%	0.0%
1.6		5	1.47	1.314	1.626	1.526	1.245	1.526	0.05626	8.56%	-1.8%
3.5		5	1.481	1.356	1.606	1.526	1.301	1.526	0.04501	6.8%	-2.58%
7.4		5	1.458	1.268	1.648	1.526	1.185	1.526	0.06832	10.48%	-0.97%
15.1		5	1.526	1.526	1.527	1.526	1.526	1.526	0	0.0%	-5.7%
32.7		5	1.5	1.425	1.574	1.526	1.392	1.526	0.02681	4.0%	-3.84%

# CETIS Analytical Report

Report Date: 13 Mar-18 14:34 (p 6 of 6)  
 Test Code: 180222msnh | 18-8122-6546

Bivalve Larval Survival and Development Test			Nautilus Environmental (CA)		
Analysis ID:	16-2093-1833	Endpoint:	Survival Rate	CETIS Version:	CETISv1.8.7
Analyzed:	13 Mar-18 14:33	Analysis:	Nonparametric-Control vs Treatments	Official Results:	Yes

## Graphics





**CETIS Analytical Report**

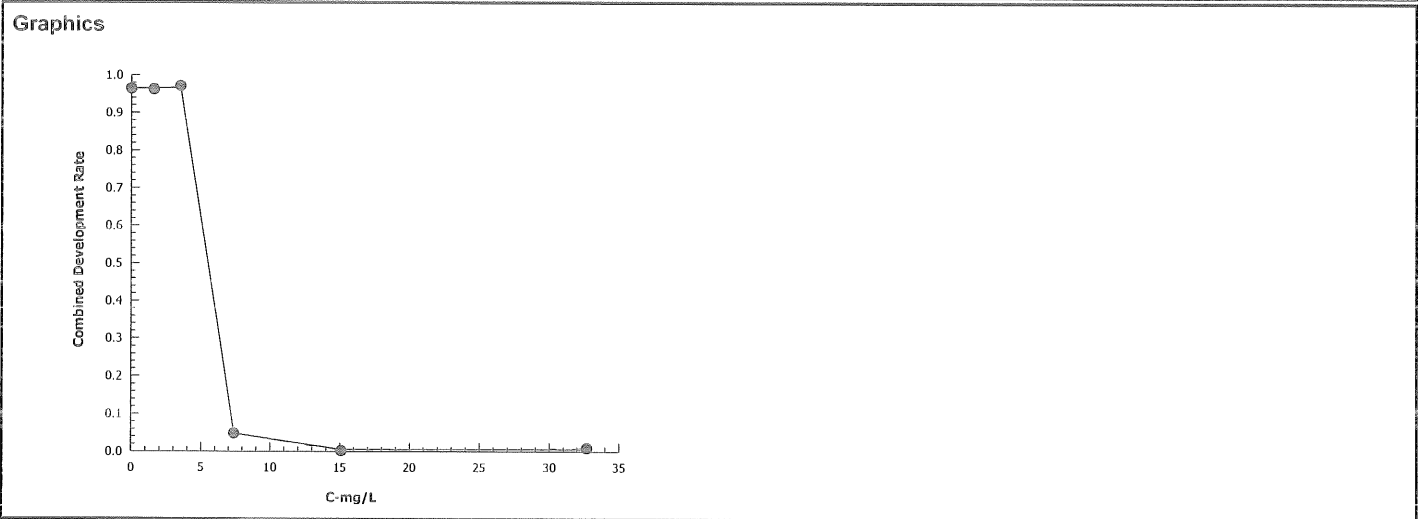
Report Date: 13 Mar-18 14:34 (p 1 of 3)  
 Test Code: 180222msnh | 18-8122-6546

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 13-1799-5427	<b>Endpoint:</b> Combined Development Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 13 Mar-18 14:33	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Official Results:</b> Yes			

<b>Linear Interpolation Options</b>					
<b>X Transform</b>	<b>Y Transform</b>	<b>Seed</b>	<b>Resamples</b>	<b>Exp 95% CL</b>	<b>Method</b>
Linear	Linear	1634326	1000	Yes	Two-Point Interpolation

<b>Point Estimates</b>			
<b>Level</b>	<b>mg/L</b>	<b>95% LCL</b>	<b>95% UCL</b>
EC25	4.527	4.372	4.551
EC50	5.554	5.434	5.607

<b>Combined Development Rate Summary</b>			<b>Calculated Variate(A/B)</b>								
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	0.9633	0.937	0.9792	0.007211	0.01612	1.67%	0.0%	640	664
1.6		5	0.961	0.8819	0.9929	0.02063	0.04613	4.8%	0.24%	631	656
3.5		5	0.9689	0.9055	1	0.0168	0.03758	3.88%	-0.58%	662	682
7.4		5	0.04933	0.0315	0.08527	0.01001	0.02239	45.39%	94.88%	32	672
15.1		5	0.002868	0	0.007246	0.001756	0.003927	136.9%	99.7%	1	709
32.7		5	0.009002	0	0.0315	0.005823	0.01302	144.6%	99.07%	6	694



**CETIS Analytical Report**

Report Date: 13 Mar-18 14:34 (p 2 of 3)  
 Test Code: 180222msnh | 18-8122-6546

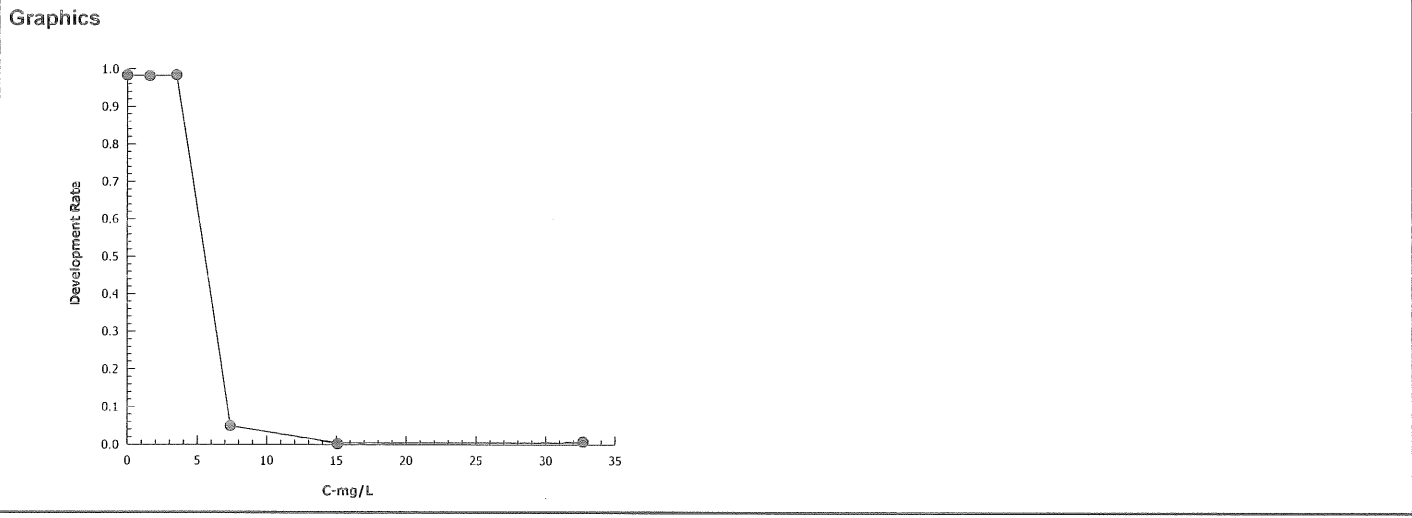
**Bivalve Larval Survival and Development Test** **Nautilus Environmental (CA)**

**Analysis ID:** 02-1601-6609      **Endpoint:** Development Rate      **CETIS Version:** CETISv1.8.7  
**Analyzed:** 13 Mar-18 14:33      **Analysis:** Linear Interpolation (ICPIN)      **Official Results:** Yes

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1816314	1000	Yes	Two-Point Interpolation

Point Estimates			
Level	mg/L	95% LCL	95% UCL
EC25	4.526	4.461	4.55
EC50	5.554	5.489	5.606

Development Rate Summary			Calculated Variate(A/B)									
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B	
0	Lab Control	5	0.9836	0.9712	1	0.004701	0.01051	1.07%	0.0%	640	651	
1.6		5	0.9811	0.9609	0.9929	0.005878	0.01314	1.34%	0.25%	631	643	
3.5		5	0.9827	0.9688	1	0.005959	0.01333	1.36%	0.09%	662	673	
7.4		5	0.05063	0.0315	0.08527	0.009772	0.02185	43.16%	94.85%	32	654	
15.1		5	0.002868	0	0.007246	0.001756	0.003927	136.9%	99.71%	1	709	
32.7		5	0.009207	0	0.03252	0.006021	0.01346	146.2%	99.06%	5	690	



**CETIS Analytical Report**

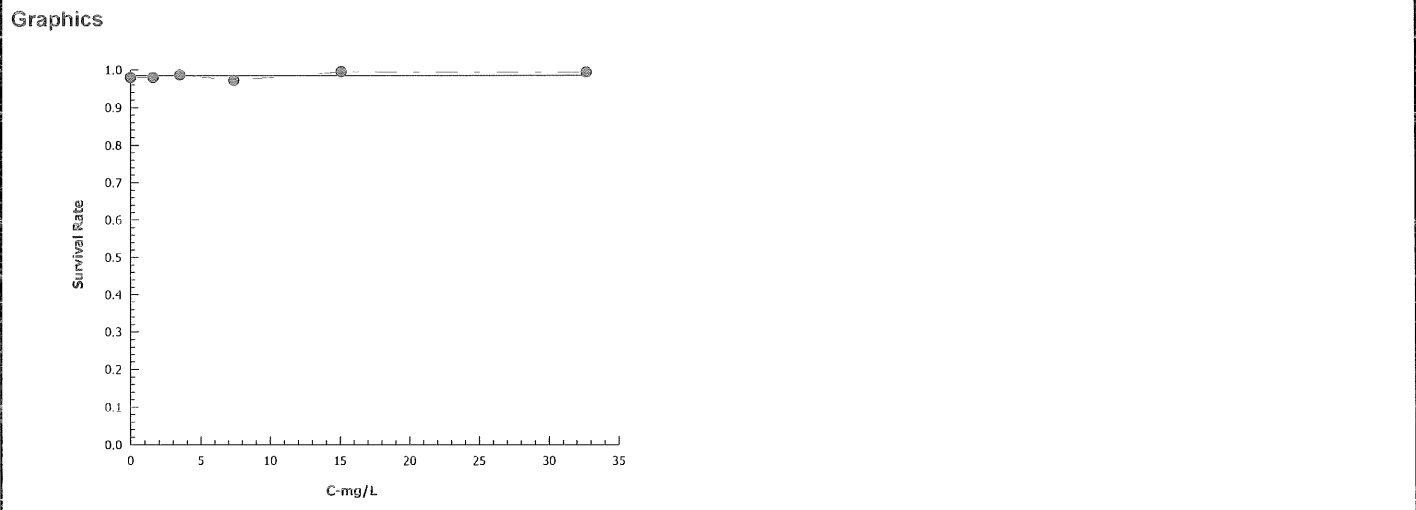
Report Date: 13 Mar-18 14:34 (p 3 of 3)  
 Test Code: 180222msnh | 18-8122-6546

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 12-4426-8348	<b>Endpoint:</b> Survival Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 13 Mar-18 14:33	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Official Results:</b> Yes			

<b>Linear Interpolation Options</b>					
<b>X Transform</b>	<b>Y Transform</b>	<b>Seed</b>	<b>Resamples</b>	<b>Exp 95% CL</b>	<b>Method</b>
Linear	Linear	149350	1000	Yes	Two-Point Interpolation

<b>Point Estimates</b>			
<b>Level</b>	<b>mg/L</b>	<b>95% LCL</b>	<b>95% UCL</b>
EC25	>32.7	N/A	N/A
EC50	>32.7	N/A	N/A

<b>Survival Rate Summary</b>			<b>Calculated Variate(A/B)</b>								
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	0.9795	0.9528	1	0.009835	0.02199	2.25%	0.0%	622	635
1.6		5	0.9795	0.8976	1	0.02047	0.04578	4.67%	0.0%	622	635
3.5		5	0.9858	0.9291	1	0.01417	0.03169	3.22%	-0.64%	626	635
7.4		5	0.9717	0.8583	1	0.02835	0.06338	6.52%	0.8%	617	635
15.1		5	1	1	1	0	0	0.0%	-2.09%	635	635
32.7		5	0.9937	0.9685	1	0.006299	0.01409	1.42%	-1.45%	631	635



Bivalve Larval Survival and Development Test

Nautilus Environmental (CA)

Test Type: Development-Survival

Organism: Mytilus galloprovincialis (Bay Mussel)

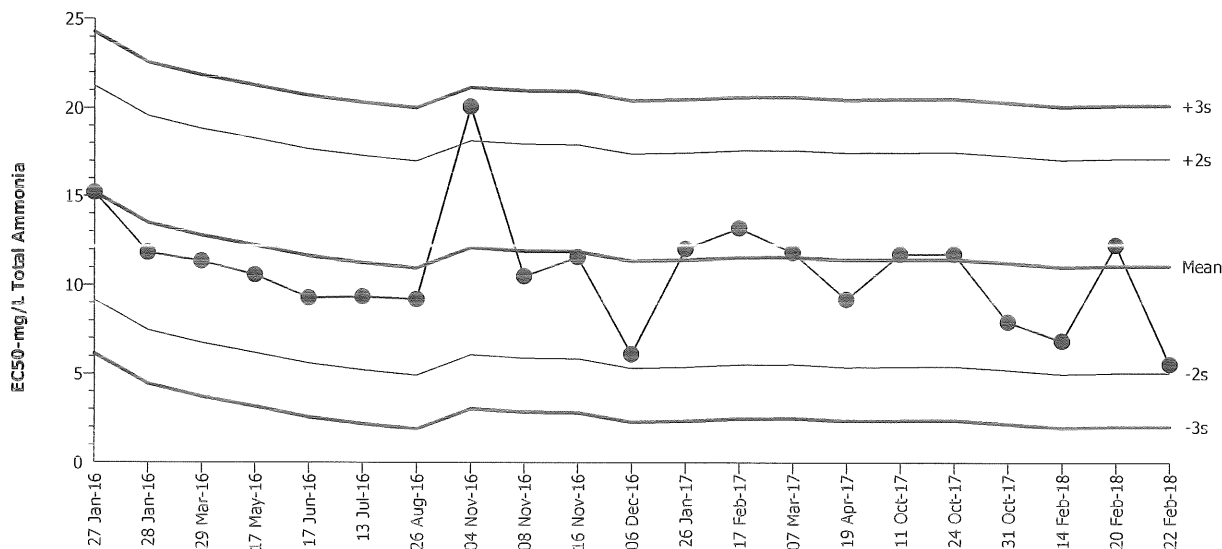
Material: Total Ammonia

Protocol: EPA/600/R-95/136 (1995)

Endpoint: Combined Development Rate

Source: Reference Toxicant-REF

Bivalve Larval Survival and Development Test



Mean: 11.09      Count: 20      -2s Warning Limit: 5.048      -3s Action Limit: 2.026  
 Sigma: 3.022      CV: 27.20%      +2s Warning Limit: 17.14      +3s Action Limit: 20.16

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2016	Jan	27	19:00	15.21	4.119	1.363			20-6363-9766	20-9983-9864
2			28	16:15	11.82	0.7295	0.2414			09-4667-0996	17-4707-8506
3		Mar	29	16:50	11.34	0.248	0.08208			10-4357-0783	08-2963-9914
4		May	17	16:25	10.58	-0.5131	-0.1698			03-9747-3260	14-8810-8473
5		Jun	17	18:15	9.279	-1.811	-0.5992			20-1939-1176	18-9823-5838
6		Jul	13	16:30	9.347	-1.743	-0.5769			03-4351-7308	19-4586-8662
7		Aug	26	14:00	9.192	-1.898	-0.6281			15-6149-3113	15-7132-2485
8		Nov	4	15:00	20.08	8.986	2.974	(+)		01-4657-1532	14-9165-5966
9			8	17:00	10.49	-0.5958	-0.1972			15-3853-5607	03-1619-5125
10			16	14:00	11.57	0.4838	0.1601			18-2336-6703	21-0897-2883
11		Dec	6	15:00	6.11	-4.98	-1.648			06-9917-3855	19-2950-6299
12	2017	Jan	26	15:30	12.05	0.9581	0.317			11-5726-2456	20-0571-9143
13		Feb	17	17:15	13.21	2.116	0.7002			01-2551-7080	11-4287-1999
14		Mar	7	16:00	11.84	0.7519	0.2488			21-2722-6816	19-3306-8336
15		Apr	19	16:45	9.194	-1.896	-0.6275			16-8954-4460	14-3970-5247
16		Oct	11	17:05	11.74	0.6496	0.215			08-7402-7277	21-1693-8729
17			24	15:25	11.75	0.6629	0.2194			02-0819-0163	19-2502-8946
18			31	15:40	7.927	-3.163	-1.047			01-0309-5599	07-5368-8597
19	2018	Feb	14	16:00	6.858	-4.232	-1.401			07-2826-0236	18-4634-3151
20			20	16:05	12.25	1.163	0.385			00-8429-6887	05-3030-7509
21			22	15:45	5.554	-5.536	-1.832			18-8122-6546	13-1799-5427

Bivalve Larval Survival and Development Test

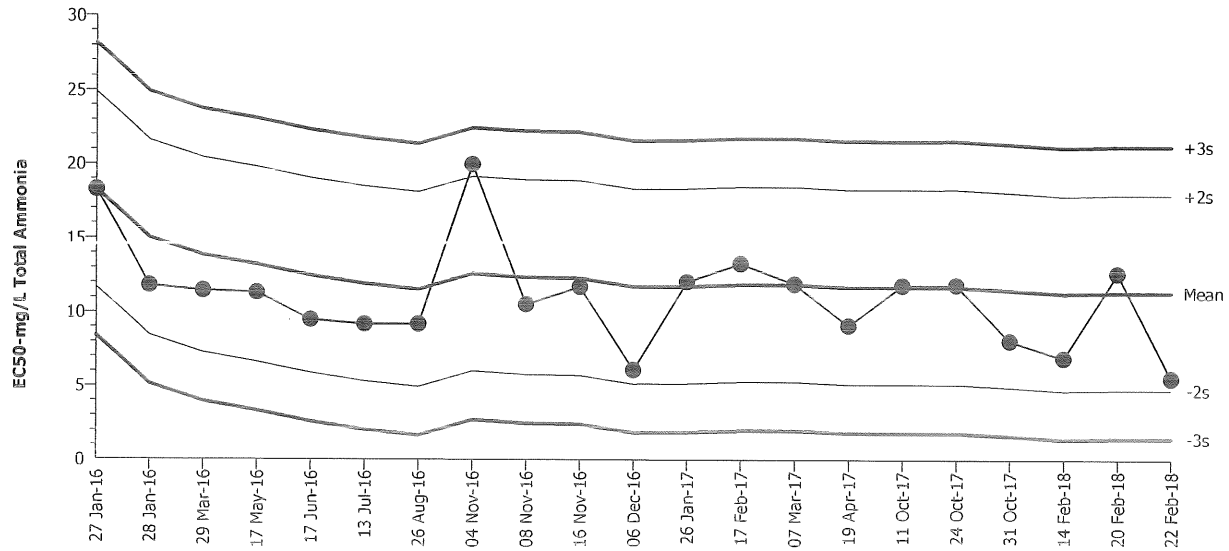
Nautilus Environmental (CA)

Test Type: Development-Survival  
Protocol: EPA/600/R-95/136 (1995)

Organism: Mytilus galloprovincialis (Bay Mussel)  
Endpoint: Development Rate

Material: Total Ammonia  
Source: Reference Toxicant-REF

Bivalve Larval Survival and Development Test



Mean: 11.34      Count: 20      -2s Warning Limit: 4.747      -3s Action Limit: 1.453  
 Sigma: 3.294      CV: 29.00%      +2s Warning Limit: 17.92      +3s Action Limit: 21.22

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2016	Jan	27	19:00	18.28	6.94	2.107	(+)		20-6363-9766	20-1848-6869
2			28	16:15	11.79	0.4539	0.1378			09-4667-0996	08-6717-0821
3		Mar	29	16:50	11.46	0.1227	0.03726			10-4357-0783	10-5662-2561
4		May	17	16:25	11.31	-0.02885	-0.00876			03-9747-3260	12-9787-0109
5		Jun	17	18:15	9.483	-1.857	-0.5638			20-1939-1176	03-8605-9749
6		Jul	13	16:30	9.18	-2.16	-0.6556			03-4351-7308	01-4957-0650
7		Aug	26	14:00	9.188	-2.152	-0.6534			15-6149-3113	11-6898-8949
8		Nov	4	15:00	19.98	8.636	2.622	(+)		01-4657-1532	08-5518-3347
9			8	17:00	10.52	-0.8224	-0.2497			15-3853-5607	10-7282-8669
10			16	14:00	11.71	0.3748	0.1138			18-2336-6703	07-0745-7031
11		Dec	6	15:00	6.096	-5.244	-1.592			06-9917-3855	08-1193-6848
12	2017	Jan	26	15:30	12.06	0.7177	0.2179			11-5726-2456	02-3529-0155
13		Feb	17	17:15	13.3	1.96	0.595			01-2551-7080	05-4072-5029
14		Mar	7	16:00	11.92	0.5818	0.1766			21-2722-6816	14-1164-3152
15		Apr	19	16:45	9.106	-2.234	-0.6781			16-8954-4460	08-2921-2011
16		Oct	11	17:05	11.84	0.4958	0.1505			08-7402-7277	11-2843-2936
17			24	15:25	11.86	0.5196	0.1578			02-0819-0163	04-3277-1820
18			31	15:40	8.079	-3.261	-0.99			01-0309-5599	12-0877-7753
19	2018	Feb	14	16:00	6.905	-4.435	-1.346			07-2826-0236	12-6715-8810
20			20	16:05	12.64	1.301	0.3948			00-8429-6887	15-6081-4246
21			22	15:45	5.554	-5.786	-1.756			18-8122-6546	02-1601-6609

**CETIS Test Data Worksheet**

Report Date: 20 Feb-18 15:08 (p 1 of 1)  
 Test Code: 18-8122-6546/18022msnh

**Bivalve Larval Survival and Development Test**

**Nautilus Environmental (CA)**

Start Date: 22 Feb-18      Species: Mytilus galloprovincialis      Sample Code: 18022msnh  
 End Date: 24 Feb-18      Protocol: EPA/600/R-95/136 (1995)      Sample Source: Reference Toxicant  
 Sample Date: 22 Feb-18      Material: Total Ammonia      Sample Station: Total Ammonia

C-mg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			1			132	0	JC 3/13/18
			2			139	135	
			3			139	0	
			4			144	141	
			5			146	146	
			6			148	5	
			7			143	0	
			8			127	4	
			9			152	151	
			10			149	1	
			11			131	130	
			12			128	123	
			13			141	1	
			14			125	123	
			15			138	1	
			16			123	4	
			17			141	8	
			18			118	115	
			19			122	122	
			20			121	119	
			21			114	112	
			22			140	139	
			23			128	124	
			24			130	127	
			25			129	126	
			26			129	11	
			27			109	5	
			28			145	0	
			29			142	0	
			30			147	1	

**CETIS Test Data Worksheet**

Report Date: 20 Feb-18 15:08 (p 1 of 1)  
 Test Code: 18-8122-6546/180222msnh

**Bivalve Larval Survival and Development Test**

**Nautilus Environmental (CA)**

Start Date: 22 Feb-18      Species: *Mytilus galloprovincialis*      Sample Code: 180222msnh  
 End Date: 24 Feb-18      Protocol: EPA/600/R-95/136 (1995)      Sample Source: Reference Toxicant  
 Sample Date: 22 Feb-18      Material: Total Ammonia      Sample Station: Total Ammonia

C-mg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	LC	1	20			125	123	JC 2/26/18
0	LC	2	14					
0	LC	3	2					
0	LC	4	19					
0	LC	5	4					
2		1	22					
2		2	24					
2		3	12					
2		4	21			119	117	JC 2/26/18
2		5	11					
4		1	18					
4		2	23					
4		3	5			136	136	JC 2/26/18
4		4	25					
4		5	9					
8		1	26			127	16	JC 2/26/18
8		2	27					
8		3	17					
8		4	6					
8		5	8					
16		1	7					
16		2	28					
16		3	29			143	0	JC 2/26/18
16		4	13					
16		5	15					
32		1	30					
32		2	3					
32		3	10					
32		4	16			125	0	JC 2/26/18
32		5	1					

QC: EG

**Marine Chronic Bioassay**

**Water Quality Measurements**

Client: Internal  
 Sample ID: Ammonia  
 Test No.: 180222msnh

Test Species: M. galloprovincialis  
 Start Date/Time: 2/20/2018 1545  
 End Date/Time: 2/22/2018 1415  
24 hrs vs 2/16/18

Concentration (mg/L)	Salinity (ppt)			Temperature (°C)			Dissolved Oxygen (mg/L)			pH (pH units)		
	0	24	48	0	24	48	0	24	48	0	24	48
Lab Control	31.1	31.4	31.1	14.7	14.6	15.0	8.9	8.4	8.3	8.07	8.01	7.97
2 (1.6)	31.1	31.4	31.4	14.5	14.5	14.8	8.9	8.5	8.4	8.05	7.99	7.97
4 (3.2)	31.0	31.4	31.5	14.6	14.5	14.7	8.8	8.4	8.4	8.03	7.98	7.97
8 (6.4)	31.1	31.5	31.7	14.6	14.5	14.9	8.8	8.4	8.3	8.01	7.97	7.96
16 (12.8)	31.0	31.3	31.5	14.5	14.4	14.8	8.9	8.4	8.3	8.00	7.97	7.96
32 (25.6)	30.8	30.9	31.2	14.6	14.5	14.8	8.8	8.4	8.3	7.98	7.95	7.95

Technician Initials: \_\_\_\_\_  
 WQ Readings: 

0	24	48
EL	DM	RT
EL		
EL		

  
 Dilutions made by: EL  
 Collect NH<sub>3</sub> Subsample: EL

High conc. made (mg/L):	32
Vol. Ammonia stock added (mL):	13.1
Final Volume (mL):	500
Ammonia stock concentration (mg/L):	1220

Comments: 0 hrs: EL 0.18 2/22/18  
 24 hrs: \_\_\_\_\_  
 48 hrs: \_\_\_\_\_

QC Check: 3/5/18 nominal ammonia (measured ammonia)  
 Final Review: KFP 3/24/18



Marine Chronic Bioassay

Larval Development Worksheet

Client: J. Jernail  
 Test No.: 180222msnh  
 Test Species: Mytilus galloprovincialis  
 Animal Source: Mission Bay  
 Date Received: 2/12/18  
 Test Chambers: 30ml Shell Vials  
 Sample Volume: 10 ml

Start Date/Time: 2/20/2018 1545  
 End Date/Time: 2/22/2018 1415  
 Technician Initials: EG

Spawn Information

First Gamete Release Time: 1240

Sex	Number Spawning
Male	5
Female	7

Gamete Selection

Sex	Beaker Number(s)	Condition (sperm motility, egg density, color, shape, etc.)
Male	2,3,4,5	Fair Density, OK motility
Female 1	2	pale orange color, mostly round, good class
Female 2	5	pale orange color, good density, OK shape
Female 3	6	pale orange color, good density, OK shape

Egg Fertilization Time: 1350

Embryo Stock Selection

Stock Number	% of embryos at 2-cell division stage
Female 1	100
Female 2	100
Female 3	100

Stock(s) chosen for testing: 1

Embryo Inoculum Preparation

Target count on Sedgwick-Rafter slide for desired density is 6 embryos

Number Counted: 7      11  
10      7  
9      10  
12      9  
5      7

Mean: 8.7

Mean 8.7 X 50 = 435 embryos/ml

Initial Density: 435 = 1.45 (dilution factor)  
 Desired Final Density: 300  
 (to inoculate with 0.5 ml)

Prepare the embryo inoculum according to the calculated dilution factor. For example, if the dilution factor is 2.25, use 100 ml of existing stock (1 part) and 125 ml of dilution water (1.25 parts).

Time Zero Control Counts

Rand. No.	No. Dividing	Total	% Dividing	Mean % Dividing
T01	129	129	100	99.8
T02	111	111	100	
T03	135	135	100	
T04	127	127	100	
T05	135	136	99.2	

48-h QC: 137/141 = 97%

Comments: X = 127

QC Check: 15 3/5/18

Final Review: KFP 3/24/18

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Internal  
Project: Ammonia Reference Toxicant  
Test Type: *M. galloprovincialis* 48-Hr

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 2/20/2018  
Q18 vs 2/16/18  
12

Analyst: SG  
Analysis Date: 2/23/18

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6
Lab Control	1		0	0.0	<0.5
	2		0	1.3	1.6
	3		0	2.9	3.5
	4		0	6.1	7.4
	5		0	12.4	15.1
	6		0	26.8	32.7
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6
Sample Duplicate <sup>a</sup>	6	NA	NA	26.4	32.2
Sample Duplicate + Spike <sup>a</sup>		NA	NA	35.1	42.8
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.7	10.6

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.6	10	NA	106
6	32.7	32.2	42.8	10	1.5	101

Comments: Q18 SG 2/23/18

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: 3/5/18

Final Review: APB/24/18

*Americamysis*

**CETIS Summary Report**

Report Date: 20 Feb-18 15:21 (p 1 of 1)  
 Test Code: 180214myra | 09-8473-5109

Mysid 96-h Acute Survival Test						Nautilus Environmental (CA)					
Batch ID:	00-3729-1149	Test Type:	Survival (96h)	Analyst:							
Start Date:	14 Feb-18 14:30	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Diluted Natural Seawater						
Ending Date:	18 Feb-18 14:40	Species:	Americamysis bahia	Brine:	Not Applicable						
Duration:	4d 0h	Source:	Aquatic Biosystems, CO	Age:	5d						
Sample ID:	02-9447-8484	Code:	180214myra	Client:	Internal						
Sample Date:	14 Feb-18	Material:	Copper chloride	Project:							
Receive Date:	14 Feb-18	Source:	Reference Toxicant								
Sample Age:	14h	Station:	Copper Chloride								
Comparison Summary											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
10-0635-1600	48h Survival Rate	200	400	282.8	14.3%		Steel Many-One Rank Sum Test				
16-9203-3889	96h Survival Rate	100	200	141.4	12.2%		Steel Many-One Rank Sum Test				
Point Estimate Summary											
Analysis ID	Endpoint	Level	µg/L	95% LCL	95% UCL	TU	Method				
02-7257-6506	48h Survival Rate	EC50	291.1	249.8	339.3		Trimmed Spearman-Kärber				
07-9224-4059	96h Survival Rate	EC50	237.9	206.1	274.6		Trimmed Spearman-Kärber				
48h Survival Rate Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%
200		4	0.9	0.7163	1	0.8	1	0.05774	0.1155	12.83%	10.0%
400		4	0.15	0	0.3091	0	0.2	0.05	0.1	66.67%	85.0%
800		4	0	0	0	0	0	0	0		100.0%
96h Survival Rate Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%
200		4	0.75	0.5909	0.9091	0.6	0.8	0.05	0.1	13.33%	25.0%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%
48h Survival Rate Detail											
C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
50		1	1	0.8	1						
100		1	1	1	1						
200		0.8	0.8	1	1						
400		0.2	0.2	0.2	0						
800		0	0	0	0						
96h Survival Rate Detail											
C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
50		1	1	0.8	1						
100		1	1	1	1						
200		0.8	0.6	0.8	0.8						
400		0	0	0	0						
800		0	0	0	0						

**CETIS Analytical Report**

Report Date: 20 Feb-18 15:21 (p 1 of 4)  
 Test Code: 180214myra | 09-8473-5109

<b>Mysid 96-h Acute Survival Test</b>						<b>Nautilus Environmental (CA)</b>			
<b>Analysis ID:</b> 10-0635-1600	<b>Endpoint:</b> 48h Survival Rate			<b>CETIS Version:</b> CETISv1.8.7					
<b>Analyzed:</b> 20 Feb-18 15:21	<b>Analysis:</b> Nonparametric-Control vs Treatments			<b>Official Results:</b> Yes					
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>Trials</b>	<b>Seed</b>	<b>PMSD</b>	<b>NOEL</b>	<b>LOEL</b>	<b>TOEL</b>	<b>TU</b>
Angular (Corrected)	NA	C > T	NA	NA	14.3%	200	400	282.8	

<b>Steel Many-One Rank Sum Test</b>										
<b>Control</b>	<b>vs</b>	<b>C-µg/L</b>	<b>Test Stat</b>	<b>Critical</b>	<b>Ties</b>	<b>DF</b>	<b>P-Value</b>	<b>P-Type</b>	<b>Decision(α:5%)</b>	
Lab Control		50	16	10	1	6	0.5661	Asymp	Non-Significant Effect	
		100	18	10	1	6	0.8000	Asymp	Non-Significant Effect	
		200	14	10	1	6	0.3081	Asymp	Non-Significant Effect	
		400*	10	10	0	6	0.0350	Asymp	Significant Effect	

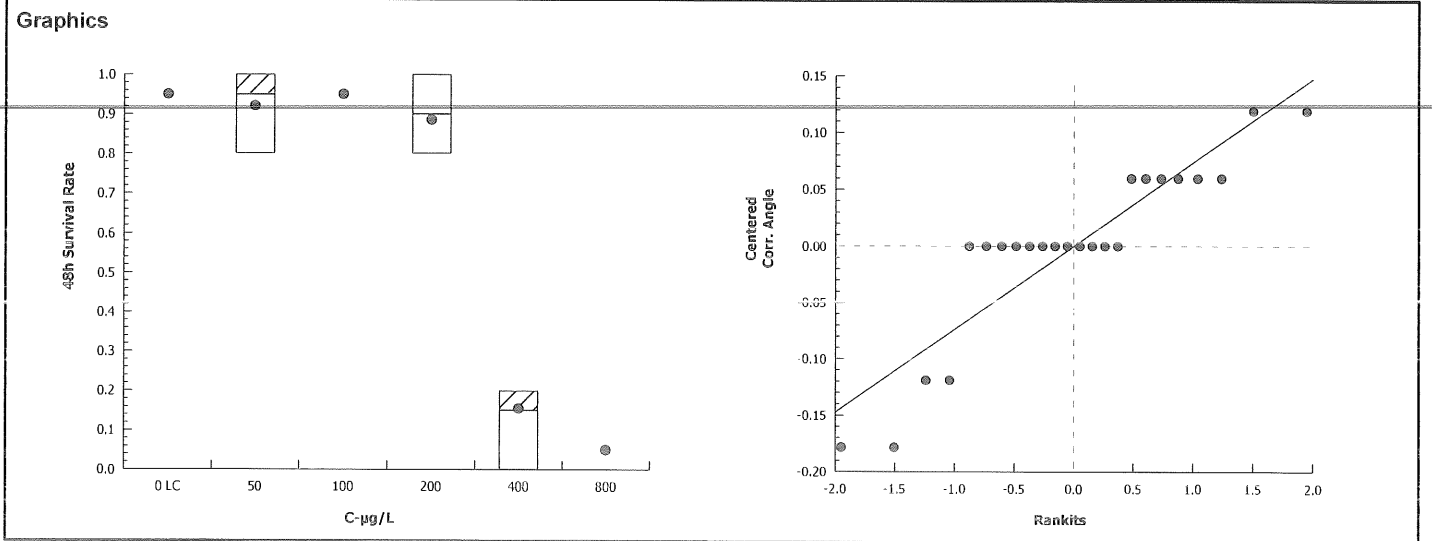
<b>ANOVA Table</b>						
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>
Between	2.610973	0.6527433	4	69.06	<0.0001	Significant Effect
Error	0.1417698	0.009451317	15			
Total	2.752743		19			

<b>Distributional Tests</b>						
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>	
Variances	Mod Levene Equality of Variance	1.75	4.893	0.1915	Equal Variances	
Variances	Levene Equality of Variance	8.75	4.893	0.0007	Unequal Variances	
Distribution	Shapiro-Wilk W Normality	0.8533	0.866	0.0061	Non-normal Distribution	

<b>48h Survival Rate Summary</b>											
<b>C-µg/L</b>	<b>Control Type</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>CV%</b>	<b>%Effect</b>
0	Lab Control	4	1	1	1	1	1	1	0	0.0%	0.0%
50		4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	5.0%
100		4	1	1	1	1	1	1	0	0.0%	0.0%
200		4	0.9	0.7163	1	0.9	0.8	1	0.05774	12.83%	10.0%
400		4	0.15	0	0.3091	0.2	0	0.2	0.05	66.67%	85.0%
800		4	0	0	0	0	0	0	0		100.0%

<b>Angular (Corrected) Transformed Summary</b>											
<b>C-µg/L</b>	<b>Control Type</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>CV%</b>	<b>%Effect</b>
0	Lab Control	4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
50		4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	4.43%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
200		4	1.226	1.007	1.445	1.226	1.107	1.345	0.06874	11.21%	8.85%
400		4	0.4041	0.2147	0.5936	0.4636	0.2255	0.4636	0.05953	29.46%	69.96%
800		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	83.24%

<b>Mysid 96-h Acute Survival Test</b>		<b>Nautilus Environmental (CA)</b>	
<b>Analysis ID:</b> 10-0635-1600	<b>Endpoint:</b> 48h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7	
<b>Analyzed:</b> 20 Feb-18 15:21	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Official Results:</b> Yes	

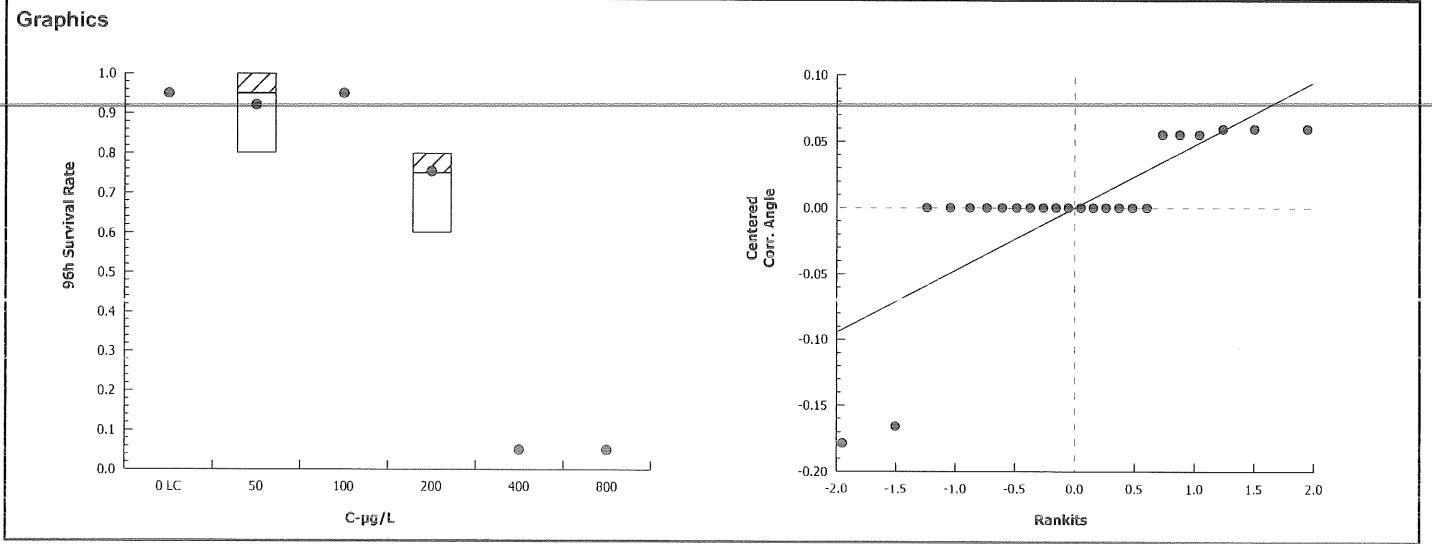


**CETIS Analytical Report**

Report Date: 20 Feb-18 15:21 (p 3 of 4)  
 Test Code: 180214myra | 09-8473-5109

Mysid 96-h Acute Survival Test										Nautilus Environmental (CA)	
Analysis ID: 16-9203-3889		Endpoint: 96h Survival Rate			CETIS Version: CETISv1.8.7						
Analyzed: 20 Feb-18 15:21		Analysis: Nonparametric-Control vs Treatments			Official Results: Yes						
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corrected)	NA	C > T	NA	NA	12.2%	100	200	141.4			
Steel Many-One Rank Sum Test											
Control	vs	C-µg/L	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)		
Lab Control		50	16	10	1	6	0.5065	Asymp	Non-Significant Effect		
		100	18	10	1	6	0.7500	Asymp	Non-Significant Effect		
		200*	10	10	0	6	0.0276	Asymp	Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square	DF	F Stat	P-Value	Decision(α:5%)				
Between	0.2339526		0.07798419	3	11.82	0.0007	Significant Effect				
Error	0.07918541		0.006598784	12							
Total	0.313138			15							
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Mod Levene Equality of Variance		0.6676	5.953	0.5880	Equal Variances					
Variances	Levene Equality of Variance		6.008	5.953	0.0097	Unequal Variances					
Distribution	Shapiro-Wilk W Normality		0.6908	0.8408	0.0001	Non-normal Distribution					
96h Survival Rate Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	1	0	0.0%	0.0%
50		4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	5.0%
100		4	1	1	1	1	1	1	0	0.0%	0.0%
200		4	0.75	0.5909	0.9091	0.8	0.6	0.8	0.05	13.33%	25.0%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%
Angular (Corrected) Transformed Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
50		4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	4.43%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
200		4	1.052	0.876	1.228	1.107	0.8861	1.107	0.05527	10.51%	21.81%
400		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	83.24%
800		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	83.24%

Mysid 96-h Acute Survival Test		Nautilus Environmental (CA)	
Analysis ID: 16-9203-3889	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7	
Analyzed: 20 Feb-18 15:21	Analysis: Nonparametric-Control vs Treatments	Official Results: Yes	





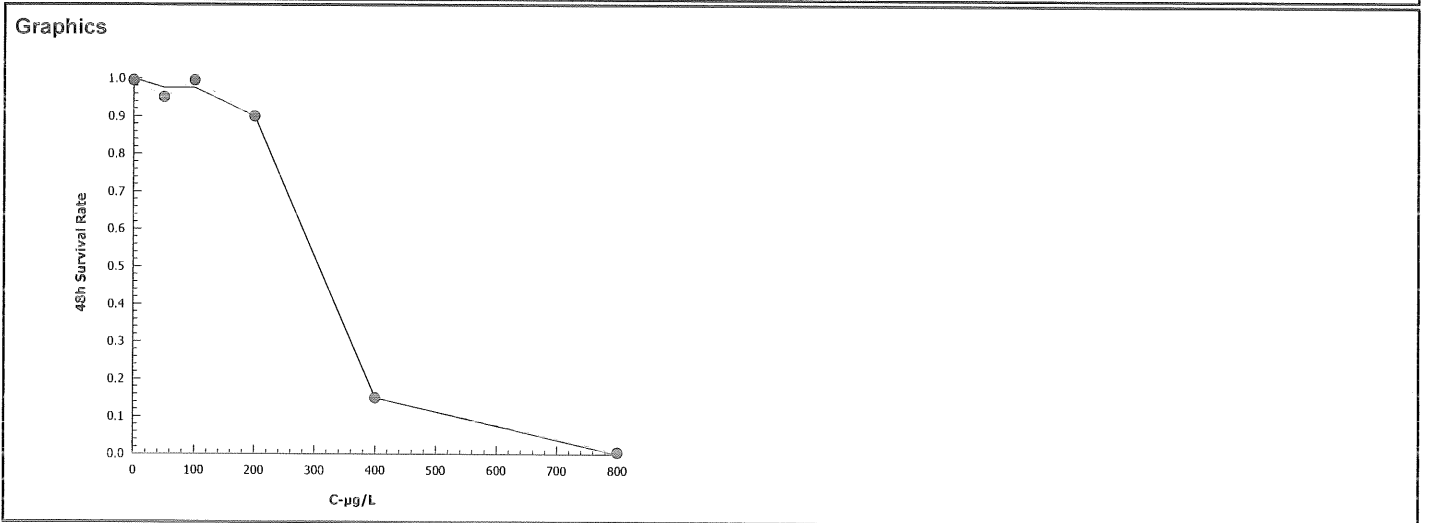
**CETIS Analytical Report**

Report Date: 20 Feb-18 15:21 (p 1 of 2)  
 Test Code: 180214myra | 09-8473-5109

<b>Mysid 96-h Acute Survival Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 02-7257-6506	<b>Endpoint:</b> 48h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 20 Feb-18 15:21	<b>Analysis:</b> Trimmed Spearman-Kärber	<b>Official Results:</b> Yes			

Trimmed Spearman-Kärber Estimates							
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0	2.50%	2.464	0.03324	291.1	249.8	339.3

48h Survival Rate Summary			Calculated Variate(A/B)								
C-µg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	1	1	1	0	0	0.0%	0.0%	20	20
50		4	0.95	0.8	1	0.05	0.1	10.53%	5.0%	19	20
100		4	1	1	1	0	0	0.0%	0.0%	20	20
200		4	0.9	0.8	1	0.05774	0.1155	12.83%	10.0%	18	20
400		4	0.15	0	0.2	0.05	0.1	66.67%	85.0%	3	20
800		4	0	0	0	0	0	100.0%	100.0%	0	20



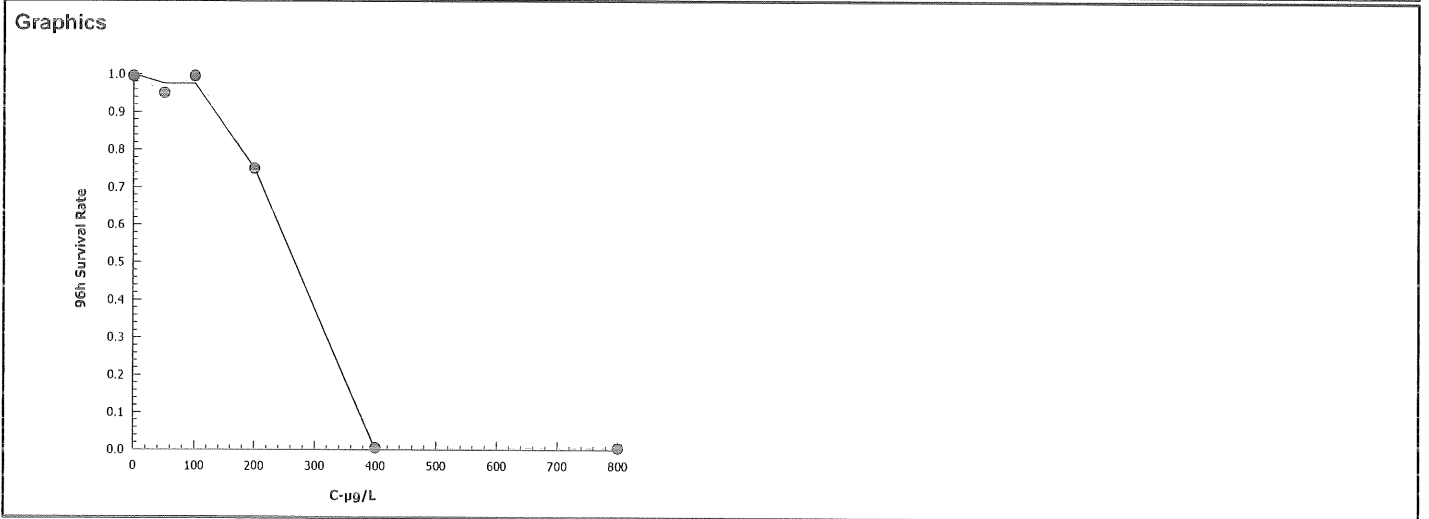
**CETIS Analytical Report**

Report Date: 20 Feb-18 15:21 (p 2 of 2)  
 Test Code: 180214myra | 09-8473-5109

<b>Mysid 96-h Acute Survival Test</b>				<b>Nautilus Environmental (CA)</b>			
<b>Analysis ID:</b> 07-9224-4059	<b>Endpoint:</b> 96h Survival Rate			<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 20 Feb-18 15:21	<b>Analysis:</b> Trimmed Spearman-Kärber			<b>Official Results:</b> Yes			

Trimmed Spearman-Kärber Estimates							
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0	2.50%	2.376	0.03116	237.9	206.1	274.6

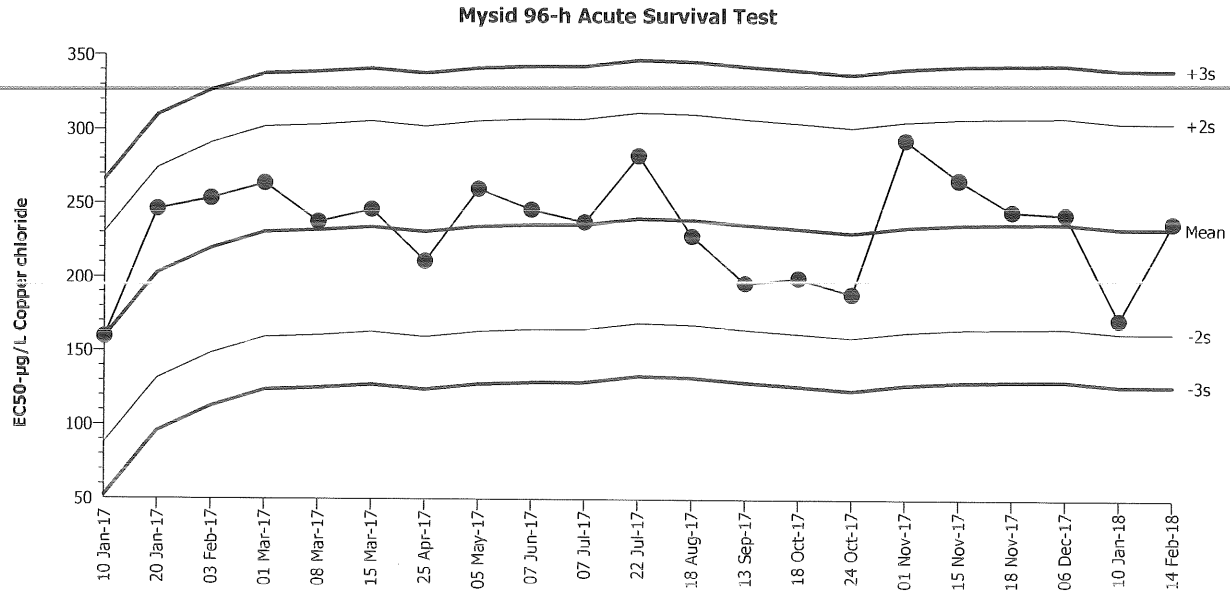
96h Survival Rate Summary			Calculated Variate(A/B)								
C-µg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	1	1	1	0	0	0.0%	0.0%	20	20
50		4	0.95	0.8	1	0.05	0.1	10.53%	5.0%	19	20
100		4	1	1	1	0	0	0.0%	0.0%	20	20
200		4	0.75	0.6	0.8	0.05	0.1	13.33%	25.0%	15	20
400		4	0	0	0	0	0		100.0%	0	20
800		4	0	0	0	0	0		100.0%	0	20



Mysid 96-h Acute Survival Test

Nautilus Environmental (CA)

Test Type: Survival (96h) Organism: Americamysis bahia (Opossum Shri) Material: Copper chloride  
 Protocol: EPA/821/R-02-012 (2002) Endpoint: 96h Survival Rate Source: Reference Toxicant-REF



Mean: 234 Count: 20 -2s Warning Limit: 162.7 -3s Action Limit: 127  
 Sigma: 35.68 CV: 15.20% +2s Warning Limit: 305.4 +3s Action Limit: 341.1

Quality Control Data

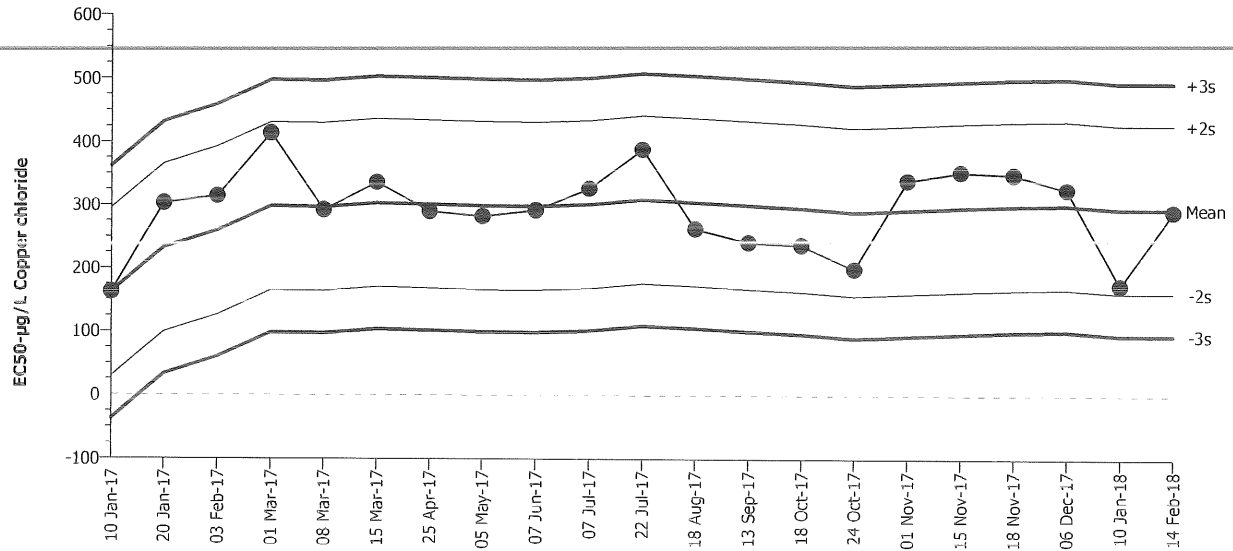
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Jan	10	16:15	159.4	-74.59	-2.091	(-)		16-3894-3724	19-0452-2517
2			20	15:25	246.2	12.23	0.3427			11-2780-9889	00-8801-4617
3		Feb	3	13:55	253.5	19.52	0.5471			20-1058-4272	05-9224-5863
4		Mar	1	14:50	263.9	29.9	0.838			18-5886-0252	03-8065-4101
5			8	14:40	237.8	3.841	0.1077			04-1071-1124	16-7731-4424
6			15	15:55	246.2	12.23	0.3427			05-0562-9795	19-0511-3356
7		Apr	25	16:30	211.2	-22.75	-0.6376			16-4599-2064	16-5263-5506
8		May	5	15:00	260.1	26.14	0.7327			16-0596-9578	02-2100-0629
9		Jun	7	14:15	246.2	12.23	0.3427			21-1826-2514	20-5292-2955
10		Jul	7	16:00	237.8	3.841	0.1077			19-0240-9062	06-6760-1962
11			22	14:55	282.8	48.84	1.369			08-1324-7861	01-8797-3188
12		Aug	18	15:00	228.5	-5.482	-0.1536			02-1611-3515	04-2734-0906
13		Sep	13	16:00	196.5	-37.5	-1.051			03-9805-8743	17-3990-0867
14		Oct	18	16:00	200	-34	-0.9529			18-6999-6233	13-8379-6705
15			24	15:40	189.2	-44.82	-1.256			09-0677-5410	07-2632-8441
16		Nov	1	10:30	293.5	59.49	1.667			15-0660-1810	03-5255-9542
17			15	14:00	266.7	32.71	0.9167			14-6406-9884	16-7238-8750
18			18	14:15	245.4	11.36	0.3183			13-3136-0118	12-6262-7347
19		Dec	6	15:30	243.5	9.477	0.2656			05-7061-5305	13-6446-0263
20	2018	Jan	10	16:10	172	-62.04	-1.739			19-5198-6454	19-5862-9045
21		Feb	14	14:30	237.9	3.914	0.1097			09-8473-5109	07-9224-4059

Mysid 96-h Acute Survival Test

Nautilus Environmental (CA)

Test Type: Survival (96h) Organism: Americamysis bahia (Opossum Shri) Material: Copper chloride  
 Protocol: EPA/821/R-02-012 (2002) Endpoint: 48h Survival Rate Source: Reference Toxicant-REF

Mysid 96-h Acute Survival Test



Mean: 294.8      Count: 20      -2s Warning Limit: 161.6      -3s Action Limit: 95.08  
 Sigma: 66.56      CV: 22.60%      +2s Warning Limit: 427.9      +3s Action Limit: 494.4

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Jan	10	16:15	162.5	-132.3	-1.988			16-3894-3724	04-3225-4540
2			20	15:25	303.1	8.343	0.1254			11-2780-9889	12-4644-2180
3		Feb	3	13:55	314.7	19.87	0.2985			20-1058-4272	08-9875-0003
4		Mar	1	14:50	414.1	119.3	1.792			18-5886-0252	19-0619-9641
5			8	14:40	292.8	-1.983	-0.02979			04-1071-1124	08-7317-5755
6			15	15:55	336.4	41.56	0.6244			05-0562-9795	14-7864-9461
7		Apr	25	16:30	290.9	-3.909	-0.05874			16-4599-2064	06-2019-8746
8		May	5	15:00	282.8	-11.96	-0.1796			16-0596-9578	11-8673-2065
9		Jun	7	14:15	292.8	-1.983	-0.02979			21-1826-2514	03-8291-7195
10		Jul	7	16:00	327.3	32.48	0.488			19-0240-9062	19-9165-2088
11			22	14:55	389.5	94.68	1.422			08-1324-7861	01-3966-4190
12		Aug	18	15:00	263.9	-30.9	-0.4642			02-1611-3515	07-0853-1813
13		Sep	13	16:00	242.5	-52.33	-0.7863			03-9805-8743	17-7148-8914
14		Oct	18	16:00	237.8	-56.96	-0.8557			18-6999-6233	06-8502-0843
15			24	15:40	200	-94.8	-1.424			09-0677-5410	03-4054-3944
16		Nov	1	10:30	340.3	45.47	0.6831			15-0660-1810	13-0162-6049
17			15	14:00	353.6	58.78	0.8831			14-6406-9884	07-6897-0356
18			18	14:15	350.1	55.28	0.8306			13-3136-0118	18-7251-4644
19		Dec	6	15:30	326.1	31.26	0.4696			05-7061-5305	08-4813-7322
20	2018	Jan	10	16:10	174.1	-120.7	-1.813			19-5198-6454	14-1913-8860
21		Feb	14	14:30	291.1	-3.669	-0.05513			09-8473-5109	02-7257-6506

Marine Acute Bioassay  
Static-Renewal Conditions

Water Quality Measurements  
& Test Organism Survival

Client: Internal  
Sample ID: CuCl<sub>2</sub>  
Test No.: 180214myra

Test Species: A. bahia  
Start Date/Time: 2/14/2018 1430  
Renewal Date/Time: 2/16/2018 1230  
End Date/Time: 2/18/2018 1440

Tech Initials				
0	24	48	72	96
Counts: DM	TN	RT	BO	TN
Readings: DM	DM	RT	RT	TN
Dilutions made by: VTP		VTP		
High conc. made (µg/L): 800	--	800	--	--
Vol. Cu stock added (mL): 17.1	--	17.1	--	--
Final Volume (mL): 2000	--	2000	--	--

Cu stock concentration (µg/L): 93,300

Concentration (µg/L)	Rand #	Number of Live Organisms					Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	8	5	5	5	4 <sup>(B)</sup> 5	5	29.5	29.8	30.2	30.3	30.5	25.0	25.4	24.7	24.4	24.1	6.4	5.5	6.3	4.8	5.3	8.00	7.97	7.95	7.71	7.72
	7	5	5	5	5			25.0					25.0					5.2					7.78			
	15	5	5	5	5			29.9																		
	4	5	5	5	5																					
50	11	5	5	5	5		29.5	29.7	30.2	30.4	30.5	25.1	25.5	24.6	24.5	24.4	6.4	5.2	6.2	5.1	5.4	7.99	7.92	7.95	7.91	7.79
	12	5	5	5	5			29.8						25.2				5.1					7.73			
	2	5	5	4	4																					
	21	5	5	5	5																					
100	10	5	5	5	5		29.5	29.7	30.3	30.3	30.8	25.1	25.5	24.7	24.2	24.1	6.4	5.4	6.2	5.3	5.7	7.97	7.96	7.95	7.82	7.57
	13	5	5	5	5			29.8						25.3				4.9					7.75			
	1	5	5	5	5																					
	23	5	5	5	5																					
200	20	5	5	4	4	4	29.4	29.7	30.2	30.4	30.9	25.0	25.5	24.5	24.1	24.3	6.3	5.5	6.3	5.5	5.8	7.99	7.96	7.93	7.85	7.55
	14	5	5	4	3	3		29.9						25.2				5.4					7.81			
	6	5	5	5	5	4																				
	22	5	5	5	5	4																				
400	3	5	4	1	1	0	29.4	29.6	30.2	30.3	30.5	25.0	25.6	24.6	24.4	24.2	6.4	5.4	6.2	5.7	5.8	7.98	7.96	7.93	7.90	7.86
	19	5	5	1	0	-		29.7						25.5				5.2					7.79			
	16	5	4	1	1	0																				
	9	5	5	0	-	-																				
800	5	5	2	0	-	-	29.2	29.6	30.0	-	-	25.0	25.5	24.6	-	-	6.4	5.5	6.2	-	-	7.96	7.97	7.92	-	
	24	5	2	0	-	-		29.9						25.2				5.4					7.79			
	18	5	2	0	-	-																				
	17	5	2	0	-	-																				

Rand # QC: TN  
Initial Counts QC'd by: VTP  
Initiated by: DM

Animal Source/Date Received: ABS/2/13/18 Age at Initiation: 5 days  
Animal Acclimation Qualifiers (circle all that apply): Q22 / Q23 / Q24 / (none)

Feeding Times				
0	24	48	72	96
AM: -	0850	0945	0940	0830
PM: 1745	1545	1530	1630	1630

Comments: i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal  
Organisms fed prior to initiation, circle one (y) / n ) (y) / n ) (A) OIB 2/16/18 RT

QC Check: EM 2/20/18 Final Review: VTP 2/23/18

**CETIS Summary Report**

Report Date: 02 Mar-18 16:37 (p 1 of 1)  
 Test Code: 180221myra | 02-7695-3118

Mysid 96-h Acute Survival Test							Nautilus Environmental (CA)				
Batch ID:	12-7668-7110	Test Type:	Survival (96h)	Analyst:							
Start Date:	21 Feb-18 13:05	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Diluted Natural Seawater						
Ending Date:	25 Feb-18 11:25	Species:	Americamysis bahia	Brine:	Not Applicable						
Duration:	94h	Source:	Aquatic Biosystems, CO	Age:	4d						
Sample ID:	17-2186-4403	Code:	180221myra	Client:	Internal						
Sample Date:	21 Feb-18	Material:	Copper chloride	Project:							
Receive Date:	21 Feb-18	Source:	Reference Toxicant								
Sample Age:	13h	Station:	Copper Chloride								
Comparison Summary											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
19-4538-3919	48h Survival Rate	100	200	141.4	22.5%		Steel Many-One Rank Sum Test				
09-7090-6140	96h Survival Rate	100	200	141.4	20.3%		Dunnett Multiple Comparison Test				
Point Estimate Summary											
Analysis ID	Endpoint	Level	µg/L	95% LCL	95% UCL	TU	Method				
17-0506-8696	48h Survival Rate	EC50	180.3	149	218.1		Spearman-Kärber				
10-4055-2096	96h Survival Rate	EC50	160.2	136.7	187.7		Spearman-Kärber				
48h Survival Rate Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	0.9	0.7163	1	0.8	1	0.05774	0.1155	12.83%	10.0%
200		4	0.4	0	0.8501	0	0.6	0.1414	0.2828	70.71%	60.0%
400		4	0.05	0	0.2091	0	0.2	0.05	0.1	200.0%	95.0%
800		4	0	0	0	0	0	0	0		100.0%
96h Survival Rate Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	-5.26%
100		4	0.9	0.7163	1	0.8	1	0.05774	0.1155	12.83%	5.26%
200		4	0.25	0	0.5547	0	0.4	0.09574	0.1915	76.59%	73.68%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%
48h Survival Rate Detail											
C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
50		1	1	1	1						
100		1	0.8	0.8	1						
200		0.6	0.4	0	0.6						
400		0	0.2	0	0						
800		0	0	0	0						
96h Survival Rate Detail											
C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	0.8						
50		1	1	1	1						
100		1	0.8	0.8	1						
200		0.4	0.2	0	0.4						
400		0	0	0	0						
800		0	0	0	0						

**CETIS Analytical Report**

Report Date: 02 Mar-18 16:37 (p 1 of 4)  
 Test Code: 180221myra | 02-7695-3118

<b>Mysid 96-h Acute Survival Test</b>							<b>Nautilus Environmental (CA)</b>				
---------------------------------------	--	--	--	--	--	--	------------------------------------	--	--	--	--

<b>Analysis ID:</b> 19-4538-3919	<b>Endpoint:</b> 48h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7
<b>Analyzed:</b> 02 Mar-18 16:37	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	22.5%	100	200	141.4	

<b>Steel Many-One Rank Sum Test</b>									
Control	vs	C-µg/L	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		50	18	10	1	6	0.8000	Asymp	Non-Significant Effect
		100	14	10	1	6	0.3081	Asymp	Non-Significant Effect
		200*	10	10	0	6	0.0350	Asymp	Significant Effect
		400*	10	10	0	6	0.0350	Asymp	Significant Effect

<b>ANOVA Table</b>						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	3.624094	0.9060235	4	34.81	<0.0001	Significant Effect
Error	0.390401	0.02602674	15			
Total	4.014495		19			

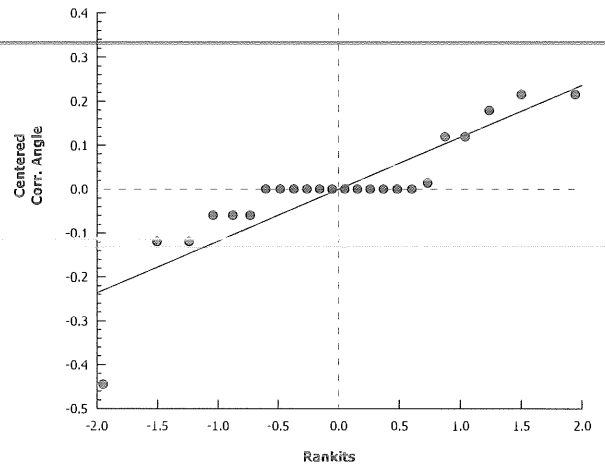
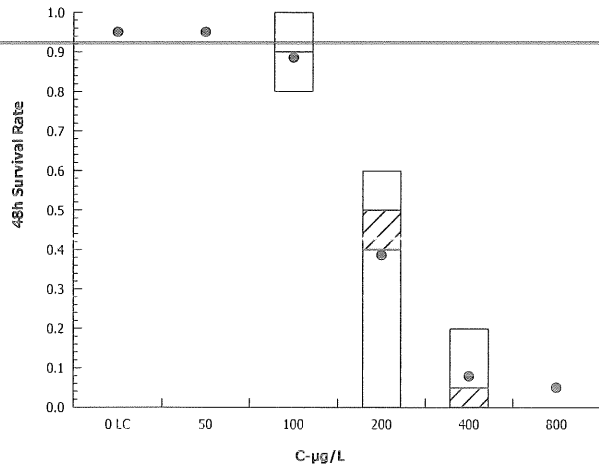
<b>Distributional Tests</b>						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Mod Levene Equality of Variance	2.474	4.893	0.0891	Equal Variances	
Variances	Levene Equality of Variance	4.996	4.893	0.0092	Unequal Variances	
Distribution	Shapiro-Wilk W Normality	0.8427	0.866	0.0040	Non-normal Distribution	

<b>48h Survival Rate Summary</b>											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	1	0	0.0%	0.0%
50		4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	0.9	0.7163	1	0.9	0.8	1	0.05774	12.83%	10.0%
200		4	0.4	0	0.8501	0.5	0	0.6	0.1414	70.71%	60.0%
400		4	0.05	0	0.2091	0	0	0.2	0.05	200.0%	95.0%
800		4	0	0	0	0	0	0	0		100.0%

<b>Angular (Corrected) Transformed Summary</b>											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
50		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
100		4	1.226	1.007	1.445	1.226	1.107	1.345	0.06874	11.21%	8.85%
200		4	0.6706	0.1749	1.166	0.7854	0.2255	0.8861	0.1558	46.46%	50.15%
400		4	0.285	0.09558	0.4745	0.2255	0.2255	0.4636	0.05953	41.77%	78.81%
800		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	83.24%

<b>Mysid 96-h Acute Survival Test</b>		<b>Nautilus Environmental (CA)</b>	
<b>Analysis ID:</b> 19-4538-3919	<b>Endpoint:</b> 48h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7	
<b>Analyzed:</b> 02 Mar-18 16:37	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Official Results:</b> Yes	

Graphics





**CETIS Analytical Report**

Report Date: 02 Mar-18 16:37 (p 3 of 4)  
 Test Code: 180221myra | 02-7695-3118

<b>Mysid 96-h Acute Survival Test</b>							<b>Nautilus Environmental (CA)</b>				
---------------------------------------	--	--	--	--	--	--	------------------------------------	--	--	--	--

<b>Analysis ID:</b> 09-7090-6140	<b>Endpoint:</b> 96h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7
<b>Analyzed:</b> 02 Mar-18 16:37	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	20.3%	100	200	141.4	

<b>Dunnett Multiple Comparison Test</b>									
Control	vs	C-µg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		50	-0.5913	2.287	0.230	6	0.9079	CDF	Non-Significant Effect
		100	0.5913	2.287	0.230	6	0.5057	CDF	Non-Significant Effect
		200*	7.659	2.287	0.230	6	<0.0001	CDF	Significant Effect

<b>ANOVA Table</b>						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.812137	0.6040457	3	29.79	<0.0001	Significant Effect
Error	0.2432871	0.02027393	12			
Total	2.055424		15			

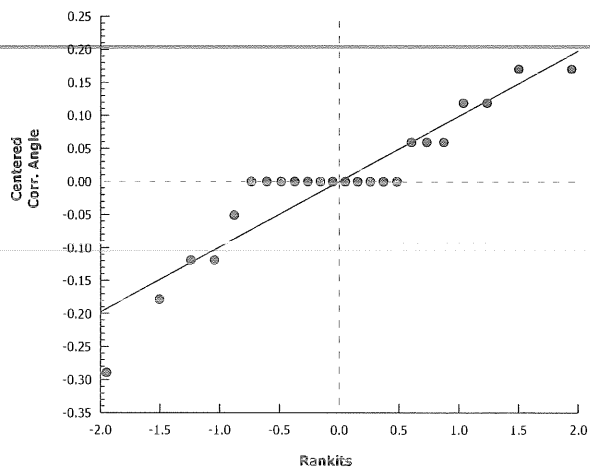
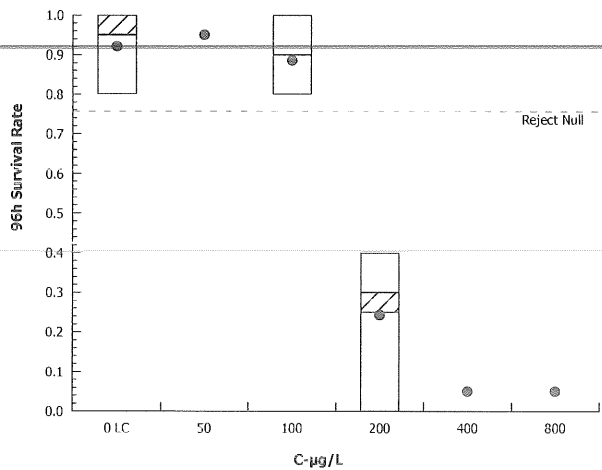
<b>Distributional Tests</b>						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Mod Levene Equality of Variance	3.057	5.953	0.0696	Equal Variances	
Variances	Levene Equality of Variance	6.267	5.953	0.0084	Unequal Variances	
Distribution	Shapiro-Wilk W Normality	0.9416	0.8408	0.3692	Normal Distribution	

<b>96h Survival Rate Summary</b>											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
50		4	1	1	1	1	1	1	0	0.0%	-5.26%
100		4	0.9	0.7163	1	0.9	0.8	1	0.05774	12.83%	5.26%
200		4	0.25	0	0.5547	0.3	0	0.4	0.09574	76.59%	73.68%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%

<b>Angular (Corrected) Transformed Summary</b>											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
50		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	-4.63%
100		4	1.226	1.007	1.445	1.226	1.107	1.345	0.06874	11.21%	4.63%
200		4	0.5146	0.166	0.8633	0.5742	0.2255	0.6847	0.1096	42.58%	59.97%
400		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	82.46%
800		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	82.46%

<b>Mysid 96-h Acute Survival Test</b>		<b>Nautilus Environmental (CA)</b>	
<b>Analysis ID:</b> 09-7090-6140	<b>Endpoint:</b> 96h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7	
<b>Analyzed:</b> 02 Mar-18 16:37	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Official Results:</b> Yes	

Graphics



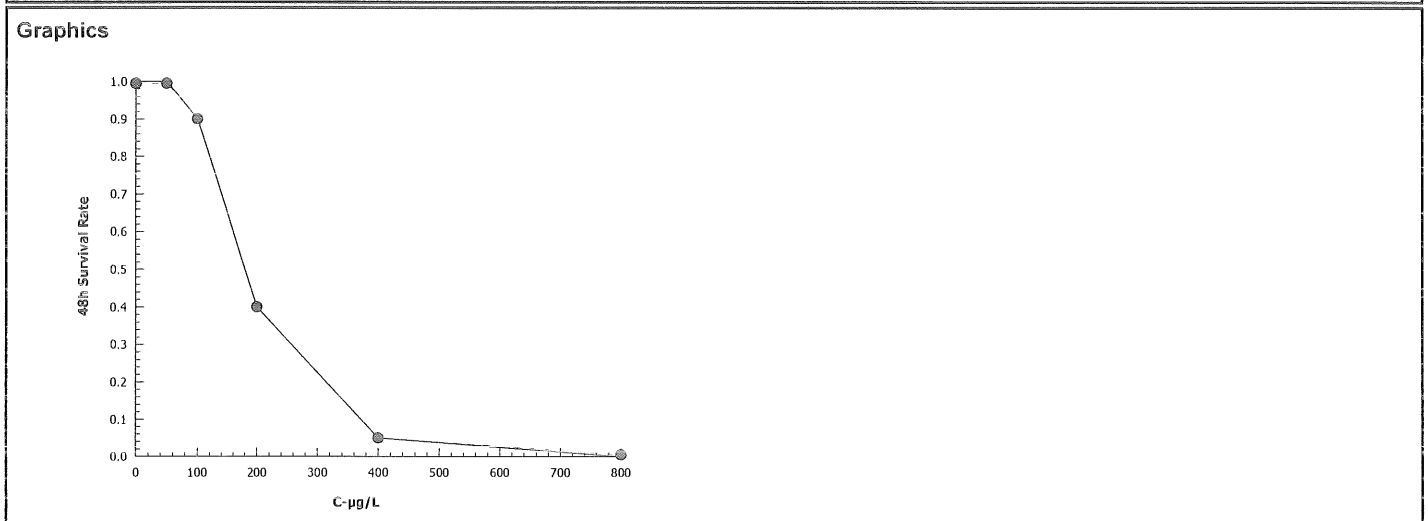
# CETIS Analytical Report

Report Date: 02 Mar-18 16:37 (p 1 of 2)  
Test Code: 180221myra | 02-7695-3118

<b>Mysid 96-h Acute Survival Test</b>			<b>Nautilus Environmental (CA)</b>		
Analysis ID: 17-0506-8696	Endpoint: 48h Survival Rate	CETIS Version: CETISv1.8.7			
Analyzed: 02 Mar-18 16:37	Analysis: Untrimmed Spearman-Kärber	Official Results: Yes			

Spearman-Kärber Estimates							
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0	0.00%	2.256	0.04136	180.3	149	218.1

48h Survival Rate Summary			Calculated Variate(A/B)								
C-µg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	1	1	1	0	0	0.0%	0.0%	20	20
50		4	1	1	1	0	0	0.0%	0.0%	20	20
100		4	0.9	0.8	1	0.05774	0.1155	12.83%	10.0%	18	20
200		4	0.4	0	0.6	0.1414	0.2828	70.71%	60.0%	8	20
400		4	0.05	0	0.2	0.05	0.1	200.0%	95.0%	1	20
800		4	0	0	0	0	0		100.0%	0	20



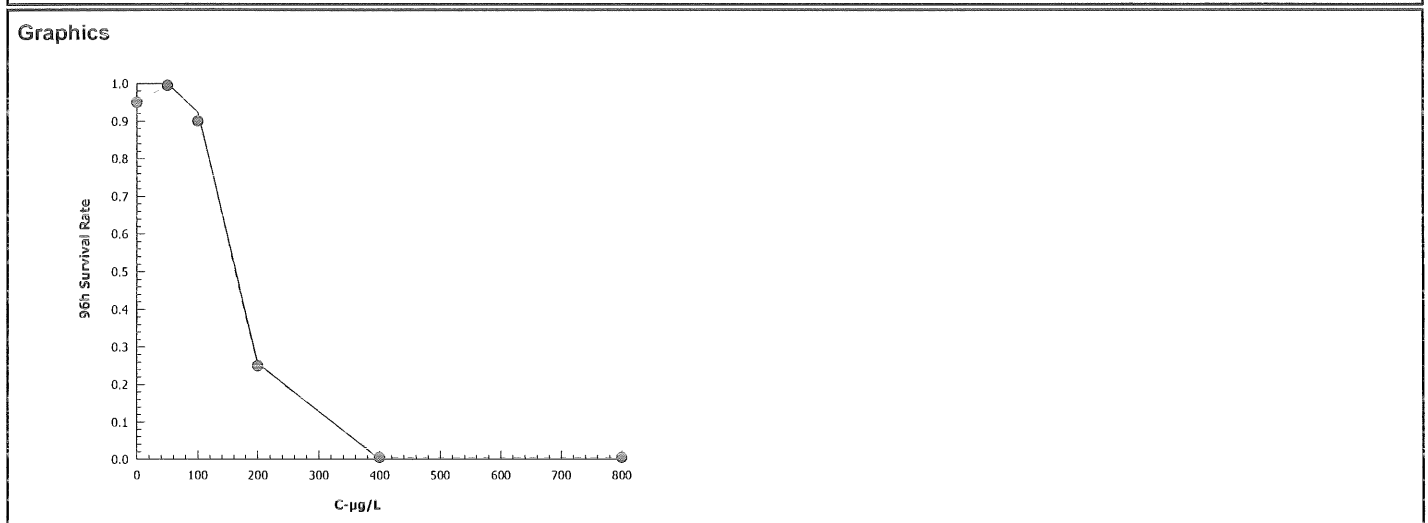
# CETIS Analytical Report

Report Date: 02 Mar-18 16:37 (p 2 of 2)  
 Test Code: 180221myra | 02-7695-3118

<b>Mysid 96-h Acute Survival Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 10-4055-2096	<b>Endpoint:</b> 96h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 02 Mar-18 16:37	<b>Analysis:</b> Untrimmed Spearman-Kärber	<b>Official Results:</b> Yes			

Spearman-Kärber Estimates							
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0.05	0.00%	2.205	0.03443	160.2	136.7	187.7

96h Survival Rate Summary			Calculated Variate(A/B)									
C-µg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B	
0	Lab Control	4	0.95	0.8	1	0.05	0.1	10.53%	0.0%	19	20	
50		4	1	1	1	0	0	0.0%	-5.26%	20	20	
100		4	0.9	0.8	1	0.05774	0.1155	12.83%	5.26%	18	20	
200		4	0.25	0	0.4	0.09574	0.1915	76.59%	73.68%	5	20	
400		4	0	0	0	0	0		100.0%	0	20	
800		4	0	0	0	0	0		100.0%	0	20	



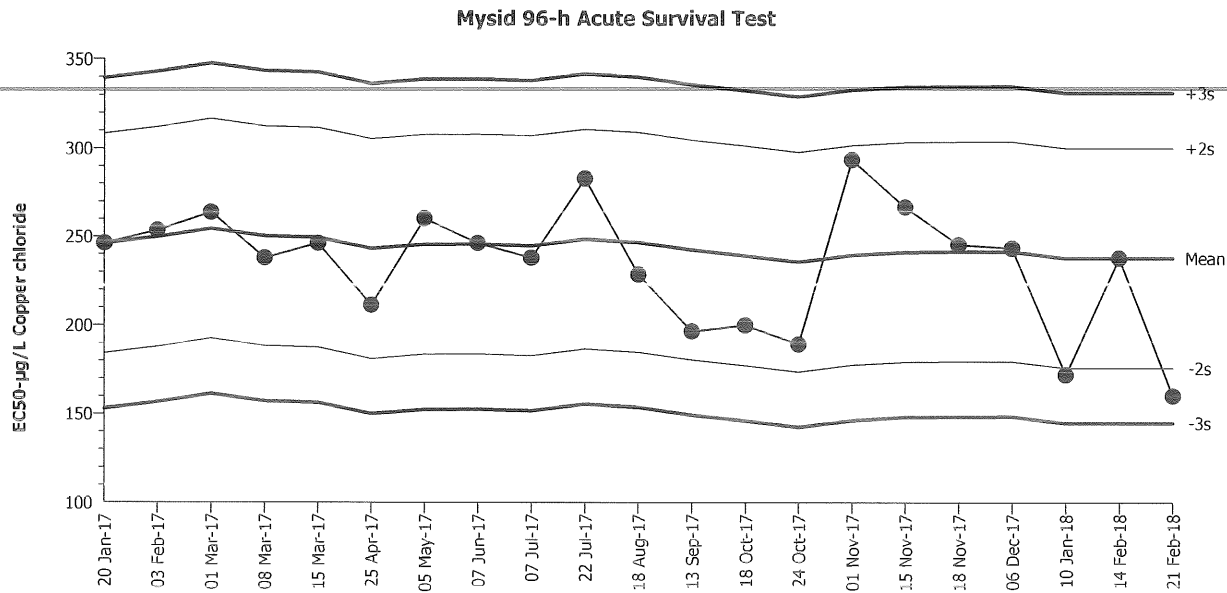
Mysid 96-h Acute Survival Test

Nautilus Environmental (CA)

Test Type: Survival (96h)  
 Protocol: EPA/821/R-02-012 (2002)

Organism: Americamysis bahia (Opossum Shri  
 Endpoint: 96h Survival Rate

Material: Copper chloride  
 Source: Reference Toxicant-REF



Mean: 238      Count: 20      -2s Warning Limit: 175.9      -3s Action Limit: 144.8  
 Sigma: 31.05      CV: 13.00%      +2s Warning Limit: 300.1      +3s Action Limit: 331.1

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Jan	20	15:25	246.2	8.229	0.265			11-2780-9889	00-8801-4617
2		Feb	3	13:55	253.5	15.52	0.4999			20-1058-4272	05-9224-5863
3		Mar	1	14:50	263.9	25.9	0.8342			18-5886-0252	03-8065-4101
4			8	14:40	237.8	-0.1586	-0.00511			04-1071-1124	16-7731-4424
5			15	15:55	246.2	8.229	0.265			05-0562-9795	19-0511-3356
6		Apr	25	16:30	211.2	-26.75	-0.8615			16-4599-2064	16-5263-5506
7		May	5	15:00	260.1	22.14	0.7132			16-0596-9578	02-2100-0629
8		Jun	7	14:15	246.2	8.229	0.265			21-1826-2514	20-5292-2955
9		Jul	7	16:00	237.8	-0.1586	-0.00511			19-0240-9062	06-6760-1962
10			22	14:55	282.8	44.84	1.444			08-1324-7861	01-8797-3188
11		Aug	18	15:00	228.5	-9.482	-0.3054			02-1611-3515	04-2734-0906
12		Sep	13	16:00	196.5	-41.5	-1.337			03-9805-8743	17-3990-0867
13		Oct	18	16:00	200	-38	-1.224			18-6999-6233	13-8379-6705
14			24	15:40	189.2	-48.82	-1.572			09-0677-5410	07-2632-8441
15		Nov	1	10:30	293.5	55.49	1.787			15-0660-1810	03-5255-9542
16			15	14:00	266.7	28.71	0.9245			14-6406-9884	16-7238-8750
17			18	14:15	245.4	7.355	0.2369			13-3136-0118	12-6262-7347
18		Dec	6	15:30	243.5	5.477	0.1764			05-7061-5305	13-6446-0263
19	2018	Jan	10	16:10	172	-66.04	-2.127	(-)		19-5198-6454	19-5862-9045
20		Feb	14	14:30	237.9	-0.08626	-0.00278			09-8473-5109	07-9224-4059
21			21	13:05	160.2	-77.84	-2.507	(-)		02-7695-3118	10-4055-2096

Mysid 96-h Acute Survival Test

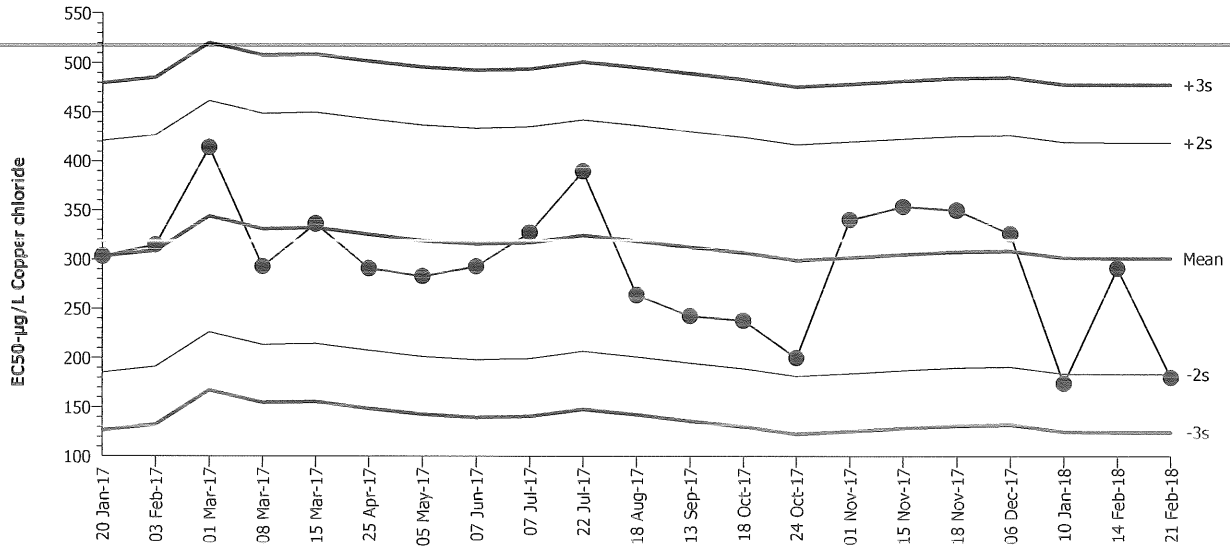
Nautilus Environmental (CA)

Test Type: Survival (96h)  
Protocol: EPA/821/R-02-012 (2002)

Organism: Americamysis bahia (Opossum Shri  
Endpoint: 48h Survival Rate

Material: Copper chloride  
Source: Reference Toxicant-REF

Mysid 96-h Acute Survival Test



Mean: 301.2      Count: 20      -2s Warning Limit: 183.5      -3s Action Limit: 124.6  
Sigma: 58.87      CV: 19.50%      +2s Warning Limit: 418.9      +3s Action Limit: 477.8

Quality Control Data

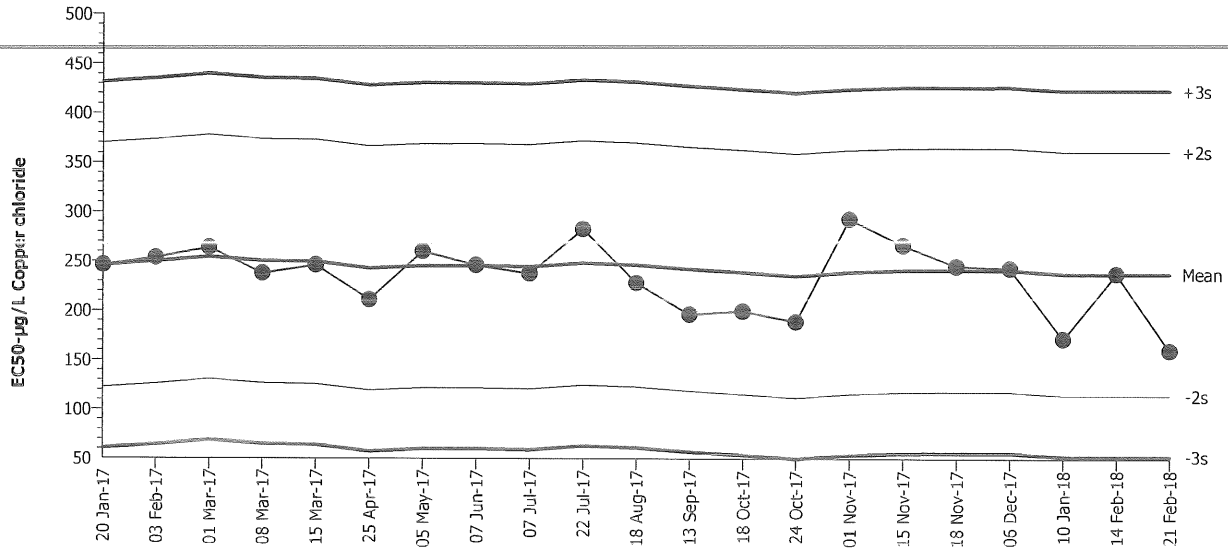
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Jan	20	15:25	303.1	1.943	0.03301			11-2780-9889	12-4644-2180
2		Feb	3	13:55	314.7	13.47	0.2288			20-1058-4272	08-9875-0003
3		Mar	1	14:50	414.1	112.9	1.918			18-5886-0252	19-0619-9641
4			8	14:40	292.8	-8.383	-0.1424			04-1071-1124	08-7317-5755
5			15	15:55	336.4	35.16	0.5972			05-0562-9795	14-7864-9461
6		Apr	25	16:30	290.9	-10.31	-0.1751			16-4599-2064	06-2019-8746
7		May	5	15:00	282.8	-18.36	-0.3118			16-0596-9578	11-8673-2065
8		Jun	7	14:15	292.8	-8.383	-0.1424			21-1826-2514	03-8291-7195
9		Jul	7	16:00	327.3	26.08	0.443			19-0240-9062	19-9165-2088
10			22	14:55	389.5	88.28	1.5			08-1324-7861	01-3966-4190
11		Aug	18	15:00	263.9	-37.3	-0.6336			02-1611-3515	07-0853-1813
12		Sep	13	16:00	242.5	-58.73	-0.9977			03-9805-8743	17-7148-8914
13		Oct	18	16:00	237.8	-63.36	-1.076			18-6999-6233	06-8502-0843
14			24	15:40	200	-101.2	-1.719			09-0677-5410	03-4054-3944
15		Nov	1	10:30	340.3	39.07	0.6636			15-0660-1810	13-0162-6049
16			15	14:00	353.6	52.38	0.8897			14-6406-9884	07-6897-0356
17			18	14:15	350.1	48.88	0.8303			13-3136-0118	18-7251-4644
18		Dec	6	15:30	326.1	24.86	0.4223			05-7061-5305	08-4813-7322
19	2018	Jan	10	16:10	174.1	-127.1	-2.159	(-)		19-5198-6454	14-1913-8860
20		Feb	14	14:30	291.1	-10.07	-0.171			09-8473-5109	02-7257-6506
21			21	13:05	180.3	-120.9	-2.055	(-)		02-7695-3118	17-0506-8696

Mysid 96-h Acute Survival Test

Nautilus Environmental (CA)

Test Type: Survival (96h) Organism: Americamysis bahia (Opossum Shri) Material: Copper chloride  
 Protocol: EPA/921/R-02-012 (2002) Endpoint: 96h Survival Rate Source: Reference Toxicant-REF

Mysid 96-h Acute Survival Test



Mean: 238      Count: 20      -2s Warning Limit: 114.2      -3s Action Limit: 52.32  
 Sigma: 61.88      CV: 26.00%      +2s Warning Limit: 361.7      +3s Action Limit: 423.6

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Jan	20	15:25	246.2	8.229	0.133			11-2780-9889	00-8801-4617
2		Feb	3	13:55	253.5	15.52	0.2508			20-1058-4272	05-9224-5863
3		Mar	1	14:50	263.9	25.9	0.4186			18-5886-0252	03-8065-4101
4			8	14:40	237.8	-0.1586	-0.00256			04-1071-1124	16-7731-4424
5			15	15:55	246.2	8.229	0.133			05-0562-9795	19-0511-3356
6		Apr	25	16:30	211.2	-26.75	-0.4323			16-4599-2064	16-5263-5506
7		May	5	15:00	260.1	22.14	0.3579			16-0596-9578	02-2100-0629
8		Jun	7	14:15	246.2	8.229	0.133			21-1826-2514	20-5292-2955
9		Jul	7	16:00	237.8	-0.1586	-0.00256			19-0240-9062	06-6760-1962
10			22	14:55	282.8	44.84	0.7247			08-1324-7861	01-8797-3188
11		Aug	18	15:00	228.5	-9.482	-0.1532			02-1611-3515	04-2734-0906
12		Sep	13	16:00	196.5	-41.5	-0.6706			03-9805-8743	17-3990-0867
13		Oct	18	16:00	200.0	-38	-0.6141			18-6999-6233	13-8379-6705
14			24	15:40	189.2	-48.82	-0.789			09-0677-5410	07-2632-8441
15		Nov	1	10:30	293.5	55.49	0.8968			15-0660-1810	03-5255-9542
16			15	14:00	266.7	28.71	0.4639			14-6406-9884	16-7238-8750
17			18	14:15	245.4	7.355	0.1189			13-3136-0118	12-6262-7347
18		Dec	6	15:30	243.5	5.477	0.08851			05-7061-5305	13-6446-0263
19	2018	Jan	10	16:10	172.0	-66.04	-1.067			19-5198-6454	19-5862-9045
20		Feb	14	14:30	237.9	-0.08626	-0.00139			09-8473-5109	07-9224-4059
21			21	13:05	160.2	-77.84	-1.258			02-7695-3118	10-4055-2096

⊕ Reference toxicant warning and control chart limits recalculated based on EPA 15<sup>th</sup> percentile interlaboratory coefficient of variation, as defined in EPA-833-R-00-003, for comparison purposes only.

Marine Acute Bioassay  
Static-Renewal Conditions

Water Quality Measurements  
& Test Organism Survival

Client: Internal  
Sample ID: CuCl<sub>2</sub>  
Test No.: 180220 myra  
180221 myra

Test Species: A. bahia  
Start Date/Time: 2/20/2018 1305  
Renewal Date/Time: 2/22/2018 1155  
End Date/Time: 2/24/2018 1125

Tech Initials				
0	24	48	72	96
RT	BO	BO	RT	TN
PH	DM	ST	RT	PH
BO		BO		
800	--	480	--	--
17.1		8.6		
2000	--	2000	--	--

Dilutions made by:  
High conc. made (µg/L):  
Vol. Cu stock added (mL):  
Final Volume (mL):

Cu stock concentration (µg/L): 93,300

Concentration (µg/L)	Rand #	Number of Live Organisms					Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	8	5	5	5	5	5	30.1	30.2	29.7	29.8	30.1	24.0	25.0	24.1	25.9	25.8	7.0	5.5	7.5	4.7	4.7	7.94	7.81	7.92	7.76	7.74
	7	5	5	5	5			30.2					25.6						4.8					7.06		
	15	5	5	5	5																					
	4	5	5	5	4	4																				
50	11	5	5	5	5	5	30.1	30.0	29.7	29.7	30.3	24.0	25.5	24.2	26.0	26.0	6.9	5.4	7.3	4.6	4.4	7.94	7.86	7.92	7.70	7.69
	12	5	5	5	5			30.2					25.7						4.8					7.69		
	2	5	5	5	5																					
	21	5	5	5	5																					
100	10	5	5	5	5	5	30.0	29.9	29.7	29.7	30.3	24.0	25.5	24.2	26.0	26.0	6.9	5.5	7.4	4.4	4.3	7.95	7.82	7.92	7.71	7.68
	13	5	5	4	4	4			30.2					25.8					5.1					7.73		
	1	5	5	4	4	4																				
	23	5	5	5	5																					
200	20	5	4	3	2	2	30.0	30.0	29.6	29.7	30.3	24.0	25.7	24.1	26.0	26.0	6.9	5.6	7.3	5.3	4.6	7.96	7.82	7.92	7.85	7.77
	14	5	3	2	1	1			30.3					25.7					5.6					7.82		
	6	5	1	0	-	-																				
	22	5	4	3	2	2																				
400	3	5	1	0	-	-	30.0	29.9	29.6	29.6	-	24.0	25.6	24.0	26.0	-	6.9	5.6	7.4	5.6	-	7.94	7.83	7.97	7.81	-
	19	5	2	1	0	-			30.3					25.7					5.6					7.81		
	16	5	3	0	-	-																				
800	9	5	2	0	-	-																				
	5	5	0				29.8	29.8	-	-	-	24.0	25.5	-	-	-	6.9	5.6	-	-	-	7.93	7.86	-	-	-
	24	5	0																							
	18	5	0																							
17	5	0																								

Rand # QC: RT  
Initial Counts QC'd by: PH  
Initiated by: RT

Animal Source/Date Received: ABS/2/21/18 Age at Initiation: 4 days  
Animal Acclimation Qualifiers (circle all that apply): Q22 / (Q23) / (Q24) / none

Comments: i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal  
Organisms fed prior to initiation, circle one (y) n ) (A) Q18 2/21/18  
(B) RT 2/21/18

QC Check: Ac 3/2/18

Feeding Times				
0	24	48	72	96
AM: -	0830	0835	0830	0820
PM: 1610	1710	1650	1600	-

Final Review: KFP 3/1/18



*Menidia*

**CETIS Summary Report**

Report Date: 20 Feb-18 15:26 (p 1 of 1)  
 Test Code: 180214mbra | 14-7429-6310

<b>Inland Silverside 96-h Acute Survival Test</b>							<b>Nautilus Environmental (CA)</b>				
<b>Batch ID:</b> 00-2170-4286	<b>Test Type:</b> Survival (96h)			<b>Analyst:</b>							
<b>Start Date:</b> 14 Feb-18 14:50	<b>Protocol:</b> EPA/821/R-02-012 (2002)			<b>Diluent:</b> Diluted Natural Seawater							
<b>Ending Date:</b> 18 Feb-18 14:00	<b>Species:</b> Menidia beryllina			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 95h	<b>Source:</b> Aquatic Biosystems, CO			<b>Age:</b> 13d							
<b>Sample ID:</b> 05-2217-6241	<b>Code:</b> 180214mbra			<b>Client:</b> Internal							
<b>Sample Date:</b> 14 Feb-18	<b>Material:</b> Copper chloride			<b>Project:</b>							
<b>Receive Date:</b> 14 Feb-18	<b>Source:</b> Reference Toxicant										
<b>Sample Age:</b> 15h	<b>Station:</b> Copper Chloride										
<b>Comparison Summary</b>											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
10-9674-6748	96h Survival Rate	100	200	141.4	19.1%	Steel Many-One Rank Sum Test					
<b>Point Estimate Summary</b>											
Analysis ID	Endpoint	Level	µg/L	95% LCL	95% UCL	TU	Method				
14-6416-7425	96h Survival Rate	EC50	170.3	141.3	205.2	Trimmed Spearman-Kärber					
<b>Test Acceptability</b>											
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision					
10-9674-6748	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria					
14-6416-7425	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria					
<b>96h Survival Rate Summary</b>											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	0.9	0.7163	1	0.8	1	0.05774	0.1155	12.83%	10.0%
100		4	0.9	0.7163	1	0.8	1	0.05774	0.1155	12.83%	10.0%
200		4	0.35	0.0453	0.6547	0.2	0.6	0.09574	0.1915	54.71%	65.0%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%
<b>96h Survival Rate Detail</b>											
C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
50		1	0.8	1	0.8						
100		0.8	0.8	1	1						
200		0.2	0.2	0.4	0.6						
400		0	0	0	0						
800		0	0	0	0						

**CETIS Analytical Report**

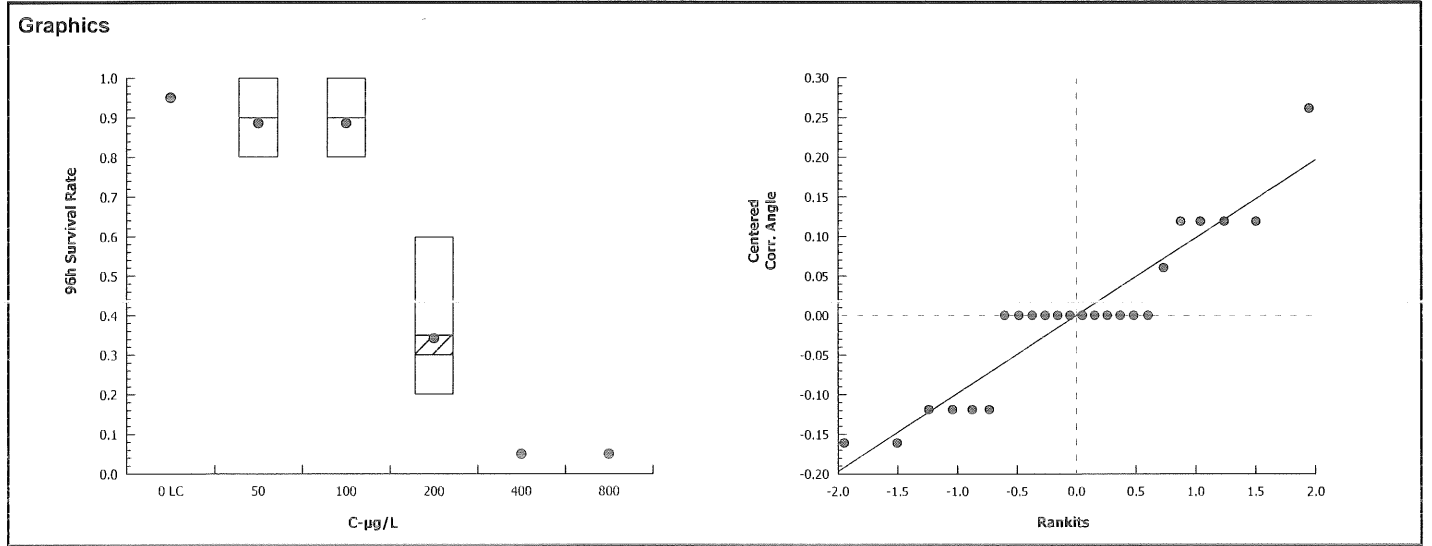
Report Date: 20 Feb-18 15:26 (p 1 of 2)  
 Test Code: 180214mbra | 14-7429-6310

Inland Silverside 96-h Acute Survival Test										Nautilus Environmental (CA)	
Analysis ID: 10-9674-6748		Endpoint: 96h Survival Rate			CETIS Version: CETISv1.8.7						
Analyzed: 20 Feb-18 15:26		Analysis: Nonparametric-Control vs Treatments			Official Results: Yes						
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corrected)	NA	C > T	NA	NA	19.1%	100	200	141.4			
Steel Many-One Rank Sum Test											
Control	vs	C-µg/L	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)		
Lab Control		50	14	10	1	6	0.2626	Asymp	Non-Significant Effect		
		100	14	10	1	6	0.2626	Asymp	Non-Significant Effect		
		200*	10	10	0	6	0.0276	Asymp	Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square	DF	F Stat	P-Value	Decision(α:5%)				
Between	1.271918		0.4239726	3	21.45	<0.0001	Significant Effect				
Error	0.2372117		0.01976764	12							
Total	1.509129			15							
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Mod Levene Equality of Variance		7.594	5.953	0.0041	Unequal Variances					
Variances	Levene Equality of Variance		11.39	5.953	0.0008	Unequal Variances					
Distribution	Shapiro-Wilk W Normality		0.9091	0.8408	0.1127	Normal Distribution					
96h Survival Rate Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	1	0	0.0%	0.0%
50		4	0.9	0.7163	1	0.9	0.8	1	0.05774	12.83%	10.0%
100		4	0.9	0.7163	1	0.9	0.8	1	0.05774	12.83%	10.0%
200		4	0.35	0.0453	0.6547	0.3	0.2	0.6	0.09574	54.71%	65.0%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%
Angular (Corrected) Transformed Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
50		4	1.226	1.007	1.445	1.226	1.107	1.345	0.06874	11.21%	8.85%
100		4	1.226	1.007	1.445	1.226	1.107	1.345	0.06874	11.21%	8.85%
200		4	0.6245	0.3013	0.9478	0.5742	0.4636	0.8861	0.1016	32.53%	53.58%
400		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	83.24%
800		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	83.24%

# CETIS Analytical Report

Report Date: 20 Feb-18 15:26 (p 2 of 2)  
Test Code: 180214mbra | 14-7429-6310

Inland Silverside 96-h Acute Survival Test		Nautilus Environmental (CA)	
Analysis ID: 10-9674-6748	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7	Official Results: Yes
Analyzed: 20 Feb-18 15:26	Analysis: Nonparametric-Control vs Treatments		



# CETIS Analytical Report

Report Date: 20 Feb-18 15:26 (p 1 of 1)  
 Test Code: 180214mbra | 14-7429-6310

Inland Silverside 96-h Acute Survival Test Nautilus Environmental (CA)

Analysis ID: 14-6416-7425      Endpoint: 96h Survival Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 20 Feb-18 15:26      Analysis: Trimmed Spearman-Kärber      Official Results: Yes

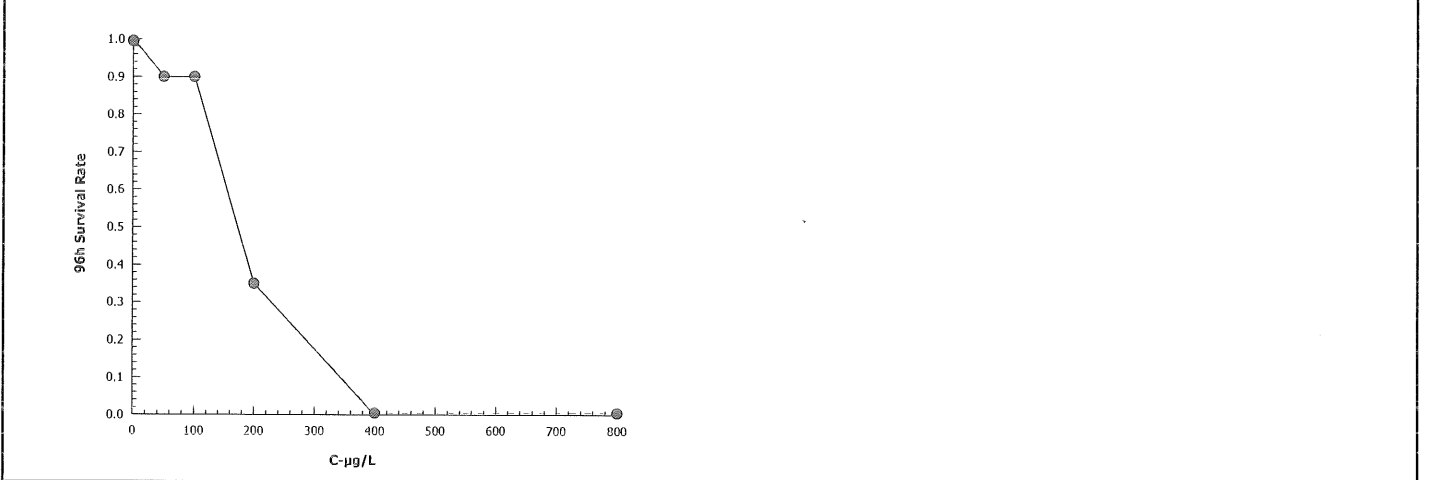
### Trimmed Spearman-Kärber Estimates

Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0	10.00%	2.231	0.04051	170.3	141.3	205.2

### 96h Survival Rate Summary

C-µg/L	Control Type	Count	Calculated Variate(A/B)								
			Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	1	1	1	0	0	0.0%	0.0%	20	20
50		4	0.9	0.8	1	0.05774	0.1155	12.83%	10.0%	18	20
100		4	0.9	0.8	1	0.05774	0.1155	12.83%	10.0%	18	20
200		4	0.35	0.2	0.6	0.09574	0.1915	54.71%	65.0%	7	20
400		4	0	0	0	0	0		100.0%	0	20
800		4	0	0	0	0	0		100.0%	0	20

### Graphics



Inland Silverside 96-h Acute Survival Test

Nautilus Environmental (CA)

Test Type: Survival (96h)

Organism: Menidia beryllina (Inland Silverside)

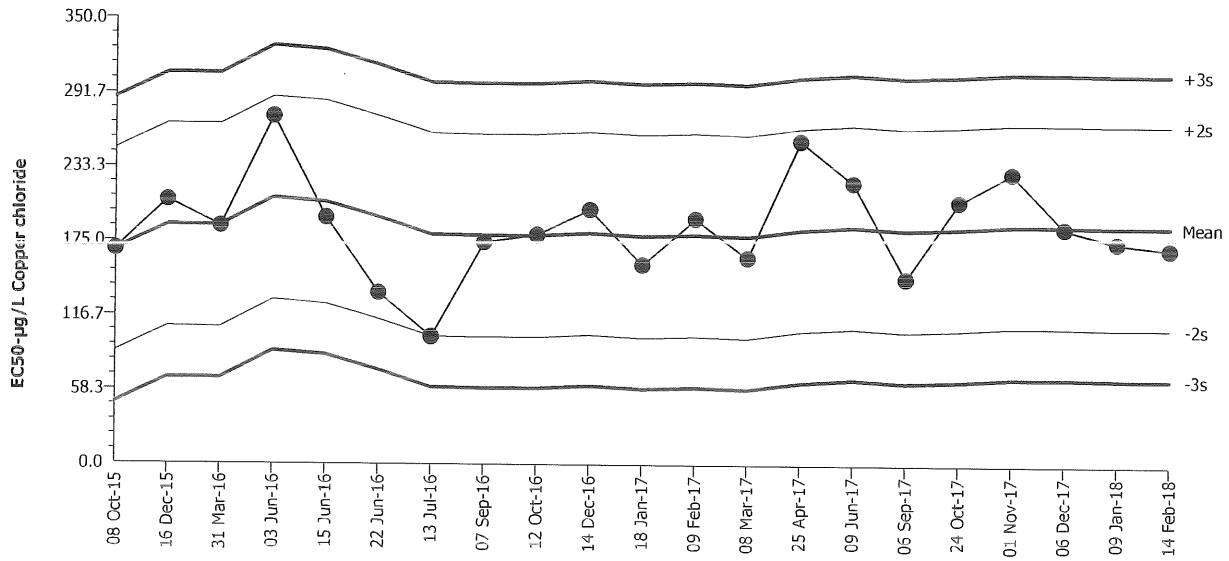
Material: Copper chloride

Protocol: EPA/821/R-02-012 (2002)

Endpoint: 96h Survival Rate

Source: Reference Toxicant-REF

Inland Silverside 96-h Acute Survival Test



Mean: 187.6      Count: 20      -2s Warning Limit: 107.6      -3s Action Limit: 67.65  
 Sigma: 39.97      CV: 21.30%      +2s Warning Limit: 267.5      +3s Action Limit: 307.5

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2015	Oct	8	14:50	168.2	-19.42	-0.4859			14-3788-0896	13-0205-0736
2		Dec	16	14:40	207.1	19.45	0.4867			01-2995-6999	07-8650-3881
3	2016	Mar	31	13:15	186.6	-0.9934	-0.02485			04-9176-6960	04-6273-7211
4		Jun	3	13:05	273.2	85.61	2.142	(+)		05-6152-2576	20-6579-6743
5			15	12:00	193.2	5.587	0.1398			10-9271-9699	01-6859-0922
6			22	16:45	134.1	-53.47	-1.338			07-0637-4050	08-9968-9939
7		Jul	13	14:00	100	-87.6	-2.192	(-)		13-7856-4259	06-7825-8215
8		Sep	7	13:00	174.1	-13.49	-0.3375			01-2005-7599	20-6477-7811
9		Oct	12	16:50	180.3	-7.35	-0.1839			05-8174-8948	18-7048-2590
10		Dec	14	15:00	200	12.4	0.3102			11-6035-0425	16-7117-7080
11	2017	Jan	18	16:10	156.9	-30.68	-0.7677			08-3080-1498	15-7184-5634
12		Feb	9	12:00	193.2	5.587	0.1398			00-6390-0484	15-2790-9508
13		Mar	8	15:15	162.5	-25.15	-0.6292			19-2708-9742	07-1568-1665
14		Apr	25	17:00	254.9	67.31	1.684			20-8848-5762	06-2422-4286
15		Jun	9	17:15	221.9	34.31	0.8585			04-5405-2533	13-3732-1084
16		Sep	6	15:50	146.4	-41.19	-1.031			01-8301-6131	10-0799-2130
17		Oct	24	16:10	207.1	19.45	0.4867			10-0714-4627	19-6697-7894
18		Nov	1	10:15	229.7	42.14	1.054			14-0848-4500	09-3507-0741
19		Dec	6	15:25	186.6	-0.9934	-0.02485			17-2716-0280	10-6923-1723
20	2018	Jan	9	16:05	175.2	-12.4	-0.3102			15-9782-4320	14-5127-3080
21		Feb	14	14:50	170.3	-17.33	-0.4335			14-7429-6310	14-6416-7425

**Marine Acute Bioassay  
Static-Renewal Conditions**

**Water Quality Measurements  
& Test Organism Survival**

Client: Internal  
 Sample ID: CuCl<sub>2</sub>  
 Test No.: 180214mbra

Test Species: M. beryllina  
 Start Date/Time: 2/14/2018 1450  
 End Date/Time: 2/18/2018 1400

Tech Initials					
0	24	48	72	96	
DM	BO	LP	BO	TW	Counts:
DM	DM	RT	RT	TW	Readings:
LP		LP			Dilutions made by:
800	--	400	--	--	High conc. made (µg/L):
17.1	--	8.0	--	--	Vol. Cu stock added (mL):
2000	--	2000	--	--	Final Volume (mL):

Cu stock concentration (µg/L): 93,300

Concentration (µg/L)	Rand #	Number of Live Organisms					Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	19	5	5	5	5	5	29.6	29.8	30.1	30.5	30.3	24.7	25.1	24.8	24.9	25.5	6.3	5.2	6.2	5.4	5.5	8.00	7.89	7.95	7.86	7.80
	14	5	5	5	5	5			29.8					25.5					4.9					7.73		
	6	5	5	5	5	5																				
	24	5	5	5	5	5																				
50	11	5	5	5	5	5	29.5	29.7	30.3	30.5	30.5	25.0	25.2	24.7	25.0	25.6	6.3	5.2	6.2	5.3	5.5	8.00	7.89	7.95	7.80	7.80
	20	5	4	4	4	4			29.7					25.6					5.1					7.73		
	1	5	5	5	5	5																				
	7	5	4	4	4	4																				
100	5	5	4	4	4	4	29.4	29.6	30.2	30.6	30.7	25.0	25.2	24.8	25.4	25.6	6.3	5.2	6.2	5.0	5.5	8.00	7.88	7.95	7.84	7.82
	9	5	4	4	4	4			29.8					25.7					5.0					7.73		
	18	5	5	5	5	5																				
	2	5	5	5	5	5																				
200	21	5	1	1	1	1	29.4	29.8	30.0	30.3	30.5	25.0	25.0	24.8	25.4	25.7	6.3	5.3	6.2	5.2	5.6	7.99	7.89	7.95	7.89	7.85
	4	5	1	1	1	1			30.2					25.6					5.2					7.77		
	17	5	2	2	2	2																				
	22	5	3	3	3	3																				
400	10	5	0	-	-	-	29.4	29.7	30.1	-	-	25.0	24.9	24.8	-	-	6.3	5.1	6.2	-	-	7.98	7.87	7.94	-	-
	23	5	1	0	-	-			29.9					25.5					5.3					7.76		
	12	5	1	0	-	-																				
800	8	5	0	-	-	-																				
	16	5	0	-	-	-	29.2	-	-	-	-	24.9	-	-	-	-	6.3	-	-	-	-	7.96	-	-	-	
	13	5	0	-	-	-			-					-					-							
	3	5	0	-	-	-													-							
15	5	0	-	-	-																					

Rand # QC: DM  
 Initial Counts QC'd by: LP  
 Initiated by: DM

Animal Source/Date Received: ABS/2/9/18 Age at Initiation: 13d  
 Animal Acclimation Qualifiers (circle all that apply): Q22 / Q23 / Q24 / none

Comments: i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal  
Organisms fed prior to initiation, circle one (y) / n )

Feeding Times					
0	24	48	72	96	
AM:	08:45	08:45	08:45	08:45	08:45
PM:	17:45				

QC Check: EC 2/20/18

Final Review: LP 2/23/18

**CETIS Summary Report**

Report Date: 02 Mar-18 16:30 (p 1 of 1)  
 Test Code: 180221mbra | 20-0148-6736

**Inland Silverside 96-h Acute Survival Test** **Nautilus Environmental (CA)**

<b>Batch ID:</b> 03-0935-0458	<b>Test Type:</b> Survival (96h)	<b>Analyst:</b>
<b>Start Date:</b> 21 Feb-18 12:25	<b>Protocol:</b> EPA/821/R-02-012 (2002)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 25 Feb-18 11:15	<b>Species:</b> Menidia beryllina	<b>Brine:</b> Not Applicable
<b>Duration:</b> 95h	<b>Source:</b> Aquatic Biosystems, CO	<b>Age:</b> 13d

<b>Sample ID:</b> 03-1697-0881	<b>Code:</b> 180221mbra	<b>Client:</b> Internal
<b>Sample Date:</b> 21 Feb-18	<b>Material:</b> Copper chloride	<b>Project:</b>
<b>Receive Date:</b> 21 Feb-18	<b>Source:</b> Reference Toxicant	
<b>Sample Age:</b> 12h	<b>Station:</b> Copper Chloride	

**Comparison Summary**

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
20-7569-5691	96h Survival Rate	100	200	141.4	18.9%		Dunnett Multiple Comparison Test

**Point Estimate Summary**

Analysis ID	Endpoint	Level	µg/L	95% LCL	95% UCL	TU	Method
18-8740-2809	96h Survival Rate	EC50	187.2	155.5	225.3		Trimmed Spearman-Kärber

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
18-8740-2809	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria
20-7569-5691	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

**96h Survival Rate Summary**

C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	0.9	0.5818	1	0.6	1	0.1	0.2	22.22%	10.0%
100		4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
200		4	0.45	0.2909	0.6091	0.4	0.6	0.05	0.1	22.22%	55.0%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%

**96h Survival Rate Detail**

C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Control	1	1	1	1
50		0.6	1	1	1
100		1	0.8	1	1
200		0.4	0.4	0.4	0.6
400		0	0	0	0
800		0	0	0	0



**CETIS Analytical Report**

Report Date: 02 Mar-18 16:30 (p 1 of 2)  
 Test Code: 180221mbra | 20-0148-6736

<b>Inland Silverside 96-h Acute Survival Test</b>							<b>Nautilus Environmental (CA)</b>				
---	--	--	--	--	--	--	------------------------------------	--	--	--	--

<b>Analysis ID:</b> 20-7569-5691	<b>Endpoint:</b> 96h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7
<b>Analyzed:</b> 02 Mar-18 16:29	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	18.9%	100	200	141.4	

<b>Dunnett Multiple Comparison Test</b>									
Control	vs	C-µg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		50	1.17	2.287	0.225	6	0.2730	CDF	Non-Significant Effect
		100	0.6067	2.287	0.225	6	0.4990	CDF	Non-Significant Effect
		200*	6.219	2.287	0.225	6	<0.0001	CDF	Significant Effect

<b>ANOVA Table</b>						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.9408557	0.3136186	3	16.29	0.0002	Significant Effect
Error	0.2310922	0.01925768	12			
Total	1.171948		15			

<b>Distributional Tests</b>					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	0.4596	5.953	0.7156	Equal Variances
Variances	Levene Equality of Variance	4.136	5.953	0.0315	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8613	0.8408	0.0200	Normal Distribution

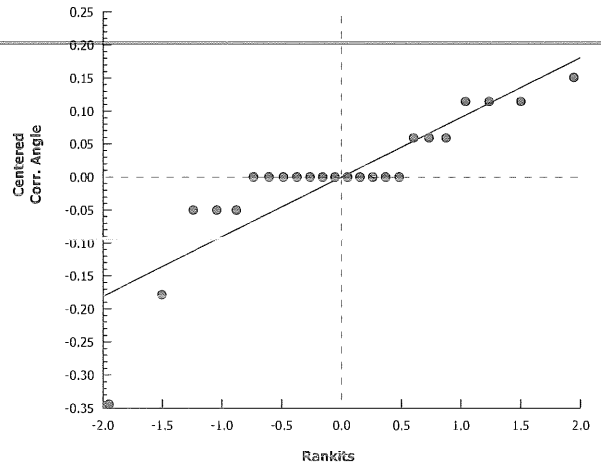
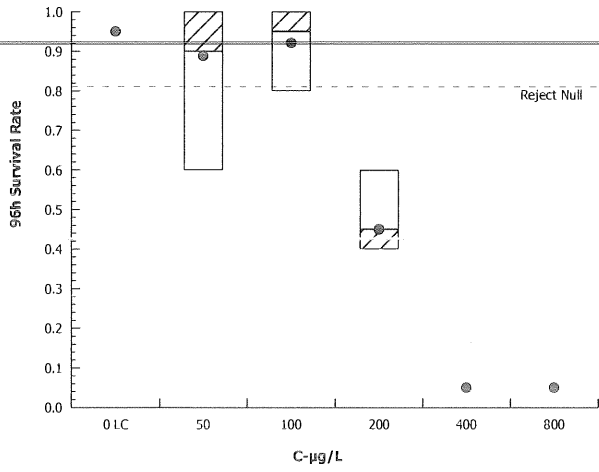
<b>96h Survival Rate Summary</b>											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	1	0	0.0%	0.0%
50		4	0.9	0.5818	1	1	0.6	1	0.1	22.22%	10.0%
100		4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	5.0%
200		4	0.45	0.2909	0.6091	0.4	0.4	0.6	0.05	22.22%	55.0%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%

<b>Angular (Corrected) Transformed Summary</b>											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
50		4	1.23	0.8651	1.596	1.345	0.8861	1.345	0.1148	18.66%	8.53%
100		4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	4.43%
200		4	0.7351	0.5749	0.8953	0.6847	0.6847	0.8861	0.05034	13.7%	45.36%
400		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	83.24%
800		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	83.24%

Inland Silverside 96-h Acute Survival Test Nautilus Environmental (CA)

Analysis ID: 20-7569-5691      Endpoint: 96h Survival Rate      CETIS Version: CETISv1.8.7  
Analyzed: 02 Mar-18 16:29      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Graphics



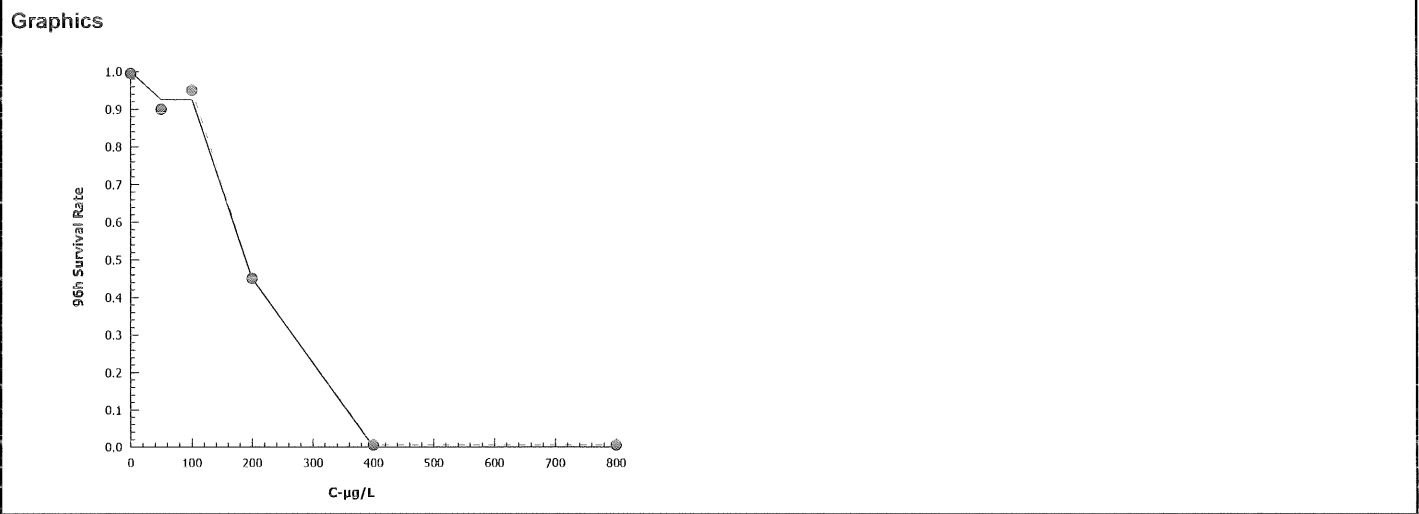
**CETIS Analytical Report**

Report Date: 02 Mar-18 16:30 (p 1 of 1)  
 Test Code: 180221mbra | 20-0148-6736

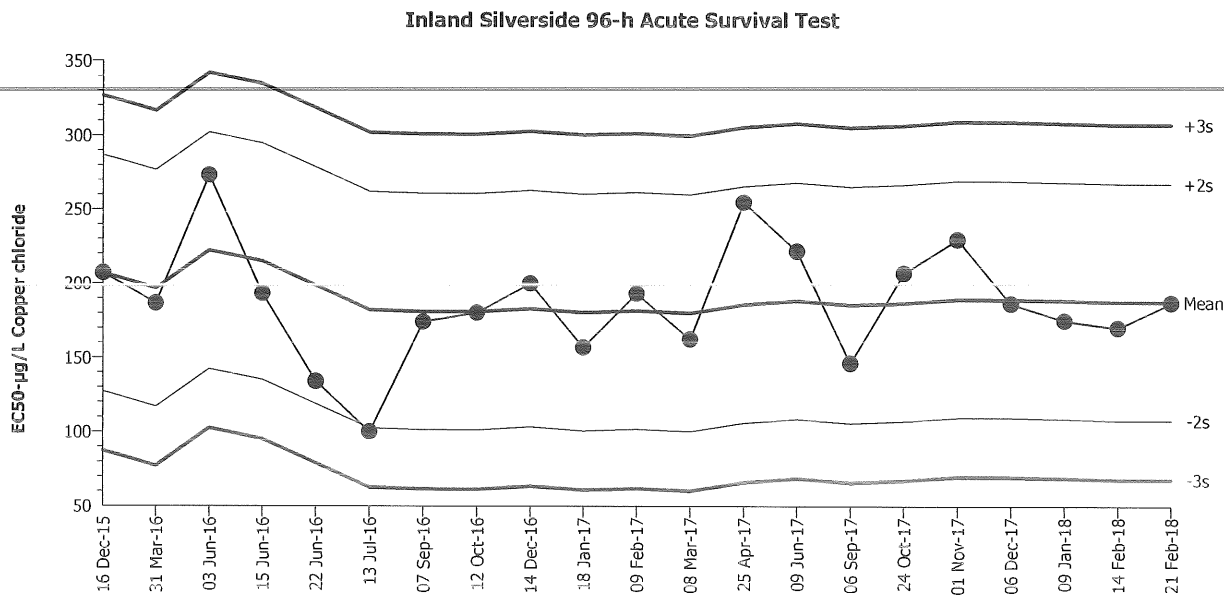
<b>Inland Silverside 96-h Acute Survival Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 18-8740-2809	<b>Endpoint:</b> 96h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 02 Mar-18 16:29	<b>Analysis:</b> Trimmed Spearman-Kärber	<b>Official Results:</b> Yes			

<b>Trimmed Spearman-Kärber Estimates</b>							
<b>Threshold Option</b>	<b>Threshold</b>	<b>Trim</b>	<b>Mu</b>	<b>Sigma</b>	<b>EC50</b>	<b>95% LCL</b>	<b>95% UCL</b>
Control Threshold	0	7.50%	2.272	0.04023	187.2	155.5	225.3

<b>96h Survival Rate Summary</b>			<b>Calculated Variate(A/B)</b>								
<b>C-µg/L</b>	<b>Control Type</b>	<b>Count</b>	<b>Mean</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	<b>A</b>	<b>B</b>
0	Lab Control	4	1	1	1	0	0	0.0%	0.0%	20	20
50		4	0.9	0.6	1	0.1	0.2	22.22%	10.0%	18	20
100		4	0.95	0.8	1	0.05	0.1	10.53%	5.0%	19	20
200		4	0.45	0.4	0.6	0.05	0.1	22.22%	55.0%	9	20
400		4	0	0	0	0	0		100.0%	0	20
800		4	0	0	0	0	0		100.0%	0	20



Inland Silverside 96-h Acute Survival Test		Nautilus Environmental (CA)	
Test Type: Survival (96h)	Organism: Menidia beryllina (Inland Silverside)	Material: Copper chloride	
Protocol: EPA/821/R-02-012 (2002)	Endpoint: 96h Survival Rate	Source: Reference Toxicant-REF	



Mean: 187.7      Count: 20      -2s Warning Limit: 107.8      -3s Action Limit: 67.9  
 Sigma: 39.92      CV: 21.30%      +2s Warning Limit: 267.5      +3s Action Limit: 307.4

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2015	Dec	16	14:40	207.1	19.35	0.4848			01-2995-6999	07-8650-3881
2	2016	Mar	31	13:15	186.6	-1.093	-0.02739			04-9176-6960	04-6273-7211
3		Jun	3	13:05	273.2	85.51	2.142	(+)		05-6152-2576	20-6579-6743
4			15	12:00	193.2	5.487	0.1375			10-9271-9699	01-6859-0922
5			22	16:45	134.1	-53.57	-1.342			07-0637-4050	08-9968-9939
6		Jul	13	14:00	100	-87.7	-2.197	(-)		13-7856-4259	06-7825-8215
7		Sep	7	13:00	174.1	-13.59	-0.3404			01-2005-7599	20-6477-7811
8		Oct	12	16:50	180.3	-7.45	-0.1866			05-8174-8948	18-7048-2590
9		Dec	14	15:00	200	12.3	0.3081			11-6035-0425	16-7117-7080
10	2017	Jan	18	16:10	156.9	-30.78	-0.7711			08-3080-1498	15-7184-5634
11		Feb	9	12:00	193.2	5.487	0.1375			00-6390-0484	15-2790-9508
12		Mar	8	15:15	162.5	-25.25	-0.6325			19-2708-9742	07-1568-1665
13		Apr	25	17:00	254.9	67.21	1.684			20-8848-5762	06-2422-4286
14		Jun	9	17:15	221.9	34.21	0.8571			04-5405-2533	13-3732-1084
15		Sep	6	15:50	146.4	-41.29	-1.034			01-8301-6131	10-0799-2130
16		Oct	24	16:10	207.1	19.35	0.4848			10-0714-4627	19-6697-7894
17		Nov	1	10:15	229.7	42.04	1.053			14-0848-4500	09-3507-0741
18		Dec	6	15:25	186.6	-1.093	-0.02739			17-2716-0280	10-6923-1723
19	2018	Jan	9	16:05	175.2	-12.5	-0.3131			15-9782-4320	14-5127-3080
20		Feb	14	14:50	170.3	-17.43	-0.4365			14-7429-6310	14-6416-7425
21			21	12:25	187.2	-0.5219	-0.01307			20-0148-6736	18-8740-2809

Marine Acute Bioassay  
Static-Renewal Conditions

Water Quality Measurements  
& Test Organism Survival

Client: Internal  
Sample ID: CuCl<sub>2</sub>  
Test No.: 180220mbra (B)  
180221mbra

Test Species: M. beryllina  
Start Date/Time: 2/21/2018 1225  
End Date/Time: 2/24/2018 1115

Tech Initials				
0	24	48	72	96
TN	BO	LP	RT	TN
RT	DM	DM	RT	PH
Dilutions made by: BO BO				
High conc. made (µg/L): 800 -- 200 -- --				
Vol. Cu stock added (mL): 17.1 -- 4.3 -- --				
Final Volume (mL): 2000 -- 2000 -- --				

Cu stock concentration (µg/L): 93,300

Concentration (µg/L)	Rand #	Number of Live Organisms					Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	19	5	5	5	5	5	30.1	30.4	29.7	30.2	31.0	24.0	25.3	24.1	25.5	25.5	6.9	5.1	7.5	5.9	5.7	7.96	7.72	7.99	7.99	7.90
	14	5	5	5	5	5			30.3					25.3					5.6				7.72			
	6	5	5	5	5	5																				
	24	5	5	5	5	5																				
50	11	5	3	3	3	3	30.1	30.4	29.7	30.3	31.9	24.0	25.6	24.2	25.6	25.5	6.9	5.0	7.4	5.9	5.7	7.96	7.80	7.99	7.94	7.94
	20	5	5	5	5	5			30.4					25.6					5.7				7.79			
	1	5	5	5	5	5																				
	7	5	5	5	5	5																				
100	5	5	5	5	5	5	30.1	30.4	29.7	30.4	32.2	24.0	25.2	24.2	25.5	25.3	6.8	5.4	7.4	5.9	5.7	7.80	7.83	7.92	7.91	7.93
	9	5	4	4	4	4			30.5					25.3					5.2			7.95	7.70			
	18	5	5	5	5	5																				
	2	5	5	5	5	5																				
200	21	5	2	2	2	2	30.0	30.4	29.7	29.8	30.2	24.0	24.9	24.1	25.9	25.9	6.8	5.3	7.4	5.9	5.6	7.95	7.82	7.92	7.93	7.94
	4	5	2	2	2	2			30.6					25.4					5.7				7.72			
	17	5	2	2	2	2																				
	22	5	3	3	3	3																				
400	10	5	0				30.0	30.3				24.0	25.4				6.9	5.1				7.68	7.81			
	23	5	0																			7.94				
	12	5	0																							
	8	5	0																							
800	16	5	0				29.9	30.3				24.0	25.4				6.9	5.2				7.66	7.80			
	13	5	0																			7.92				
	3	5	0																							
	15	5	0																							

Rand # QC: RT  
Initial Counts QC'd by: BO  
Initiated by: BO

Animal Source/Date Received: ABS 12/16/18 Age at Initiation: 13d  
Animal Acclimation Qualifiers (circle all that apply): Q22 / Q23 / Q24 / (none)

Feeding Times				
0	24	48	72	96
AM:	0835	0835	0830	0820
PM:	1610			

Comments: i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal  
Organisms fed prior to initiation, circle one (y/n)  
(B) Q18 2/24/18 RT  
QC Check: AC 3/2/18

Final Review: KFP 3/11/18

**CETIS Summary Report**

Report Date: 02 Mar-18 16:32 (p 1 of 1)  
 Test Code: 180222mbra | 21-2244-9573

**Inland Silverside 96-h Acute Survival Test** **Nautilus Environmental (CA)**

<b>Batch ID:</b> 10-0266-9285	<b>Test Type:</b> Survival (96h)	<b>Analyst:</b>
<b>Start Date:</b> 22 Feb-18 17:20	<b>Protocol:</b> EPA/821/R-02-012 (2002)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 26 Feb-18 16:15	<b>Species:</b> Menidia beryllina	<b>Brine:</b> Not Applicable
<b>Duration:</b> 95h	<b>Source:</b> Aquatic Biosystems, CO	<b>Age:</b> 10d

<b>Sample ID:</b> 00-8422-6309	<b>Code:</b> 180222mbra	<b>Client:</b> Internal
<b>Sample Date:</b> 22 Feb-18	<b>Material:</b> Copper chloride	<b>Project:</b>
<b>Receive Date:</b> 22 Feb-18	<b>Source:</b> Reference Toxicant	
<b>Sample Age:</b> 17h	<b>Station:</b> Copper Chloride	

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
05-6802-3723	96h Survival Rate	200	400	282.8	13.2%		Dunnett Multiple Comparison Test

Point Estimate Summary							
Analysis ID	Endpoint	Level	µg/L	95% LCL	95% UCL	TU	Method
15-2512-9013	96h Survival Rate	EC50	266.7	244.6	290.8		Spearman-Kärber

Test Acceptability							
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision	
05-6802-3723	96h Survival Rate	Control Resp	0.95	0.9 - NL	Yes	Passes Acceptability Criteria	
15-2512-9013	96h Survival Rate	Control Resp	0.95	0.9 - NL	Yes	Passes Acceptability Criteria	

96h Survival Rate Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	-5.26%
100		4	1	1	1	1	1	0	0	0.0%	-5.26%
200		4	0.9	0.7163	1	0.8	1	0.05774	0.1155	12.83%	5.26%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%

96h Survival Rate Detail						
C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	
0	Lab Control	1	0.8	1	1	
50		1	1	1	1	
100		1	1	1	1	
200		0.8	1	0.8	1	
400		0	0	0	0	
800		0	0	0	0	

**CETIS Analytical Report**

Report Date: 02 Mar-18 16:32 (p 1 of 2)  
 Test Code: 180222mbra | 21-2244-9573

Inland Silverside 96-h Acute Survival Test							Nautilus Environmental (CA)				
--	--	--	--	--	--	--	-----------------------------	--	--	--	--

Analysis ID: 05-6802-3723	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 02 Mar-18 16:32	Analysis: Parametric-Control vs Treatments	Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	13.2%	200	400	282.8	

Dunnett Multiple Comparison Test									
Control	vs	C-µg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		50	-0.9258	2.287	0.147	6	0.9537	CDF	Non-Significant Effect
		100	-0.9258	2.287	0.147	6	0.9537	CDF	Non-Significant Effect
		200	0.9258	2.287	0.147	6	0.3639	CDF	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.03898668	0.01299556	3	1.571	0.2476	Non-Significant Effect
Error	0.09923882	0.008269902	12			
Total	0.1382255		15			

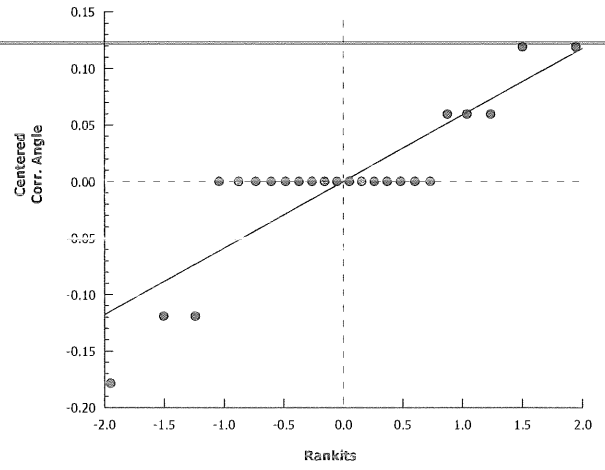
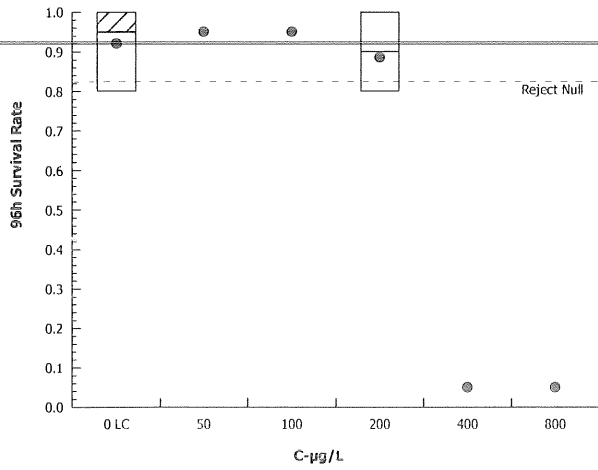
Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Mod Levene Equality of Variance	3.667	5.953	0.0439	Equal Variances	
Variances	Levene Equality of Variance	17	5.953	0.0001	Unequal Variances	
Distribution	Shapiro-Wilk W Normality	0.8711	0.8408	0.0283	Normal Distribution	

96h Survival Rate Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
50		4	1	1	1	1	1	1	0	0.0%	-5.26%
100		4	1	1	1	1	1	1	0	0.0%	-5.26%
200		4	0.9	0.7163	1	0.9	0.8	1	0.05774	12.83%	5.26%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%

Angular (Corrected) Transformed Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
50		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	-4.63%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	-4.63%
200		4	1.226	1.007	1.445	1.226	1.107	1.345	0.06874	11.21%	4.63%
400		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	82.46%
800		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	82.46%

Inland Silverside 96-h Acute Survival Test		Nautilus Environmental (CA)
Analysis ID: 05-6802-3723	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 02 Mar-18 16:32	Analysis: Parametric-Control vs Treatments	Official Results: Yes

Graphics





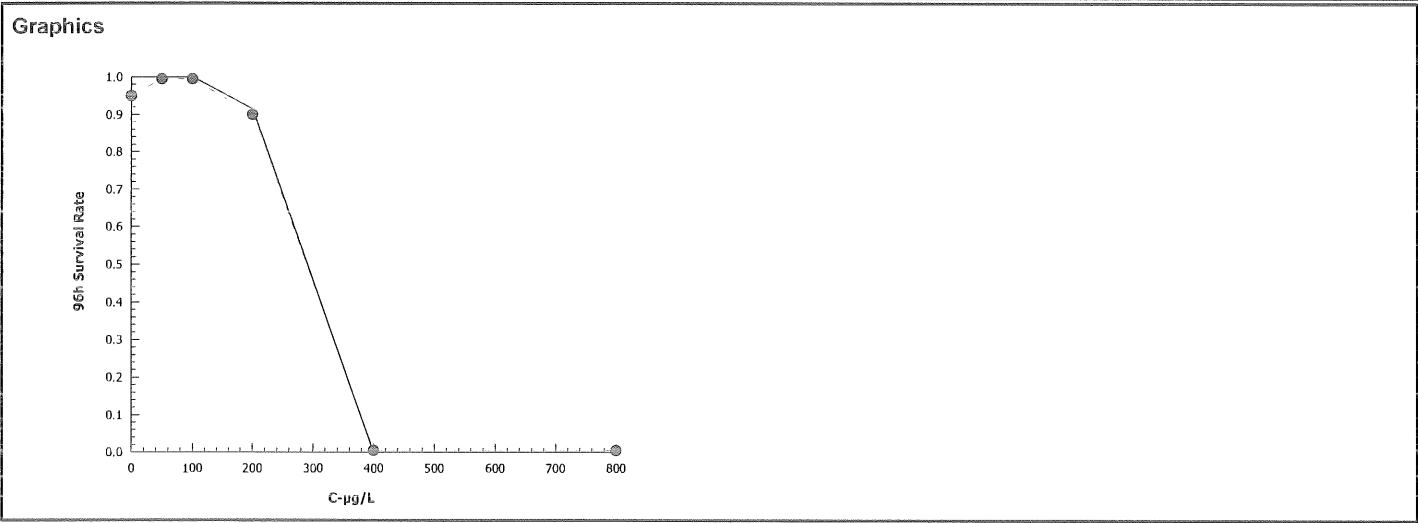
**CETIS Analytical Report**

Report Date: 02 Mar-18 16:32 (p 1 of 1)  
 Test Code: 180222mbra | 21-2244-9573

<b>Inland Silverside 96-h Acute Survival Test</b>				<b>Nautilus Environmental (CA)</b>			
<b>Analysis ID:</b> 15-2512-9013	<b>Endpoint:</b> 96h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7		<b>Official Results:</b> Yes			
<b>Analyzed:</b> 02 Mar-18 16:32	<b>Analysis:</b> Untrimmed Spearman-Kärber						

Spearman-Kärber Estimates							
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0.05	0.00%	2.426	0.01875	266.7	244.6	290.8

96h Survival Rate Summary			Calculated Variate(A/B)									
C-µg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B	
0	Lab Control	4	0.95	0.8	1	0.05	0.1	10.53%	0.0%	19	20	
50		4	1	1	1	0	0	0.0%	-5.26%	20	20	
100		4	1	1	1	0	0	0.0%	-5.26%	20	20	
200		4	0.9	0.8	1	0.05774	0.1155	12.83%	5.26%	18	20	
400		4	0	0	0	0	0		100.0%	0	20	
800		4	0	0	0	0	0		100.0%	0	20	



Inland Silverside 96-h Acute Survival Test

Nautilus Environmental (CA)

Test Type: Survival (96h)

Organism: Menidia beryllina (Inland Silverside)

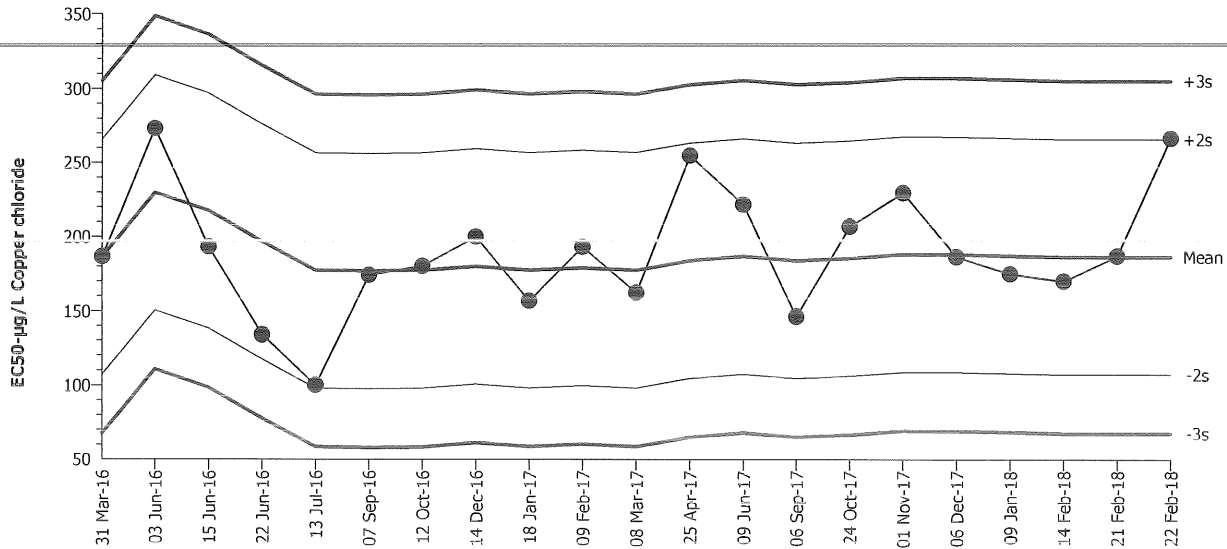
Material: Copper chloride

Protocol: EPA/821/R-02-012 (2002)

Endpoint: 96h Survival Rate

Source: Reference Toxicant-REF

Inland Silverside 96-h Acute Survival Test



Mean: 186.7      Count: 20      -2s Warning Limit: 107.3      -3s Action Limit: 67.69  
 Sigma: 39.66      CV: 21.20%      +2s Warning Limit: 266      +3s Action Limit: 305.6

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2016	Mar	31	13:15	186.6	-0.0934	-0.00236			04-9176-6960	04-6273-7211
2		Jun	3	13:05	273.2	86.51	2.181	(+)		05-6152-2576	20-6579-6743
3			15	12:00	193.2	6.487	0.1636			10-9271-9699	01-6859-0922
4			22	16:45	134.1	-52.57	-1.326			07-0637-4050	08-9968-9939
5		Jul	13	14:00	100	-86.7	-2.186	(-)		13-7856-4259	06-7825-8215
6		Sep	7	13:00	174.1	-12.59	-0.3174			01-2005-7599	20-6477-7811
7		Oct	12	16:50	180.3	-6.45	-0.1626			05-8174-8948	18-7048-2590
8		Dec	14	15:00	200	13.3	0.3354			11-6035-0425	16-7117-7080
9	2017	Jan	18	16:10	156.9	-29.78	-0.751			08-3080-1498	15-7184-5634
10		Feb	9	12:00	193.2	6.487	0.1636			00-6390-0484	15-2790-9508
11		Mar	8	15:15	162.5	-24.25	-0.6114			19-2708-9742	07-1568-1665
12		Apr	25	17:00	254.9	68.21	1.72			20-8848-5762	06-2422-4286
13		Jun	9	17:15	221.9	35.21	0.8879			04-5405-2533	13-3732-1084
14		Sep	6	15:50	146.4	-40.29	-1.016			01-8301-6131	10-0799-2130
15		Oct	24	16:10	207.1	20.35	0.5132			10-0714-4627	19-6697-7894
16		Nov	1	10:15	229.7	43.04	1.085			14-0848-4500	09-3507-0741
17		Dec	6	15:25	186.6	-0.0934	-0.00236			17-2716-0280	10-6923-1723
18	2018	Jan	9	16:05	175.2	-11.5	-0.2899			15-9782-4320	14-5127-3080
19		Feb	14	14:50	170.3	-16.43	-0.4142			14-7429-6310	14-6416-7425
20			21	12:25	187.2	0.4781	0.01205			20-0148-6736	18-8740-2809
21			22	17:20	266.7	80.01	2.017	(+)		21-2244-9573	15-2512-9013

Marine Acute Bioassay  
Static-Renewal Conditions

Water Quality Measurements  
& Test Organism Survival

Client: Internal  
Sample ID: CuCl<sub>2</sub>  
Test No.: 180222mbra

Test Species: M. beryllina  
Start Date/Time: 2/22/2018 1720  
End Date/Time: 2/26/2018 1615

	Tech Initials				
	0	24	48	72	96
Counts:	A	RT	BO	PH	DM
Readings:	RT	DM	RT	PH	DM
Dilutions made by:	MS		BO		
High conc. made (µg/L):	800	--	200	--	--
Vol. Cu stock added (mL):	171	--	43	--	--
Final Volume (mL):	2000	--	2000	--	--

Cu stock concentration (µg/L): 93,300

Concentration (µg/L)	Rand #	Number of Live Organisms					Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	19	5	5	5	5	5	30.4	30.3	29.4	30.4	30.2	24.0	25.4	24.2	25.9	25.7	6.9	6.0	6.5	5.5	5.5	8.02	7.89	7.97	7.91	7.89
	14	5	4	4	4	4			30.0					25.9					5.4					7.85		
	6	5	5	5	5	5																				
	24	5	5	5	5	5																				
50	11	5	5	5	5	5	30.3	30.3	29.3	30.7	30.7	24.1	25.6	24.1	25.9	25.7	7.0	6.0	6.8	5.5	5.5	8.03	7.90	7.97	7.91	7.90
	20	5	5	5	5	5			30.1					26.0					5.4					7.87		
	1	5	5	5	5	5																				
	7	5	5	5	5	5																				
100	5	5	5	5	5	5	30.2	30.2	29.3	30.9	31.0	24.1	25.7	24.0	25.4	25.5	6.9	6.1	6.5	5.6	5.6	8.05	7.91	7.97	7.92	7.93
	9	5	5	5	5	5			30.3					26.0					5.6					7.89		
	18	5	5	5	5	5																				
	2	5	5	5	5	5																				
200	21	5	5	4	4	4	30.1	30.2	29.3	31.0	31.3	24.0	25.6	24.0	25.9	25.4	7.0	6.2	6.5	5.6	5.6	8.02	7.92	7.96	7.92	7.94
	4	5	5	5	5	5			30.7					25.6					5.9					7.92		
	17	5	4	4	4	4																				
	22	5	5	5	5	5																				
400	10	5	0				30.0	30.1	-	-	-	24.0	25.2	-	-	-	7.0	6.1	-	-	-	8.01	7.91	-	-	-
	23	5	0						-	-	-			-	-	-			-	-						
	12	5	0						-	-	-			-	-	-			-	-						
	8	5	0						-	-	-			-	-	-			-	-						
800	16	5	0				30.1	30.0	-	-	-	24.1	25.7	-	-	-	7.0	6.2	-	-	-	7.99	7.90	-	-	-
	13	5	0						-	-	-			-	-	-			-	-						
	3	5	0						-	-	-			-	-	-			-	-						
	15	5	0						-	-	-			-	-	-			-	-						

Rand # QC: RT  
Initial Counts QC'd by: RT  
Initiated by: RT

Animal Source/Date Received: ABS/2-22-18 Age at Initiation: 10d

Animal Acclimation Qualifiers (circle all that apply): Q22 / Q23 / Q24 / none

Comments: i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal  
Organisms fed prior to initiation, circle one (y/n) (y)

	Feeding Times				
	0	24	48	72	96
AM:	0835	0830	0820	0830	
PM:	1720				

QC Check: AC 3/2/18

Final Review: KFP 3/11/18

**Appendix F**  
**Laboratory Qualifier Codes**

### Glossary of Qualifier Codes:

- Q1 - Temperatures out of recommended range; corrective action taken and recorded in Test Temperature Correction Log
- Q2 - Temperatures out of recommended range; no action taken, test terminated same day
- Q3 - Sample aerated prior to initiation or renewal due to dissolved oxygen (D.O.) levels below 6.0 mg/L
- Q4 - Test aerated; D.O. levels dropped below 4.0 mg/L
- Q5 - Test initiated with aeration due to an anticipated drop in D.O.
- Q6 - Airline obstructed or fell out of replicate and replaced; drop in D.O. occurred
- Q7 - Salinity out of recommended range
- Q8 - Spilled test chamber/ Unable to recover test organism(s)
- Q9 - Inadequate sample volume remaining, 50% renewal performed
- Q10 - Inadequate sample volume remaining, no renewal performed
- Q11 - Sample out of holding time; refer to QA section of report
- Q12 - Replicate(s) not initiated; excluded from data analysis
- Q13 - Survival counts not recorded due to poor visibility or heavy debris
- Q14 - D.O. percent saturation was checked and was  $\leq 110\%$
- Q15 - Did not meet minimum test acceptability criteria. Refer to QA section of report.
- Q16 - Percent minimum significant difference (PMSD) was below the lower bound limit for acceptability. This indicates that statistics may be over-sensitive in detecting a difference from the control due to low variability in the data set.
- Q17 - Percent minimum significant difference (PMSD) was above the upper bound limit for acceptability. This indicates that statistics may be under-sensitive in detecting a difference from the control due to high variability in the data set.
- Q18 - Incorrect Entry
- Q19 - Illegible Entry
- Q20 - Miscalculation
- Q21 - Other (provide reason in comments section)
- Q22 - Greater than 10% mortality observed upon receipt and/or in holding prior to test initiation. Organisms acclimated to test conditions at Nautilus and ultimately deemed fit to use for testing.
- Q23 - Test organisms received at a temperature greater than 3°C outside the recommended test temperature range. However, due to age-specific protocol requirements and/or sample holding time constraints, the organisms were used to initiate tests upon the day of arrival. Organisms were acclimated to the appropriate test conditions upon receipt and prior to test initiation.
- Q24 - Test organisms received at salinity greater than 3 ppt outside of the recommended test salinity range. However, due to age-specific protocol requirements and/or sample holding time constraints, the organisms were used to initiate tests upon the day of arrival. Organisms were acclimated to the appropriate test conditions upon receipt and prior to test initiation.



NAUTILUS  
ENVIRONMENTAL

TOXICITY LABORATORY & CONSULTING

## Newport Bay Federal Channels Dredge Material Evaluation – Toxicity and Bioaccumulation Testing Report

*Sample IDs: LA3-REF, NC2-COMP and NC3-COMP*

*Sample Collection: January 22 through  
February 12, 2019*

**Prepared for:** Anchor QEA  
27201 Puerta Real, Suite 350  
Mission Viejo, CA 92691

**Prepared by:** Enthalpy Analytical  
(formerly Nautilus Environmental)  
4340 Vandever Avenue  
San Diego, CA 92120  
(858) 587-7333

**Date Submitted:** April 26, 2019

### Data Quality Assurance:

- Nautilus Environmental is accredited in accordance with NELAP by the State of Oregon Environmental Laboratory Accreditation Program (Certificate No. 4053). It is also certified by the State of California Department of Health Services Environmental Laboratory Accreditation Program (Certificate No. 1802) and the State of Washington Department of Ecology (Lab ID C552).
- All data have been reviewed and verified.
- All test results have met minimum test acceptability criteria under their respective EPA protocols, unless otherwise noted in this report.
- All test results have met internal Quality Assurance Program requirements.

Verified by:

Kasey Skrivseth, Project Manager

## INTRODUCTION

Anchor QEA (Anchor) partnered with Nautilus Environmental (Nautilus) to perform toxicity testing on sediment samples for the Newport Bay Federal Channels maintenance dredging project in Newport Beach, CA. Two site sediment samples, a reference sediment sample, and site water used for elutriate preparation were evaluated in accordance with test methods found in "Evaluation of Dredged Material Proposed for Ocean Disposal" (OTM; USEPA/USACE 1991), "Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S." (ITM; USEPA/USACE 1998), as well as guidance cited in the reference section of this report.

Nautilus conducted solid phase (SP), suspended particulate phase (SPP), and bioaccumulation potential (BP) sediment evaluations in February and March 2019 as a part of the testing program described in the biological testing section of the Sampling Analysis Plan (SAP) provided by Anchor (Anchor 2017). This report summarizes testing results for samples collected between January 22 and 24, 2019 and subsequently composited on February 25, 2019. As well as a reference sample collected February 12, 2019. Test exposures were initiated between February 26 and March 6, 2019.

## MATERIALS AND METHODS

Sample materials were delivered by courier to the Nautilus laboratory in San Diego, California. Upon arrival, temperatures were recorded and samples were sealed with no headspace and stored in the dark at 4°C until either composited or used for testing. Anchor requested that specific samples from areas NC1, NC2, and NC3 be composited into two single samples to be known as NC2-COMP and NC3-COMP. Instructions for which samples were to be included in each composite were provided by email. Nautilus performed this task in our San Diego facility by combining all volume of individual sites together and mixing via a stainless steel mixing blade affixed to a hand drill to create a single composite sample. Each sample to be tested was thoroughly homogenized and interstitial pore water was collected for measurement of total ammonia. A summary of sample identification, collection and receipt dates and times, test types performed, and compositing information is provided in Table 1. Test methods and acceptability criteria are summarized in Tables 2 through 4. Chain of Custody documentation and sample receipt information are included in Appendices A and B, respectively.

**Table 1. Sample Identification, Collection, Receipt and Testing Information**

Sample ID	Date/Time Collected	Date/Time Received at Nautilus	Test Types Performed
LA3-REF-021219	2/12/2019 08:00	2/13/2019 09:46	SP, BP
NC1-01-012319	1/23/2019 11:15	1/24/2019 13:25	Samples Not Tested
NC1-02-012319	1/23/2019 13:45	1/24/2019 13:25	
NC1-03-012319	1/23/2019 15:30	1/24/2019 13:25	
NC1-04-012319	1/23/2019 17:00	1/24/2019 13:25	
NC2-01-012419	1/24/2019 08:00	1/25/2019 12:10	Samples Composited Together as NC2-COMP for Testing (SP, BP, SPP)
NC2-02-012419	1/24/2019 11:00	1/25/2019 12:10	
NC2-03-012419	1/24/2019 12:35	1/25/2019 12:10	
NC2-04-012219	1/22/2019 15:52	1/23/2019 13:46	
NC3-01-012219	1/22/2019 14:15	1/23/2019 13:46	Samples Composited Together as NC3-COMP for Testing (SP, BP, SPP)
NC3-02-012219	1/22/2019 11:34	1/23/2019 13:46	
NC3-03-012219	1/22/2019 09:47	1/23/2019 13:46	
NC3-04-012319	1/23/2019 08:15	1/24/2019 13:25	
NC2-COMP <sup>a</sup>	2/25/2019 13:30	2/25/2019 13:30	SP, BP, SPP
NC3-COMP <sup>a</sup>	2/25/2019 12:00	2/25/2019 13:30	
LNB-SW-012419	1/24/2019 09:45	1/25/2019 12:10	Used for SPP Elutriate Preparations

BP - Bioaccumulation Potential

SP - Solid Phase

SPP - Suspended Particulate Phase

<sup>a</sup> Samples created by Nautilus staff at Nautilus by compositing individual samples together. Collection date is the date the composite samples were created



**Table 2. 10-day Survival Solid-Phase (SP) Toxicity Test Specifications**

Method-Specific Conditions: **Marine amphipod (*Ampelisca abdita*)**

Source & Origin	Aquatic Research Organisms; field collected near Hampton, NH
Size	3–5 millimeter (mm)
Chambers	1-Liter (L) glass jar, 4-centimeter (cm) sediment with 800-milliliter (mL) overlying water
Negative Control	Marine sediment from Aquatic Research Organisms
Reference Toxicant	Cadmium chloride and Ammonium chloride

Method-Specific Conditions: **Marine polychaete (*Neanthes arenaceodentata*)**

Source & Origin	Aquatic Toxicology Support; laboratory cultured in Bremerton, WA
Age	2–3 weeks, post emergence
Chambers	1-L glass jar, 2.5-cm sediment with 800-mL overlying water
Negative Control	Clean, rinsed beach sand collected near Scripps Institution of Oceanography (SIO) Pier in La Jolla, CA
Reference Toxicant	Cadmium chloride

Shared SP Conditions:

Overlying Water	Natural seawater collected offshore of SIO Pier in La Jolla, CA. Seawater is 20-micrometer ( $\mu\text{m}$ ) filtered and diluted to 30 parts per thousand (ppt) with deionized water prior to testing
Sample Preparation	Sediments sieved through 500- $\mu\text{m}$ Nitex <sup>®</sup> mesh
Acceptability Criterion	$\geq 90$ percent mean lab control survival

**Table 3. Suspended Particulate-Phase (SPP) Toxicity Test Specifications**

Method-Specific Conditions: **Mediterranean mussel (*Mytilus galloprovincialis*)**

Duration & Endpoints	48 hours, normal shell development and survival
Source & Origin	Field collected in San Diego, CA
Age	<4 hr old larvae
Concentrations	100, 50, 10, and 1% elutriate, plus lab control and site water control
Acceptability Criteria	≥70 percent mean normal shell development and survival in lab control
Reference Toxicant	Ammonium chloride

Method-Specific Conditions: **Mysid shrimp (*Americamysis bahia*)  
& Inland Silverside (*Menidia beryllina*)**

Duration & Endpoint	96 hours, Survival
Source & Origin	Aquatic BioSystems Inc.; laboratory cultured in Fort Collins, CO
Age	4 days, (Mysid); 9 days, (Silverside)
Concentrations	100, 50, and 10% elutriate, plus lab control and site water control
Acceptability Criterion	≥90 percent mean lab control survival
Reference Toxicant	Copper chloride

Shared SPP Conditions:

Dilution & Control Water	Natural seawater collected offshore of SIO Pier, La Jolla, CA. Seawater is 20-µm filtered and was diluted to 32 ppt with deionized water prior to testing
Test Solution Preparation	Standard elutriate test (SET) method Elutriate prepared with site water

**Table 4. 28-day Bioaccumulation Potential (BP) Exposure Specifications**

Test Species	<b>Bent-nose clam (<i>Macoma nasuta</i>) &amp; Polychaete worm (<i>Nereis virens</i>)</b>
Source & Origin	J & G Gunstone Clams, Inc.; field collected near Port Townsend, WA (Clam) Aquatic Research Organisms; field collected near Hampton, NH (Worm)
Size	Adult
Test chambers	10-gallon glass aquaria, 5-6 cm sediment and 26-L overlying water
Overlying water	Natural seawater collected offshore of SIO Pier, La Jolla, CA. Seawater is 20- $\mu$ m filtered and continuously chilled; test conducted on constant flow through
Negative Control	Sediment from clam habitat
Reference toxicant	None

The approach to data analysis was to first conduct an evaluation of normality and assess homogeneity of variance. Proportion data were subjected to arcsine square-root transformations for survival comparisons using an ad hoc test for significance as indicated by ANOVA results. Statistical analyses of SP test data were performed using GraphPad Prism, Version 6.05. For SP tests, sample results were compared to reference sample results. Statistical analysis for all other test data was performed using Comprehensive Environmental Toxicity Information System Software (CETISTM), Version 1.8.7.20. (Tidepool Scientific Software 2001-2013). Analyses followed standard USEPA flow chart methods specified by test type. For SPP tests, elutriate concentrations were compared to the lab control unless otherwise indicated.

## RESULTS

Detailed results for all tests are provided in Appendix C. Raw datasheets including water quality data, ammonia analyses, and summaries of statistical analyses are included in Appendix D.

Mean survival in the laboratory controls met the acceptability criterion for both SP test species. Mean survival in the reference sample was 96 percent or greater for both species. There was not a statistically significant effect observed in either sample for the *Neanthes* test compared to the reference sample. There was a statistically significant effect observed in both samples for the *Ampelisca* test compared to the reference sample (Appendix D). A brief summary of amphipod and polychaete toxicity test results is shown in Table 5. A detailed summary of results for both species can be found in Appendix C.

**Table 5. Summary of Marine Amphipod and Polychaete SP Results**

Sample ID	<i>Ampelisca</i> Mean % Survival	<i>Neanthes</i> Mean % Survival	Significant Compared to Reference ( <i>Ampelisca</i> / <i>Neanthes</i> )	Significant and Above Effect Threshold? <sup>a</sup>
Lab Control	95	100	NA	NA
LA3-REF-021219	100	96	NA	NA
NC2-COMP	97	96	Yes/No	No
NC3-COMP	94	96	Yes/No	No

NA = not applicable

<sup>a</sup> Percent effect threshold: *Ampelisca* ≥20% reduction from reference per the OTM (USEPA/USACE 1991); *Neanthes* ≥10% reduction from reference per the OTM (USEPA/USACE 1991)

For all SPP testing, the controls met or exceeded the test acceptability criterion. There were no statistically significant effects to any species tested in any elutriate concentration when compared to their respective lab control (or site control where noted), with the exception of the 10 percent concentration in the *Menidia* test for sample NC3-COMP. The 50 percent concentration has 98 percent survival and the 100 percent concentration had 90 percent survival, therefore the 10 percent concentration (78 percent survival) was considered an interrupted dose-response and was rejected as the Lowest Observed Effect Concentration (LOEC). The NOEC is reported as the 100 percent concentration as per USEPA 2000 guidance.

For the BP exposures, mean survival ranged from 97 to 99 percent for clams in all samples, which should provide sufficient tissue volume for analysis. Mean survival ranged from 66 to 92 percent for worms in all samples, see Quality Assurance section for more information. Tissue samples were frozen and sent to Eurofins Calscience, Inc. in Garden Grove, CA to hold frozen until a request for analysis was made. Each replicate was sent as a separate sample. Three zero time replicates per species were also sent.

## QUALITY ASSURANCE

All of the data presented have been thoroughly reviewed and deemed acceptable for reporting in accordance with our internal Quality Assurance and Quality Control (QA/QC) program and applicable protocols. All testing was initiated within six weeks of site sample collection, and met the holding time requirements. Noteworthy deviations with respect to test conditions or acceptability criteria are reported below. Minor deviations are noted on datasheets with corrective actions taken when appropriate. All were determined to be minor with no likely impact on the final data or its

interpretation. Copies of reference toxicant results and a list of qualifier codes can be found in Appendices E and F, respectively.

### **Solid-Phase Toxicity Tests**

Controls met the test acceptability criterion for both species. All water quality values were within the required ranges as defined by the test protocols for both species. Additionally, reference site results met all control acceptability criteria.

### **Suspended Particulate-Phase Toxicity Tests**

All controls met the test acceptability criteria for all SPP exposures, with the exception of the Lab Control for the *Menidia* test with 88 percent survival. For the *Menidia* testing, sample concentrations were statistically compared to the Site Control (94 percent survival) to be conservative in the evaluation of the data. All other protocol method conditions were met. All water quality values were within the required ranges as defined by the test protocols for all SPP exposures.

### **Bioaccumulation Potential Tests**

Mean clam survival in each replicate should be sufficient to achieve minimum tissue requirements for chemical analysis. Mean worm survival in some replicates may be insufficient to achieve minimum tissue requirements for chemical analysis. Worm survival ranged from 40 to 90 percent between individual replicates for both samples NC2-COMP and NC3-COMP. Replicates with low worm survival were not found to be statistical outliers using the Grubbs test (Grubbs 1969). Upon arrival, quality of the worms was noted to be average. The worms were deemed acceptable for use based on low mortality upon arrival, activity level, and overall size. Survival ranged from 80 to 100 percent in the Lab Control and the Reference sample, which supports the observation of acceptable quality at time of arrival and use. An additional note was made during the compositing process for both samples that a large proportion of the samples consisted of a large grain size sand. It is unclear of whether this may have effected worm survival.

The test-wide mean temperature did not deviate by more than 1°C over the course of the exposure and instantaneous temperature remained within  $\pm 3^\circ\text{C}$ . Water quality parameters satisfied test protocol requirements and data are valid without qualification.

## Reference Toxicant Tests

### *Solid Phase Reference Toxicant Tests*

Median lethal effect concentration (LC<sub>50</sub>) values for concurrent reference toxicant tests using cadmium chloride were within two standard deviations of the internal control charts means for both SP species tested. All reference toxicant test controls met acceptability criteria.

An additional concurrent reference toxicant test with *Ampelisca* using ammonium chloride as the toxicant was performed to add additional information with regard to potential effects from ammonia. The no observed effect concentration (NOEC) for the test was 64 milligrams per Liter (mg/L) total ammonia and the LC<sub>50</sub> was 93 mg/L total ammonia. The LC<sub>50</sub> value was also within two standard deviations of the internal control charts means comparing the previous five tests.

### *Suspended Particulate Reference Toxicant Tests*

The median effect concentration (EC<sub>50</sub>) value for the copper chloride and ammonium chloride reference toxicant tests associated with *Mytilus* were within two standard deviations of the internal control chart means for development rate. For the test with ammonia the NOEC for the development endpoint of this test was 4.5 mg/L total ammonia and the EC<sub>50</sub> was 11.5 mg/L total ammonia. LC<sub>50</sub> values for *Americamysis* and *Menidia* copper reference toxicant tests were within two standard deviations of the internal control charts means for both species tested.

All reference toxicant test controls met acceptability criteria.

## Potential Confounding Factor: Ammonia

Total ammonia values in the interstitial water of the test sediments prior to testing ranged from 2.3 to 5.5 mg/L. Due to measured ammonia levels well below the threshold of 30 mg/L reported for *Ampelisca* (USEPA 1994), there was no need for mitigation efforts in regard to ammonia. No biologically significant effects were observed in the test for either sample (Dillon et al. 1993, USEPA 1994, Kohn et al. 1994).

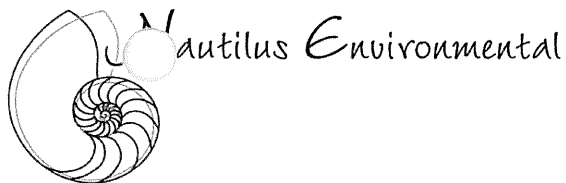
No significant effects were observed in the undiluted concentrations of the SPP testing for any of the species or endpoints. The total ammonia concentrations ranged from < 0.5 to 3.9 mg/L in any of the concentrations of either elutriate sample on Day 0 of the tests for all species.

## REFERENCES

- Anchor 2017. Lower Newport Bay Federal Channels Dredging Sampling and Analysis Plan. December 2017
- ASTM 1998. Standard Guide for Conducting Static Acute Toxicity Tests Starting with Embryos of Four Species of Saltwater Bivalve Molluscs. American Society for Testing and Materials, Philadelphia Pennsylvania. ASTM Method E724-98.
- ASTM 2000. Standard Guide for Conducting Sediment Tests with Polychaetous Annelids. American Society for Testing and Materials, Philadelphia PA. ASTM Method E1611-00.
- ASTM 2003. Standard Test Method for Measuring The Toxicity of Sediment-Associated Contaminants with Estuarine and Marine Invertebrates. American Society for Testing and Materials, Philadelphia Pennsylvania. ASTM Method E1367-03.
- Dillon T.M., D.W. Moore and A.B. Gibson. 1993. Development of a Chronic Sublethal Bioassay for Evaluating Contaminated Sediment with the Marine Polychaete Worm *Nereis (Neanthes) arenaceodentata*. *Environmental Toxicology and Chemistry* 12: 589-605.
- GraphPad Software Inc. 1992-2014. GraphPad Prism, version 6.05.
- Grubbs, F.E. 1969. Procedures for detecting outlying observations in samples. *Technometrics* 11(1):1-21.
- Kohn N.P., J.Q. Word and D.K. Niyogi. 1994. Acute Toxicity of Ammonia to Four Species of Marine Amphipod. *Marine Environmental Research* 38: 1-15.
- Tang A., J.G. Kalocai, S. Santos, B. Jamil, and J. Stewart. 1997. Sensitivity of Blue Mussel and Purple Sea Urchin Larvae to Ammonia. Poster presentation at *Society of Environmental Toxicology and Chemistry*, 18th Annual Meeting, San Francisco, CA.
- Tidepool Scientific Software. 2001-2013. CETIS™ Comprehensive Environmental Toxicity Information System Software, Version 1.8.7.20.
- USEPA. 1994. Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods. June 1994. Environmental Protection Agency, Office of Research and Development. EPA 600/R-94/025.
- USEPA 1995. Short-term methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. August 1995. Environmental Protection Agency, Office of Water. EPA 600/R-95/136.
- USEPA/USACE. 1991. Evaluation of Dredged Material Proposed for Ocean Disposal: Testing Manual (OTM). February 1991. Environmental Protection Agency, Office of Water & United States Army Corps of Engineers, Department of The Army. EPA 503/8-91/001.
- USEPA/USACE. 1998. Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. - Testing Manual (ITM). February 1998. Environmental Protection Agency, Office of Water & United States Army Corps of Engineers, Department of The Army. EPA 823/B-98/004.
- USEPA. 2000. Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing. July 2000. Environmental Protection Agency, Office of Research and Development. EPA 821/B-00/004.

**Appendix A**  
**Chain-of-Custody Forms**





4340 Vandever Ave.  
San Diego, CA 92120  
Phone 858.587.7333  
Fax 858.587.3961

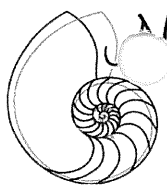
Chair of Custody

Date 1/22/19 Page 1 of 1

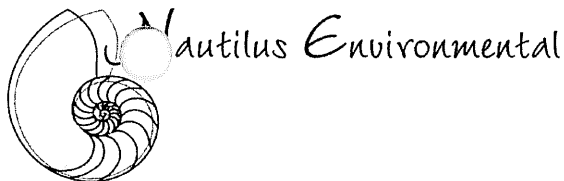
Sample Collection By: <u>C. Osuch</u>							ANALYSES REQUIRED											
Report to:				Invoice To:			Solid Phase Testing	Suspended Particulate Phase Testing	Bioaccumulation Potential Testing	Hold for Compositing Instructions *							Receipt Temperature (°C)	
Company	<u>Anchor QEA</u>			Company	<u>Anchor QEA</u>													
Address	<u>27201 Puerta Real Suite 350</u>			Address	<u>720 Olive Way Suite 1900</u>													
City/State/Zip	<u>Mission Viejo, CA 92691</u>			City/State/Zip	<u>Seattle, WA 98101</u>													
Contact	<u>Chris Osuch</u>			Contact														
Phone	<u>(949) 347-2780</u>			Phone	<u>(949) 347-2780</u>													
Email	<u>cosuch@anchorqea.com</u>			Email														
SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NO. OF CONTAINERS	COMMENTS												
1 NC3-03-012219	1/22/19	0947	SED	20-L Plastic Bag	2				X								2.3	
2 NC3-02-012219		1134							X								5.3	
3 NC3-01-012219		1415							X								2.3	
4 NC2-04-012219		1552							X								2.5	
5																		
6																		
7																		
8																		
9																		
10																		
PROJECT INFORMATION		SAMPLE RECEIPT		RELINQUISHED BY (CLIENT)				RELINQUISHED BY (COURIER)										
Client:		Total No. of Containers		(Signature)	(Time)	(Signature)	(Time)											
PO No.:		Received Good Condition?		<u>Chris Osuch</u>	<u>1747</u>	<u>[Signature]</u>	<u>1346</u>											
Shipped Via:		Matches Test Schedule?		(Printed Name)	(Date)	(Printed Name)	(Date)											
				<u>Chris Osuch</u>	<u>1/22/19</u>	<u>Sam R</u>	<u>1/23/19</u>											
				(Company)		(Company)												
				<u>Anchor QEA</u>		<u>EA</u>												
SPECIAL INSTRUCTIONS/COMMENTS: Tier III testing per Federal Channels Sampling and Analysis Plan (Anchor QEA 2017)				RECEIVED BY (COURIER)				RECEIVED BY (LABORATORY)										
				(Signature)	(Time)	(Signature)	(Time)											
				<u>Charlene Ratus</u>	<u>17:47</u>	<u>[Signature]</u>	<u>1346</u>											
				(Printed Name)	(Date)	(Printed Name)	(Date)											
				<u>Charlene Ratus</u>	<u>17:47</u>	<u>Taylor Nash</u>	<u>1/23/19</u>											
				(Company)		(Company)												
						<u>NAUTILUS</u>	<u>19-3020-3023</u>											

Additional costs may be required for sample disposal or storage. Payment net 30 unless otherwise contracted.

DISTRIBUTION: WHITE - Nautilus Environmental, COLOR - Originator



Sample Collection By:							ANALYSES REQUIRED										Receipt Temperature (°C)			
Report to:				Invoice To:			Solid Phase Testing	Suspended Particulate Phase Testing	Bioaccumulation Potential Testing											
<b>Company</b> <u>Anchor QEA</u> <b>Address</b> <u>27201 Puerta Real Suite 350</u> <b>City/State/Zip</b> <u>Mission Viejo, CA 92691</u> <b>Contact</b> <u>Chris Osuch</u> <b>Phone</b> <u>(949) 347-2780</u> <b>Email</b> <u>cosuch@anchoragea.com</u>				<b>Company</b> <u>Anchor QEA</u> <b>Address</b> <u>720 Olive Way Suite 1900</u> <b>City/State/Zip</b> <u>Seattle, WA 98101</u> <b>Contact</b> _____ <b>Phone</b> <u>(949) 347-2780</u> <b>Email</b> _____																
SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NO. OF CONTAINERS	COMMENTS														
1	NC3-04-012319	1/23/19	0815	SED	bag	2		X	X	X									23	
2	NC1-01-012319		1115			3		X	X	X									4.0	
3	NC1-02-012319		1315			2		X	X	X									30	
4	NC1-03-012319		1530			3		X	X	X									30	
5	NC1-04-012319		1700			2		X	X	X									4.0	
6																				
7																				
8																				
9																				
10																				
PROJECT INFORMATION		SAMPLE RECEIPT		RELINQUISHED BY (CLIENT)				RELINQUISHED BY (COURIER)												
Client:	<u>Anchor QEA</u>	Total No. of Containers:		(Signature)	<u>[Signature]</u>	(Time)	<u>1750</u>	(Signature)	<u>[Signature]</u>	(Time)	<u>1/24/19</u>									
PO No.:	<u>180243-02.01</u>	Received Good Condition?		(Printed Name)	<u>Claire Dolphin</u>	(Date)	<u>1/23/19</u>	(Printed Name)	<u>SAM</u>	(Date)	<u>1325</u>									
Shipped Via:	<u>Courier</u>	Matches Test Schedule?		(Company)	<u>Anchor QEA</u>			(Company)	<u>EIA</u>											
SPECIAL INSTRUCTIONS/COMMENTS: Tier III testing per Federal Channels Sampling and Analysis Plan (Anchor QEA 2017)				RECEIVED BY (COURIER)				RECEIVED BY (LABORATORY)												
				(Signature)	<u>[Signature]</u>	(Time)	<u>1750</u>	(Signature)	<u>[Signature]</u>	(Time)	<u>1325</u>									
				(Printed Name)	<u>Charlene Ruffen</u>	(Date)		(Printed Name)	<u>Taylor Nason</u>	(Date)	<u>1/24/19</u>									
				(Company)	<u>Anchor QEA</u>			(Company)	<u>NAUTILUS</u>		<u>19-3024-3028</u>									

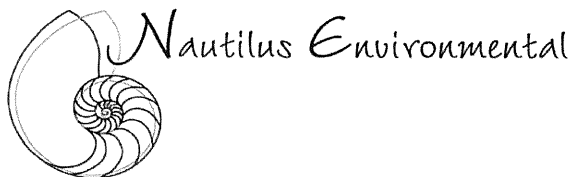


4340 Vandever Ave.  
San Diego, CA 92120  
Phone 858.587.7333  
Fax 858.587.3961

Chain of Custody

Date 1/24/19 Page 1 of 1

Sample Collection By:							ANALYSES REQUIRED											
Report to:				Invoice To:			Solid Phase Testing	Suspended Particulate Phase Testing	Bioaccumulation Potential Testing								Receipt Temperature (°C)	
Company	Address	City/State/Zip	Contact	Phone	Email	Company				Address	City/State/Zip	Contact	Phone	Email				
Anchor QEA	27201 Puerta Real Suite 350	Mission Viejo, CA 92691	Chris Osuch	(949) 347-2780	cosuch@anchorqea.com	Anchor QEA	720 Olive Way Suite 1900	Seattle, WA 98101										
SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NO. OF CONTAINERS	COMMENTS												
1 NC2-01-012419	1/24/19	0810	SED	BAG		Hold for composite instruction	X	X	X									8.0
2 NC2-02-012419	↓	1100	↓	↓			X	X	X									3.0
3 NC2-03-012419	↓	1235	↓	↓			X	X	X									3.0
4 LNB-JW-012419	1/24/19	0945	WAT	Cube	5	Hold for comp												4.5
5																		
6																		
7																		
8																		
9																		
10																		
PROJECT INFORMATION		SAMPLE RECEIPT		RELINQUISHED BY (CLIENT)				RELINQUISHED BY (COURIER)										
Client:	Anchor QEA	Total No. of Containers	11	(Signature)	(Time)	(Signature)	(Time)	(Signature)	(Time)	(Signature)	(Time)	(Signature)	(Time)					
PO No.:	180243-02.9	Received Good Condition?	Y	(Printed Name)	(Date)	(Printed Name)	(Date)	(Printed Name)	(Date)	(Printed Name)	(Date)	(Printed Name)	(Date)					
Shipped Via:	Carrier	Matches Test Schedule?	Y	(Company)		(Company)		(Company)		(Company)		(Company)						
SPECIAL INSTRUCTIONS/COMMENTS: Tier III testing per Federal Channels Sampling and Analysis Plan (Anchor QEA 2017)				RECEIVED BY (COURIER)				RECEIVED BY (LABORATORY)										
				(Signature)	(Time)	(Signature)	(Time)	(Signature)	(Time)	(Signature)	(Time)							
				(Printed Name)	(Date)	(Printed Name)	(Date)	(Printed Name)	(Date)	(Printed Name)	(Date)							



4340 Vandever Ave.  
 San Diego, CA 92120  
 Phone 858.587.7333  
 Fax 858.587.3961

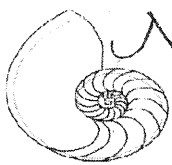
# Chain of Custody

Date 2/12/19 Page 1 of 1

Sample Collection By:							ANALYSES REQUIRED										Receipt Temperature (°C)						
Report to:				Invoice To:			Solid Phase Testing	Suspended Particulate Phase Testing	Bioaccumulation Potential Testing														
<b>Company</b> <u>Anchor QEA</u> <b>Address</b> <u>9700 Research Drive</u> <b>City/State/Zip</b> <u>Irvine, CA 92618</u> <b>Contact</b> <u>Chris Osuch</u> <b>Phone</b> <u>(949) 347-2780</u> <b>Email</b> <u>cosuch@anchorqea.com</u>				<b>Company</b> <u>Anchor QEA</u> <b>Address</b> <u>same</u> <b>City/State/Zip</b> <u>same</u> <b>Contact</b> <u>same</u> <b>Phone</b> <u>same</u> <b>Email</b> <u>same</u>																			
SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NO. OF CONTAINERS	COMMENTS																	
LA-3-021219	2/12/2019	800	SED	20 L Plastic	4		X		X													60.0	
PROJECT INFORMATION		SAMPLE RECEIPT		RELINQUISHED BY (CLIENT)			RELINQUISHED BY (COURIER)																
Client:		Total No. of Containers		(Signature)	<u>Dominic Massaro</u>	(Time)	<u>0946</u>	(Signature)		(Time)													
PO No.:		Received Good Condition?		(Printed Name)	<u>Dominic Massaro</u>	(Date)	<u>2/13/19</u>	(Printed Name)		(Date)													
Shipped Via:		Matches Test Schedule?		(Company)	<u>Anchor QEA</u>	(Company)		(Company)															
SPECIAL INSTRUCTIONS/COMMENTS: Hold for testing with Newport Channel composite samples. Tier III testing per Federal Channels Sampling and Analysis Plan (Anchor QEA 2017).				RECEIVED BY (COURIER)			RECEIVED BY (LABORATORY)																
				(Signature)		(Time)		(Signature)	<u>Amber Seg-</u>	(Time)	<u>0946</u>												
				(Printed Name)		(Date)		(Printed Name)	<u>Amber Seg-</u>	(Date)	<u>2/13/19</u>												
				(Company)				(Company)	<u>Nautilus</u>		<u>19-3040</u>												

Additional costs may be required for sample disposal or storage. Payment net 30 unless otherwise contracted.

DISTRIBUTION: WHITE - Nautilus Environmental, COLOR - Originator



Sample Collection By:  *YS*

<b>Report to:</b> <b>Company</b> <u>Anchor QEA</u> <b>Address</b> _____ <b>City/State/Zip</b> _____ <b>Contact</b> _____ <b>Phone</b> _____ <b>Email</b> _____	<b>Invoice To:</b> <input checked="" type="checkbox"/> Same as Report to <b>Company</b> _____ <b>Address</b> _____ <b>City/State/Zip</b> _____ <b>Contact</b> _____ <b>Phone</b> _____ <b>Email</b> _____
--	---

SAMPLE ID	SAMPLE			MATRIX CODE	Container		COMMENTS	Solid Phase Testing	Suspended Particulate Phase	Bioaccumulation	Nautilus Matrix Codes: G = Grab C = Composite FW = Freshwater SW = Seawater Sed = Sediment STRM = Stormwater GW = Groundwater Q = Other (specify)	Receipt Temperature (°C)
	Date	Time	Type (G or C)	(FW, SW, Sed, STRM, GW, O)	Type	Qty						
1	2/25/19	1330	C	sed	bag	1 @		X	X	X		4
2	2/25/19	1200	C	sed	bag	1 ↓		X	X	X		4
3												
4												
5												
6												
7												
8												
9												
10												

<b>PROJECT INFORMATION</b>		<b>SAMPLE RECEIPT</b>		<b>1) RELINQUISHED BY (CLIENT)</b>		<b>2) RECEIVED BY (COURIER)</b>					
Project Name:	Newport	Total No. of Containers		(Signature)	<i>Kasey Strickell</i>	(Time)	1330				
PO No.:		Received Good Condition?		(Printed Name)	Kasey Strickell	(Date)	2/25/19				
Shipped Via:		Matches Test Schedule?		(Company)	Enthelphy	(Company)					
<b>SPECIAL INSTRUCTIONS/COMMENTS:</b> @ sediment used in bioaccumulation dest setup same day as composited  19-3043 and 19-3044				<b>3) RELINQUISHED BY (COURIER)</b>		<b>4) RECEIVED BY (LABORATORY)</b>					
				(Signature)		(Time)		(Signature)	<i>Taylor Nash</i>	(Time)	1330
				(Printed Name)		(Date)		(Printed Name)	TAYLOR NASH	(Date)	2/25/19
				(Company)				(Company)	NAUTILUS	(Log-in #s)	

Additional costs may be required for sample disposal or storage. Payment net 30 unless otherwise contracted. Shaded areas are for lab use only. Report turn-around-time varies depending on length of test; please inquire with your project manager.

**Appendix B**  
**Sample Receipt Information**

Client: Anchor GEA  
Project: Newport Bay Federal Channels

Test Type(s): Suspended Particulate Phase (Mysid, Menidia, Bivalve); Solid Phase (Neanthes, Eohaustorius); Bioaccumulation (Macoma, Nereis)  
Test IDs: (A)

Nautilus Log-in 19-18-xxxx (A)	Sample ID	Collection Date & Time	Receipt Date & Time	Receipt Temp. (°C)	No. Containers	Container Type	Approx. Total Volume Received (L)	Sample Description	Tech Initials	
(F) 1	3020	NC3-03-012219	1/22/19 0947	1/23/19 1346	2.3	2	20L BAG	~18L	BROWN SAND, LARGE GRAIN	TN
(F) 2	3021	NC3-02-012219	1/22/19 1134	1/23/19 1346	5.3	2	20L BAG	~19L	BROWN MUD w/ SMALL GRAINS OF SAND	TN
(F) 3	3022	NC3-01-012219	1/22/19 1415	1/23/19 1346	2.3	2	20L BAG	~18L	GRAY SAND, LARGE GRAIN, SHELL HASH	TN
(C) 4	3023	NC2-04-012219	1/22/19 1552	1/23/19 1346	2.5	2	20L BAG	~18L	GRAY SAND, LARGE GRAIN	TN
(F) 5	3024	NC3-04-012319	1/23/19 0815	1/24/19 1325	2.3	2	20L BAG	~18L	BROWN, SANDY, SHELL HASH, DRY	TN/KC
6	3025	NC1-01-012319	1/23/19 1115	1/24/19 1325	4.0	3	20L BAG	~18L	BROWN SOFT MUD, FINE GRAIN	TN/KC
7	3026	NC1-02-012319	1/23/19 1345	1/24/19 1325	3.0	2	20L BAG	~18L	DARK BROWN MUD, THICK w/ SMALL GRAIN	TN/KC
(C) 8	3027	NC1-03-012319	1/23/19 1530	1/24/19 1325	3.0	3	20L BAG	~18L	DARK GRAY, MUDDY, SHELL HASH, WATERY	TN/KC
(C) 9	3028	NC1-04-012319	1/23/19 1700	1/24/19 1325	4.0	2	20L BAG	~18L	BROWN, FINE GRAIN SOFT MUD	TN/KC
(C) 10	3029	NC2-01-012419	1/24/19 0810	1/25/19 1210	8.0	2	20L BAG	~18L	GRAY MUD SOFT GRAIN	TN/KC
(C) 11	3030	NC2-02-012419	1/24/19 1100	1/24/19 1210	3.0	2	20L BAG	~18L	GRAY SOFT MUD, SMALL GRAIN, SHELL HASH	TN/KC
(C) 12	3031	<del>NC3</del> NC2-03-012419	1/24/19 1235	1/25/19 1210	3.0	(B) 3	20L BAG	~18L	DARK BROWN, SOFT MUD	TN/KC

Samples Shipped Via: Carrier  
COC Present? (Y) N  
Sieving Required? (Y) (N) Screen Size: \_\_\_\_\_  
Lab Control Sediment: \_\_\_\_\_

Sub-samples for additional chemistry:  
Collect Porewater Tech Initials NA  
Other \_\_\_\_\_ Tech Initials \_\_\_\_\_  
Other \_\_\_\_\_ Tech Initials \_\_\_\_\_

Test Organism:	<u>Ampeleiza Amp</u> <u>Eohaustorius (Eot)</u> (A)	Neanthes (Na)	Mysid (My)	Menidia (Mb)	Bivalve (Mg)
Supplier:					
Receipt Date:					
Condition:					

Comments: (A) Q18 vs 1/24/19 (B) Q18 vs 1/25/19 (C) Q18 vs 3/21/19  
(A) Samples held pending chemistry results (C) samples composited on 2/26/19 to become sample NC2-COMP  
(B) samples composited on 2/26/19 to become sample NC3-COMP  
QC Check: vs 4/1/19 Final Review: EG 4/4/19

Client: Anchor QEA

Test Type(s): Solid phase (Nearshore, Ameliza)  
Bioaccumulation (Macoma, Nereis)

Project: LA-3 Federal channels  
Newport Bay

Test IDs: 1902-SR1 to SR3; 1903-S004 to S009

Nautilus Log-in 1918-xxxx <u>(2)</u>	Sample ID	Collection Date & Time	Receipt Date & Time	Receipt Temp. (°C)	No. Containers	Container Type	Approx. Total Volume Received (L)	Sample Description	Tech Initials
<u>3040</u>	<u>LA-3-021219</u>	<u>2/12/19 0800</u>	<u>2/13/19 0940</u>	<u>6.0</u>	<u>4</u>	<u>20L Bag</u>	<u>~80L</u>	<u>Medium brown, liquid present, silty sand</u>	<u>JBS</u>

Samples Shipped Via: Carrier

Sub-samples for additional chemistry:

COC Present? (Y) N

Collect and Preserve Initial Porewater

Tech Initials VS

Sieving Required? (Y) N

Screen Size: 0.5mm for Solid Phase only Other \_\_\_\_\_

Tech Initials \_\_\_\_\_

Other \_\_\_\_\_

Tech Initials \_\_\_\_\_

Comments: QAC JBS 2/13/19 @ RB 4/1/19

QC Check: VS w/1/19

Final Review: EG 4/4/19



Client: Anchovy QEA  
Project: Newport Bay Federal Channels

Test Type(s): Suspended Particulate Phase (Mysid, Menidia, Bivalve); Solid Phase (Neanthes, Eohaustorius); Bioaccumulation (Macoma, Nereis)

Test IDs: 1902-1991 to 1993 and 1996 to 1999; 1903-2004 to 2009 and 2050 and 2051

Nautilus Log-in ① 18-xxxx 19	Sample ID	Collection Date & Time	Receipt Date & Time	Receipt Temp. (°C)	No. Containers	Container Type	Approx. Total Volume Received (L)	Sample Description	Tech Initials
1	3043	NC2-COMP	2/25/19 1330	NA ②	1 ③	bag	55	dark brown, silty sand some shell hash	YS
2	3044	NC3-COMP	2/25/19 1200	NA	1	bag	75	dark brown, silty sand some shell hash	YS
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

Samples Shipped Via: NA Sub-samples for additional chemistry:  
 COC Present?  Y  N Collect Porewater Tech Initials YS  
 Sieving Required?  Y  N Screen Size: 0.5 mm <sup>for solid phase only</sup> Other \_\_\_\_\_ Tech Initials \_\_\_\_\_  
 Lab Control Sediment: Clam/Nereis - from clam supplier Other \_\_\_\_\_ Tech Initials \_\_\_\_\_  
Amp - from supplier  
Neanthes - local beach sand

Test Organism:	<u>Macoma/Nereis</u>	<u>Ampelisca</u> <u>Eohaustorius (Eoh)</u> ④	<u>Neanthes (Na)</u>	<u>Mysid (My)</u>	<u>Menidia (Mb)</u>	<u>Bivalve (Mg)</u>
Supplier:	<u>Sand &amp; Gunstone/ARO</u>	<u>ARO</u>	<u>ATS</u>	<u>ABS</u>	<u>ABS</u>	<u>Mission Bay</u>
Receipt Date:	<u>2/21/19 / 2/26/19</u>	<u>2/28/19</u>	<u>2/27/19</u>	<u>2/26/19</u>	<u>2/26/19</u>	<u>3/5/19</u>
Condition:	<u>good / below average</u>	<u>good</u>	<u>good</u>	<u>good</u>	<u>average</u>	<u>good</u>

Comments: ② Q19 vs 2/25/19 ③ samples pulled from storage (4°C) and homogenized to create NC2-COMP and NC3-COMP before being utilized for the bioaccumulation test and the remaining stored at 4°C until used for other tests.  
 ④ Q18 vs 2/21/19

QC Check: YS 3/22/19

Final Review: EG 4/4/19

Nautilus Environmental  
 4340 Vandever Avenue  
 San Diego, CA 92120

Client: Anchor QEA  
 Sample ID: LNB-SW-012419  
 Test ID No(s): 1902-5196 to 5199; 1903-5050 and 5051

Sample Check-In Information

Sample Description: Algaeless, Clear, odorless; NO DEBRS

Sample (A, B, C):	A			
Log-in No. (19-xxxx):	0147			
Sample Collection Date & Time:	1/24/19 0745			
Sample Receipt Date & Time:	1/25/19 120			
Number of Containers & Container Type:	5-20L CUBS			
Approx. Total Volume Received (L):	~100L			
Check-in Temperature (°C)	4.5			
Temperature OK? <sup>1</sup>	<input checked="" type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
DO (mg/L)	7.0			
pH (units)	7.92			
Conductivity (µS/cm)	—			
Salinity (ppt)	320			
Alkalinity (mg/L) <sup>2</sup>	112			
Hardness (mg/L) <sup>2,3</sup>	—			
Total Chlorine (mg/L)	0.02			
Technician Initials	TN/KC			

Test Performed:  A Control/Dilution Water: 8:2 / Lab SW / Lab ART Other: \_\_\_\_\_  
 Alkalinity: \_\_\_\_\_ Hardness or Salinity: \_\_\_\_\_

Additional Control?  Y  N = \_\_\_\_\_ Alkalinity: \_\_\_\_\_ Hardness or Salinity: \_\_\_\_\_

Test Performed: \_\_\_\_\_ Control/Dilution Water: 8:2 / Lab SW / Lab ART Other: \_\_\_\_\_  
 Alkalinity: \_\_\_\_\_ Hardness or Salinity: \_\_\_\_\_

Additional Control?  Y  N = \_\_\_\_\_ Alkalinity: \_\_\_\_\_ Hardness or Salinity: \_\_\_\_\_

Test Performed: \_\_\_\_\_ Control/Dilution Water: 8:2 / Lab SW / Lab ART Other: \_\_\_\_\_  
 Alkalinity: \_\_\_\_\_ Hardness or Salinity: \_\_\_\_\_

Additional Control?  Y  N = \_\_\_\_\_ Alkalinity: \_\_\_\_\_ Hardness or Salinity: \_\_\_\_\_

**Notes:** <sup>1</sup> Temperature of sample should be 0-6°C, if received more than 24 hours past collection time.

<sup>2</sup> mg/L as CaCO<sub>3</sub>, <sup>3</sup> Measured for freshwater samples only, NA = Not Applicable

**Additional Comments:** ⓐ used for elutriate preparation and as an additional control for elutriate testing with Menidia, Mysids, and Mussels.

COC Complete (Y/N)?

A  B  C

Filtration? Y  N

Pore Size: \_\_\_\_\_

Organisms or Debris

Salinity Adjustment? Y  N

Test: Source: Target ppt:

Test: Source: Target ppt:

Test: Source: Target ppt:

pH Adjustment? Y  N

	A	B	C
Initial pH:			
Amount of HCl added:			
Final pH:			

Cl<sub>2</sub> Adjustment? Y  N

	A	B	C
Initial Free Cl <sub>2</sub> :			
STS added:			
Final Free Cl <sub>2</sub> :			

Sample Aeration? Y  N

	A	B	C
Initial D.O.			
Duration & Rate			
Final D.O.			

Subsamples for Additional Chemistry Required? Y  N

NH<sub>3</sub> Other \_\_\_\_\_

Tech Initials A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_

QC Check: YS 2/1/19

Final Review: EA 4/4/19

# Sediment/Soil Sample Composite Worksheet

Client: Anchor QEA

Project: Newport Bay Federal Channels

Analyst(s): VS/TN

Matrix: Sediment

Mixing Method: Mixing blade  Hand  Other \_\_\_\_\_

Proportion Method: By volume  By weight  Total volume received  *Follow table provided*

Retain subsamples prior to compositing for *chemistry* or *archive*? (circle one): Yes / No

Samples to be composited together into a single sample:

Sample ID:	Date/Time Sampled:	Volume (L):	Sample Description Notes:
<u>NC1-03</u>	<u>1/23/19 1530</u>	<u>5L x 2</u>	<u>SAND w/ SOME WATER</u>
<u>NC1-04</u>	<u>1/23/19 1700</u>	<u>5L x 2</u>	<u>MUD w/ CLUMPS OF SAND</u>
<u>NC2-01</u>	<u>1/24/19 <del>0800</del> <sup>0810</sup> <sub>0810</sub></u>	<u>vs <del>10L</del> 5L</u>	<u>Fine sand, silt, very little hash</u>
<u>NC2-02</u>	<u>1/24/19 1100</u>	<u>10L</u>	<u>Fine sand, silt, very little hash</u>
<u>NC2-03</u>	<u>1/24/19 1235</u>	<u>6L, 4L</u>	<u>WET SAND, FEW ODD SHELL HASHT</u>
<u>NC2-04</u>	<u>1/22/19 1552</u>	<u>6L, 4L</u>	<u>Coarse sand, fines, minimal hash</u>

Composite Sample ID: NC2-COMP Date/Time Composited: 2/26/19 2/25/19 1330 Estimated Total Volume: ~55 L  
*EG Q18 4/4/19*

Initials \_\_\_\_\_

Composite sample checked into sample log and new COC completed: VS

Composite sample subsampled for porewater: VS

Subsample composite for chemistry?: Yes / No

Subsample composite for grain size?: Yes / No

Comments: ⓐ EG Q18 4/4/19

ⓑ VS Q18 3/1/19

QC Check: VS 3/11/19

Final Review: EG 4/4/19

**Sediment/Soil Sample Composite Worksheet**

Client: Anchor QEA

Project: Newport Bay Federal Channels

Analyst(s): YS / TN

Matrix: Sediment

Mixing Method: Mixing blade  Hand  Other \_\_\_\_\_

Proportion Method: By volume  By weight  Total volume received  Follow table provided

Retain subsamples prior to compositing for *chemistry* or *archive*? (circle one): Yes  **No**

Samples to be composited together into a single sample:

Sample ID:	Date/Time Sampled:	Volume (L):	Sample Description Notes:
<u>NC3-01</u>	<u>1/22/19 1415</u>	<u>6 x 2</u>	<u>sand, fines, shell hash</u>
<u>NC3-02</u>	<u>1/22/19 1134</u>	<u>8 x 2</u>	<u>coarse sand, fines, shell hash</u>
<u>NC3-03</u>	<u>1/22/19 0947</u>	<u>8 x 2</u>	<u>coarse dry sand, shell hash, fine sand, fines</u>
<u>NC3-04</u>	<u>1/23/19 0815</u>	<u>6 x 2</u>	<u>COARSE DRY SAND, SHELL HASH + some dark fines in bag 2</u>

Composite Sample ID: NC3-COMP Date/Time Composited: 2/26/19 1200 Estimated Total Volume: ~56 L  
25

Initials \_\_\_\_\_

Composite sample checked into sample log and new COC completed: YS

Composite sample subsampled for porewater: YS

Subsample composite for chemistry?:  Yes /  No YS

Subsample composite for grain size?:  Yes /  No YS

Comments: Ⓐ EG 918 4/4/19

---



---



---

QC Check: YS 3/10/19

Final Review: EG 4/4/19

**Appendix C**  
**Summary of Results Tables**

Anchor QEA - Newport Bay Federal Channels  
 Ampelisca 10-day Survival  
 Test Date: 3/1/19

Site ID	Replicate	Rand No.	No. Alive	Percent Survival	Mean Percent Survival	Standard Deviation
Lab Control	A	14	20	100	95.0	5.0
	B	17	20	100		
	C	11	19	95.0		
	D	19	18	90.0		
	E	4	18	90.0		
LA3-REF	A	5	20	100	100	0.0
	B	13	20	100		
	C	7	20	100		
	D	6	20	100		
	E	1	20	100		
NC2-Comp	A	18	19	95.0	<b>97.0</b>	2.7
	B	2	19	95.0		
	C	8	20	100		
	D	3	19	95.0		
	E	10	20	100		
NC3-Comp	A	9	18	90.0	<b>94.0</b>	4.2
	B	12	19	95.0		
	C	16	19	95.0		
	D	15	18	90.0		
	E	20	20	100		

Values in **bold** indicate a statistically significant result when compared to the reference.

**Anchor QEA - Newport Bay Federal Channels  
Neanthes 10-day Survival  
Test Date: 3/1/19**

Site ID	Replicate	Rand No.	No. Alive	Percent Survival	Mean Percent Survival	Standard Deviation
Lab Control	A	40	5	100	100	0.0
	B	35	5	100		
	C	28	5	100		
	D	22	5	100		
	E	32	5	100		
LA3-REF	A	27	5	100	96.0	8.9
	B	29	5	100		
	C	33	5	100		
	D	36	5	100		
	E	34	4	80.0		
NC2-Comp	A	30	5	100	96.0	8.9
	B	24	5	100		
	C	37	4	80.0		
	D	23	5	100		
	E	25	5	100		
NC3-Comp	A	31	5	100	96.0	8.9
	B	26	5	100		
	C	21	4	80.0		
	D	38	5	100		
	E	39	5	100		

**Anchor QEA**  
**Newport Federal Channels**  
***Americamysis bahia* 96-Hr Suspended Particulate Phase (SPP) Survival**  
**Standard Elutriate Preparation (SET)**  
**Test Initiation: February 27, 2019**

<b>Site: NC2-COMP</b>					
<b>Treatment</b>	<b>Replicate</b>	<b>No. Alive</b>	<b>Percent Survival</b>	<b>Mean Percent Survival</b>	<b>Standard Deviation</b>
<b>Laboratory Control #1 (Clean Seawater)</b>	A	10	100	100	0.0
	B	10	100		
	C	10	100		
	D	10	100		
	E	10	100		
<b>Site Water Control #1</b>	A	9	90.0	98.0	4.5
	B	10	100		
	C	10	100		
	D	10	100		
	E	10	100		
<b>10:90 (Sample:Clean Seawater)</b>	A	10	100	98.0	4.5
	B	9	90.0		
	C	10	100		
	D	10	100		
	E	10	100		
<b>50:50 (Sample:Clean Seawater)</b>	A	10	100	98.0	4.5
	B	10	100		
	C	10	100		
	D	9	90.0		
	E	10	100		
<b>100:0 (Sample:Clean Seawater)</b>	A	10	100	98.0	4.5
	B	10	100		
	C	10	100		
	D	10	100		
	E	9	90.0		
<b>NOEC = 100</b>		<b>EC<sub>50</sub> &gt; 100</b>			



**Anchor QEA**  
**Newport Federal Channels**  
***Americamysis bahia* 96-Hr Suspended Particulate Phase (SPP) Survival**  
**Standard Elutriate Preparation (SET)**  
**Test Initiation: February 27, 2019**

<b>Site: NC3-COMP</b>					
<b>Treatment</b>	<b>Replicate</b>	<b>No. Alive</b>	<b>Percent Survival</b>	<b>Mean Percent Survival</b>	<b>Standard Deviation</b>
<b>Laboratory Control #1 (Clean Seawater)</b>	A	10	100	100	0.0
	B	10	100		
	C	10	100		
	D	10	100		
	E	10	100		
<b>Site Water Control #1</b>	A	9	90.0	98.0	4.5
	B	10	100		
	C	10	100		
	D	10	100		
	E	10	100		
<b>10:90 (Sample: Clean Seawater)</b>	A	10	100	98.0	4.5
	B	10	100		
	C	10	100		
	D	10	100		
	E	9	90.0		
<b>50:50 (Sample: Clean Seawater)</b>	A	10	100	100	0.0
	B	10	100		
	C	10	100		
	D	10	100		
	E	10	100		
<b>100:0 (Sample: Clean Seawater)</b>	A	10	100	98.0	4.5
	B	9	90.0		
	C	10	100		
	D	10	100		
	E	10	100		
<b>NOEC = 100</b>		<b>EC<sub>50</sub> &gt; 100</b>			

**Anchor QEA**  
**Newport Federal Channels**  
***Menidia beryllina* 96-Hr Suspended Particulate Phase (SPP) Survival**  
**Standard Elutriate Preparation (SET)**  
**Test Initiation: February 27, 2019**

<b>Site: NC2-COMP</b>					
<b>Treatment</b>	<b>Replicate</b>	<b>No. Alive</b>	<b>Percent Survival</b>	<b>Mean Percent Survival</b>	<b>Standard Deviation</b>
<b>Laboratory Control #1 (Clean Seawater)</b>	A	8	80.0	88.0	11
	B	10	100		
	C	8	80.0		
	D	10	100		
	E	8	80.0		
<b>Site Water Control #1</b>	A	10	100	94.0	5.5
	B	9	90.0		
	C	9	90.0		
	D	9	90.0		
	E	10	100		
<b>10:90 (Sample:Clean Seawater)</b>	A	10	100	88.0	8.4
	B	8	80.0		
	C	9	90.0		
	D	8	80.0		
	E	9	90.0		
<b>50:50 (Sample:Clean Seawater)</b>	A	4	40.0	82.0	27
	B	10	100		
	C	7	70.0		
	D	10	100		
	E	10	100		
<b>100:0 (Sample:Clean Seawater)</b>	A	4	40.0	86.0	26
	B	9	90.0		
	C	10	100		
	D	10	100		
	E	10	100		
<b>NOEC = 100</b>		<b>EC<sub>50</sub> &gt; 100</b>			

Note: Lab Control did meet acceptability criteria therefore dilutions compared to Site Water Control.

Anchor QEA  
 Newport Federal Channels  
*Menidia beryllina* 96-Hr Suspended Particulate Phase (SPP) Survival  
 Standard Elutriate Preparation (SET)  
 Test Initiation: February 27, 2019

Site: NC3-COMP					
Treatment	Replicate	No. Alive	Percent Survival	Mean Percent Survival	Standard Deviation
Laboratory Control #1 (Clean Seawater)	A	8	80.0	88.0	11
	B	10	100		
	C	8	80.0		
	D	10	100		
	E	8	80.0		
Site Water Control #1	A	10	100	94.0	5.5
	B	9	90.0		
	C	9	90.0		
	D	9	90.0		
	E	10	100		
10:90 (Sample:Clean Seawater)	A	6	60.0	<b>78.0</b>	15
	B	7	70.0		
	C	8	80.0		
	D	8	80.0		
	E	10	100		
50:50 (Sample:Clean Seawater)	A	10	100	98.0	4.5
	B	10	100		
	C	10	100		
	D	9	90.0		
	E	10	100		
100:0 (Sample:Clean Seawater)	A	9	90.0	90.0	0.0
	B	9	90.0		
	C	9	90.0		
	D	9	90.0		
	E	9	90.0		
NOEC = 100		EC <sub>50</sub> > 100			

Note: Lab Control did meet acceptability criteria therefore dilutions compared to Site Water Control.  
 Value in **bold** indicate a statistically significant results when compared to the Site Water Control.

Anchor QEA  
Newport Bay Federal Channels  
*Mytilus galloprovincialis* 48-Hr Suspended Particulate Phase (SPP) Standard Elutriate Test (SET)  
Test Initiation: March 6, 2019

Site: NC2-COMP											Day 0 OVNH (mg/L)
Treatment	Replicate	Zero Time Average	Total No. Counted	No. Normally Developed	Percent Normal	Mean Percent Normal	Standard Deviation	Percent Survival	Mean Percent Survival	Standard Deviation	
Laboratory Control #1 (Clean Seawater)	A	157	120	113	94.2			76.4			< 0.5
	B	157	157	154	98.1			100			
	C	162	162	161	99.4	97.0	2.0	100	94.1	10	
	D	157	148	142	95.9			94.3			
	E	159	159	155	97.5			100			
Site Water Control #1	A	157	154	151	98.1			98.1			< 0.5
	B	157	153	150	98.0			97.5			
	C	157	151	149	98.7	97.6	1.3	96.2	97.3	1.1	
	D	157	151	144	95.4			96.2			
	E	157	155	152	98.1			98.7			
1:99 (Sample:Clean Seawater)	A	157	144	135	93.8			91.7			< 0.5
	B	157	156	152	97.4			99.4			
	C	157	147	142	96.6	95.8	1.6	93.6	96.9	4.0	
	D	158	158	153	96.8			100			
	E	164	164	155	94.5			100			
10:90 (Sample:Clean Seawater)	A	157	150	143	95.3			95.5			< 0.5
	B	173	173	163	94.2			100			
	C	157	146	141	96.6	96.0	1.2	93.0	96.9	3.0	
	D	172	172	167	97.1			100			
	E	157	151	146	96.7			96.2			
50:50 (Sample:Clean Seawater)	A	157	155	149	96.1			98.7			0.6
	B	162	162	157	96.9			100			
	C	157	152	148	97.4	96.8	1.3	96.8	96.7	5.1	
	D	157	138	136	98.6			87.9			
	E	167	167	159	95.2			100.0			
100:0 (Sample:Clean Seawater)	A	157	153	147	96.1			97.5			1.7
	B	160	160	154	96.3			100			
	C	168	168	163	97.0	97.1	1.0	100	97.7	2.3	
	D	157	151	147	97.4			96.2			
	E	157	149	147	98.7			94.9			
Development	NOEC = 100		EC <sub>50</sub> > 100			Survival	NOEC = 100		EC <sub>50</sub> > 100		

OVNH = overlying water ammonia

When the final number counted was larger than the initial time zero mean of 157, the time zero value was changed to the total number counted (see Quality Assurance section).

Anchor QEA  
Newport Bay Federal Channels  
*Mytilus galloprovincialis* 48-Hr Suspended Particulate Phase (SPP) Standard Elutriate Test (SET)  
Test Initiation: March 6, 2019

Site: NC3-COMP											Day 0 OVNH (mg/L)
Treatment	Replicate	Zero Time Average	Total No. Counted	No. Normally Developed	Percent Normal	Mean Percent Normal	Standard Deviation	Percent Survival	Mean Percent Survival	Standard Deviation	
Laboratory Control #1 (Clean Seawater)	A	157	120	113	94.2			76.4			< 0.5
	B	157	157	154	98.1			100			
	C	162	162	161	99.4	97.0	2.0	100	94.4	10	
	D	157	148	142	95.9			94.3			
	E	157	159	155	97.5			101			
Site Water Control #1	A	157	154	151	98.1			98.1			< 0.5
	B	157	153	150	98.0			97.5			
	C	157	151	149	98.7	97.6	1.3	96.2	97.3	1.1	
	D	157	151	144	95.4			96.2			
	E	157	155	152	98.1			98.7			
1:99 (Sample:Clean Seawater)	A	157	134	132	98.5			85.4			< 0.5
	B	157	127	123	96.9			80.9			
	C	178	178	171	96.1	97.3	0.9	100	88.4	8.9	
	D	157	126	123	97.6			80.3			
	E	157	150	146	97.3			95.5			
10:90 (Sample:Clean Seawater)	A	168	168	162	96.4			100			< 0.5
	B	157	150	145	96.7			95.5			
	C	157	154	150	97.4	96.3	1.8	98.1	96.2	5.3	
	D	164	164	153	93.3			100			
	E	157	137	134	97.8			87.3			
50:50 (Sample:Clean Seawater)	A	158	158	156	98.7			100			0.7
	B	169	169	161	95.3			100			
	C	157	157	154	98.1	97.5	1.5	100	99.5	1.1	
	D	159	159	157	98.7			100			
	E	157	153	148	96.7			97.5			
100:0 (Sample:Clean Seawater)	A	164	164	159	97.0			100			< 0.5
	B	157	151	147	97.4			96.2			
	C	158	158	154	97.5	97.2	0.4	100	97.5	2.5	
	D	157	148	143	96.6			94.3			
	E	157	152	148	97.4			96.8			
Development	NOEC = 100		EC <sub>50</sub> > 100			Survival	NOEC = 100		EC <sub>50</sub> > 100		

OVNH = overlying water ammonia

When the final number counted was larger than the initial time zero mean of 157, the time zero value was changed to the total number counted (see Quality Assurance section).

**Anchor QEA - Newport Bay Federal Channels**  
***N. virens* 28-day Survival**  
**Test Initiation: February 26, 2019**

Site ID	Replicate	No. Alive	Percent Survival	Mean Percent Survival	Standard Deviation
Lab Control	A	9	90.0	90.0	7.1
	B	9	90.0		
	C	8	80.0		
	D	9	90.0		
	E	10	100		
LA3-Ref	A	10	100	92.0	11
	B	8	80.0		
	C	10	100		
	D	8	80.0		
	E	10	100		
NC2-Comp	A	8	80.0	66.0	17
	B	4	40.0		
	C	7	70.0		
	D	6	60.0		
	E	8	80.0		
NC3-Comp	A	9	90.0	76.0	15
	B	9	90.0		
	C	6	60.0		
	D	8	80.0		
	E	6	60.0		

**Anchor QEA - Newport Bay Federal Channels**  
***M. nasuta* 28-day Survival**  
**Test Initiation: February 26, 2019**

Site ID	Replicate	No. Alive	Percent Survival	Mean Percent Survival	Standard Deviation
Lab Control	A	30	100	98.0	1.8
	B	29	96.7		
	C	29	96.7		
	D	29	96.7		
	E	30	100		
LA3-Ref	A	30	100	98.7	1.8
	B	29	96.7		
	C	30	100		
	D	29	96.7		
	E	30	100		
NC2-Comp	A	29	96.7	98.0	1.8
	B	29	96.7		
	C	29	96.7		
	D	30	100		
	E	30	100		
NC3-Comp	A	28	93.3	96.7	3.3
	B	30	100		
	C	30	100		
	D	29	96.7		
	E	28	93.3		

**Appendix D**  
**Raw Datasheets and Statistical Summaries**



*Ampelisca* SP 10-day

**Anchor QEA - Newport Bay Federal Channels  
Toxicity Test Raw Data Summary**

Samples Collected 1/22/19-2/12/19 ; Test Initiated 3/1/19

**A. abdita 10-Day Survival**

Site ID	Replicate	Number Alive	Percent Survival	Mean Percent Survival
Lab Control	A	20	100	95
	B	20	100	
	C	19	95	
	D	18	90	
	E	18	90	
LA3-REF	A	20	100	100
	B	20	100	
	C	20	100	
	D	20	100	
	E	20	100	
NC2-Comp	A	19	95	97
	B	19	95	
	C	20	100	
	D	19	95	
	E	20	100	
NC3-Comp	A	18	90	94
	B	19	95	
	C	19	95	
	D	18	90	
	E	20	100	

Entry: KS 3/27/19  
QC: Eg 4/4/19

Initial Number of Animals: 20

Number Initial	Number Survived	Proportion Alive	Transformed Result
20	20	1	1.459
20	20	1	1.459
20	19	0.95	1.345
20	18	0.9	1.249
20	18	0.9	1.249
20	20	1	1.459
20	20	1	1.459
20	20	1	1.459
20	20	1	1.459
20	19	0.95	1.345
20	19	0.95	1.345
20	20	1	1.459
20	19	0.95	1.345
20	20	1	1.459
20	18	0.9	1.249
20	19	0.95	1.345
20	18	0.9	1.249
20	20	1	1.459

**Anchor QEA**  
**Newport Bay Federal Channels**  
***A. abdita* 10-Day Survival**  
**Column Statistics**  
**Test Initiated: 3/1/19**

	Lab Control	LA3-REF	NC2-Comp	NC3-Comp
Number of values	5	5	5	5
Minimum	1.249	1.459	1.345	1.249
25% Percentile	1.249	1.459	1.345	1.249
Median	1.345	1.459	1.345	1.345
75% Percentile	1.459	1.459	1.459	1.402
Maximum	1.459	1.459	1.459	1.459
Mean	1.352	1.459	1.391	1.329
Std. Deviation	0.1051	4.298e-007	0.06244	0.08691
Std. Error of Mean	0.04699	1.922e-007	0.02792	0.03887
Lower 95% CI of mean	1.222	1.459	1.313	1.221
Upper 95% CI of mean	1.483	1.459	1.468	1.437
Sum	6.761	7.295	6.953	6.647

Entry: KS 3/27/19  
 QC: EA 4/23/19

**Anchor QEA**  
**Newport Bay Federal Channels**  
***A. abdita* 10-Day Survival**  
**Normality Test**  
**Test Initiated: 3/1/19**

Number of values	20
Minimum	-0.1032
25% Percentile	-0.04560
Median	0.0
75% Percentile	0.0552
Maximum	0.1296
Mean	1.164e-009
Std. Deviation	0.06881
Std. Error of Mean	0.01539
Lower 95% CI of mean	-0.03221
Upper 95% CI of mean	0.03221
D'Agostino & Pearson omnibus normality test	
K2	0.7251
P value	0.6959
Passed normality test (alpha=0.05)?	Yes
P value summary	ns
Sum	2.328e-008

Entry: KS 3/27/19  
 QC: Ea 4/4/19

**Anchor QEA**  
**Newport Bay Federal Channels**  
***A. abdita* 10-Day Survival**  
**ANOVA**  
**Test Initiated: 3/1/19**

Table Analyzed	Transformed Survival
ANOVA summary	
F	2.862
P value	0.0696
P value summary	ns
Are differences among means statistically significant? (P < 0.05)	No
R square	0.3492
Brown-Forsythe test	
F (DFn, DFd)	2.692 (3, 16)
P value	0.0810
P value summary	ns
Significantly different standard deviations? (P < 0.05)	No

ANOVA table	SS	DF	MS	F (DFn, DFd)	P value
Treatment (between columns)	0.04828	3	0.01609	F (3, 16) = 2.862	P = 0.0696
Residual (within columns)	0.08997	16	0.005623		
Total	0.1382	19			
Data summary					
Number of treatments (columns)	4				
Number of values (total)	20				

Entry: KS 3/27/19  
 QC: EA 4/23/19

# Anchor QEA

## Newport Bay Federal Channels

### *A. abdita* 10-Day Survival

### Test Initiated: 3/1/19

Table Analyzed	Transformed Survival	Table Analyzed	Transformed Survival
Column B	LA3-REF	Column B	LA3-REF
vs.	vs.	vs.	vs.
Column D	NC3-Comp	Column C	NC2-Comp
Unpaired t test with Welch's correction		Unpaired t test with Welch's correction	
P value	0.0145	P value	0.0352
P value summary	*	P value summary	*
Significantly different? (P < 0.05)	Yes	Significantly different? (P < 0.05)	Yes
One- or two-tailed P value?	One-tailed	One- or two-tailed P value?	One-tailed
Welch-corrected t, df	t=3.335 df=4.000	Welch-corrected t, df	t=2.449 df=4.000
How big is the difference?		How big is the difference?	
Mean ± SEM of column B	1.459 ± 1.908e-007, n=5	Mean ± SEM of column B	1.459 ± 1.908e-007, n=5
Mean ± SEM of column D	1.329 ± 0.03887, n=5	Mean ± SEM of column C	1.391 ± 0.02792, n=5
Difference between means	0.1296 ± 0.03887	Difference between means	0.06840 ± 0.02792
95% confidence interval	0.02169 to 0.2375	95% confidence interval	-0.009130 to 0.1459
R squared	0.7354	R squared	0.6000
F test to compare variances		F test to compare variances	
F,DFn, Dfd	4.148e+010, 4, 4	F,DFn, Dfd	2.141e+010, 4, 4
P value	< 0.0001	P value	< 0.0001
P value summary	****	P value summary	****
Significantly different? (P < 0.05)	Yes	Significantly different? (P < 0.05)	Yes

Entry: KS 3/27/19

QC: Ea 4/23/19

**10-Day Marine Sediment Bioassay  
Static Conditions**

**Water Quality Measurements**

Client/Project ID: Anchor QEA/Newport Federal Channels

Test Species: A. abdita

Test No(s): 1903-5004 to 5006 Bay  
~~4904-S~~

Start Date/Time: 3/1/2019 1200

Sample ID: Lab Control

End Date/Time: 3/10/2019 1630  
11

Log-in No.: 19-3045

Test Day	Temperature (°C)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH (units)	Technician Initials	Comments
0	20.9	29.9	6.8	7.77	TN	Collect <sup>JBS</sup> Ammonia
1 Q <sub>1</sub>	21.4	30.3	6.8	7.89	TN	
2 Q <sub>1</sub>	21.9	30.2	7.0	7.96	DM	
3 Q <sub>1</sub>	21.4	30.1	7.0	7.91	UTP	
4	20.7	30.3	6.5	7.90	DM	
5	20.6	30.3	6.7	7.93	DM	
6	21.0	30.4	6.7	7.97	TN	
7	21.0	30.1	6.5	7.98	JBS	
8	20.8	30.3	7.0	7.99	BO	
9	20.5	30.4	7.2	8.03	DM	
10	20.8	30.0	6.5	7.99	ACS	Collect <sup>JBS</sup> Ammonia

QC Check: JBS 3/21/19

Final Review: EG 4/4/19

Nautilus Environmental. 4340 Vandever Avenue. San Diego, CA 92120.

@Q18UTP 2/28/19 @Q18ACS 3/1/19

**10-Day Marine Sediment Bioassay  
Static Conditions**

**Water Quality Measurements**

Client/Project ID: Anchor QEA/Newport Federal Channels

Test Species: A. abdita

Test No(s): ~~1901-S~~ 1903-S004

Start Date/Time: 3/1/2019 1200

Sample ID: ~~LA-3REF~~ LA3-REF

End Date/Time: 3/10/2019 1030

Log-in No.: 19-3040

Test Day	Temperature (°C)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH (units)	Technician Initials	Comments
0	20.8	30.4	7.1	8.04	TN	Collect <sup>✓SBS</sup> Ammonia
1 Q1	21.7	30.8	6.9	8.02	TN	
2 Q1	21.9	30.8	6.9	8.06	DM	
3 Q1	21.0	30.9	6.9	8.04	LTP	
4	20.2	30.9	6.7	8.04	DM	
5	20.1	30.9	6.7	8.02	DM	
6	21.0	31.4	6.7	8.02	TN	
7	21.0	31.6	6.6	8.03	JBS	
8	20.9	31.7	7.0	8.00	BO	
9	20.7	31.9	7.2	8.08	DM	
10	20.8	32.2	7.0	8.00	ACS	Collect <sup>✓S</sup> Ammonia

QC Check: ✓ 3/2/19

Final Review: EC 4/4/19

@BSEP 02/18/19



**10-Day Marine Sediment Bioassay  
Static Conditions**

**Water Quality Measurements**

Client/Project ID: Anchor QEA/Newport Federal Channels

Test Species: A. abdita

Test No(s): 1901-S 1903-S005

Start Date/Time: 3/1/2019 1200

Sample ID: NC2- Comp

End Date/Time: 3/10/2019 1030

Log-in No.: 19-3043

11

Test Day	Temperature (°C)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH (units)	Technician Initials	Comments
0	20.9	30.1	7.1	8.01	TN	Collect <sup>JBS</sup> Ammonia
1 Q <sub>1</sub>	21.3	30.4	7.0	8.04	TN	
2 Q <sub>1</sub>	21.7	30.8	7.0	8.07	DM	
3 Q <sub>1</sub>	21.3	30.8	7.1	8.06	LTP	
4	20.4	30.8	6.8	8.07	PM	
5	20.4	30.9	6.8	8.03	DM	
6	20.9	30.9	6.9	8.02	TN	
7	21.0	31.3	6.7	8.03	JBS	
8	20.8	31.4	7.0	7.99	BO	
9	20.8	31.2	7.2	8.11	DM	
10	20.8	31.3	7.0	8.05	ARS	Collect <sup>JBS</sup> Ammonia

QC Check: vs 3/21/19

Final Review: Em 4/4/19

Nautilus Environmental. 4340 Vandever Avenue. San Diego, CA 92120.

@ Q18 LTP 02/28/19

**10-Day Marine Sediment Bioassay  
Static Conditions**

**Water Quality Measurements**

Client/Project ID: Anchor QEA/Newport Federal Channels

Test Species: A. abdita

Test No(s): ~~1901-S~~ 1903-S006

Start Date/Time: 3/1/2019 1200

Sample ID: NC3- Comp

End Date/Time: 3/10/2019 1030

Log-in No.: 19-3044

Test Day	Temperature (°C)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH (units)	Technician Initials	Comments
0	20.8	30.0	7.1	7.98	TN	Collect <sup>JBS</sup> Ammonia
1 Q1	21.4	30.3	7.1	8.01	TN	
2 Q1	22.0	30.4	7.1	8.06	DM	
3 Q1	21.5	30.7	7.0	8.01	UTP	
4	20.2	30.5	6.7	8.04	DM	
5	20.1	30.6	6.8	8.00	DM	
6	20.9	30.7	6.7	7.99	TN	
7	21.0	30.7	6.6	7.96	JBS	
8	20.8	30.8	6.9	7.93	BO	
9	21.0	30.9	7.1	8.00	DM	
10 Q2	21.1	30.7	6.8	7.98	ACS	Collect <sup>JBS</sup> Ammonia

QC Check: vs 3/25/19

Final Review: EA 4/4/19

# Sediment Bioassay

# Daily Observations

Client: Anchor QEA

Test Species: A. abdita

Project ID: Newport <sup>v Bay</sup> Federal Channels

Start Date/Time: 3/1/2019 1200

Test No. 1901-S-1903-S004 to S006

End Date/Time: 3/10/2019 1030

11

Random Number	Daily Observations (Use Codes Provided)									
	1	2	3	4	5	6	7	8	9	10
1	N	N	N	B <sub>1</sub>	B <sub>1</sub>	N	B <sub>1</sub>	N	B <sub>2</sub>	B <sub>2</sub>
2	N	N	<del>B<sub>2</sub></del>	N	N	N	W	N	N	N
3	N	<del>N</del> B <sub>2</sub>	B <sub>2</sub>	B <sub>2</sub>	N	N	W	N	N	N
4	B <sub>4</sub>	N	B <sub>1</sub>	N	N	N	W	N	N	N
5	B <sub>2</sub>	N	N	B <sub>1</sub>	B <sub>1</sub>	N	W	N	B <sub>2</sub>	B <sub>1</sub>
6	B <sub>5</sub>	N	N	N	B <sub>1</sub>	B <sub>1</sub>	B <sub>1</sub>	N	N	N
7	B <sub>2</sub>	<del>N</del> B <sub>2</sub>	B <sub>2</sub>	B <sub>2</sub>	B <sub>2</sub>	B <sub>2</sub>	B <sub>2</sub>	N	B <sub>1</sub>	N
8	B <sub>2</sub>	<del>N</del> B <sub>2</sub>	B <sub>4</sub>	B <sub>4</sub>	B <sub>2</sub>	N	N	N	N	B <sub>1</sub>
9	S <sub>1</sub>	B <sub>3</sub> , S <sub>1</sub>	N	N	N	N	N	N	N	S <sub>1</sub>
10	B <sub>1</sub>	N	N	B <sub>1</sub>	N	N	W	N	N	B <sub>1</sub>
11	B <sub>1</sub>	B <sub>2</sub>	N	N	N	B <sub>1</sub>	W	N	N	N
12	N	B <sub>3</sub>	B <sub>2</sub>	B <sub>2</sub>	B <sub>1</sub>	N	W	N	N	N
13	B <sub>2</sub>	B <sub>1</sub>	B <sub>1</sub>	N	N	B <sub>1</sub>	N	B <sub>1</sub>	G <sup>0.05</sup> <sub>7.3</sub>	N
14	B <sub>1</sub>	B <sub>1</sub>	N	B <sub>1</sub>	B <sub>1</sub>	B <sub>1</sub>	W	N	B <sub>2</sub>	B <sub>1</sub>
15	B <sub>1</sub>	B <sub>1</sub>	N	N	N	N	W	N	N	N
16	B <sub>3</sub>	B <sub>2</sub>	N	N	N	N	N	N	N	N
17	B <sub>5</sub>	N	N	N	N	N	W	N	N	N
18	B <sub>5</sub>	N	B <sub>2</sub>	B <sub>2</sub>	B <sub>2</sub>	B <sub>3</sub>	B <sub>1</sub>	B <sub>2</sub>	B <sub>1</sub>	B <sub>2</sub>
19	B <sub>4</sub>	N	B <sub>1</sub>	B <sub>1</sub>	N	N	W	N	N	B <sub>1</sub>
20	B <sub>1</sub>	N	N	B <sub>1</sub>	N	B <sub>2</sub>	B <sub>1</sub>	B <sub>1</sub>	B <sub>1</sub>	B <sub>1</sub>
Tech	TN	DM	LTP	DM	DM	TN	JBS	BO	DM	YG

Observations Key: E = Emerged, specify number S = Trapped on surface, specify number  
 N = Normal G = Abnormal growth on or discoloration of sediment surface  
 A = No/low aeration B = Body or molt on sediment surface, specify number

QC Check: YS 3/21/19

Final Review: EG 4/4/19

Q18 LTP 02/28/19  
Q18 DM 3/13/19  
Q18 LTP 3/1/19

Marine Sediment Bioassay

Organism Survival

Client/Project ID: Anchor QEA/Newport Federal Ch Test Species: A. abdita

Test No(s): <sup>(a)</sup> 1904-5 1903-505 Bay Start Date/Time: 3/1/2019 1200

Initial No. Organisms: 20/rep <sup>-5004 do 5006</sup> End Date/Time: <sup>(a)</sup> 3/10/2019 1030

Random Number	Number Alive	10% QC Check of final counts	Random Number	Number Alive	10% QC Check of final counts
1	20	20			
2	19				
3	19				
4	18				
5	20				
6	20				
7	20				
8	20				
9	18				
10	20				
11	19				
12	19				
13	20				
14	20				
15	18				
16	19	19			
17	20				
18	19				
19	18				
20	20				
Tech Initials:	<u>YS</u>	<u>EG</u>	Tech Initials:		

Initiation QC Check Initials:

Counts YS All Jars initiated YS Air YS Lights (24hr) YS  
 T<sub>0</sub> <sup>everything</sup> pore water WQ (pH, salinity, ammonia) PH 060705 All <sup>pore</sup> pore water ammonia below NH<sub>3</sub> threshold YS  
 NH<sub>3</sub> Thresholds: (*Eohaustorius* and *Leptocheirus* = 60 mg/L) (*Ampelisca* and *Rhepoxynius* = 30 mg/L)

Termination QC Check Initials:

T<sub>f</sub> <sup>everything</sup> pore water WQ (pH, salinity, ammonia) YS

Animal Source/Date Received: ARO 2/28/19 Size at Initiation: 2-4 mm

Comments: YS YS 3/2/19

QC Check: YS 3/2/19 <sup>(a)</sup> EG/UTD 2/28/19 Final Review: EG 4/4/19

**Anchor QEA - Newport Federal Channel**  
***Ampelisca* 10-day Survival**  
**Test Date: 3/1/19**

<b>Site</b>	<b>Rep</b>	<b>Rand #</b>
Lab Control	A	14
	B	17
	C	11
	D	19
	E	4
LA3-REF	A	5
	B	13
	C	7
	D	6
	E	1
NC2-Comp	A	18
	B	2
	C	8
	D	3
	E	10
NC3-Comp	A	9
	B	12
	C	16
	D	15
	E	20

QC = LTP

QC: LTP

*Neanthes* SP 10-day

**10-Day Marine Sediment Bioassay  
Static Conditions**

**Water Quality Measurements**

Client/Project ID: Anchor QEA/Newport Federal Channels

Test Species: N. arenaceodentata

Test No(s): 1901-S-1903-S007 to S009

Start Date/Time: 3/1/2019 1450

Sample ID: Lab Control #1

End Date/Time: 3/10/2019 1015

Log-in No.: 19-3012

Test Day	Temperature (°C)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH (units)	Technician Initials	Comments
0	20.2	30.0	7.2	8.03	TN	Collect Ammonia ✓ JBS
1	19.1	30.1	7.7	8.02	TN	
2	19.6	30.2	7.6	8.05	DM	
3	19.7	30.1	7.8	8.06	LTP	
4	19.6	30.1	7.0	8.04	DM	
5	19.6	30.2	7.0	8.02	DM	
6	20.4	30.2	6.7	7.99	TN	
7	20.3	30.0	6.8	8.00	JBS	
8	20.3	30.3	7.0	7.98	BO	
9	20.2	30.0	7.4	8.00	DM	
10	20.2	29.8	7.0	8.00	ACS	Collect Ammonia ✓ ACS 04/05

QC Check: vs 3/2/19

Final Review: EA 4/4/19

@GISLTP 02/28/19

**10-Day Marine Sediment Bioassay  
Static Conditions**

**Water Quality Measurements**

Client/Project ID: Anchor QEA/Newport Federal Channels

Test Species: N. arenaceodentata

Test No(s): <sup>Ⓢ</sup> 1901-S 1903-S007

Start Date/Time: 3/1/2019 1450

Sample ID: <sup>Ⓢ</sup> LA-REF LA3-REF

End Date/Time: <sup>11</sup> 3/10/2019 1015

Log-in No.: 19-3040

Test Day	Temperature (°C)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH (units)	Technician Initials	Comments
0	20.1	30.0	7.0	7.99	TN	Collect Ammonia <sup>JBS</sup>
1	19.1	30.6	7.5	8.03	TN	
2	19.6	30.7	7.4	8.04	DM	
3	19.6	30.7	7.5	8.04	LTP	
4	19.6	30.5	6.8	8.03	DM	
5	19.8	30.7	7.0	7.94	DM	
6	20.5	30.8	6.9	8.01	TN	
7	20.7	30.9	6.5	7.92	JBS	
8	20.6	30.8	7.1	7.96	BO	
9	20.4	30.9	7.3	8.00	DM	
10	20.4	31.0	7.0	7.95	ACS	Collect Ammonia <sup>ACS 04/15</sup>

QC Check: Y 3/2/19

Final Review: Ea 4/4/19



**10-Day Marine Sediment Bioassay  
Static Conditions**

**Water Quality Measurements**

Client/Project ID: Anchor QEA/Newport Federal Channels

Test Species: N. arenaceodentata

Test No(s): 1901-S-1903-5008

Start Date/Time: 3/1/2019 1450

Sample ID: NC2-Comp

End Date/Time: 3/10/2019 1015

Log-in No.: 19-3043

Test Day	Temperature (°C)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH (units)	Technician Initials	Comments
0	20.2	30.0	7.2	8.01	TN	Collect <sup>JBS</sup> Ammonia
1	19.3	30.5	7.5	8.02	TN	
2	19.8	30.4	7.5	8.03	DM	
3	19.8	30.6	7.4	8.06	LTP	
4	19.6	30.5	6.8	8.05	DM	
5	19.6	30.6	6.6	7.96	DM	
6	20.7	31.1	6.7	7.98	TN	
7	20.5	30.6	6.8	7.97	JBS	
8	20.4	30.8	7.0	7.96	BO	
9	20.3	30.6	7.3	7.95	DM	
10	20.2	30.6	7.1	7.99	ACS	Collect Ammonia <sup>JBS AND KSS</sup>

QC Check: vs 3/21/19

Final Review: EG 4/4/19

Nautilus Environmental. 4340 Vandever Avenue. San Diego, CA 92120.

@018002/28/19

**10-Day Marine Sediment Bioassay  
Static Conditions**

**Water Quality Measurements**

Client/Project ID: Anchor QEA/Newport Federal Channels

Test Species: N. arenaceodentata

Test No(s): ~~1901-S~~ <sup>Bay</sup> 1903-S009

Start Date/Time: 3/1/2019 1450

Sample ID: NC3-Comp

End Date/Time: 3/10/2019 1015

Log-in No.: 19-3044

Test Day	Temperature (°C)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH (units)	Technician Initials	Comments
0	20.3	30.3	7.1	7.98	TN	Collect <sup>JBS</sup> Ammonia
1	19.1	30.5	7.4	8.02	TN	
2	19.7	30.3	7.4	8.00	DM	
3	19.6	30.4	7.3	8.03	LTP	
4	19.6	30.5	6.7	8.03	DM	
5	19.7	30.5	6.9	7.93	DM	
6	20.3	30.5	6.9	8.03	TN	
7	20.3	30.6	6.7	8.01	JBS	
8	20.0	30.4	6.9	8.00	BD	
9	20.4	30.6	7.3	8.03	DM	
10	20.1	30.9	7.1	8.01	ACS	Collect <sup>ARESOAD 65</sup> Ammonia

QC Check: 3/21/19

Final Review: EG 4/4/19

Nautilus Environmental. 4340 Vandever Avenue. San Diego, CA 92120.

@QASPP 02/28/19

Marine Polychaete Sediment Bioassay

Organism Survival

Anchor QEA/Newport Federal  
 Client/Project ID: \_\_\_\_\_ Channels <sup>Bay</sup> Test Species: N. arenaceodentata  
 Test No(s): 1901-S 1903-S 5007 to 5009 Start Date/Time: 3/1/2019 1450  
 Initial No. Organisms: 5/rep End Date/Time: 3/10/2019 1015

Random Number	Number Alive	10% QC Check of final counts	Random Number	Number Alive	10% QC Check of final counts
21	4	4			
22	5				
23	5				
24	5				
25	5				
26	5				
27	5				
28	5				
29	5				
30 10	5	5			
31 11	5				
32 12	5				
33 13	5				
34 14	4				
35 15	5				
36 16	5				
37 17	4	4			
38 18	5				
39 19	5				
40 20(A)	5				
Tech Initials:	ACS	VS	Tech Initials:		

Initiation QC Check Initials:

Counts TN All Jars initiated TN Air TN Lights (12:12) TN  
~~T<sub>0</sub> pore water WQ (pH, salinity, ammonia)~~ <sup>overriding</sup> All pore water ammonia <60 mg/L TN QBS SBS

Termination QC Check Initials:

T<sub>f</sub> pore water WQ (pH, salinity, ammonia) ACS/KS

Animal Source/Date Received: ARS 2/27/19 Age at Initiation: 2-3 WEEKS POST EMERGENCE

Comments: Ⓐ QBS VS 3/2/19 Ⓑ QBS ACS 3/1/19 Ⓒ QBS VS 3/2/19

QC Check: VS 3/2/19

Final Review: EA 4/4/19

**Anchor QEA - Newport Federal Channel**  
***Neanthes* 10-day Survival**  
**Test Date: 3/1/19**

Site	Rep	Rand #
Lab Control	A	40
	B	35
	C	28
	D	22
	E	32
LA3-REF	A	27
	B	29
	C	33
	D	36
	E	34
NC2-Comp	A	30
	B	24
	C	37
	D	23
	E	25
NC3-Comp	A	31
	B	26
	C	21
	D	38
	E	39

QC: LTP

Sediment Bioassay

Daily Observations

Client: Anchor QEA

Test Species: N. arenaceodentata

Project ID: Newport Federal Channels

Start Date/Time: 3/1/2019 1450

Test No.: 1904-S-1903-5007 to 5009

End Date/Time: 3/10/2019 1015

Random Number	Daily Observations (Use Codes Provided)									
	1	2	3	4	5	6	7	8	9	10
21	N	N	N	N	N	N	N	N	N	N
22	N	N	N	N	N	N	N	N	N	N
23	N	N	N	N	N	N	N	N	N	N
24	N	N	N	N	N	N	N	N	N	N
25	N	N	N	N	N	N	N	N	N	N
26	N	N	N	N	N	N	N	N	N	N
27	N	N	N	N	N	N	N	N	N	N
28	N	N	N	N	N	N	N	N	N	N
29	N	N	N	N	N	N	N	N	N	N
30 10	N	N	N	N	N	N	N	N	N	N
31 11	N	N	N	N	N	N	N	N	N	N
32 12	N	N	N	N	N	N	N	N	N	N
33 13	N	N	N	N	N	N	N	N	N	N
34 14	N	N	N	N	N	N	N	N	N	N
35 15	N	N	N	N	N	N	N	N	N	N
36 16	N	N	N	N	N	N	N	N	N	N
37 17	N	N	N	N	N	N	N	N	N	N
38 18	N	N	N	N	N	N	N	N	N	N
39 19	N	N	N	N	N	N	N	N	N	N
40 20 <sup>(A)</sup>	N	N	N	N	N	N	N	N	N	N
Tech	TN	DM	VTP	DM	TN	A	JBS	BO	DM	AJ

Observations Key

E = Emerged, specify number	S = Trapped on surface, specify number
N = Normal	G = Abnormal growth on or discoloration of sediment surface
A = No/low aeration	B = Body or molt on sediment surface, specify number

QC Check: vs 3/21/19

Final Review: Eg 4/11/19

<sup>(A)</sup> @ 18 LTP 02/28/19    <sup>(B)</sup> @ 15 ARS 2/11/15

*Mytilus* SPP 48-hour

**Standard Elutriate Preparation**

Client: Anchor QEA/Newport Federal Channels Test Species: M. galloprovincialis

Sample IDs: NC2-COMP and NC3-COMP

Analyst: TN/Vs

Test IDs: 1903-5050 and 5051

Protocols : EPA-503/8-91/001 Feb 1991 (ITM) & EPA-823/B-98/004 Feb 1998 (OTM)

Water used to prepare elutriate (circle): Lab SW or Site Water

Test Salinity (ppt): 32

Ratio 1:4 (Sediment:Water): Example: 3 L Sediment : 12 L Water

Site ID:	Sediment Volume:	Water Volume:
<u>NC2-COMP</u>	<u>0.5 L</u>	<u>2 L</u>
<u>NC3-COMP</u>	<u>0.5 L</u>	<u>2 L</u>

Mix sediment and water in polyethylene plastic-lined 5-gallon bucket with stainless steel mixing blade for a total of 30 min.

Every 10 minutes, use a stainless steel spoon to manually suspend settled sediment.

Site ID:	Settling Start Date/Time:	Settling End Date/Time:
<u>NC2-COMP</u>	<u>3/6/19 1032</u>	<u>3/6/19 1132</u>
<u>NC3-COMP</u>	<u>3/6/19 1035</u>	<u>3/6/19 1135</u>

Settle for 1-hour at room temperature. (See project manager if settling is insufficient)  
Siphon overlying water (elutriate) into a new container without disturbing the sediment  
If necessary, centrifuge elutriate to remove particulates (especially for larval testing).

Check Dissolved Oxygen (DO) before preparing dilutions (aerate if < 6.0 mg/L).

Site ID:	Initial DO (mg/L):	Final DO (mg/L):
<u>NC2-COMP</u>	<u>5.1</u>	<u>6.6</u>
<u>NC3-COMP</u>	<u>5.8</u>	<u>6.8</u>

Prepare dilutions if necessary and collect ammonia subsamples

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

QC Check: vs 3/21/19 Final Review: EG 4/4/19

**CETIS Summary Report**

Report Date: 21 Mar-19 12:30 (p 1 of 2)  
 Test Code: 1903-S050 | 06-6914-9368

**Bivalve Larval Survival and Development Test** **Nautilus Environmental (CA)**

Batch ID: 13-0799-3084	Test Type: Development-Survival	Analyst:
Start Date: 06 Mar-19 14:40	Protocol: EPA-823-B-98-004 (1998)	Diluent: Diluted Natural Seawater
Ending Date: 08 Mar-19 04:20	Species: Mytilus galloprovincialis	Brine: Not Applicable
Duration: 38h 48h	Source: Taylor Shellfish Mission Bay Q18 15 4/1/19	Age:

Sample ID: 05-9134-6097	Code: 19-3043	Client: Anchor QEA
Sample Date: 25 Feb-19 13:30	Material: Sediment Elutriate	Project: Newport Federal Channels
Receive Date: 25 Feb-19 13:30	Source: Anchor QEA	
Sample Age: 9d 1h	Station: NC2-COMP	

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
02-6579-3962	Development Rate	100	>100	NA	2.11%	1	Dunnett Multiple Comparison Test
10-0406-0933	Survival Rate	100	>100	NA	7.87%	1	Steel Many-One Rank Sum Test

Point Estimate Summary							
Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
00-7451-9771	Development Rate	EC25	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC50	>100	N/A	N/A	<1	
19-2304-2673	Survival Rate	EC25	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC50	>100	N/A	N/A	<1	

Development Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9701	0.9451	0.9952	0.9417	0.9938	0.00901	0.02015	2.08%	0.0%
0	Site Water Contr	5	0.9764	0.9602	0.9925	0.9536	0.9868	0.005814	0.013	1.33%	-0.64%
1		5	0.9583	0.9384	0.9781	0.9375	0.9744	0.007157	0.016	1.67%	1.22%
10		5	0.9598	0.9451	0.9745	0.9422	0.9709	0.005297	0.01185	1.23%	1.06%
50		5	0.9683	0.9527	0.984	0.9521	0.9855	0.005646	0.01262	1.3%	0.19%
100		5	0.9707	0.9579	0.9835	0.9608	0.9866	0.004614	0.01032	1.06%	-0.06%

Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9414	0.8147	1	0.7643	1	0.04564	0.1021	10.84%	0.0%
0	Site Water Contr	5	0.9732	0.9591	0.9874	0.9618	0.9873	0.005096	0.01139	1.17%	-3.38%
1		5	0.9694	0.9202	1	0.9172	1	0.01772	0.03962	4.09%	-2.98%
10		5	0.9694	0.9317	1	0.9299	1	0.01357	0.03035	3.13%	-2.98%
50		5	0.9669	0.9038	1	0.879	1	0.02273	0.05084	5.26%	-2.71%
100		5	0.9771	0.9488	1	0.949	1	0.01019	0.02279	2.33%	-3.79%

Development Rate Detail						
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Control	0.9417	0.9809	0.9938	0.9595	0.9748
0	Site Water Contr	0.9805	0.9804	0.9868	0.9536	0.9806
1		0.9375	0.9744	0.966	0.9684	0.9451
10		0.9533	0.9422	0.9658	0.9709	0.9669
50		0.9613	0.9691	0.9737	0.9855	0.9521
100		0.9608	0.9625	0.9702	0.9735	0.9866

Survival Rate Detail						
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Control	0.7643	1	1	0.9427	1
0	Site Water Contr	0.9809	0.9745	0.9618	0.9618	0.9873
1		0.9172	0.9936	0.9363	1	1
10		0.9554	1	0.9299	1	0.9618
50		0.9873	1	0.9682	0.879	1
100		0.9745	1	1	0.9618	0.949



**CETIS Summary Report**

Report Date: 21 Mar-19 12:30 (p 2 of 2)  
 Test Code: 1903-S050 | 06-6914-9368

Bivalve Larval Survival and Development Test							Nautilus Environmental (CA)
<b>Development Rate Binomials</b>							
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	113/120	154/157	161/162	142/148	155/159	
0	Site Water Contr	151/154	150/153	149/151	144/151	152/155	
1		135/144	152/156	142/147	153/158	155/164	
10		143/150	163/173	141/146	167/172	146/151	
50		149/155	157/162	148/152	136/138	159/167	
100		147/153	154/160	163/168	147/151	147/149	
<b>Survival Rate Binomials</b>							
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	120/157	157/157	157/157	148/157	157/157	
0	Site Water Contr	154/157	153/157	151/157	151/157	155/157	
1		144/157	156/157	147/157	157/157	157/157	
10		150/157	157/157	146/157	157/157	151/157	
50		155/157	157/157	152/157	138/157	157/157	
100		153/157	157/157	157/157	151/157	149/157	

**CETIS Analytical Report**

Report Date: 21 Mar-19 12:30 (p 1 of 2)  
 Test Code: 1903-S050 | 06-6914-9368

**Bivalve Larval Survival and Development Test** Nautilus Environmental (CA)

Analysis ID: 02-6579-3962      Endpoint: Development Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 21 Mar-19 12:28      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	2.11%	100	>100	NA	1

**Dunnnett Multiple Comparison Test**

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		1	1.43	2.305	0.062	8	0.2204	CDF	Non-Significant Effect
		10	1.33	2.305	0.062	8	0.2532	CDF	Non-Significant Effect
		50	0.4165	2.305	0.062	8	0.6402	CDF	Non-Significant Effect
		100	0.1792	2.305	0.062	8	0.7368	CDF	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.006308761	0.00157719	4	0.8838	0.4914	Non-Significant Effect
Error	0.03568975	0.001784488	20			
Total	0.04199851		24			

**Distributional Tests**

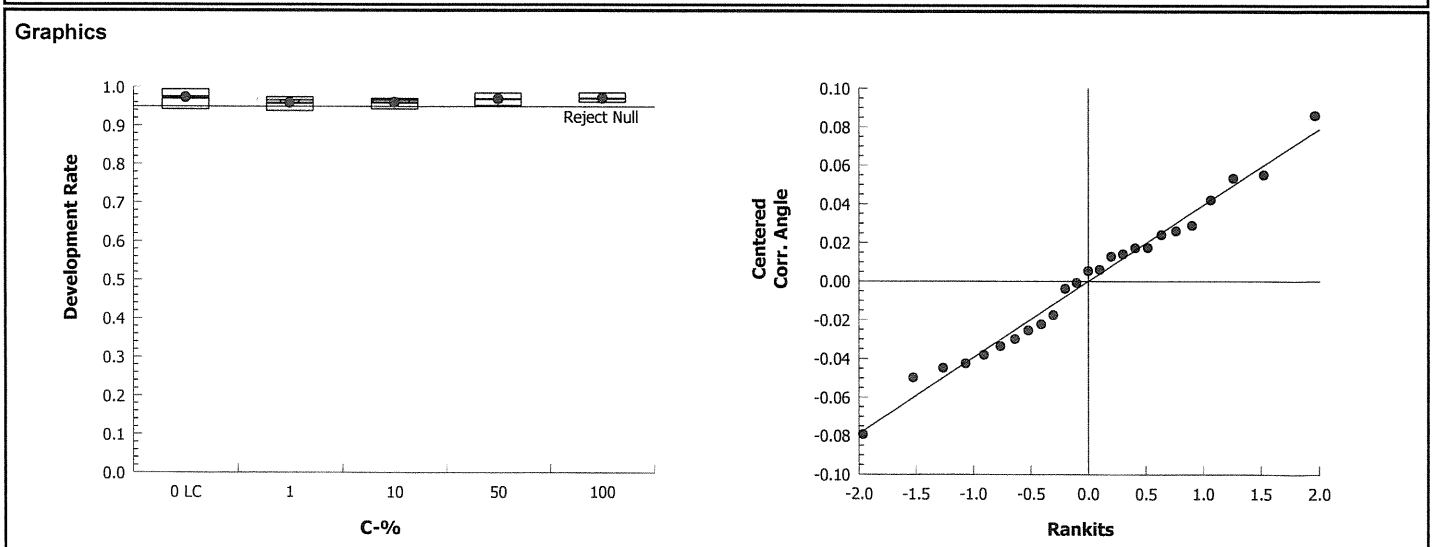
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	2.766	13.28	0.5977	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9867	0.8877	0.9790	Normal Distribution

**Development Rate Summary**

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9701	0.9451	0.9952	0.9748	0.9417	0.9938	0.00901	2.08%	0.0%
1		5	0.9583	0.9384	0.9781	0.966	0.9375	0.9744	0.007156	1.67%	1.22%
10		5	0.9598	0.9451	0.9745	0.9658	0.9422	0.9709	0.005298	1.23%	1.06%
50		5	0.9683	0.9527	0.984	0.9691	0.9521	0.9855	0.005646	1.3%	0.19%
100		5	0.9707	0.9579	0.9835	0.9702	0.9608	0.9866	0.004614	1.06%	-0.06%

**Angular (Corrected) Transformed Summary**

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.406	1.328	1.484	1.412	1.327	1.492	0.02814	4.48%	0.0%
1		5	1.368	1.319	1.417	1.385	1.318	1.41	0.01769	2.89%	2.72%
10		5	1.371	1.334	1.407	1.385	1.328	1.399	0.01313	2.14%	2.53%
50		5	1.395	1.348	1.442	1.394	1.35	1.45	0.0169	2.71%	0.79%
100		5	1.401	1.36	1.443	1.397	1.371	1.455	0.01489	2.38%	0.34%



**CETIS Analytical Report**

Report Date: 21 Mar-19 12:30 (p 2 of 2)  
 Test Code: 1903-S050 | 06-6914-9368

Bivalve Larval Survival and Development Test							Nautilus Environmental (CA)			
Analysis ID: 10-0406-0933		Endpoint: Survival Rate			CETIS Version: CETISv1.8.7					
Analyzed: 21 Mar-19 12:28		Analysis: Nonparametric-Control vs Treatments			Official Results: Yes					
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU	
Angular (Corrected)	NA	C > T	NA	NA	7.87%	100	>100	NA	1	

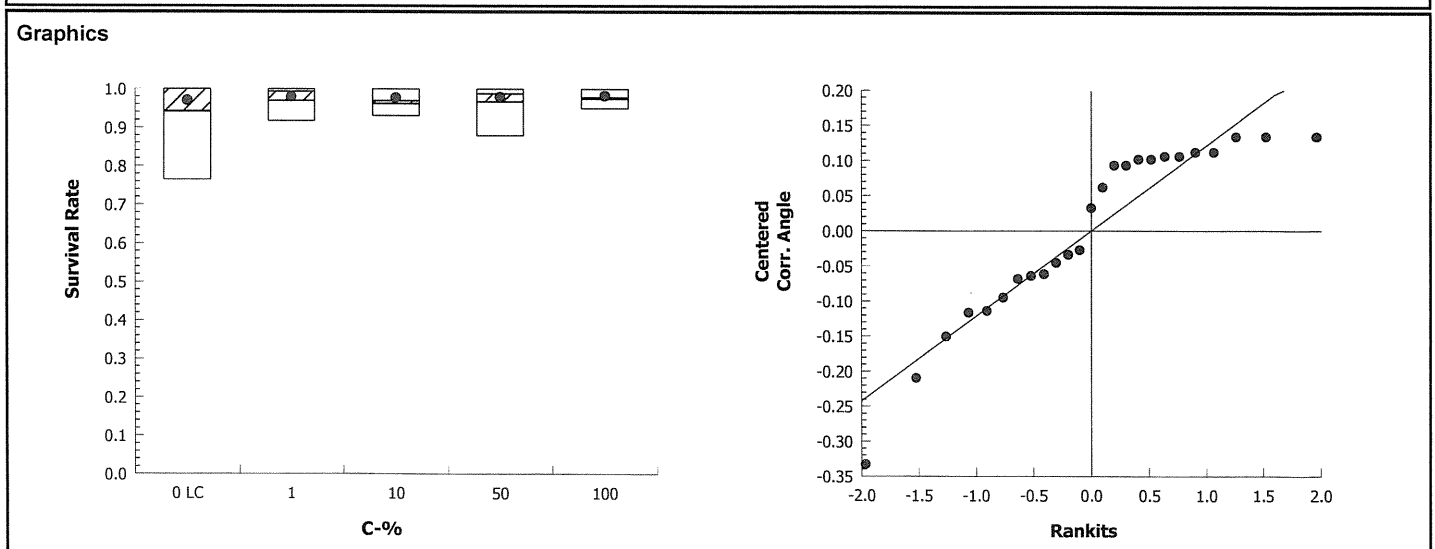
Steel Many-One Rank Sum Test									
Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		1	26	17	1	8	0.6824	Asymp	Non-Significant Effect
		10	27	17	1	8	0.7639	Asymp	Non-Significant Effect
		50	27	17	1	8	0.7639	Asymp	Non-Significant Effect
		100	28	17	1	8	0.8326	Asymp	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.004721853	0.001180463	4	0.06327	0.9920	Non-Significant Effect
Error	0.3731759	0.0186588	20			
Total	0.3778978		24			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Bartlett Equality of Variance	3.211	13.28	0.5231	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.8858	0.8877	0.0091	Non-normal Distribution	

Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9414	0.8147	1	1	0.7643	1	0.04564	10.84%	0.0%
1		5	0.9694	0.9202	1	0.9936	0.9172	1	0.01772	4.09%	-2.98%
10		5	0.9694	0.9317	1	0.9618	0.9299	1	0.01357	3.13%	-2.98%
50		5	0.9669	0.9038	1	0.9873	0.879	1	0.02273	5.26%	-2.71%
100		5	0.9771	0.9488	1	0.9745	0.949	1	0.01019	2.33%	-3.79%

Angular (Corrected) Transformed Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.397	1.142	1.653	1.531	1.064	1.531	0.09202	14.73%	0.0%
1		5	1.429	1.277	1.581	1.491	1.279	1.531	0.05475	8.57%	-2.31%
10		5	1.419	1.289	1.55	1.374	1.303	1.531	0.04704	7.41%	-1.59%
50		5	1.425	1.263	1.588	1.458	1.215	1.531	0.05853	9.18%	-2.02%
100		5	1.438	1.328	1.547	1.41	1.343	1.531	0.03944	6.13%	-2.92%



# CETIS Analytical Report

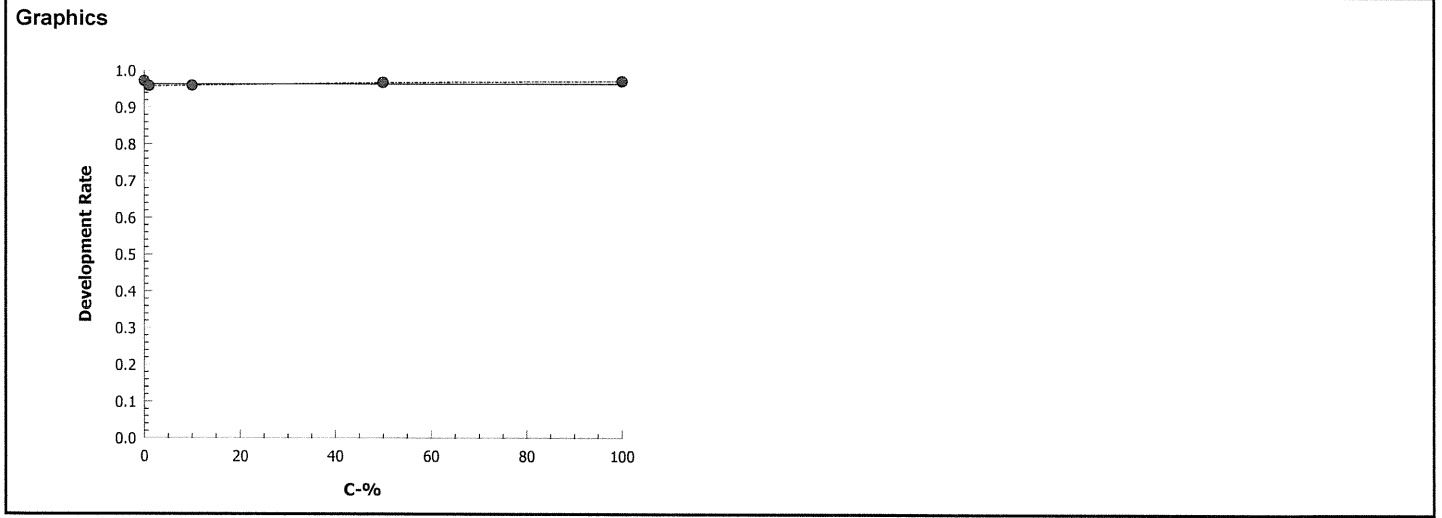
Report Date: 21 Mar-19 12:30 (p 1 of 2)  
 Test Code: 1903-S050 | 06-6914-9368

Bivalve Larval Survival and Development Test			Nautilus Environmental (CA)		
Analysis ID: 00-7451-9771	Endpoint: Development Rate	CETIS Version: CETISv1.8.7			
Analyzed: 21 Mar-19 12:28	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes			

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1352201	1000	Yes	Two-Point Interpolation

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC25	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

Development Rate Summary			Calculated Variate(A/B)									
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B	
0	Lab Control	5	0.9701	0.9417	0.9938	0.00901	0.02015	2.08%	0.0%	725	746	
1		5	0.9583	0.9375	0.9744	0.007156	0.016	1.67%	1.22%	737	769	
10		5	0.9598	0.9422	0.9709	0.005298	0.01185	1.23%	1.06%	760	792	
50		5	0.9683	0.9521	0.9855	0.005646	0.01262	1.3%	0.19%	749	774	
100		5	0.9707	0.9608	0.9866	0.004614	0.01032	1.06%	-0.06%	758	781	



# CETIS Analytical Report

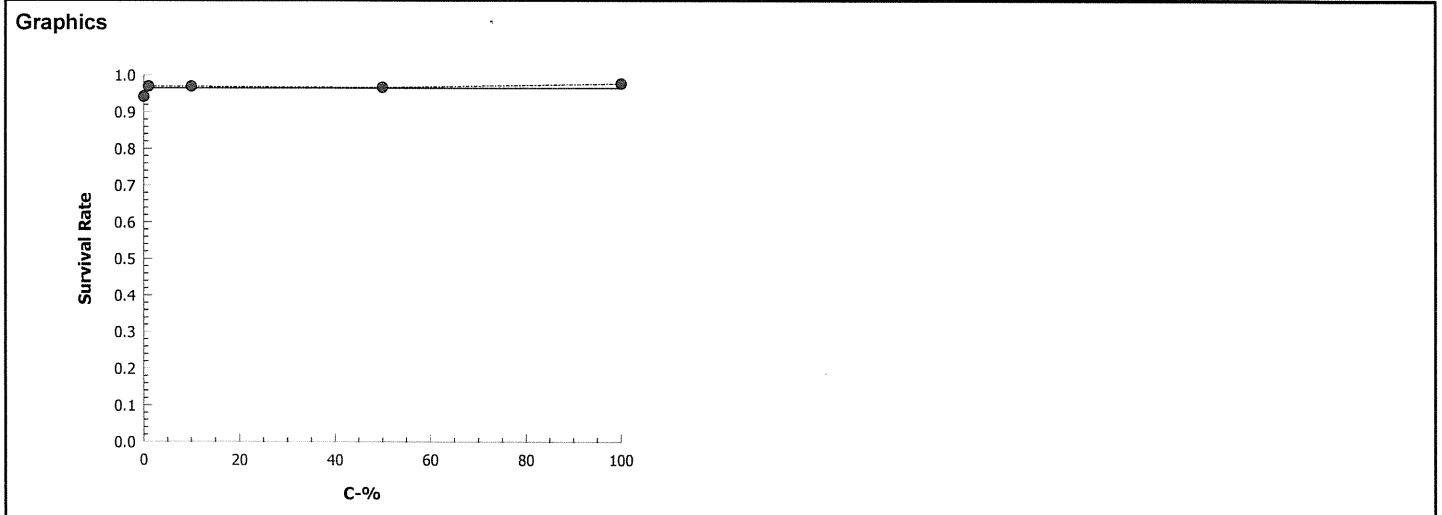
Report Date: 21 Mar-19 12:30 (p 2 of 2)  
 Test Code: 1903-S050 | 06-6914-9368

Bivalve Larval Survival and Development Test			Nautilus Environmental (CA)		
Analysis ID: 19-2304-2673	Endpoint: Survival Rate	CETIS Version: CETISv1.8.7			
Analyzed: 21 Mar-19 12:28	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes			

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	248220	1000	Yes	Two-Point Interpolation

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC25	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

Survival Rate Summary			Calculated Variate(A/B)									
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B	
0	Lab Control	5	0.9414	0.7643	1	0.04564	0.1021	10.84%	0.0%	739	785	
1		5	0.9694	0.9172	1	0.01772	0.03962	4.09%	-2.98%	761	785	
10		5	0.9694	0.9299	1	0.01357	0.03035	3.13%	-2.98%	761	785	
50		5	0.9669	0.879	1	0.02273	0.05084	5.26%	-2.71%	759	785	
100		5	0.9771	0.949	1	0.01019	0.02279	2.33%	-3.79%	767	785	



# CETIS Summary Report

Report Date: 21 Mar-19 12:39 (p 1 of 2)  
 Test Code: 1903-S051 | 20-2147-3787

<b>Bivalve Larval Survival and Development Test</b>	<b>Nautilus Environmental (CA)</b>
---	------------------------------------

<b>Batch ID:</b> 09-8918-1660	<b>Test Type:</b> Development-Survival	<b>Analyst:</b>
<b>Start Date:</b> 06 Mar-19 14:40	<b>Protocol:</b> EPA-823-B-98-004 (1998)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 08 Mar-19 14:20	<b>Species:</b> Mytilus galloprovincialis	<b>Brine:</b> Not Applicable
<b>Duration:</b> 48h	<b>Source:</b> <del>Taylor Shellfish</del> Mission Bay GIS 154/1/19	<b>Age:</b>

<b>Sample ID:</b> 02-7132-5674	<b>Code:</b> 19-0344	<b>Client:</b> Anchor QEA
<b>Sample Date:</b> 25 Feb-19 12:00	<b>Material:</b> Sediment Elutriate	<b>Project:</b> Newport Federal Channels
<b>Receive Date:</b> 25 Feb-19 13:30	<b>Source:</b> Anchor QEA	
<b>Sample Age:</b> 9d 3h	<b>Station:</b> NC3-COMP	

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
05-5562-9940	Development Rate	100	>100	NA	2.12%	1	Dunnett Multiple Comparison Test
01-3648-5307	Survival Rate	100	>100	NA	8.79%	1	Dunnett Multiple Comparison Test

Point Estimate Summary							
Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
16-4354-0169	Development Rate	EC25	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC50	>100	N/A	N/A	<1	
13-7505-2004	Survival Rate	EC25	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC50	>100	N/A	N/A	<1	

Development Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9701	0.9451	0.9952	0.9417	0.9938	0.00901	0.02015	2.08%	0.0%
0	Site Water Contr	5	0.9764	0.9602	0.9925	0.9536	0.9868	0.005814	0.013	1.33%	-0.64%
1		5	0.9728	0.9615	0.984	0.9607	0.9851	0.004049	0.009054	0.93%	-0.27%
10		5	0.9632	0.9411	0.9853	0.9329	0.9781	0.007965	0.01781	1.85%	0.72%
50		5	0.9751	0.9565	0.9937	0.9527	0.9874	0.006705	0.01499	1.54%	-0.51%
100		5	0.9715	0.9671	0.9759	0.9662	0.9747	0.001594	0.003564	0.37%	-0.14%

Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9414	0.8147	1	0.7643	1	0.04564	0.1021	10.84%	0.0%
0	Site Water Contr	5	0.9732	0.9591	0.9874	0.9618	0.9873	0.005096	0.01139	1.17%	-3.38%
1		5	0.8841	0.7734	0.9947	0.8025	1	0.03985	0.0891	10.08%	6.09%
10		5	0.9618	0.8959	1	0.8726	1	0.02375	0.0531	5.52%	-2.17%
50		5	0.9949	0.9808	1	0.9745	1	0.005096	0.01139	1.15%	-5.68%
100		5	0.9745	0.9434	1	0.9427	1	0.01121	0.02508	2.57%	-3.52%

Development Rate Detail						
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Control	0.9417	0.9809	0.9938	0.9595	0.9748
0	Site Water Contr	0.9805	0.9804	0.9868	0.9536	0.9806
1		0.9851	0.9685	0.9607	0.9762	0.9733
10		0.9643	0.9667	0.974	0.9329	0.9781
50		0.9873	0.9527	0.9809	0.9874	0.9673
100		0.9695	0.9735	0.9747	0.9662	0.9737

Survival Rate Detail						
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Control	0.7643	1	1	0.9427	1
0	Site Water Contr	0.9809	0.9745	0.9618	0.9618	0.9873
1		0.8535	0.8089	1	0.8025	0.9554
10		1	0.9554	0.9809	1	0.8726
50		1	1	1	1	0.9745
100		1	0.9618	1	0.9427	0.9682

# CETIS Summary Report

Report Date: 21 Mar-19 12:39 (p 2 of 2)  
 Test Code: 1903-S051 | 20-2147-3787

Bivalve Larval Survival and Development Test							Nautilus Environmental (CA)
<b>Development Rate Binomials</b>							
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	113/120	154/157	161/162	142/148	155/159	
0	Site Water Contr	151/154	150/153	149/151	144/151	152/155	
1		132/134	123/127	171/178	123/126	146/150	
10		162/168	145/150	150/154	153/164	134/137	
50		156/158	161/169	154/157	157/159	148/153	
100		159/164	147/151	154/158	143/148	148/152	
<b>Survival Rate Binomials</b>							
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	120/157	157/157	157/157	148/157	157/157	
0	Site Water Contr	154/157	153/157	151/157	151/157	155/157	
1		134/157	127/157	157/157	126/157	150/157	
10		157/157	150/157	154/157	157/157	137/157	
50		157/157	157/157	157/157	157/157	153/157	
100		157/157	151/157	157/157	148/157	152/157	

# CETIS Analytical Report

Report Date: 21 Mar-19 12:39 (p 1 of 2)  
 Test Code: 1903-S051 | 20-2147-3787

Bivalve Larval Survival and Development Test							Nautilus Environmental (CA)			
Analysis ID:	05-5562-9940	Endpoint:	Development Rate			CETIS Version:	CETISv1.8.7			
Analyzed:	21 Mar-19 12:37	Analysis:	Parametric-Control vs Treatments			Official Results:	Yes			
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU	
Angular (Corrected)	NA	C > T	NA	NA	2.12%	100	>100	NA	1	

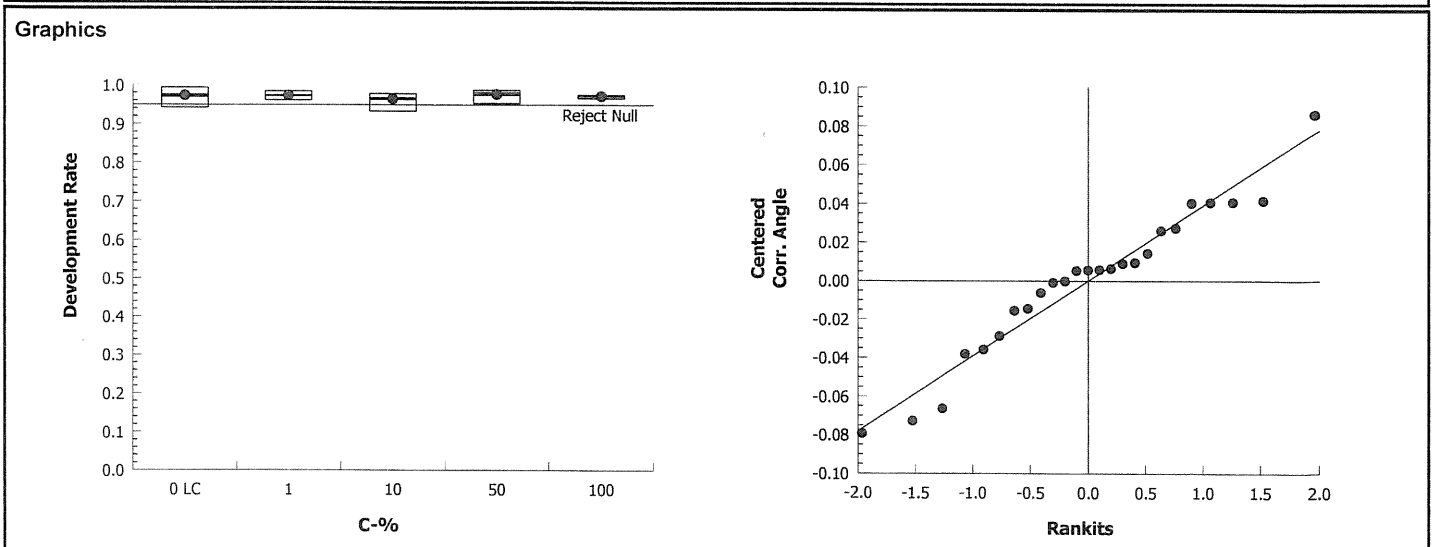
Dunnett Multiple Comparison Test									
Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		1	-0.0283	2.305	0.062	8	0.8091	CDF	Non-Significant Effect
		10	0.9155	2.305	0.062	8	0.4172	CDF	Non-Significant Effect
		50	-0.435	2.305	0.062	8	0.9105	CDF	Non-Significant Effect
		100	0.1737	2.305	0.062	8	0.7389	CDF	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.003527617	0.0008819043	4	0.49	0.7431	Non-Significant Effect
Error	0.03599601	0.001799801	20			
Total	0.03952363		24			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Bartlett Equality of Variance	9.161	13.28	0.0572	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.9583	0.8877	0.3812	Normal Distribution	

Development Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9701	0.9451	0.9952	0.9748	0.9417	0.9938	0.00901	2.08%	0.0%
1		5	0.9728	0.9615	0.984	0.9733	0.9607	0.9851	0.004049	0.93%	-0.27%
10		5	0.9632	0.9411	0.9853	0.9667	0.9329	0.9781	0.007965	1.85%	0.72%
50		5	0.9751	0.9565	0.9937	0.9809	0.9527	0.9874	0.006705	1.54%	-0.51%
100		5	0.9715	0.9671	0.9759	0.9735	0.9662	0.9747	0.001594	0.37%	-0.14%

Angular (Corrected) Transformed Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.406	1.328	1.484	1.412	1.327	1.492	0.02814	4.48%	0.0%
1		5	1.407	1.371	1.442	1.407	1.371	1.448	0.01281	2.04%	-0.05%
10		5	1.382	1.327	1.436	1.387	1.309	1.422	0.01966	3.18%	1.75%
50		5	1.418	1.36	1.476	1.432	1.351	1.458	0.02086	3.29%	-0.83%
100		5	1.401	1.388	1.415	1.407	1.386	1.411	0.004718	0.75%	0.33%





**CETIS Analytical Report**

Report Date: 21 Mar-19 12:39 (p 2 of 2)  
 Test Code: 1903-S051 | 20-2147-3787

**Bivalve Larval Survival and Development Test** Nautilus Environmental (CA)

Analysis ID: 01-3648-5307      Endpoint: Survival Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 21 Mar-19 12:37      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	8.79%	100	>100	NA	1

**Dunnett Multiple Comparison Test**

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		1	1.501	2.305	0.212	8	0.1987	CDF	Non-Significant Effect
		10	-0.1571	2.305	0.212	8	0.8470	CDF	Non-Significant Effect
		50	-1.193	2.305	0.212	8	0.9856	CDF	Non-Significant Effect
		100	-0.3713	2.305	0.212	8	0.8981	CDF	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.1618027	0.04045067	4	1.916	0.1472	Non-Significant Effect
Error	0.4223451	0.02111725	20			
Total	0.5841478		24			

**Distributional Tests**

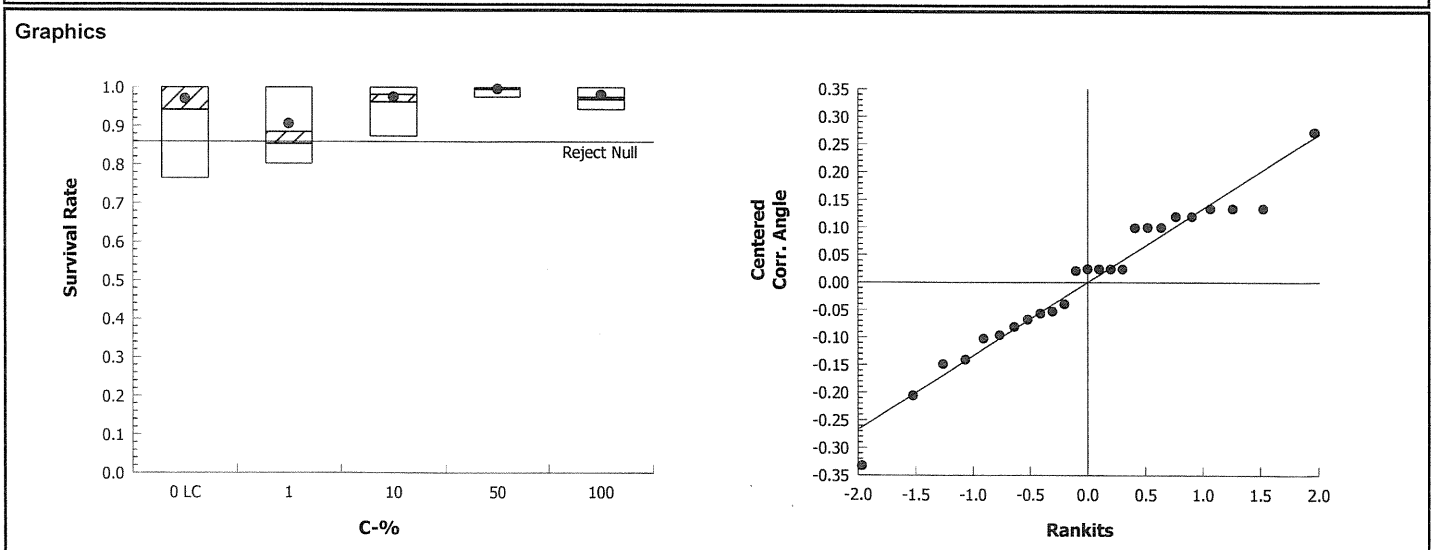
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	6.728	13.28	0.1510	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9653	0.8877	0.5302	Normal Distribution

**Survival Rate Summary**

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9414	0.8147	1	1	0.7643	1	0.04564	10.84%	0.0%
1		5	0.8841	0.7734	0.9947	0.8535	0.8025	1	0.03985	10.08%	6.09%
10		5	0.9618	0.8959	1	0.9809	0.8726	1	0.02375	5.52%	-2.17%
50		5	0.9949	0.9808	1	1	0.9745	1	0.005095	1.15%	-5.68%
100		5	0.9745	0.9434	1	0.9682	0.9427	1	0.01121	2.57%	-3.52%

**Angular (Corrected) Transformed Summary**

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.397	1.142	1.653	1.531	1.064	1.531	0.09202	14.73%	0.0%
1		5	1.259	1.033	1.485	1.178	1.11	1.531	0.08129	14.44%	9.88%
10		5	1.412	1.243	1.581	1.432	1.206	1.531	0.06086	9.64%	-1.03%
50		5	1.507	1.44	1.574	1.531	1.41	1.531	0.02408	3.57%	-7.85%
100		5	1.431	1.315	1.548	1.391	1.329	1.531	0.04193	6.55%	-2.44%



**CETIS Analytical Report**

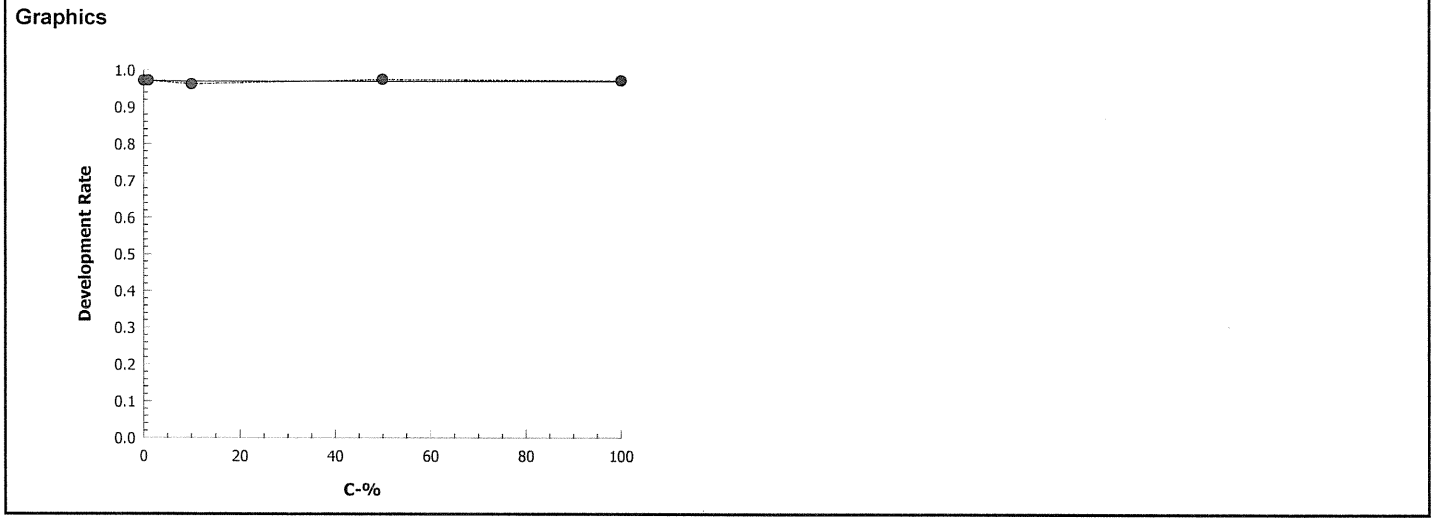
Report Date: 21 Mar-19 12:39 (p 1 of 2)  
 Test Code: 1903-S051 | 20-2147-3787

Bivalve Larval Survival and Development Test			Nautilus Environmental (CA)		
Analysis ID: 16-4354-0169	Endpoint: Development Rate	CETIS Version: CETISv1.8.7			
Analyzed: 21 Mar-19 12:37	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes			

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	938530	1000	Yes	Two-Point Interpolation

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC25	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

Development Rate Summary			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	0.9701	0.9417	0.9938	0.00901	0.02015	2.08%	0.0%	725	746
1		5	0.9728	0.9607	0.9851	0.004049	0.009053	0.93%	-0.27%	695	715
10		5	0.9632	0.9329	0.9781	0.007965	0.01781	1.85%	0.72%	744	773
50		5	0.9751	0.9527	0.9874	0.006705	0.01499	1.54%	-0.51%	776	796
100		5	0.9715	0.9662	0.9747	0.001594	0.003565	0.37%	-0.14%	751	773



# CETIS Analytical Report

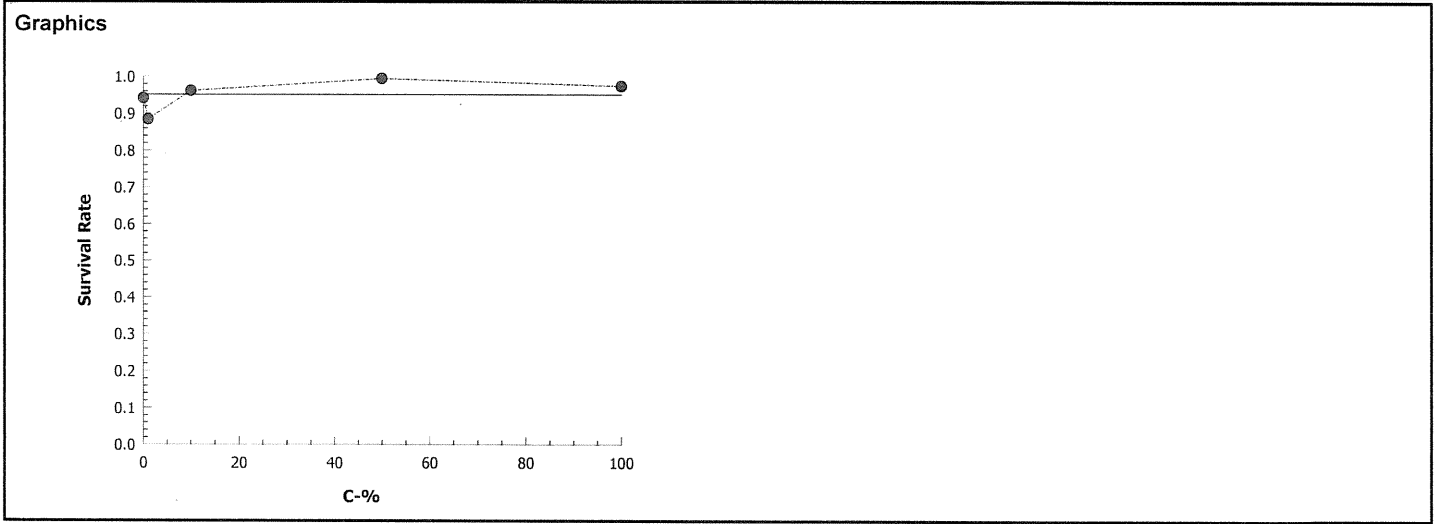
Report Date: 21 Mar-19 12:39 (p 2 of 2)  
 Test Code: 1903-S051 | 20-2147-3787

Bivalve Larval Survival and Development Test			Nautilus Environmental (CA)		
Analysis ID: 13-7505-2004	Endpoint: Survival Rate	CETIS Version: CETISv1.8.7			
Analyzed: 21 Mar-19 12:37	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes			

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	999533	1000	Yes	Two-Point Interpolation

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC25	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

Survival Rate Summary			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	0.9414	0.7643	1	0.04564	0.1021	10.84%	0.0%	739	785
1		5	0.8841	0.8025	1	0.03985	0.0891	10.08%	6.09%	694	785
10		5	0.9618	0.8726	1	0.02375	0.0531	5.52%	-2.17%	755	785
50		5	0.9949	0.9745	1	0.005095	0.01139	1.15%	-5.68%	781	785
100		5	0.9745	0.9427	1	0.01121	0.02508	2.57%	-3.52%	765	785



# Marine Chronic Bioassay Suspended Particulate Phase

# Water Quality Measurements

Client: Anchor QEA / Newport Federal Channels

Test Species: Mytilus galloprovincialis

Sample ID: NC2-COMP

Start Date/Time: 3/6/2019 1440

Sample Log No.: 19-3043

End Date/Time: 3/8/2019 1420

Test No.: 1903-5050

Concentration (%)	Salinity (ppt)			Temperature (°C) @			Dissolved Oxygen (mg/L)			pH (pH units)		
	0	24	48	0	24	48	0	24	48	0	24	48
Lab Control #1	32.0	32.0	31.8	15.6	14.4	15.0	8.1	8.2	8.2	8.06	7.96	7.88
Site Control #1	32.1	32.1	31.9	16.0	14.5	14.5	8.5	8.2	8.3	7.98	7.96	7.87
1	32.0	32.2	32.1	15.8	14.6	14.7	8.0	8.0	8.3	8.07	8.02	7.88
10	32.1	32.3	32.3	15.9	14.5	14.8	7.9	8.1	8.3	8.11	8.06	7.91
50	32.2	32.3	32.3	16.0	14.4	14.6	7.5	8.1	8.4	8.26	8.16	7.99
100	32.2	32.4	32.3	14.5	14.4	14.7	7.2	8.1	8.5	8.41	8.27	8.08

Technician Initials:      0              24              48

WQ Readings:            RT      KFP

Dilutions made by:                 

Collect NH<sub>3</sub> Subsample (overlying water):                  JBS

Comments:      0 hrs:      @ temperatures below protocol range, no action taken due to technician error JBS VS 3/21/19

                                24 hrs: \_\_\_\_\_

                                48 hrs: \_\_\_\_\_

QC Check:      VS 3/21/19

Final Review:      EA 4/4/19

**Marine Chronic Bioassay  
Suspended Particulate Phase**

**Water Quality Measurements**

Client: Anchor QEA / Newport Federal Channels

Sample ID: NC3-COMP

Sample Log No.: 19-3044

Test No.: 1903-5051

Test Species: *Mytilus galloprovincialis*

Start Date/Time: 3/6/2019 1440

End Date/Time: 3/8/2019 1420

Concentration (%)	Salinity (ppt)			Temperature (°C)			Dissolved Oxygen (mg/L)			pH (pH units)		
	0	24	48	0	24	48	0	24	48	0	24	48
Lab Control #1	32.0	32.0	31.8	15.6	14.4	15.0	8.1	8.2	8.2	8.06	7.96	7.88
Site Control #1	32.1	32.1	31.9	16.0	14.5	14.5	8.5	8.2	8.3	7.98	7.96	7.87
1	32.1	32.1	31.7	16.0	14.8	15.2	7.9	8.0	8.6	8.05	7.99	7.87
10	32.2	32.3	32.1	16.0	14.6	14.9	7.9	8.2	8.5	8.10	8.04	7.89
50	32.3	32.4	32.3	16.0	14.5	14.9	7.5	8.1	8.5	8.20	8.15	7.96
100	32.3	32.4	32.3	15.0	14.6	15.0	7.3	8.0	8.5	8.32	8.21	8.03

Technician Initials: 0      24      48

WQ Readings: 

VS	RT	KFP
----	----	-----

Dilutions made by: 

VS		
----	--	--

Collect NH<sub>3</sub> Subsample (overlying water): 

BO		JBS
----	--	-----

Comments: 0 hrs: @ temperatures below protocol range, no action taken due to technician error Q18 vs 3/21/19

24 hrs: \_\_\_\_\_

48 hrs: \_\_\_\_\_

QC Check: VS 3/21/19

Final Review: EG 4/4/19

Embryo Larval Bioassay

48-hour Development

Client: Anchor QEA

Test Species: M. galloprovincialis

Project ID: Newport Federal Channels

Start Date/Time: 3/6/2019 1440

Test IDs: 1903 - 5050 and 5051

End Date/Time: 3/8/2019 1420

Random Number	Number Normal	Total Number	Technician Initials	Comments
31	144	151	JL	3/15/19
32	161	169		
33	150	153		
34	123	127		
35	145	150		
36	143	148		
37	167	172		
38	113	120		
39	163	168		
40	153	158		
41	147	151		
42	150	154		
43	159	164		
44	149	155		
45	135	144		
46	153	164		
47	154	157		
48	161	162		
49	134	137		
50	154	160		
51	154	158		
52	147	149		
53	162	168		
54	142	147		
55	143	150		
56	148	153		
57	151	154		
58	132	134		
59	171	178		
60	141	146		
61	147	153		
62	155	164		
63	148	152		
64	136	138		
65	157	159		

QC Check: AC 3/7/19

Final Review: vs 3/2/19

Embryo Larval Bioassay

48-hour Development

Client: Anchor QEA

Test Species: M. galloprovincialis

Project ID: Newport Federal Channels

Start Date/Time: 3/6/2019 1440

End Date/Time: 3/8/2019 1420

Random Number	Number Normal	Total Number	Technician Initials	Comments
66	148	152	JCL	3/15/19
67	159	167		
68	154	157		
69	123	126		
70	149	151		
71	147	151		
72	156	158		
73	155	159		
74	146	151		
75	142	148		
76	152	156		
77	163	173		
78	146	150		
79	157	162		
80	152	155		

QC Check: AC 3/17/19

Final Review: 4/3/21/19

Anchor QEA  
 Newport Federal Channels SPP: 48-hr Bivalve Development Test  
 Random Number Assignment  
 Sample Composite Dates: 2/25/19 and 2/25/19  
 Test Initiation Date: 3/6/19

NC2-COMP			NC3-COMP		
Site	Rep	Rand # <i>AC 3/11</i>	Site	Rep	Rand # <i>AC 3/11</i>
Lab Control #1	A	38	1	A	58 <i>142/144</i>
	B	47 <i>161/163</i>		B	34
	C	48		C	59
	D	75		D	69
	E	73		E	78
Site Control #1	A	57 <i>155/156</i>	10	A	53 <i>170/175</i>
	B	33		B	35
	C	70		C	42
	D	31		D	46
	E	80		E	49
1	A	45 <i>139/148</i>	50	A	72 <i>162/164</i>
	B	76		B	32
	C	54		C	68
	D	40		D	65
	E	62		E	56
10	A	55 <i>153/157</i>	100	A	43 <i>171/174</i>
	B	77		B	71
	C	60		C	51
	D	37		D	36
	E	74		E	66
50	A	44			
	B	79 <i>169/173</i>			
	C	63			
	D	64			
	E	67			
100	A	61 <i>158/163</i>			
	B	50			
	C	39			
	D	41			
	E	52			

Rand # QC: *AC*



Marine Chronic Bioassay

Larval Development Worksheet

Client: Anchor QEA  
 Test No.: 1903-S050 and S051  
 Test Species: M. galloprovincialis  
 Animal Source: Mission Bay  
 Date Received: 3/5/19  
 Test Chambers: 30 mL glass vial  
 Sample Volume: 10 mL

Start Date/Time: 3/6/2019 1440  
 End Date/Time: 3/8/2019 1420  
 Technician Initials: KS/BO

Spawn Information

First Gamete Release Time: 1105

Sex	Number Spawning
Male	5+
Female	6+

Gamete Selection

Sex	Beaker Number(s)	Condition (sperm motility, egg density, color, shape, etc.)
Male	1, 5, 4	good motility, very dense
Female 1	1	yellow, high density, good quality
Female 2	2	yellow, very high density, okay quality
Female 3	—	—

Egg Fertilization Time: 1210

Embryo Stock Selection

Stock Number	% of embryos at 2-cell division stage
Female 1	98%
Female 2	94%
Female 3	—

Stock(s) chosen for testing: 1

Embryo Inoculum Preparation

Target count on Sedgwick-Rafter slide for desired density is 6 embryos

Number Counted: 10      9  
12                      12  
7                         14  
13                      13  
16                      11

Mean: 11.7

Mean 11.7 X 50 = 585 embryos/ml

Initial Density: 585 = 1.95 (dilution factor)  
 Desired Final Density: 300  
 (to inoculate with 0.5 ml)

Prepare the embryo inoculum according to the calculated dilution factor. For example, if the dilution factor is 2.25, use 100 ml of existing stock (1 part) and 125 ml of dilution water (1.25 parts).

Time Zero Control Counts

Rand. No.	No. Dividing	Total	% Dividing	Mean % Dividing
T0 1	149	152	98	99
T0 2	163	165	99	
T0 3	159	163	98	
T0 4	150	152	99	
T0 5	160	162	99	
T0 6	158	159	99	

48-h QC: 156/159 98.1%

Comments:

$\bar{x} = 157$

QC Check: KS 3/2/19

Final Review: EG 4/4/19

*Americamysis* SPP 96-hour

**CETIS Summary Report**

Report Date: 28 Mar-19 08:23 (p 1 of 1)  
 Test Code: 1902-S196 | 01-2077-8787

**Mysid 96-h Acute Survival Test** **Nautilus Environmental (CA)**

<b>Batch ID:</b> 10-9868-8445	<b>Test Type:</b> Survival (96h)	<b>Analyst:</b>
<b>Start Date:</b> 27 Feb-19 14:45	<b>Protocol:</b> EPA/821/R-02-012 (2002)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 03 Mar-19 12:55	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 94h	<b>Source:</b> Aquatic Biosystems, CO	<b>Age:</b> 4d

<b>Sample ID:</b> 01-2783-9894	<b>Code:</b> 19-3043	<b>Client:</b> Anchor QEA
<b>Sample Date:</b> 25 Feb-19 13:30	<b>Material:</b> Sediment Elutriate	<b>Project:</b> <del>LNB</del> Federal Channels Newport Bay
<b>Receive Date:</b> 25 Feb-19 13:30	<b>Source:</b> Anchor QEA	
<b>Sample Age:</b> 49h	<b>Station:</b> NC2-COMP	

**Comparison Summary**

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
17-1069-2439	96h Survival Rate	100	>100	NA	6.01%	1	Steel Many-One Rank Sum Test

**Point Estimate Summary**

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
02-8425-6126	96h Survival Rate	EC25	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC50	>100	N/A	N/A	<1	

**96h Survival Rate Summary**

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	1	1	1	1	1	0	0	0.0%	0.0%
0	Site Water Contr	5	0.98	0.9245	1	0.9	1	0.02	0.04472	4.56%	2.0%
10		5	0.98	0.9245	1	0.9	1	0.02	0.04472	4.56%	2.0%
50		5	0.98	0.9245	1	0.9	1	0.02	0.04472	4.56%	2.0%
100		5	0.98	0.9245	1	0.9	1	0.02	0.04472	4.56%	2.0%

**96h Survival Rate Detail**

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Control	1	1	1	1	1
0	Site Water Contr	0.9	1	1	1	1
10		1	0.9	1	1	1
50		1	1	1	0.9	1
100		1	1	1	1	0.9

*DEU Q18 4/4/19*

**CETIS Analytical Report**

Report Date: 28 Mar-19 08:23 (p 1 of 1)  
 Test Code: 1902-S196 | 01-2077-8787

<b>Mysid 96-h Acute Survival Test</b>						<b>Nautilus Environmental (CA)</b>			
---------------------------------------	--	--	--	--	--	------------------------------------	--	--	--

Analysis ID: 17-1069-2439	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 28 Mar-19 8:21	Analysis: Nonparametric-Control vs Treatments	Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	6.01%	100	>100	NA	1

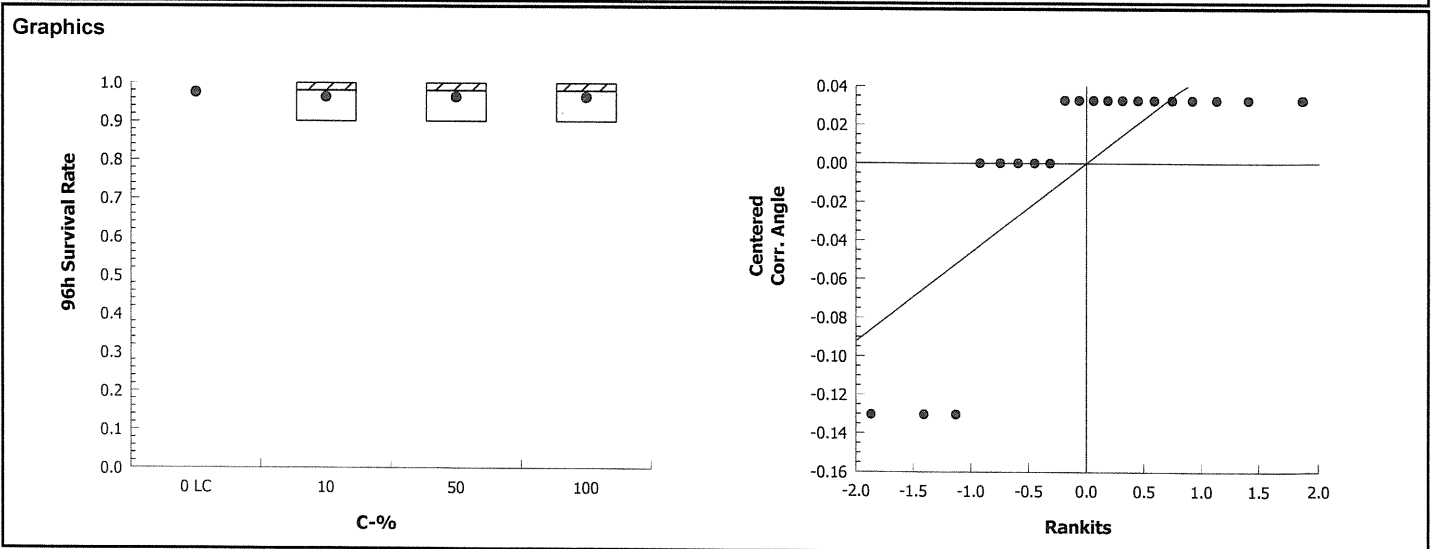
<b>Steel Many-One Rank Sum Test</b>									
Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		10	25	17	1	8	0.5314	Asymp	Non-Significant Effect
		50	25	17	1	8	0.5314	Asymp	Non-Significant Effect
		100	25	17	1	8	0.5314	Asymp	Non-Significant Effect

<b>ANOVA Table</b>						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0039839	0.001327967	3	0.3333	0.8014	Non-Significant Effect
Error	0.0637424	0.0039839	16			
Total	0.0677263		19			

<b>Distributional Tests</b>						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Mod Levene Equality of Variance	0.3333	5.953	0.8015	Equal Variances	
Variances	Levene Equality of Variance	2.37	5.292	0.1089	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.5875	0.866	<0.0001	Non-normal Distribution	

<b>96h Survival Rate Summary</b>												
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0	Lab Control	5	1	1	1	1	1	1	0	0.0%	0.0%	
10		5	0.98	0.9245	1	1	0.9	1	0.02	4.56%	2.0%	
50		5	0.98	0.9245	1	1	0.9	1	0.02	4.56%	2.0%	
100		5	0.98	0.9245	1	1	0.9	1	0.02	4.56%	2.0%	

<b>Angular (Corrected) Transformed Summary</b>												
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0	Lab Control	5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%	
10		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	2.31%	
50		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	2.31%	
100		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	2.31%	



# CETIS Analytical Report

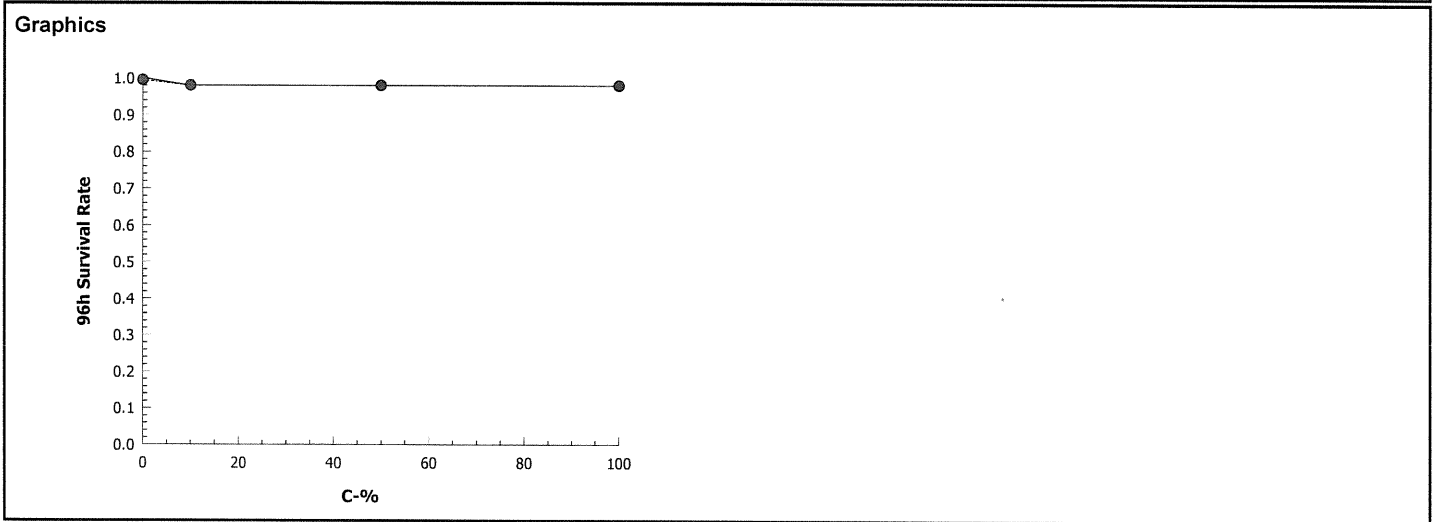
Report Date: 28 Mar-19 08:23 (p 1 of 1)  
 Test Code: 1902-S196 | 01-2077-8787

Mysid 96-h Acute Survival Test			Nautilus Environmental (CA)		
Analysis ID: 02-8425-6126	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7			
Analyzed: 28 Mar-19 8:21	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes			

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1171251	1000	Yes	Two-Point Interpolation

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC25	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	1	1	1	0	0	0.0%	0.0%	50	50
10		5	0.98	0.9	1	0.02	0.04472	4.56%	2.0%	49	50
50		5	0.98	0.9	1	0.02	0.04472	4.56%	2.0%	49	50
100		5	0.98	0.9	1	0.02	0.04472	4.56%	2.0%	49	50



**CETIS Summary Report**

Report Date: 28 Mar-19 08:30 (p 1 of 1)  
 Test Code: 1902-S197 | 19-7496-6580

**Mysid 96-h Acute Survival Test** **Nautilus Environmental (CA)**

<b>Batch ID:</b> 08-7396-7011	<b>Test Type:</b> Survival (96h)	<b>Analyst:</b>
<b>Start Date:</b> 27 Feb-19 14:45	<b>Protocol:</b> EPA/821/R-02-012 (2002)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 03 Mar-19 13:15	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 94h	<b>Source:</b> Aquatic Biosystems, CO	<b>Age:</b> 4 days

<b>Sample ID:</b> 12-4662-5981	<b>Code:</b> 19-3044	<b>Client:</b> Anchor QEA
<b>Sample Date:</b> 25 Feb-19 12:00	<b>Material:</b> Sediment Elutriate	<b>Project:</b> <del>LNB</del> Federal Channels Newport Bay
<b>Receive Date:</b> 25 Feb-19 13:30	<b>Source:</b> Anchor QEA	
<b>Sample Age:</b> 51h	<b>Station:</b> NC3-COMP	

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
17-3918-2398	96h Survival Rate	100	>100	NA	5.26%	1	Steel Many-One Rank Sum Test

Point Estimate Summary							
Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
17-8269-0835	96h Survival Rate	EC25	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC50	>100	N/A	N/A	<1	

96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	1	1	1	1	1	0	0	0.0%	0.0%
0	Site Water Contr	5	0.98	0.9245	1	0.9	1	0.02	0.04472	4.56%	2.0%
10		5	0.98	0.9245	1	0.9	1	0.02	0.04472	4.56%	2.0%
50		5	1	1	1	1	1	0	0	0.0%	0.0%
100		5	0.98	0.9245	1	0.9	1	0.02	0.04472	4.56%	2.0%

96h Survival Rate Detail						
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Control	1	1	1	1	1
0	Site Water Contr	0.9	1	1	1	1
10		1	1	1	1	0.9
50		1	1	1	1	1
100		1	0.9	1	1	1

Ⓐ EG Q18 4/4/19

**CETIS Analytical Report**

Report Date: 28 Mar-19 08:30 (p 1 of 1)  
 Test Code: 1902-S197 | 19-7496-6580

Mysid 96-h Acute Survival Test						Nautilus Environmental (CA)			
--------------------------------	--	--	--	--	--	-----------------------------	--	--	--

Analysis ID: 17-3918-2398	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 28 Mar-19 8:29	Analysis: Nonparametric-Control vs Treatments	Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	5.26%	100	>100	NA	1

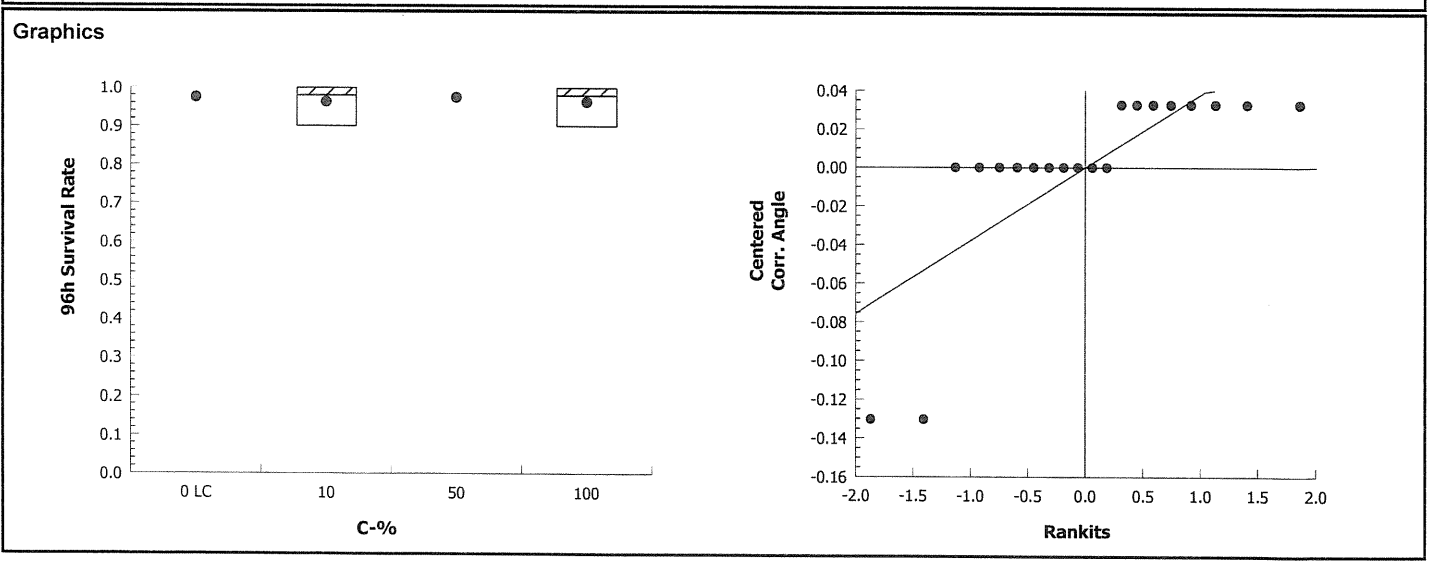
Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		10	25	17	1	8	0.5314	Asymp	Non-Significant Effect
		50	27.5	17	1	8	0.7500	Asymp	Non-Significant Effect
		100	25	17	1	8	0.5314	Asymp	Non-Significant Effect

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.005311866	0.001770622	3	0.6667	0.5847	Non-Significant Effect
Error	0.04249493	0.002655933	16			
Total	0.0478068		19			

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	0.6667	5.953	0.5885	Equal Variances
Variances	Levene Equality of Variance	4.741	5.292	0.0150	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.6038	0.866	<0.0001	Non-normal Distribution

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1	1	1	1	1	1	0	0.0%	0.0%
10		5	0.98	0.9245	1	1	0.9	1	0.02	4.56%	2.0%
50		5	1	1	1	1	1	1	0	0.0%	0.0%
100		5	0.98	0.9245	1	1	0.9	1	0.02	4.56%	2.0%

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
10		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	2.31%
50		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
100		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	2.31%



# CETIS Analytical Report

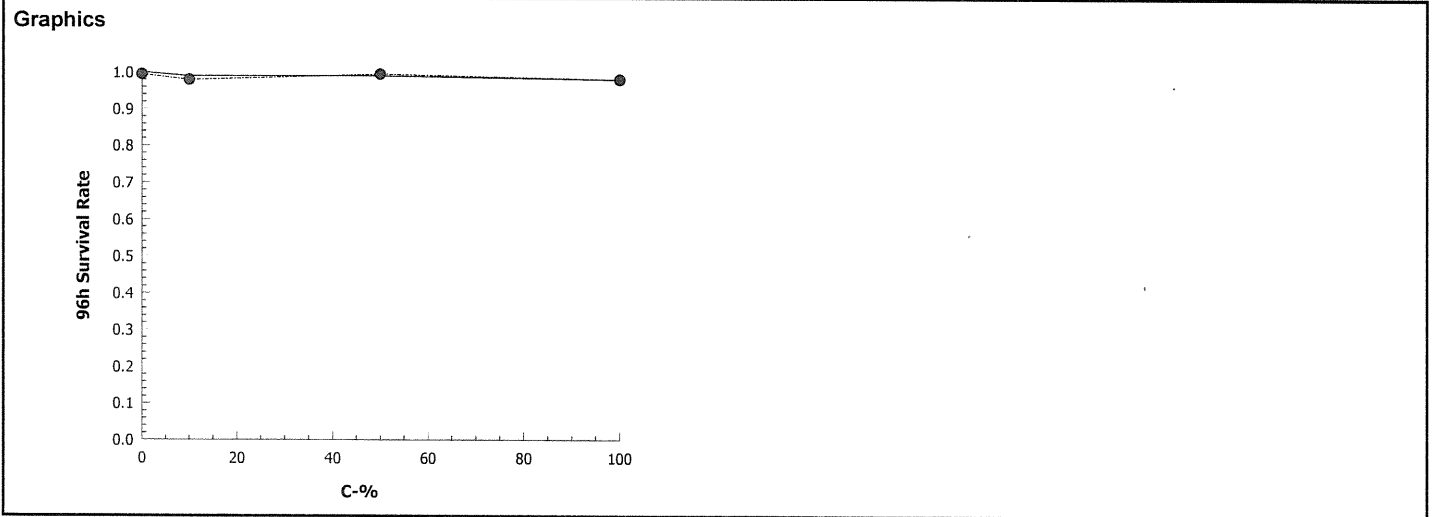
Report Date: 28 Mar-19 08:30 (p 1 of 1)  
 Test Code: 1902-S197 | 19-7496-6580

Mysid 96-h Acute Survival Test			Nautilus Environmental (CA)		
Analysis ID: 17-8269-0835	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7			
Analyzed: 28 Mar-19 8:29	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes			

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	436562	1000	Yes	Two-Point Interpolation

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC25	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	1	1	1	0	0	0.0%	0.0%	50	50
10		5	0.98	0.9	1	0.02	0.04472	4.56%	2.0%	49	50
50		5	1	1	1	0	0	0.0%	0.0%	50	50
100		5	0.98	0.9	1	0.02	0.04472	4.56%	2.0%	49	50





96-Hour Marine Sediment Bioassay  
Suspended Particulate Phase

Water Quality Measurements  
& Test Organism Survival

Client/Project ID: Anchor QEA / Newport <sup>Bay</sup> Federal Channels

Sample ID: NC2-COMP

Test No.: 1902-996

Test Species: *A. bahia*

Start Date/Time: 2/27/2019 1445

End Date/Time: 3/3/2019 1255

Concentration %	Rep	Number of Live Organisms			Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Percent Survival
		0	48	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	
Lab Control #1	A	10	10	10	31.5	31.6	32.0	32.0	31.8	24.0	25.3	24.7	25.1	25.3	6.6	6.3	5.6	5.4	5.0	7.93	7.83	7.74	7.70	7.64	100
	B	10	10	10																					100
	C	10	10	10																					100
	D	10	10	10																					100
	E	10	10	10																					100
Site Water Control #1	A	10	10	9	31.8	31.9	32.0	32.0	32.1	24.7	25.3	25.4	25.4	25.3	7.2	6.1	5.3	5.0	4.7	7.88	7.86	7.77	7.73	7.71	90
	B	10	10	10																					100
	C	10	10	10																					100
	D	10	10	10																					100
	E	10	10	10																					100
1	A	10																							
	B	10																							
	C	10																							
	D	10																							
	E	10																							
10	A	10	10	10	31.3	31.2	31.3	31.3	31.4	24.1	25.3	25.5	25.4	25.3	6.7	6.1	5.2	4.9	4.5	7.97	7.86	7.76	7.68	7.64	100
	B	10	10	9																					90
	C	10	10	10																					100
	D	10	10	10																					100
	E	10	10	10																					100
50	A	10	10	10	31.4	31.4	31.5	31.4	31.5	24.6	25.3	25.5	25.4	25.4	6.4	6.0	4.7	4.9	4.2	7.96	7.87	7.73	7.68	7.65	100
	B	10	10	10																					100
	C	10	10	10																					100
	D	10	10	9																					90
	E	10	10	10																					100
100	A	10	10	10	32.5	32.1	32.2	32.2	32.3	25.4	25.4	25.5	25.2	25.4	6.6	6.7	4.7	4.6	4.3	7.94	7.87	7.80	7.72	7.71	100
	B	10	10	10																					100
	C	10	10	10																					100
	D	10	10	10																					100
	E	10	10	9																					90

Tech Initials (counts) <sup>RT</sup> DM BO VP  
Collect NH<sub>3</sub> subsample <sup>RT</sup> ACS DM

Tech Initials (readings) <sup>RT</sup> BO RT BO VM

Animal Source/Date Received:

2/26/19  
ABS 12/27/19  
RT 2/27/19

Age at Initiation:

4d

Comments:

Organisms fed prior to initiation, circle one (y) 1 n ) (x) Q18 ACS 2/26/19

Feeding Times (hr):

	0	24	48	72	96
	-	0900	0905	0930	0920
	1715	1555	1555	1710	-

QC Check:

vs 3/11/19

Final Review:

EG 4/4/19

96-Hour Marine Sediment Bioassay  
Suspended Particulate Phase

Water Quality Measurement  
& Test Organism Survival

Client/Project ID: Anchor QEA / Newport Federal Channels  
 Sample ID: NC3-COMP  
 Test No.: 1902-5197

Test Species: A. bahia  
 Start Date/Time: 2/27/2019 1445  
 End Date/Time: 3/3/2019 1315  
 QRS vs 3/11/19

Concentration %	Rep	Number of Live Organisms			Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Percent Survival	
		0	48	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96		
Lab Control #1	A	10	10	10	31.5	31.6	32.0	32.0	31.8	24.0	25.3	24.7	25.1	25.3	6.6	6.3	5.6	5.4	5.0	7.93	7.83	7.77	7.70	7.64	100	
	B	10	10	10																					100	
	C	10	10	10																						100
	D	10	10	10																						100
	E	10	10	10																						100
Site Water Control #1	A	10	10	9	31.9	31.9	32.0	32.0	32.1	24.7	25.2	25.4	25.4	25.3	7.2	6.1	5.3	5.0	4.7	7.88	7.86	7.77	7.73	7.71	90	
	B	10	10	10																						100
	C	10	10	10																						100
	D	10	10	10																						100
	E	10	10	10																						100
1	A	10																								
	B	10	(n)																							
	C	10																								
	D	10																								
	E	10																								
10	A	10	10	10	31.9	31.9	32.1	32.1	31.7	24.0	25.2	25.5	25.0	25.3	6.3	6.1	5.0	5.3	5.2	7.76	7.83	7.72	7.69	7.65	100	
	B	10	10	10																						100
	C	10	10	10																						100
	D	10	10	10																						100
	E	10	9	9																						90
50	A	10	10	10	32.1	31.9	32.0	32.1	32.1	24.9	25.3	25.6	25.1	25.5	6.4	5.9	5.1	5.0	4.7	7.99	7.87	7.79	7.69	7.68	100	
	B	10	10	10																						100
	C	10	10	10																						100
	D	10	10	10																						100
	E	10	10	10																						100
100	A	10	13	10	31.8	32.1	32.2	32.0	32.4	24.5	25.3	25.5	25.1	25.4	6.4	5.7	5.0	4.8	4.3	7.97	7.86	7.80	7.70	7.69	100	
	B	10	1	9																						90
	C	10	1	10																						100
	D	10	1	10																						100
	E	10	1	10																						100

Tech Initials (counts) DM BO UP  
 Collect NH<sub>3</sub> subsample LTB - DM

Tech Initials (readings) ACS BO RT BO nm

Animal Source/Date Received: ABS / 2/27/19  
 QRS 2/27/19 RT

Age at Initiation: 4 d

Comments: Organisms fed prior to initiation, circle one (y) / n) (A) QRS 2/26/19

Feeding Times (hr):

0	24	48	72	96
-	0900	0905	0930	0820
1715	1655	1666	1710	-

QC Check: vs 3/11/19

Final Review: EG 4/4/19

*Menidia* SPP 96-hour

**Standard Elutriate Preparation**

Client: Anchor QEA/Newport Federal Channels Test Species: M. galloprovincialis <sup>Ⓞ</sup>

Sample IDs: NC2-COMP and NC3-COMP M. beryllina

Analyst: ACS / LTP A. bahia

Test IDs: 1902-5194 to 5199

Protocols: EPA-503/8-91/001 Feb 1991 (ITM) & EPA-823/B-98/004 Feb 1998 (OTM)

Water used to prepare elutriate (circle): Lab SW or Site Water

Salinity (ppt): 32.2

Ratio 1:4 (Sediment:Water): Example: 3 L Sediment : 12 L Water

Site ID:	Sediment Volume:	Water Volume:
NC2-COMP	<u>9L</u>	<u>36L</u>
NC3-COMP	<u>6L</u>	<u>24L</u>

Mix sediment and water in polyethylene plastic-lined 5-gallon bucket with stainless steel mixing blade for a total of 30 min.

Every 10 minutes, use a stainless steel spoon to manually suspend settled sediment.

Site ID:	Settling Start Date/Time:	Settling End Date/Time:
NC2-COMP (1 of 3)	<u>02/27/19 1025</u>	<u>02/27/19 1125</u>
NC3-COMP	<u>2/27/19 0945</u>	<u>02/27/19 1045</u>
NC2-COMP (3 of 3)	<u>02/27/19 1100</u>	<u>02/27/19 1202</u>

Settle for 1-hour at room temperature. (See project manager if settling is insufficient)  
Siphon overlying water (elutriate) into a new container without disturbing the sediment  
If necessary, centrifuge elutriate to remove particulates (especially for larval testing).

Check Dissolved Oxygen (DO) before preparing dilutions (aerate if < 6.0 mg/L).

Site ID:	Initial DO (mg/L):	Final DO (mg/L):
NC2-COMP	<u>2.9</u>	<u>9.8</u>
NC3-COMP	<u>2.2</u>	<u>9.4</u>

Prepare dilutions if necessary and collect ammonia subsamples

Comments: Ⓞ test was invalid and was repeated on 3/6/19 vs

QC Check: vs 3/1/19 Final Review: EG 4/4/19

**CETIS Summary Report**

Report Date: 28 Mar-19 08:39 (p 1 of 1)  
 Test Code: 1902-S198 | 04-7072-3239

Inland Silverside 96-h Acute Survival Test						Nautilus Environmental (CA)					
Batch ID:	14-7780-4031	Test Type:	Survival (96h)	Analyst:		Diluent:	Diluted Natural Seawater	Brine:	Not Applicable	Age:	9d
Start Date:	27 Feb-19 16:10	Protocol:	EPA/821/R-02-012 (2002)	Species:	Menidia beryllina	Source:	Aquatic Biosystems, CO	Client:	Anchor QEA	Project:	① LNB Federal Channels Newport Bay
Ending Date:	03 Mar-19 14:20	Material:	Sediment Elutriate	Source:	Anchor QEA	Station:	NC2-COMP	Sample ID:	07-5953-0907	Code:	19-3043
Duration:	94h	Sample Date:	25 Feb-19 13:30	Receive Date:	25 Feb-19 13:30	Sample Age:	51h	Method:	Steel Many-One Rank Sum Test		
<b>Comparison Summary</b>											
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method				
00-8838-8048	96h Survival Rate	100	>100	NA	27.2%	1	Steel Many-One Rank Sum Test				
<b>Point Estimate Summary</b>											
Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method				
05-3705-8453	96h Survival Rate	EC25	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)				
		EC50	>100	N/A	N/A	<1					
<b>Test Acceptability</b>											
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision					
00-8838-8048	96h Survival Rate	Control Resp	0.94	0.9 - NL	Yes	Passes Acceptability Criteria					
05-3705-8453	96h Survival Rate	Control Resp	0.94	0.9 - NL	Yes	Passes Acceptability Criteria					
<b>96h Survival Rate Summary</b>											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.88	0.744	1	0.8	1	0.04899	0.1095	12.45%	0.0%
0	Site Water Contr	5	0.94	0.872	1	0.9	1	0.02449	0.05477	5.83%	-6.82%
10		5	0.88	0.7761	0.9839	0.8	1	0.03742	0.08367	9.51%	0.0%
50		5	0.82	0.4868	1	0.4	1	0.12	0.2683	32.72%	6.82%
100		5	0.86	0.5362	1	0.4	1	0.1166	0.2608	30.32%	2.27%
<b>96h Survival Rate Detail</b>											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	0.8	1	0.8	1	0.8					
0	Site Water Contr	1	0.9	0.9	0.9	1					
10		1	0.8	0.9	0.8	0.9					
50		0.4	1	0.7	1	1					
100		0.4	0.9	1	1	1					

① EG Q18 4/1/19

# CETIS Analytical Report

Report Date: 28 Mar-19 08:39 (p 1 of 1)  
 Test Code: 1902-S198 | 04-7072-3239

Inland Silverside 96-h Acute Survival Test Nautilus Environmental (CA)

Analysis ID: 00-8838-8048 Endpoint: 96h Survival Rate CETIS Version: CETISv1.8.7  
 Analyzed: 28 Mar-19 8:38 Analysis: Nonparametric-Control vs Treatments Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	27.2%	100	>100	NA	1

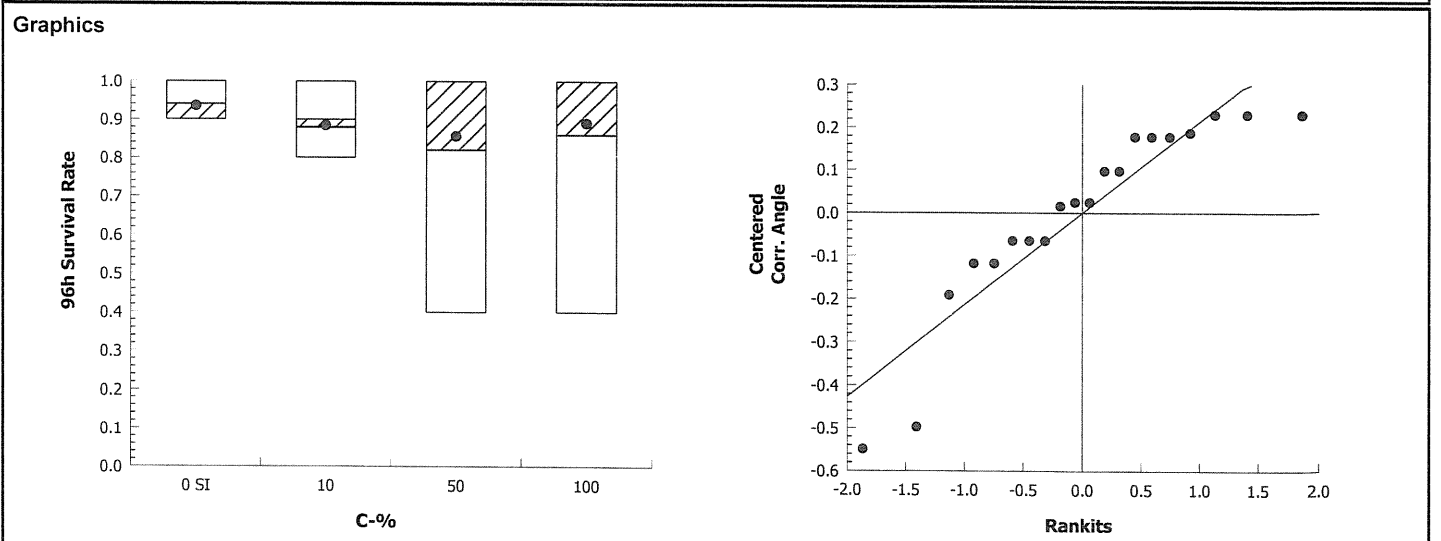
Steel Many-One Rank Sum Test									
Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Site Water Control		10	22	17	3	8	0.2647	Asymp	Non-Significant Effect
		50	27	17	2	8	0.7105	Asymp	Non-Significant Effect
		100	28.5	17	3	8	0.8197	Asymp	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.04545034	0.01515011	3	0.2592	0.8537	Non-Significant Effect
Error	0.9352162	0.05845102	16			
Total	0.9806666		19			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Bartlett Equality of Variance	7.689	11.34	0.0529	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.8584	0.866	0.0074	Non-normal Distribution	

96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Site Water Contr	5	0.94	0.872	1	0.9	0.9	1	0.02449	5.83%	0.0%
10		5	0.88	0.7761	0.9839	0.9	0.8	1	0.03742	9.51%	6.38%
50		5	0.82	0.4868	1	1	0.4	1	0.12	32.72%	12.77%
100		5	0.86	0.5362	1	1	0.4	1	0.1166	30.32%	8.51%

Angular (Corrected) Transformed Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Site Water Con	5	1.314	1.203	1.425	1.249	1.249	1.412	0.03992	6.79%	0.0%
10		5	1.225	1.068	1.382	1.249	1.107	1.412	0.05653	10.32%	6.8%
50		5	1.182	0.7694	1.595	1.412	0.6847	1.412	0.1487	28.13%	10.03%
100		5	1.234	0.8428	1.625	1.412	0.6847	1.412	0.1409	25.53%	6.11%



# CETIS Analytical Report

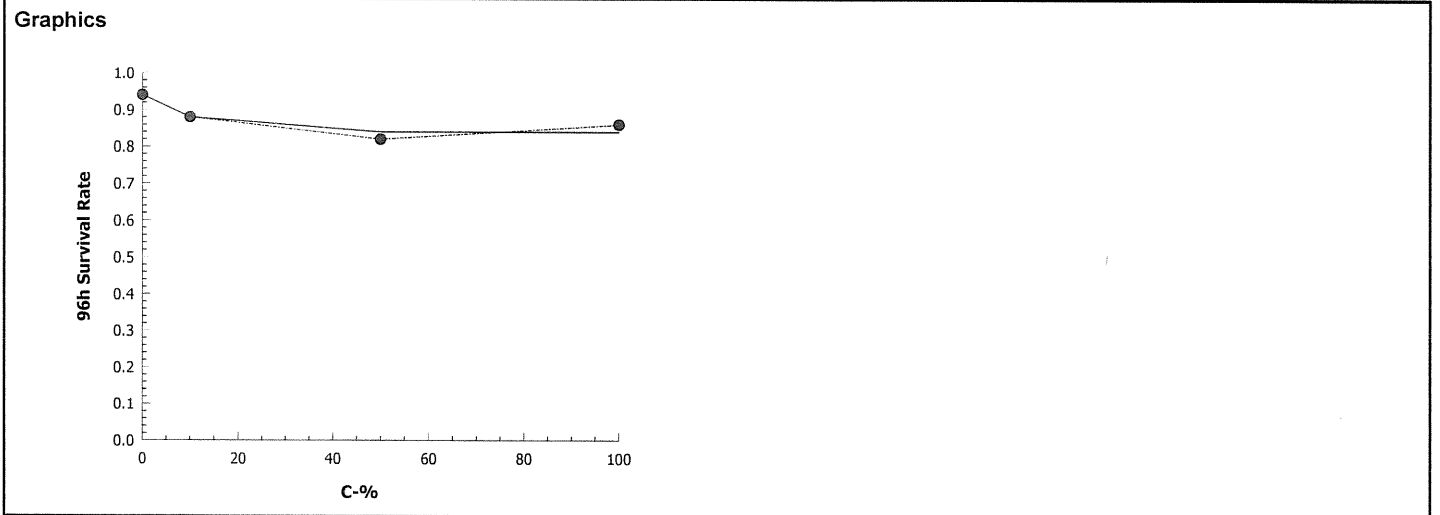
Report Date: 28 Mar-19 08:39 (p 1 of 1)  
 Test Code: 1902-S198 | 04-7072-3239

Inland Silverside 96-h Acute Survival Test			Nautilus Environmental (CA)		
Analysis ID: 05-3705-8453	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7			
Analyzed: 28 Mar-19 8:39	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes			

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	2085822	1000	Yes	Two-Point Interpolation

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC25	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary			Calculated Variate(A/B)									
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B	
0	Site Water Contr	5	0.94	0.9	1	0.02449	0.05477	5.83%	0.0%	47	50	
10		5	0.88	0.8	1	0.03742	0.08367	9.51%	6.38%	44	50	
50		5	0.82	0.4	1	0.12	0.2683	32.72%	12.77%	41	50	
100		5	0.86	0.4	1	0.1166	0.2608	30.32%	8.51%	43	50	



**CETIS Summary Report**

Report Date: 28 Mar-19 08:44 (p 1 of 1)  
 Test Code: 1902-S199 | 13-8252-7742

**Inland Silverside 96-h Acute Survival Test** **Nautilus Environmental (CA)**

<b>Batch ID:</b> 21-4437-5661	<b>Test Type:</b> Survival (96h)	<b>Analyst:</b>
<b>Start Date:</b> 27 Feb-19 16:10	<b>Protocol:</b> EPA/821/R-02-012 (2002)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 03 Mar-19 14:15	<b>Species:</b> Menidia beryllina	<b>Brine:</b> Not Applicable
<b>Duration:</b> 94h	<b>Source:</b> Aquatic Biosystems, CO	<b>Age:</b> 9d

<b>Sample ID:</b> 18-3340-7955	<b>Code:</b> 19-3044	<b>Client:</b> Anchor QEA
<b>Sample Date:</b> 25 Feb-19 12:00	<b>Material:</b> Sediment Elutriate	<b>Project:</b> <del>LNB</del> Federal Channels <i>Newport Bay</i>
<b>Receive Date:</b> 25 Feb-19 13:30	<b>Source:</b> Anchor QEA	
<b>Sample Age:</b> 52h	<b>Station:</b> NC3-COMP	

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
01-9189-3437	96h Survival Rate	100	>100	NA	11.1%	1	Dunnett Multiple Comparison Test

Point Estimate Summary							
Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
04-4908-2963	96h Survival Rate	EC25	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC50	>100	N/A	N/A	<1	

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
01-9189-3437	96h Survival Rate	Control Resp	0.94	0.9 - NL	Yes	Passes Acceptability Criteria
04-4908-2963	96h Survival Rate	Control Resp	0.94	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.88	0.744	1	0.8	1	0.04899	0.1095	12.45%	0.0%
0	Site Water Contr	5	0.94	0.872	1	0.9	1	0.02449	0.05477	5.83%	-6.82%
10		5	0.78	0.5958	0.9642	0.6	1	0.06633	0.1483	19.02%	11.36%
50		5	0.98	0.9245	1	0.9	1	0.02	0.04472	4.56%	-11.36%
100		5	0.9	0.9	0.9	0.9	0.9	0	0	0.0%	-2.27%

96h Survival Rate Detail						
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Control	0.8	1	0.8	1	0.8
0	Site Water Contr	1	0.9	0.9	0.9	1
10		0.6	0.7	0.8	0.8	1
50		1	1	1	0.9	1
100		0.9	0.9	0.9	0.9	0.9

Ⓐ EG 018 4/4/19



# CETIS Analytical Report

Report Date: 28 Mar-19 08:44 (p 1 of 1)  
 Test Code: 1902-S199 | 13-8252-7742

Inland Silverside 96-h Acute Survival Test					Nautilus Environmental (CA)				
--	--	--	--	--	-----------------------------	--	--	--	--

Analysis ID: 01-9189-3437	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 28 Mar-19 8:42	Analysis: Parametric-Control vs Treatments	Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	11.1%	100	>100	NA	1

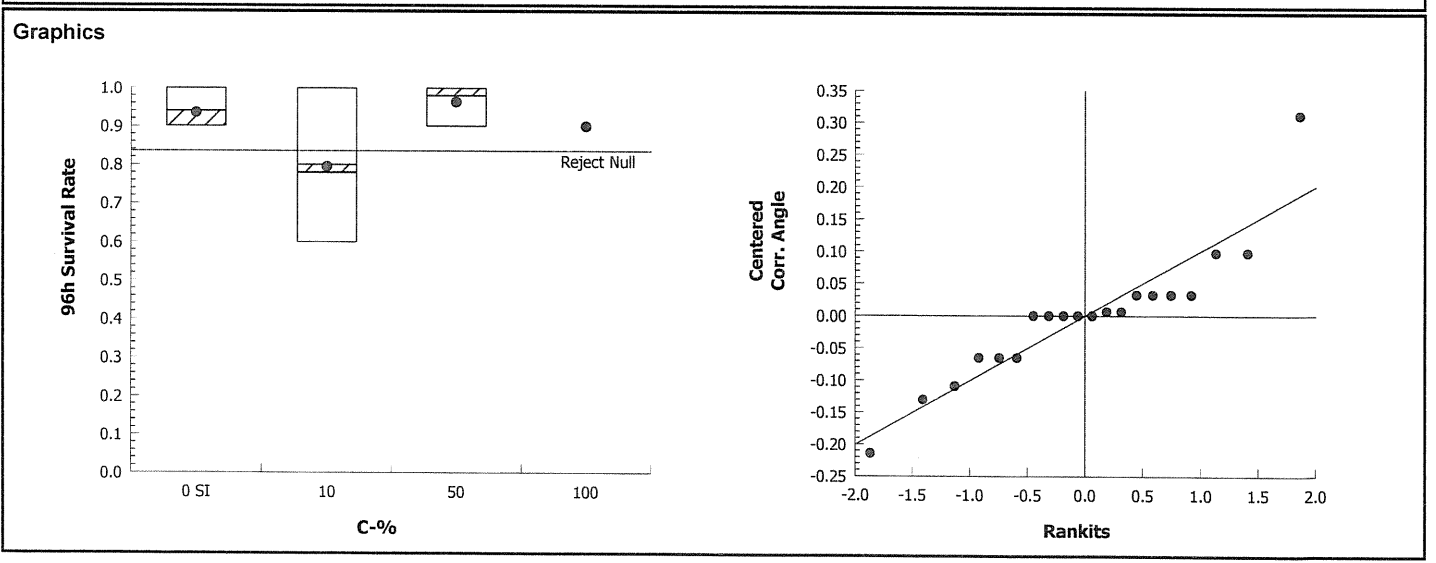
Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Site Water Control		10*	2.96	2.227	0.161	8	0.0121	CDF	Significant Effect
		50	-0.9036	2.227	0.161	8	0.9528	CDF	Non-Significant Effect
		100	0.9036	2.227	0.161	8	0.3702	CDF	Non-Significant Effect

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.2134675	0.07115585	3	5.469	0.0088	Significant Effect
Error	0.2081823	0.01301139	16			
Total	0.4216498		19			

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	2.281	5.953	0.1314	Equal Variances
Variances	Levene Equality of Variance	2.919	5.292	0.0661	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8854	0.866	0.0222	Normal Distribution

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Site Water Contr	5	0.94	0.872	1	0.9	0.9	1	0.02449	5.83%	0.0%
10		5	0.78	0.5958	0.9642	0.8	0.6	1	0.06633	19.02%	17.02%
50		5	0.98	0.9245	1	1	0.9	1	0.02	4.56%	-4.26%
100		5	0.9	0.8998	0.9002	0.9	0.9	0.9	0	0.0%	4.26%

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Site Water Con	5	1.314	1.203	1.425	1.249	1.249	1.412	0.03992	6.79%	0.0%
10		5	1.101	0.8562	1.345	1.107	0.8861	1.412	0.08805	17.89%	16.25%
50		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	-4.96%
100		5	1.249	1.249	1.249	1.249	1.249	1.249	0	0.0%	4.96%



# CETIS Analytical Report

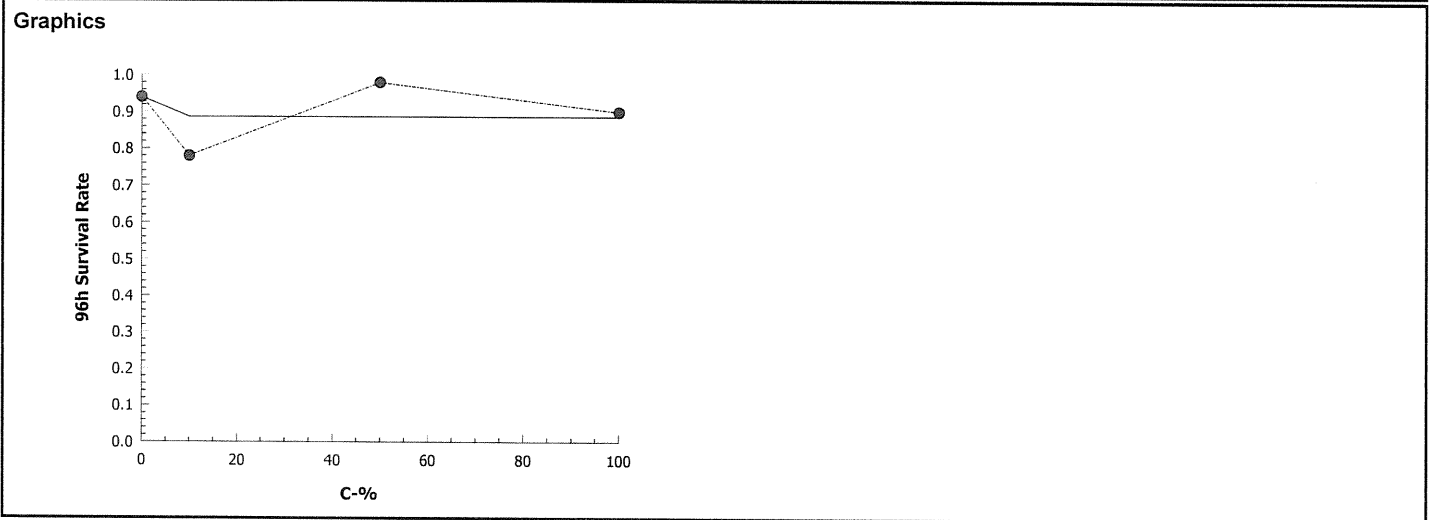
Report Date: 28 Mar-19 08:44 (p 1 of 1)  
 Test Code: 1902-S199 | 13-8252-7742

Inland SilverSide 96-h Acute Survival Test			Nautilus Environmental (CA)		
Analysis ID: 04-4908-2963	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7			
Analyzed: 28 Mar-19 8:42	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes			

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1693307	1000	Yes	Two-Point Interpolation

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC25	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Site Water Contr	5	0.94	0.9	1	0.02449	0.05477	5.83%	0.0%	47	50
10		5	0.78	0.6	1	0.06633	0.1483	19.02%	17.02%	39	50
50		5	0.98	0.9	1	0.02	0.04472	4.56%	-4.26%	49	50
100		5	0.9	0.9	0.9	0	0	0.0%	4.26%	45	50



96-Hour Marine Sediment Bioassay  
Suspended Particulate Phase

Water Quality Measurements  
& Test Organism Survival

Client/Project ID: Anchor QEA / Newport Federal Channels  
Sample ID: NC2-COMP  
Test No.: 1902-5198

Test Species: M. beryllina <sup>2/18 RT/19</sup>  
Start Date/Time: 2/27/2019 <sup>1625</sup> 1610  
End Date/Time: 3/3/2019 <sup>1420</sup> 15

Concentration %	Rep	Number of Live Organisms			Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Percent Survival
		0	48	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	
Lab Control #1	A	10	8	8	31.5	31.8	31.8	31.9	32.0	24.0	24.7	25.1	24.7	24.7	6.6	6.4	6.1	6.0	6.2	7.83	7.86	7.81	7.80	7.86	80
	B	10	10	10																				100	
	C	10	8	8																				80	
	D	10	10	10																				100	
	E	10	8	8																				80	
Site Water Control #1	A	10	10	10	31.8	31.9	32.1	32.3	32.5	24.7	24.8	25.3	24.8	24.9	7.2	6.3	6.0	5.9	5.9	7.88	7.86	7.83	7.81	7.88	100
	B	10	9	9																				90	
	C	10	9	9																				90	
	D	10	9	9																				90	
	E	10	10	10																				100	
1	A	10																							
	B	10																							
	C	10	(A)																						
	D	10																							
	E	10																							
10	A	10	10	10	31.3	32.3	32.4	32.0	32.3	24.1	24.6	25.2	24.7	24.8	6.7	6.2	5.9	5.8	6.0	7.77	7.87	7.81	7.80	7.88	100
	B	10	8	8	31.4	31.7																		80	
	C	10	9	9																				90	
	D	10	8	8																				80	
	E	10	9	9																				90	
50	A	10	4	4	31.5	31.8	31.9	31.8	31.9	24.7	24.7	24.7	24.9	25.1	6.6	6.2	5.9	5.7	5.9	7.96	7.90	7.87	7.82	7.89	40
	B	10	10	10																				100	
	C	10	7	7																				70	
	D	10	10	10																				100	
	E	10	10	10																				100	
100	A	10	4	4	32.3	32.4	32.1	32.4	32.6	25.5	24.8	25.2	24.8	25.0	6.5	6.0	5.9	5.8	5.8	7.94	7.90	7.84	7.86	7.93	40
	B	10	9	9																				90	
	C	10	10	10																				100	
	D	10	10	10																				100	
	E	10	10	10																				100	

Tech Initials (counts) LTP/RT BO WT QC'd by: LTP/RT Tech Initials (readings) ACS BO RT BO DM  
Collect NH<sub>3</sub> subsample ACS/LTP - DM

Animal Source/Date Received: ABS 02/26/19 Q22 Age at Initiation: 9d

Comments: Organisms fed prior to initiation, circle one (y) 1 n (b) ACS 2/26/19  
@ Q22 BO 2/28/19 (y) ACS RT 3/1/19  
Feeding Times (hr): 

0	24	48	72	96
-	0700	0905	0930	0920
-	-	-	-	-

QC Check: vs 3/11/19 Final Review: EM 4/4/19

96-Hour Marine Sediment Bioassay  
Suspended Particulate Phase

Water Quality Measurements  
& Test Organism Survival

Client/Project ID: Anchor QEA / Newport Federal Channels  
 Sample ID: NC3-COMP  
 Test No.: 1902-5199

Test Species: M. beryllina  
 Start Date/Time: 2/27/2019 1610  
 End Date/Time: 3/3/2019 1415

Concentration %	Rep	Number of Live Organisms			Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Percent Survival
		0	48	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	
Lab Control #1	A	10	8	8	31.5	31.8	31.8	31.9	32.0	24.0	24.7	25.1	24.7	24.7	6.6	6.4	6.1	6.0	6.2	7.93	7.86	7.81	7.80	7.86	80
	B	10	10	10																				100	
	C	10	8	8																				80	
	D	10	10	10																				100	
	E	10	8	8																				80	
Site Water Control #1	A	10	10	10	31.9	31.9	32.1	32.3	32.5	24.7	24.8	25.3	24.8	24.9	7.2	6.3	6.0	5.9	5.9	7.89	7.86	7.83	7.81	7.88	100
	B	10	9	9																				90	
	C	10	9	9																				90	
	D	10	9	9																				90	
	E	10	10	10																				100	
1	A	10																							
	B	10																							
	C	10	ⓐ																						
	D	10																							
	E	10																							
10	A	10	7	6	32.2	31.5	32.0	32.2	32.3	24.1	24.5	25.3	24.9	25.2	6.4	6.4	6.0	5.9	5.8	7.95	7.89	7.80	7.80	7.86	60
	B	10	7	7	32.3																			70	
	C	10	8	8																				80	
	D	10	8	8																				80	
	E	10	10	10																				100	
50	A	10	10	10	31.9	31.4	32.4	32.3	32.4	24.6	25.0	25.4	25.0	25.1	6.3	6.0	5.7	5.7	5.7	7.98	7.87	7.83	7.83	7.89	100
	B	10	10	10																				100	
	C	10	10	10																				100	
	D	10	9	9																				90	
	E	10	10	10																				100	
100	A	10	9	9	32.3	32.0	32.0	32.1	32.3	25.2	25.0	26.2	24.9	25.0	6.4	6.0	5.7	5.6	5.8	7.99	7.91	7.87	7.86	7.92	90
	B	10	9	9																				90	
	C	10	9	9																				90	
	D	10	9	9																				90	
	E	10	9	9																				90	

Tech Initials (counts) WTP BO TP QC'd by: JBS Tech Initials (readings) ACS BO RT BO DM  
 Collect NH<sub>3</sub> subsample WTP - DM

Animal Source/Date Received: ABS 02/26/19 Q22 Age at Initiation: 9d

Comments: Organisms fed prior to initiation, circle one (y) / n) (A) Q18 ACS 2/26/19  
Q18 BO 2/28/19  
 Feeding Times (hr): 

0	24	48	72	96
-	0900	0905	0930	0820
-	-	-	-	-

QC Check: vs 3/11/19 Final Review: EG 4/4/19

*Macoma* and *Nereis* BP 28-day

**28-Day Marine Sediment Bioaccumulation**

**Water Quality Measurements**

**Client:** Anchor QEA  
**Test Species:** M. nasuta and N. virens

**Project ID:** Newport Bay Federal Channels  
**Site ID:** Lab Control

**Start Date/Time:** 2/26/2019 1115  
**End Date/Time:** 3/26/2019 1130

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0*/W	15.7	15.5	15.7	15.6	15.5	8.3	8.2	8.2	8.2	8.2	7.97	8.00	8.00	8.00	8.02	33.8	33.9	34.0	34.0	34.0	TN
1 Q	16.2	16.6	16.3	15.9	16.3	7.7	7.5	7.7	7.7	7.7	7.85	7.86	7.90	7.88	7.95	33.7	33.8	34.0	33.9	33.9	TN
2	15.3	16.1	15.0	15.8	16.0	7.8	7.8	7.9	7.7	7.7	7.88	7.91	7.99	7.89	8.01	33.8	33.9	34.0	34.0	34.0	WJP
3	15.0	15.0	14.8	15.2	15.8	8.4	8.2	8.1	8.1	7.9	7.89	7.91	7.98	7.92	8.00	34.1	33.9	33.9	34.0	34.1	TN
4	15.5	15.9	15.4	15.7	15.9	7.3	7.5	7.8	7.6	7.7	7.86	7.88	7.95	7.88	7.98	33.9	34.0	34.0	34.0	34.1	TN
5	15.6	15.4	15.4	15.4	15.2	8.2	8.3	8.4	8.2	8.4	7.86	7.93	7.97	7.91	8.00	33.9	34.0	34.1	34.1	34.1	DM
6	15.4	15.4	15.4	15.5	15.2	8.1	8.1	8.1	8.1	8.2	7.85	7.91	7.93	7.94	7.98	34.1	34.1	34.5	34.2	34.1	LTP
7 W	15.5	15.4	15.5	15.6	15.3	7.7	7.8	7.7	7.6	7.7	7.84	7.89	7.93	7.92	7.98	33.8	34.0	34.1	34.1	34.1	TN
8	15.7	15.7	15.6	15.7	15.4	7.6	7.6	7.7	7.6	7.7	7.84	7.88	7.93	7.91	7.97	34.1	34.2	34.2	34.2	34.2	DM
9	15.7	15.6	15.6	15.8	15.6	7.5	7.6	7.7	7.7	7.7	7.85	7.92	7.94	7.95	7.99	34.4	34.0	34.1	34.1	34.1	TN
10	15.9	15.6	15.6	15.8	15.6	7.6	7.7	7.6	7.6	7.7	7.86	7.93	7.95	7.96	8.01	33.9	34.2	34.2	34.3	34.2	JBS
11	15.7	15.4	15.4	15.6	15.4	8.1	8.2	8.2	8.2	8.0	7.86	7.89	7.93	7.96	8.00	34.0	34.0	34.1	34.2	34.1	BO
12	15.3	15.5	15.6	15.8	15.4	8.1	8.0	8.0	8.0	8.1	7.86	7.92	7.98	7.94	8.02	34.3	34.1	34.2	34.2	34.2	DM
13	15.7	15.7	15.4	15.6	15.6	8.1	7.9	8.0	7.9	7.9	7.87	7.87	7.95	7.94	7.99	34.1	34.2	34.5	34.3	34.2	LTP
14 W	15.7	15.8	15.5	15.7	15.5	8.2	8.0	8.2	8.1	8.1	7.82	7.81	7.91	7.90	7.94	34.3	34.2	34.1	34.2	34.2	TN
15	15.3	15.3	15.6	15.2	15.5	8.3	8.3	8.3	8.3	8.2	7.76	7.81	7.88	7.88	7.90	33.5	33.6	33.7	33.7	33.8	RT
16	15.6	15.1	15.5	15.3	15.6	8.3	8.5	8.4	8.5	8.4	7.89	7.86	7.89	7.88	7.91	33.5	33.5	33.7	33.7	34.0	BO
17	15.7	15.3	15.5	15.3	15.6	8.4	8.5	8.3	8.3	8.2	7.87	7.95	7.98	7.97	7.99	33.6	33.9	34.5	34.1	34.3	TN
18	15.7	15.4	15.6	15.5	15.8	8.0	8.2	8.2	8.3	8.1	7.89	7.90	7.90	7.92	7.95	33.6	33.8	33.9	33.9	34.1	BO
19	15.8	15.4	15.6	15.5	15.8	8.4	8.5	8.4	8.4	8.3	7.93	7.96	8.01	7.99	8.01	33.9	33.6	33.7	33.7	33.9	DM
20	15.0	15.4	15.6	15.4	14.0	8.4	8.2	8.2	8.2	8.7	7.89	7.90	7.97	7.95	7.99	33.4	33.7	34.0	34.0	33.9	JBS
21*	15.0	15.3	15.9	15.7	14.7	8.2	8.1	8.0	8.0	8.2	7.86	7.88	7.93	7.91	7.95	33.8	33.7	33.8	33.7	33.6	JBS
22	15.1	15.3	15.7	15.5	14.7	8.2	8.1	8.0	8.0	8.3	7.85	7.95	7.94	7.96	7.99	33.3	33.6	33.7	33.7	33.4	ACS
23	15.8	15.5	15.9	15.8	14.9	8.1	8.1	8.1	8.0	8.3	7.88	7.97	8.00	7.97	7.98	33.3	33.5	33.6	33.7	33.5	JBS
24	15.2	15.3	15.6	15.5	14.7	8.3	8.3	8.3	8.3	8.5	7.86	7.94	7.97	7.94	7.98	33.3	33.5	33.6	33.6	33.4	TN
25	15.4	15.5	15.6	15.7	14.9	8.0	8.2	8.0	8.2	8.3	7.86	7.93	7.96	7.93	7.99	33.6	33.5	33.6	33.6	33.4	BO
26	15.5	15.4	15.8	15.7	14.8	8.3	8.3	8.2	8.2	8.4	7.94	7.98	8.01	7.98	8.02	33.4	33.5	33.7	33.6	33.4	DM
27	15.6	15.6	16.0	15.9	15.1	7.8	7.6	7.7	7.7	7.8	7.91	7.95	7.99	7.97	8.00	33.8	33.6	33.6	33.6	33.7	ACS
28*/W	15.7	15.7	15.9	15.9	15.1	8.5	8.6	8.4	8.4	8.6	7.94	7.94	7.98	7.95	7.99	33.3	33.4	33.6	33.6	33.4	TN

**Comments:** \* Collect NH<sub>3</sub> Samples (D) Q18 RT 3/13/2019

**QC Check:** VS 4/1/19

**Final Review:** EG 4/4/19

# 28-Day Marine Sediment Bioaccumulation

# Water Quality Measurements

Client: Anchor QEA  
 Test Species: M. nasuta and N. virens

Project ID: Newport Bay Federal Channels  
 Site ID: LA3-REF

Start Date/Time: 2/26/2019 1105  
 End Date/Time: 3/26/2019 1130

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0 <del>1</del>	15.1	15.0	15.4	14.5	14.5	8.3	8.2	8.1	8.3	8.3	8.01	8.02	8.03	8.04	8.05	33.7	34.0	33.7	34.2	34.1	TN
1 <del>Q</del>	16.3	16.4	15.8	16.0	16.0	7.7	7.6	7.7	7.7	7.7	7.96	7.89	7.96	7.95	7.95	34.1	34.1	33.5	34.1	34.1	TN
2	16.4	14.9	16.3	14.7	15.6	7.8	7.8	7.7	7.9	7.6	8.00	7.98	8.01	7.99	8.00	34.4	34.0	34.1	34.4	34.3	LTP
3	15.4	15.0	15.3	14.6	15.4	8.1	8.2	8.0	8.2	8.0	8.01	7.97	8.00	7.99	8.00	34.0	34.0	34.1	33.8	34.1	TN
4	16.0	15.5	15.8	15.1	15.7	7.9	7.9	7.8	7.9	7.8	7.99	7.95	7.99	7.95	7.98	34.1	34.0	34.1	34.1	34.4	TN
5	15.9	15.6	15.8	15.2	15.5	8.1	8.3	8.2	8.4	8.3	8.02	7.96	8.01	7.97	7.99	34.3	34.1	34.2	34.6	34.4	DM
6	14.7	15.3	14.4	15.3	15.6	8.3	8.0	8.2	8.0	8.0	7.99	7.91	7.99	7.94	7.96	34.1	34.2	34.1	34.3	34.4	LTP
7 <del>1</del>	14.8	15.4	14.6	15.3	15.6	7.8	7.5	7.7	7.6	7.5	7.98	7.89	7.98	7.97	7.96	34.0	34.2	34.4	34.2	34.3	TN
8	15.0	15.4	14.7	15.4	15.6	7.8	7.7	7.8	7.6	7.6	7.97	7.91	7.97	7.95	7.95	34.2	34.3	34.2	34.3	34.4	DM
9	15.9	15.5	14.8	15.5	15.7	7.8	7.5	7.9	7.8	7.7	7.96	7.86	7.98	7.93	7.95	34.1	34.1	34.0	34.2	34.3	TN
10	15.3	15.6	14.8	15.4	15.7	7.6	7.5	7.7	7.6	7.6	7.99	7.91	7.99	7.97	7.98	34.6	34.3	34.2	34.3	34.4	JBS
11	15.2	15.4	14.7	15.1	15.5	8.0	8.0	8.3	8.0	8.0	7.96	7.93	7.98	7.98	7.98	34.1	34.2	34.1	34.3	34.4	BO
12	15.2	15.3	14.9	15.1	15.3	8.1	8.1	8.2	8.2	8.1	8.02	7.97	8.01	8.01	8.02	34.2	34.2	34.1	34.3	34.5	DM
13	15.3	16.4	14.6	15.2	15.5	7.9	7.8	8.0	7.8	7.8	7.97	7.93	7.97	7.97	7.97	34.5	34.2	34.1	34.3	34.5	LTP
14 <del>1</del>	15.4	15.5	15.0	15.2	15.5	8.1	8.0	8.2	8.0	8.0	7.90	7.85	7.90	7.91	7.92	34.0	34.1	34.0	34.3	34.5	TN
15	15.6	15.5	15.0	15.2	15.5	8.2	8.1	8.3	8.2	8.1	7.89	7.85	7.92	7.90	7.91	34.0	33.8	33.6	33.8	34.1	RT
16	15.7	15.6	15.0	15.3	15.6	8.4	8.5	8.4	8.3	8.0	7.91	7.88	7.91	7.92	7.91	33.8	33.8	33.8	33.9	34.1	BO
17	15.8	15.7	15.1	15.3	15.6	8.1	8.1	8.2	8.2	8.1	7.99	7.94	7.99	8.00	7.99	34.6	34.2	34.4	34.3	34.6	TN
18	15.9	15.9	15.3	15.4	15.7	8.0	8.0	8.1	8.2	8.1	7.95	7.90	7.94	7.95	7.95	34.1	34.0	34.2	34.1	34.4	BO
19	14.2	14.3	15.1	15.3	15.6	8.5	8.6	8.3	8.3	8.2	8.03	8.01	8.01	8.02	7.99	33.9	33.9	33.7	34.0	34.2	DM
20	15.1	14.3	15.2	15.3	15.6	8.2	8.4	8.2	8.2	8.1	7.98	7.98	7.98	7.98	7.99	33.7	33.7	33.8	34.0	34.3	JBS
21*	15.6	14.6	15.5	15.6	15.9	7.9	8.1	7.9	7.9	7.9	7.94	7.94	7.94	7.93	7.94	33.7	34.0	34.1	34.1	34.4	JBS
22	15.6	14.6	15.3	15.4	15.6	8.0	8.1	8.0	7.9	7.9	7.89	7.96	7.96	7.94	7.97	33.7	33.4	33.7	34.3	34.3	HS
23	15.8	14.9	15.7	15.7	15.9	8.0	8.1	8.0	7.9	8.0	8.00	7.98	7.99	7.95	7.99	33.7	33.5	33.6	34.0	34.3	JBS
24	15.6	14.9	15.5	15.3	15.6	8.2	8.4	8.2	8.2	8.2	7.97	7.95	7.96	7.92	7.96	33.7	33.4	33.6	34.0	34.3	TN
25	15.8	15.2	15.6	15.5	15.8	8.0	8.3	8.0	8.0	8.2	7.98	7.96	7.96	7.94	7.96	33.8	33.5	33.6	34.0	34.3	BO
26	15.8	15.1	15.5	15.5	15.7	8.2	8.3	8.2	8.2	8.1	8.01	7.99	8.01	7.98	7.99	34.1	33.4	33.7	34.0	34.4	DM
27 <del>Q</del>	16.2	15.6	15.9	15.8	16.0	7.6	7.6	7.6	7.7	7.3	7.97	7.96	7.98	7.98	7.97	33.7	33.7	33.6	34.0	34.3	ATC
28 <del>Q</del>	15.4	15.8	15.9	15.9	15.9	8.5	8.3	8.3	8.2	8.3	7.99	7.95	7.98	7.95	7.95	33.5	33.5	33.5	34.0	34.2	TN

Comments: \* Collect NH<sub>3</sub> Samples

QC Check: VS 4/1/19

Final Review: Eu 4/4/19

# 28-Day Marine Sediment Bioaccumulation

# Water Quality Measurements

Client: Anchor QEA  
 Test Species: M. nasuta and N. virens

Project ID: Newport Bay Federal Channels  
 Site ID: NC2-COMP

Start Date/Time: 2/26/2019 1115  
 End Date/Time: 3/26/2019 1130

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0*	15.2	14.4	14.2	14.2	14.6	8.1	8.3	8.4	8.4	8.3	8.01	8.03	8.04	8.03	8.03	34.0	34.4	34.4	34.3	34.4	UTP
1	16.2	15.9	15.9	15.9	16.0	7.5	7.6	7.5	7.7	7.6	7.80	7.86	7.82	7.92	7.87	34.0	34.1	34.1	34.1	34.1	UTP
2	15.9	15.5	15.7	15.6	15.8	7.0	7.5	7.2	7.5	7.2	7.67	8.01	7.86	7.93	7.88	34.2	34.2	34.3	34.2	34.2	UTP
3	15.6	14.3	15.3	15.4	15.6	8.0	8.3	8.1	7.9	7.4	7.99	8.00	8.04	7.96	7.81	33.9	34.0	34.0	34.1	34.0	TN
4	16.0	14.9	15.6	15.7	15.9	7.7	8.0	7.8	7.7	7.2	7.97	7.94	8.02	7.93	7.77	33.9	33.9	34.3	34.3	34.2	TN
5	16.0	15.4	15.1	15.7	15.8	8.1	8.3	8.4	8.1	7.7	8.02	7.96	8.04	7.87	7.78	34.3	34.1	34.2	34.6	34.3	DM
6	15.0	15.5	15.1	15.7	15.8	8.2	8.1	8.1	7.8	7.7	7.99	7.98	7.99	7.87	7.81	34.2	34.3	34.2	34.5	34.3	UTP
7	15.1	15.3	15.0	15.5	15.7	7.6	7.5	7.6	7.5	7.4	7.96	7.97	8.00	8.04	7.99	33.9	34.3	34.2	34.9	34.3	TN
8	15.2	15.4	15.2	15.5	15.7	7.7	7.7	7.7	7.6	7.5	7.96	7.98	8.00	8.04	7.99	34.5	34.4	34.2	34.9	34.4	DM
9	15.5	15.5	15.2	15.7	15.8	7.7	7.7	7.8	7.7	7.6	7.95	7.98	8.00	8.06	7.98	34.2	34.4	34.2	34.7	34.8	TN
10	15.4	15.4	15.2	15.6	15.7	7.5	7.6	7.6	7.5	7.4	7.94	8.01	8.01	8.07	7.99	34.2	34.5	34.3	34.8	34.5	JBS
11	15.1	15.0	15.3	15.4	15.5	8.0	8.2	8.1	8.0	8.1	7.93	8.00	8.00	8.03	8.00	34.3	34.3	34.1	34.8	34.4	BO
12	15.2	15.0	15.2	15.3	15.4	8.2	8.3	8.2	8.2	8.1	8.03	8.06	8.07	8.12	8.06	34.4	34.6	34.3	34.8	34.4	DM
13	15.2	15.0	15.3	15.3	15.4	7.9	7.9	7.8	7.8	7.7	7.96	7.99	7.99	8.07	8.01	34.3	34.7	34.5	35.0	34.6	UTP
14	15.3	14.7	15.3	15.3	15.5	8.1	8.2	8.1	8.0	7.8	7.88	7.92	7.94	8.03	7.87	34.1	34.3	34.6	35.2	34.6	TN
15	15.3	14.7	15.3	15.3	15.4	8.2	8.3	8.2	8.1	8.0	7.90	7.94	7.95	8.01	7.85	33.8	33.9	34.2	34.8	34.3	RT
16	15.1	14.7	15.3	15.3	15.4	8.3	8.4	8.0	8.2	8.0	7.91	7.93	7.92	7.97	7.84	34.1	33.8	34.2	34.8	34.3	BO
17	15.4	14.7	15.3	15.4	15.4	8.2	8.3	8.2	8.1	8.0	7.99	8.02	8.02	8.06	7.90	33.8	33.6	34.3	34.9	34.2	TN
18	15.5	14.8	15.3	15.5	15.5	8.0	8.3	8.1	8.1	8.1	7.96	7.97	7.94	8.01	7.90	34.0	34.1	34.4	35.0	34.3	BO
19	15.6	14.8	15.2	15.4	15.5	8.2	8.4	8.3	8.3	8.0	8.01	8.04	7.98	8.02	7.93	34.0	33.9	34.5	34.9	34.7	DM
20	15.6	14.8	15.3	15.4	15.5	8.2	8.4	8.2	8.1	7.8	7.94	7.97	7.95	8.03	7.88	34.2	34.0	34.7	35.4	34.8	JBS
21*	15.9	15.1	15.6	15.7	15.8	8.0	8.1	7.9	7.9	7.6	7.90	7.92	7.91	7.97	7.80	34.0	34.0	34.7	35.6	34.6	JBS
22	15.6	14.8	15.3	15.3	15.4	7.9	8.1	7.9	8.0	7.9	7.95	7.99	7.98	8.00	7.97	33.9	33.8	34.7	35.4	34.4	AS
23	15.9	15.4	15.6	15.7	15.7	8.0	8.2	8.1	8.1	7.9	7.97	8.00	7.99	8.02	7.91	33.9	33.8	34.8	35.5	34.4	JBS
24	15.7	15.2	15.3	15.4	15.5	8.2	8.3	8.3	8.2	8.1	7.93	7.96	7.96	8.00	7.91	33.8	33.8	34.8	35.5	34.8	TN
25	15.4	15.2	15.4	15.5	15.5	8.0	8.2	8.2	8.0	8.1	7.99	7.98	7.97	8.00	7.93	33.9	33.8	34.9	35.6	34.6	BO
26	15.3	15.3	15.4	15.5	15.5	8.0	8.2	8.1	8.1	8.0	8.02	8.03	7.99	8.00	7.89	33.9	33.8	35.0	35.8	34.5	DM
27	15.7	15.6	15.8	15.7	15.9	7.7	7.7	7.7	7.7	7.3	7.96	7.96	7.97	7.96	7.85	33.6	34.1	35.0	35.8	34.5	AS
28	15.8	15.7	15.8	15.9	15.9	8.2	8.2	8.1	8.1	8.0	7.96	7.97	7.96	7.92	7.79	34.0	33.9	35.1	35.9	34.5	TN

Comments: \* Collect NH<sub>3</sub> Samples Data transferred 02/28/19 UTP @ QISRH 3/11/19 = 15.3°C

QC Check: 4/4/19 Final Review: EA 4/4/19



# 28-Day Marine Sediment Bioaccumulation

# Water Quality Measurements

Client: Anchor QEA  
 Test Species: M. nasuta and N. virens

Project ID: Newport Bay Federal Channels Start Date/Time: 2/26/2019 1115  
 Site ID: NC3-COMP End Date/Time: 3/26/2019 1130

Day	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
0 <sup>th</sup> TN	14.4	14.3	14.5	14.4	14.4	8.3	8.3	8.2	8.3	8.2	8.03	8.03	8.03	8.03	8.04	34.2	34.3	34.2	34.3	34.2	UTP
1	16.0	15.6	15.7	15.7	15.7	7.4	7.9	7.5	7.8	7.7	7.84	7.95	7.86	7.92	7.91	34.3	34.0	34.0	34.1	34.0	UTP
2	14.0	15.8	16.0	15.7	14.4	7.8	7.3	7.2	7.5	7.8	7.97	7.93	7.83	7.98	7.97	34.2	34.3	34.2	34.3	34.1	UTP
3	14.6	15.4	15.2	15.4	14.2	7.9	7.8	7.8	7.9	8.1	7.93	7.93	7.89	7.99	7.97	33.8	34.0	33.9	34.0	34.0	TN
4	15.1	15.9	15.8	15.8	14.6	7.8	7.6	7.6	7.8	8.0	7.89	7.88	7.83	7.97	7.94	34.0	34.3	34.1	34.3	34.2	TN
5	15.1	15.5	15.2	15.6	14.6	8.3	8.0	8.1	8.1	8.4	7.84	7.86	7.85	7.99	7.96	34.3	34.3	34.2	34.4	34.5	DM
6	15.9	15.6	15.2	15.5	14.5	7.7	7.8	7.9	7.9	8.2	7.81	7.80	7.87	7.95	7.93	34.5	34.3	34.2	34.4	34.0	UTP
7 <sup>th</sup> TN	14.9	15.5	15.3	15.5	14.5	7.6	7.4	7.4	7.4	7.7	7.93	7.91	7.86	7.95	7.97	34.4	34.3	34.1	34.7	34.5	TN
8	14.9	15.7	15.5	15.6	14.6	7.8	7.5	7.6	7.5	7.8	7.91	7.89	7.85	7.93	7.97	34.4	34.4	34.2	34.5	34.5	DM
9	14.9	15.8	15.6	15.7	14.6	7.7	7.4	7.4	7.5	7.9	7.94	7.88	7.86	7.93	7.99	34.2	34.4	34.2	34.5	34.4	TN
10	14.9	15.5	15.3	15.4	14.6	7.7	7.6	7.4	7.5	7.8	7.94	7.94	7.87	7.96	8.00	34.0	34.4	34.3	34.6	34.6	JBS
11	14.7	15.3	15.3	15.4	14.5	8.2	8.2	8.0	8.2	8.3	7.93	7.96	7.89	7.93	8.03	33.9	34.1	34.2	34.3	34.4	BO
12	14.8	15.4	15.3	15.4	14.2	7.8	8.0	8.0	8.1	8.3	7.98	8.00	7.96	8.00	8.03	34.2	34.3	34.3	34.8	34.4	DM
13	16.0	15.5	15.3	15.4	14.2	7.9	7.7	7.7	7.8	8.1	7.91	7.92	7.91	7.96	7.98	34.1	34.5	34.3	34.7	34.4	UTP
14 <sup>th</sup> TN	15.2	15.6	15.4	15.4	14.2	8.0	7.9	7.9	8.0	8.3	7.84	7.85	7.86	7.92	7.93	34.2	34.5	34.3	34.7	34.4	TN
15	15.4	15.6	15.4	15.4	14.1	8.1	8.0	8.1	8.0	8.4	7.86	7.86	7.86	7.90	7.92	33.8	34.0	33.9	34.4	33.9	RT
16	15.5	15.6	15.5	15.4	14.2	8.3	8.3	8.3	8.4	8.3	7.87	7.86	7.86	7.89	7.91	33.9	34.1	34.0	34.3	33.7	BO
17	15.6	15.6	15.6	15.4	14.2	8.1	8.1	8.0	8.1	8.4	7.94	7.96	7.95	7.97	8.00	34.4	34.8	33.9	34.3	33.9	TN
18	15.7	15.7	15.7	15.5	14.4	8.0	8.0	8.0	8.1	8.3	7.91	7.92	7.93	7.93	7.96	34.2	34.6	34.0	34.3	34.1	BO
19	15.6	15.6	15.6	15.2	14.2	8.1	8.2	8.2	8.3	8.6	7.97	7.97	7.98	7.98	8.01	34.1	34.5	34.1	34.6	33.8	DM
20	15.7	15.6	15.5	15.3	14.2	8.0	8.1	8.1	8.2	8.5	7.96	7.94	7.96	7.95	8.00	34.1	34.6	34.2	34.9	33.7	JBS
21*	15.1	15.9	15.8	15.6	14.5	7.9	7.9	7.9	7.9	8.2	7.86	7.86	7.88	7.90	7.95	33.8	34.7	34.3	34.9	33.7	JBS
22	14.9	15.6	15.6	15.4	14.3	8.1	7.9	7.9	8.0	8.2	7.89	7.90	7.91	7.94	8.00	33.4	34.7	34.2	34.8	33.8	ACS
23	15.3	15.9	15.9	15.7	14.5	8.0	8.0	7.9	7.9	8.3	7.95	7.93	7.93	7.92	8.00	33.3	34.7	34.3	34.9	33.8	JBS
24	15.2	15.7	15.6	15.5	14.3	8.3	8.2	8.1	8.2	8.5	7.91	7.88	7.91	7.90	7.98	33.4	34.8	34.3	34.9	33.8	TN
25	15.4	15.7	15.7	15.3	14.4	8.2	8.0	8.2	8.0	8.6	7.94	7.91	7.91	7.90	7.98	33.6	34.8	34.5	34.6	33.8	BO
26	15.5	15.6	15.7	15.3	14.3	8.0	8.1	8.1	8.2	8.4	7.93	7.95	7.94	7.95	8.01	33.6	34.7	34.9	34.4	33.8	DM
27	15.9	16.0	16.0	15.6	14.6	7.5	7.6	7.4	7.7	7.9	7.92	7.90	7.90	7.92	7.98	33.6	34.7	34.6	34.3	33.7	ACS
28 <sup>th</sup> TN	16.0	15.9	15.8	15.7	14.7	8.2	8.2	8.2	8.2	8.5	7.91	7.89	7.91	7.91	7.96	33.6	34.5	34.5	34.3	33.8	TN

Comments: \* Collect NH<sub>3</sub> Samples Data transferred 02/28/19 UTP @ 9:15 ACS 3/25/19

QC Check: AS 4/1/19

Final Review: EA 4/4/19

28-Day Marine Sediment Bioaccumulation

Observations

Client: Anchor QEA

Start Date/Time: 2/26/2019 1115

Project ID: Newport Bay Federal Channels

End Date/Time: 3/26/2019 1130

Site ID: Lab Control

Test Species: M. nasuta and N. virens

Day	Observations by Replicate (Indicate key code)					Additional Comments	Tech Initials
	A	B	C	D	E		
1	B <sub>2</sub> =2 worms, 1 clam	N	B <sub>1</sub> =1 clam, N	B <sub>2</sub> =1 clam, 1 worm	B <sub>2</sub> =1 clam, 1 worm	FT=A, B, C, E	TN
2	N, B <sub>1</sub> =worm	N, B <sub>1</sub> =clam	B <sub>1</sub> =clam, N	N, B <sub>2</sub> =clam	N	FT=E	LTP
3	N, B <sub>1</sub> =1 worm	N, B <sub>1</sub> =1 clam	N, B <sub>1</sub> =clam	N, B <sub>2</sub> =1 clam	N		TN
4	N	N, B <sub>1</sub> =1 clam	N, B <sub>2</sub> =clam	N, B <sub>1</sub> =1 clam	N	FT=B, D, E	TN
5	N	N, B <sub>1</sub> =1 clam	N, B <sub>2</sub> =3 clam	N, B <sub>1</sub> =1 clam	N		DM
6	B <sub>1</sub> =clam, N	B <sub>1</sub> =clam, N	M <sub>1</sub> =clam, N, B <sub>3</sub>	N, B <sub>2</sub> =clams	B <sub>1</sub> =clam, N	Half dead worm removed per KS (firc)	LTP
7	N, B <sub>2</sub> =clam	N, B <sub>2</sub> =clam	N, B <sub>2</sub> =1 clam	N, B <sub>3</sub> =2 clams	N, B <sub>1</sub> =clam	unhealthy worm in D	TN
8	N	N, B <sub>1</sub> =clam	N, B <sub>2</sub> =1 clam	N, B <sub>2</sub> =1 clam	N, B <sub>1</sub> =1 clam	worm in C-B dead and removed	DM/AS
9	N	N, B <sub>2</sub> =1 clam	N, B <sub>2</sub> =1 clam	N, B <sub>1</sub> =clam	N, B <sub>1</sub> =clam	worm in C both unhealthy	AS
10	N, B <sub>1</sub> =clam	N, B <sub>1</sub> =worm	N, B <sub>2</sub> =clam	N, B <sub>2</sub> =clam	N, B <sub>1</sub> =clam	worm in C dead and removed	JBS
11	N, B <sub>1</sub> =clam	N, B <sub>2</sub> =1 clam	N, B <sub>1</sub> =clam	N, B <sub>2</sub> =clams	N, B <sub>1</sub> =clam	clam in C looks unhealthy	BD/TN
12	N, B <sub>2</sub> =clam	N, B <sub>1</sub> =clam	N, B <sub>1</sub> =clam	N, B <sub>1</sub> =1 clam	N, B <sub>2</sub> =clam	1 clam dead in D + removed	DM/AS
13	N, B <sub>1</sub> =clam	N, B <sub>1</sub> =clam	N	N	B <sub>2</sub> =clam, N		LTP/AS
14	N, B <sub>1</sub> =clam	N, B <sub>1</sub> =clam	N	N, B <sub>1</sub> =clam	N, B <sub>1</sub> =clam		TN
15	N, B <sub>1</sub> =clam	N, B <sub>2</sub> =clam	N	N, B <sub>1</sub> =clam	N, B <sub>2</sub> =clam		RT
16	N, B <sub>2</sub> =clams	N, B <sub>2</sub> =clams	N	N, B <sub>2</sub> =clams	N, B <sub>2</sub> =clams		BO
17	N, B <sub>2</sub> =clams	N, B <sub>2</sub> =clams	N	N, B <sub>2</sub> =clams	N, B <sub>2</sub> =clams		TN
18	N, B <sub>1</sub> =clam	N, B <sub>2</sub> =clams	N	N, B <sub>2</sub> =clams	N, B <sub>2</sub> =clams		BO
19	N, B <sub>1</sub> =clam	N, B <sub>2</sub> =clam	N	N, B <sub>2</sub> =clam	N, B <sub>1</sub> =clam	FT=A	DM
20	N, B <sub>1</sub> =clam	N, B <sub>4</sub> =clam	N	N, B <sub>2</sub> =clam	N, B <sub>2</sub> =clam	1 clam dead in B and removed	JBS
21	N, B <sub>1</sub> =worm	N, B <sub>4</sub> =clam	N	N, B <sub>3</sub> =clam	N, B <sub>2</sub> =clam		JBS
22	N, B <sub>1</sub> =clam	N, B <sub>3</sub> =clam	N	N, B <sub>2</sub> =clam	N, B <sub>2</sub> =clam		AS
23	N, B <sub>1</sub> =clam	N, B <sub>4</sub> =clam	N	N, B <sub>2</sub> =clam	N, B <sub>2</sub> =clam		JBS
24	N, B <sub>1</sub> =clam	N, B <sub>3</sub> =clam	N	N, B <sub>2</sub> =clam	N, B <sub>2</sub> =clam		TN
25	N, B <sub>1</sub> =clam	N, B <sub>2</sub> =clams	N	N, B <sub>2</sub> =clams	N, B <sub>3</sub> =clams		BO
26	N, B <sub>1</sub> =clam	N, B <sub>3</sub> =clam	N	N, B <sub>2</sub> =clam	N, B <sub>3</sub> =clam		DM
27	N, B <sub>1</sub> =clam	N, B <sub>3</sub> =clam	N	N, B <sub>2</sub> =clam	N, B <sub>3</sub> =clam		AS
28	N, B <sub>1</sub> =clam	N, B <sub>3</sub> =clam	N	N, B <sub>2</sub> =clam	N, B <sub>3</sub> =clam		TN

④ QLS AS 2/24/19

Observations Key:

A = No/low aeration, turned on/up M = Mortalities observed, specify number  
 G = Abnormal growth on or discoloration of sediment surface N = Normal conditions C = Cloudy  
 B = Organisms not burrowed in sediment, specify number  
 F = Flow adjustment necessary, specify up or down

QC Check: BS 4/1/19

Final Review: EA 4/1/19

**28-Day Marine Sediment Bioaccumulation**

**Observations**

Client: Anchor anchor QEA

Start Date/Time: 2/26/2019 1115

Project ID: Newport Bay Federal Channels

End Date/Time: 3/26/2019 1130

Site ID: LA3-REF

Test Species: M. nasuta and N. virens

Day	Observations by Replicate (Indicate key code)					Additional Comments	Tech Initials
	A	B	C	D	E		
1	B <sub>1</sub> = 1 WSEM, C	B <sub>1</sub> = 1 CLAM, C	B <sub>1</sub> = 1 CLAM, C	B <sub>1</sub> = 1 CLAM, C	B <sub>1</sub> = 1 CLAM, C	FP = A, B	TN
2	C	C	B <sub>1</sub> = clam, C	C	C		UTP
3	C	C, B <sub>1</sub> = 1 WSEM	C, B <sub>1</sub> = 1 WSEM	C, B <sub>1</sub> = 1 CLAM	C		TN
4	C	C, B <sub>1</sub> = 1 CLAM	C	C, B <sub>1</sub> = 1 CLAM	C	FP = A, C, E	TN
5	C	C, B <sub>1</sub> = 1 clam	C	C, B <sub>1</sub> = 1 clam	C	FP = A, C	DM
6	C	C	C	N	N		UTP
7	C	C, B <sub>1</sub> = clam	C	N	N		TN
8	C	C, B <sub>1</sub> = clam	C	C	C		DM
9	C	C, B <sub>1</sub> = clam	C	C	C		AS
10	C	C	C	C	C		JBS
11	C	C	C	C	C		BO
12	C	C	C	C	C		DM
13	C, <del>A</del> (B)	C, <del>A</del> (B)	(B), <del>A</del> , C	C, <del>A</del> (B)	C, <del>A</del> (B)		UTP
14	C	C	C	C	C		TN
15	C	C	C	C	C		RT
16	C	C	C	C	C		BO
17	C	C, B <sub>1</sub> = 1 CLAM	C	C	C		TN
18	C	C, B <sub>1</sub> = clam	C	C	C		BO
19	C	C, B <sub>1</sub> = clam	C	C	C		DM
20	C	C	C	C	C		JBS
21	C, B <sub>1</sub> = clam	C	C	C	C		JBS
22	C	C	C, B <sub>1</sub> = clam	C	C		AS
23	C	C	C	C	C		JBS
24	C	C	C	C	C		TN
25	C	C	C	C	C		BO
26	C	C	C	C	C		DM
27	C	C	C	C	C	FP = A, E	AS
28	C	C	C	C	C		TN

(A) QAS ACS 2/24/19

(B) QASUTP 3/11/19

**Observations Key:**

A = No/low aeration, turned on/up M = Mortalities observed, specify number  
 G = Abnormal growth on or discoloration of sediment surface N = Normal conditions C = Cloudy  
 B = Organisms not burrowed in sediment, specify number  
 F = Flow adjustment necessary, specify up or down

QC Check: BS 4/1/19

Final Review: EG 4/4/19

**28-Day Marine Sediment Bioaccumulation**

**Observations**

Client: <sup>Anchor</sup> ~~Anchor~~ QEA

Start Date/Time: 2/26/2019 1115

Project ID: Newport Bay Federal Channels

End Date/Time: 3/26/2019 1130

Site ID: NC2-COMP

Test Species: *M. nasuta* and *N. virens*

Day	Observations by Replicate (Indicate key code)					Additional Comments	Tech Initials
	A	B	C	D	E		
1	B <sub>1</sub> = 1 clam, C	B <sub>2</sub> = 2 worms	B <sub>3</sub> = 3 CLAMS, 2 worms, C	B <sub>1</sub> = 1 worm, C	B <sub>2</sub> = 1 worm, 1 clam, C	FP = A	TN
2	M1-clam, C	B <sub>1</sub> = worm, C	C	B <sub>1</sub> = worm, C	C	FP = A, E AP = A, C, E	LP
3	C	C, B <sub>1</sub> = 1 worm	C	B <sub>1</sub> = 1 worm, C	C	worm in B looks UNHEALTHY	TN
4	C	C, B <sub>2</sub> = 1 clam 1 worm, 1 worm	C	C, B <sub>2</sub> = 2 CLAMS	C	FP = A, E	TN
5	C	C, B = 1 clam	C	C, B <sub>2</sub> = 1 clam 1 worm	C	FP = A, E	DM
6	C	C	C	C, B <sub>1</sub> = clam	C	FP = E	LP/A
7	C	C	C	C, B <sub>1</sub> = clam	C		TN
8	C	C	C	C, B <sub>2</sub> = 1 clam 1 worm	C		DM
9	C	C	C	C, B <sub>1</sub> = 1 worm	C		AC
10	C	C	C	C, B <sub>1</sub> = worm	C	unhealthy worm in	JBS
11	C	C	C	C	C		BO
12	C	C	C	C	C		DM
13	C	C	C	C	C		LP
14	C	C	C	C	C		TN
15	C	C	C	C	C		RT
16	C	C	C	C	C		BO
17	C	C	C	C	C		TN
18	C	C	C	C	C		BO
19	C	C	C	C	C		DM
20	C	C	C	C	C		JBS
21	C	C	C	C	C		JBS
22	C	C	C	C	C		AC
23	C	C	C	C	C		JBS
24	C, B <sub>1</sub> = clam	C	C	C	C		TN
25	C, B <sub>1</sub> = clam	C	C	C	C		BO
26	C, B <sub>1</sub> = clam	C	C	C	C		DM
27	C	C	C	C	C		AC
28	C	C	C	C	C		TN

QC: SACS 2/24/19

**Observations Key:**

A = No/low aeration, turned on/up M = Mortalities observed, specify number  
 G = Abnormal growth on or discoloration of sediment surface N = Normal conditions C = Cloudy  
 B = Organisms not burrowed in sediment, specify number  
 F = Flow adjustment necessary, specify up or down

QC Check: KS 4/1/19

Final Review: EG 4/4/19

**28-Day Marine Sediment Bioaccumulation**

**Observations**

Client: Anchor QEA

Start Date/Time: 2/26/2019 1115

Project ID: Newport Bay Federal Channels

End Date/Time: 3/26/2019 1130

Site ID: NC3-COMP

Test Species: M. nasuta and N. virens

Day	Observations by Replicate (Indicate key code)					Additional Comments	Tech Initials
	A	B	C	D	E		
1	B <sub>1</sub> = 2 worms, 2 clams, 1 C	B <sub>3</sub> = 2 clams, 1 worm, C	B <sub>2</sub> = 2 clams, C	B <sub>4</sub> = 2 clams, 2 worms, C	B <sub>2</sub> = 2 clams		TN
2	B <sub>1</sub> = clam, C	C	B <sub>1</sub> = clam, C	C	C	F <sub>1</sub> = B, C A <sub>1</sub> = C	LTP
3	C, B <sub>1</sub> = 1 clam	C	B <sub>2</sub> = 1 clam, 1 worm	C	C, B <sub>1</sub> = 1 worm		TN
4	C	C	C, B <sub>1</sub> = 1 clam	C	C	F <sub>1</sub> = B, C, D	TN
5	C	C	C, B <sub>1</sub> = 1 clam	C	C		DM
6	C	C	C	C	C	worm tail removed from tank C, F <sub>1</sub> = A	LTP
7	C	C	C	C	C	(A) F <sub>1</sub> = A	TN, JBS
8	C	C	C	C	C		JBS
9	C	C	C	C	C		DM
10	C	C	C	C	C		JBS
11	C	C	C	C	C		BO
12	C	C	C	C	C		DM
13	C	C	C	C	C		LTP
14	C	C	C	C	C		TN
15	C	C	C	C	C		RT
16	C	C	C	C	C		BO
17	C	C	C	C	C		TN
18	C	C	C	C	C		BO
19	C	C	C	C	C		DM
20	C	C	C	C	C, B <sub>1</sub> = clam		JBS
21	C	C	C	C	C		JBS
22	C	C	C	C	C, B <sub>1</sub> = clam		AS
23	C	C	C	C	C, B <sub>2</sub> = (clam)		JBS
24	C	C	C	C	C		TN
25	C	C	C	C	C, B <sub>1</sub> = clam		BO
26	C	C	C	C	C, B <sub>1</sub> = clam		DM
27	C	C	C	C	C, M <sub>1</sub> = clam	F <sub>1</sub> = B, C	AS
28	C	C	C	C	C, B <sub>1</sub> = clam		TN

ⓐ Q18 ACS 2/24/19

ⓐ Q18 UP 3/6/19 ⓑ TAC 2/26/19 ⓒ Q18 AC 3/2/19

**Observations Key:**

A = No/low aeration, turned on/up M = Mortalities observed, specify number  
 G = Abnormal growth on or discoloration of sediment surface N = Normal conditions C = Cloudy  
 B = Organisms not burrowed in sediment, specify number  
 F = Flow adjustment necessary, specify up or down

QC Check: KS 4/1/19

Final Review: EG 4/4/19

**28-Day Marine Sediment  
Bioaccumulation (24-hr depuration water quality)**

**Water Quality Measurements**

Client: Anchor QEA Project ID: Newport Bay Federal Test Start and End Dates/Times: 2/26/19 1115 3/26/19 1130  
 Test Species: M. nasuta and N. virens Depuration Start and End Dates/Times: 3/26/19 1130 3/27/19 1230

Site	Temperature (°C)					Dissolved Oxygen (mg/L)					pH (pH units)					Salinity (ppt)					Analyst
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
Lab Control	15.2	15.3	14.9	15.1	15.0	8.6	8.6	8.4	8.4	8.4	7.96	7.94	7.95	7.99	7.95	33.6	33.8	33.7	33.7	33.7	BO
LA3-REF	15.1	15.0	15.0	14.8	14.1	8.5	8.4	8.4	8.5	8.6	7.95	7.98	8.02	7.96	7.99	33.6	33.8	33.7	33.8	34.0	BO
NC2-COMP <sup>P14</sup> <sub>P22</sub>	14.7	14.3	14.2	10.6	13.6	8.6	8.5	8.6	9.3	8.7	7.94	7.99	7.97	8.09	7.97	33.6	33.8	33.8	33.9	34.0	BO
NC3-COMP	14.9	14.3	14.1	14.3	14.2	8.4	8.6	8.6	8.6	8.5	7.99	7.99	7.99	7.99	7.99	33.9	34.0	34.1	34.0	34.0	BO

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

QC Check: 4/4/19 Final Review: EA 4/4/19

**28-Day Marine Sediment  
Bioaccumulation**

**Organism Survival**

Client: Anchor QEA  
Project ID: Newport Bay Federal Channels

Start Date/Time: 2/26/2019 1115  
End Date/Time: 3/26/2019 1130

Worm Species: Nereis virens  
Clam Species: Macoma nasuta

Initial Number of 10 worms  
Each Species: 30 clams

Site	Rep	Number of Surviving Worms (on Day 28)	Number of Surviving Clams (on Day 28)	Number of Dead Clams (on Day 28)	Number of Expected Clams <sup>1</sup>	Tech Initials
Lab Control	A	9	30	0	30	VS
	B	9	29	0	29	JBS
	C	8	29	0	29	BO
	D	9	29	0	29	BO
	E	10	30	0	30	JBS
LA3-REF	A	10	30	0	30	TN
	B	8	29	0	29	LP
	C	10	30	0	30	TN
	D	8	29	2	30	VS
	E	10	30	0	30	BO
NC2-COMP	A	<del>7</del> 8	29	0	29	TN
	B	4	29	1	30	JBS
	C	7	29	1	30	ES
	D	6	30	40 <sup>(A)</sup>	30	TN
	E	8	30	0	30	LP
NC3-COMP	A	9	28	2	30	LP
	B	9	30	0	30	JBS
	C	6	30	0	30	TN
	D	8	29	2	30	BO
	E	10	28	2 <sup>(A)</sup>	29	TN
	A					
	B					
	C					
	D					
	E					
	A					
	B					
	C					
	D					
	E					

QC Check: VS 3/1/19

Final Review: EA 4/4/19

Notes: <sup>1</sup> Expected number of clams on day 28 based on observations during test. Calculated by initial # clams - dead clams removed days 1-27.  
BO VS TN 3/26/19

## Ammonia Analyses



**Total Ammonia Analysis  
Marine**

**Pore Water**

Client: Anchor QEA  
 Project: Newport Bay Federal Channels  
 Test Type: Various

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: Variable

Analyst: SG  
 Analysis Date: 2/26/19

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	pH (units)	Salinity (ppt)	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	8.4	10.2
LA3-REF	1	2/25/19	pre-test	7.41	35	1.9	2.3
NC2-COMP	2	↓	pre-test	7.56	35	4.3	5.2
NC3-COMP	3		pre-test	7.63	34	4.5	5.5
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	8.4	10.2
Sample Duplicate <sup>a</sup>	3	NA	NA	NA	NA	8.47	5.7
Sample Duplicate + Spike <sup>a</sup>		NA	NA	NA	NA	12.6	15.4
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	NA	NA	8.4	10.2

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal spike} (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.2	10	NA	102
3	5.5	5.7	15.4	10	3.6	99

Comments: (B) Q18 SG 2/26/19

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or more values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

(d) measured with refractometer KS 2/25/19

QC Check: vs 3 | 2/19

Final Review:

EG 4/4/19

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
Project: Newport Bay Federal Channels  
Test Type: Ampelisca 10-day Survival

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 3/1/2019

Analyst: SG  
Analysis Date: 3/13/19

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
<b>Blank Spike (10 mg/L NH<sub>3</sub>)</b>					
Lab Control	90	3/1/2019	0	8.2	10.0
LA3-REF	91	3/1/2019	0	1.5	1.8
NC2- COMP	92	3/1/2019	0	0.4	<0.5
NC3-COMP	93	3/1/2019	0	0.7	0.9
Lab Control	94	3/11/2019	10	0.3	<0.5
LA3-REF	95	3/11/2019	10	1.0	1.2
NC2- COMP	96	3/11/2019	10	0.2	<0.5
NC3-COMP	97	3/11/2019	10	0.0	<0.5
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>					
		NA	NA	8.2	10.0
Sample Duplicate <sup>a</sup>	97	NA	NA	0.1	<0.5
Sample Duplicate + Spike <sup>a</sup>		NA	NA	8.4	10.2
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.2	10.0

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{\text{average ammonia} (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal [spike]} (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.0	10	NA	100
97	<0.5	<0.5	10.2	10	C	C

Comments: Sample setup for acclimation with twice daily renewals on 3/24/19 (A) (A) EG Q18 4/4/19

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: VS 3/21/19

Final Review:

EG 4/4/19 - 4/4/19  
(A)

**Total Ammonia Analysis  
Marine**

**Overlying Water**

**Client:** Anchor QEA  
**Project:** Newport Bay Federal Channels  
**Test Type:** *Neanthes* 10-day Survival

**DI Blank:** 0.0  
**SW Blank:** 0.0

**Test Start Date:** 3/1/2019

**Analyst:** SG  
**Analysis Date:** 3/13/19

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
<b>Blank Spike (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.2	10.0
Lab Control	82	3/1/2019	0	0.0	<0.5
LA3-REF	83	3/1/2019	0	0.0	<0.5
NC2-COMP	84	3/1/2019	0	0.6	0.7
NC3-COMP	85	3/1/2019	0	0.4	<0.5
Lab Control	86	3/11/2019	10	0.3	<0.5
LA3-REF	87	3/11/2019	10	1.0	1.2
NC2-COMP	88	3/11/2019	10	0.2	<0.5
NC3-COMP	89	3/11/2019	10	0.2	<0.5
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.2	10.0
Sample Duplicate <sup>a</sup>	89	NA	NA	0.1	<0.5
Sample Duplicate + Spike <sup>a</sup>		NA	NA	8.2	10.0
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.2	10.0

Relative Percent Difference (RPD) =  $\frac{[sample] (mg/L) - [sample duplicate] (mg/L)}{[average ammonia] (mg/L)} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[spiked sample] (mg/L) - [sample] (mg/L)}{nominal [spike] (mg/L)} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	0.0	10	NA	100
89	<0.5	<0.5	0.0	10	C	C

Comments: Sample setup for acclimation with twice daily renewals on 3/24/19 - EQ 8 4/4/19

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: vs 3/2/19

Final Review:

EQ 4/4/19

**Total Ammonia Analysis  
Marine**

**Overlying Water**

**Client:** Anchor QEA  
**Project:** Newport Bay Federal Channels  
**Test Type:** Menidia 96-Hr. SET SPP; Samples NC2-COMP and NC3-COMP

**DI Blank:** 0.0  
**SW Blank:** 0.0

**Test Start Date:** 2/27/2019

**Analyst:** SG  
**Analysis Date:** 3/7/19

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
<b>Blank Spike (10 mg/L NH<sub>3</sub>)</b>		NA	NA	7.6	9.3
Lab Control	40	2/27/2019	0	0.0	<0.5
Site Water Control	41	2/27/2019	0	0.3	<0.5
NC2-COMP; 10	42	2/27/2019	0	0.0	<0.5
NC2-COMP; 50	43	2/27/2019	0	0.2	<0.5
NC2-COMP; 100	44	2/27/2019	0	2.2	2.7
NC3-COMP; 10	45	2/27/2019	0	1.1	1.3
NC3-COMP; 50	46	2/27/2019	0	1.4	1.7
NC3-COMP; 100	47	2/27/2019	0	1.8	2.2
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	7.6	9.3
Lab Control	48	3/3/2019	4	1.6	2.0
Site Water Control	49	3/3/2019	4	1.6	2.0
NC2-COMP; 10	50	3/3/2019	4	1.4	1.7
NC2-COMP; 50	51	3/3/2019	4	2.0	2.4
NC2-COMP; 100	52	3/3/2019	4	1.6	2.0
NC3-COMP; 10	53	3/3/2019	4	0.4	<0.5
NC3-COMP; 50	54	3/3/2019	4	0.8	1.0
NC3-COMP; 100	55	3/3/2019	4	1.2	1.5
Sample Duplicate <sup>a</sup>	55	NA	NA	1.5	1.8
Sample Duplicate + Spike <sup>a</sup>		NA	NA	8.8	10.7
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	7.6	9.3

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	9.3	10	NA	93
55	1.5	1.8	10.7	10	18.2	92

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: 3/21/19

Final Review: EM 4/4/19

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
 Project: Newport Bay Federal Channels  
 Test Type: Mysid 96-Hr. SET SPP; Samples NC2-COMP and NC3-COMP

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 2/27/2019

Analyst: SG  
 Analysis Date: 3/6/19

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
<b>Blank Spike (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.5	10.4
Lab Control	24	2/27/2019	0	1.5	1.8
Site Water Control	25	2/27/2019	0	1.6	2.0
NC2-COMP; 10	26	2/27/2019	0	1.8	2.2
NC2-COMP; 50	27	2/27/2019	0	2.4	2.9
NC2-COMP; 100	28	2/27/2019	0	3.2	3.9
NC3-COMP; 10	29	2/27/2019	0	1.6	2.0
NC3-COMP; 50	30	2/27/2019	0	1.9	2.3
NC3-COMP; 100	31	2/27/2019	0	2.6	3.2
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.5	10.4
Lab Control	32	3/3/2019	4	2.2	2.7
Site Water Control	33	3/3/2019	4	2.1	2.6
NC2-COMP; 10	34	3/3/2019	4	2.7	2.2
NC2-COMP; 50	35	3/3/2019	4	2.7	2.3
NC2-COMP; 100	36	3/3/2019	4	2.7	2.6
NC3-COMP; 10	37	3/3/2019	4	2.9	2.6
NC3-COMP; 50	38	3/3/2019	4	1.2	1.5
NC3-COMP; 100	39	3/3/2019	4	1.9	2.3
Sample Duplicate <sup>a</sup>	39	NA	NA	2.0	2.4
Sample Duplicate + Spike <sup>a</sup>		NA	NA	10.9	13.3
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.5	10.4

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.4	10	NA	104
39	2.3	2.4	13.3	10	4.3	110

Comments: (A) Q18 SG 3/6/19

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: YS 3/2/19

Final Review: EM 4/4/19

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
 Project: Newport Bay Federal Channels  
 Test Type: Bivalve 48-Hr. SET SPP; Samples NC2-COMP and NC3-COMP

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 3/6/2019

Analyst: SG  
 Analysis Date: 3/13/19

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
<b>Blank Spike (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.3	10.1
Lab Control	56	3/6/2019	0	0.1	<0.5
Site Water Control	57	3/6/2019	0	0.1	<0.5
NC2-COMP; 1	58	3/6/2019	0	0.0	<0.5
NC2-COMP; 10	59	3/6/2019	0	0.3	<0.5
NC2-COMP; 50	60	3/6/2019	0	0.5	0.6
NC2-COMP; 100	61	3/6/2019	0	1.4	1.7
NC3-COMP; 1	62	3/6/2019	0	0.3	<0.5
NC3-COMP; 10	63	3/6/2019	0	0.0	<0.5
NC3-COMP; 50	64	3/6/2019	0	0.6	0.7
NC3-COMP; 100	65	3/6/2019	0	0.0	<0.5
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.3	10.1
Lab Control	66	3/8/2019	2	0.3	<0.5
Site Water Control	67	3/8/2019	2	0.0	<0.5
NC2-COMP; 1	68	3/8/2019	2	0.0	<0.5
NC2-COMP; 10	69	3/8/2019	2	0.0	<0.5
NC2-COMP; 50	70	3/8/2019	2	0.6	0.7
NC2-COMP; 100	71	3/8/2019	2	1.2	1.5
NC3-COMP; 1	72	3/8/2019	2	0.0	<0.5
NC3-COMP; 10	73	3/8/2019	2	0.0	<0.5
NC3-COMP; 50	74	3/8/2019	2	0.4	<0.5
NC3-COMP; 100	75	3/8/2019	2	1.2	1.5
Sample Duplicate <sup>a</sup>	75	NA	NA	0.9	1.1
Sample Duplicate + Spike <sup>a</sup>		NA	NA	9.4	11.5
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.3	10.1

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.1	10	NA	101
75	1.5	1.1	1.5	10	30.8	100

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L **B** RPD high due to values being near Method Detection limit EG 4/4/19

QC Check: vs 3/21/19

Final Review:

EG 4/4/19

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
Project: Newport Bay Federal Channels  
Test Type: *Macoma* and *Nereis* 28-day Bioaccumulation

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 2/26/2019

Analyst: SG  
Analysis Date: 4/2/19

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
<b>Blank Spike (10 mg/L NH<sub>3</sub>)</b>		NA	NA	9.0	11.0
Lab Control	4	2/26/2019	0	0.3	<0.5
LA3-REF	5	2/26/2019	0	1.1	1.3
NC2- COMP	6	2/26/2019	0	0.9	1.1
NC3-COMP	7	2/26/2019	0	1.4	1.7
Lab Control	8	3/5/2019	7	1.6	2.0
LA3-REF	9	3/5/2019	7	1.9	2.3
NC2- COMP	10	3/5/2019	7	4.6	5.6
NC3-COMP	11	3/5/2019	7	3.3	4.0
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	9.0	11.0
Lab Control	12	3/12/2019	14	1.9	2.3
LA3-REF	13	3/12/2019	14	2.5	3.1
NC2- COMP	14	3/12/2019	14	6.0	7.3
NC3-COMP	15	3/12/2019	14	3.2	3.9
Lab Control	16	3/19/2019	21	0.4	<0.5
LA3-REF	17	3/19/2019	21	0.8	1.0
NC2- COMP	18	3/19/2019	21	4.4	5.4
NC3-COMP	19	3/19/2019	21	1.6	2.0
Sample Duplicate <sup>a</sup>	19	NA	NA	1.8	2.2
Sample Duplicate + Spike <sup>a</sup>		NA	NA	10.3	12.6
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	9.0	11.0

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	11.0	10	NA	110
19	2.0	2.2	12.6	10	9.5	106

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: EG 4/4/19

Final Review: \_\_\_\_\_

4/2/19

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Anchor QEA  
Project: Newport Bay Federal Channels  
Test Type: Macoma and Nereis 28-day Bioaccumulation

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 2/26/2019

Analyst: SG  
Analysis Date: 3/29/19

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
<b>Blank Spike (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.2	10.0
Lab Control	20	3/26/2019	28	0.5	0.6
LA3-REF	21	3/26/2019	28	1.0	1.2
NC2-COMP	22	3/26/2019	28	2.0	2.4
NC3-COMP	23	3/26/2019	28	0.6	0.7
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.2	10.0
Sample Duplicate <sup>a</sup>	23	NA	NA	0.6	0.7
Sample Duplicate + Spike <sup>a</sup>		NA	NA	8.7	10.6
<b>Spike Check (10 mg/L NH<sub>3</sub>)</b>		NA	NA	8.2	10.0

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal [spike]} (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.0	10	NA	100
23	0.7	0.7	10.6	10	0.0	99

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: EA 4/4/19

Final Review: ES 4/22/19



**Appendix E**  
**Reference Toxicant Results**

*Ampelisca*

**CETIS Summary Report**

Report Date: 07 Mar-19 09:32 (p 1 of 1)  
 Test Code: 190301abra | 03-3451-3339

Acute Amphipod Survival Test							Nautilus Environmental (CA)					
Batch ID:	05-2445-5882	Test Type:	Survival (96h)	Analyst:								
Start Date:	01 Mar-19 14:40	Protocol:	ASTM E1367-99 (1999)	Diluent:	Diluted Natural Seawater							
Ending Date:	05 Mar-19 13:35	Species:	Ampelisca abdita	Brine:	Not Applicable							
Duration:	95h	Source:	Aquatic Research Organisms, NH	Age:	Size: 2-4mm							
Sample ID:	20-5735-9991	Code:	190301abra	Client:	Internal							
Sample Date:	01 Mar-19	Material:	Cadmium chloride	Project:								
Receive Date:	01 Mar-19	Source:	Reference Toxicant									
Sample Age:	15h	Station:	Cadium Chloride									
Comparison Summary												
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method					
02-4088-7192	96h Survival Rate	<0.25	0.25	NA	9.65%		Dunnett Multiple Comparison Test					
Point Estimate Summary												
Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method					
17-3909-6908	96h Survival Rate	EC50	0.3868	0.2633	0.5682		Trimmed Spearman-Kärber					
96h Survival Rate Summary												
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
0	Lab Control	4	0.975	0.8954	1	0.9	1	0.025	0.05	5.13%	0.0%	
0.25		4	0.6	0.4163	0.7837	0.5	0.7	0.05774	0.1155	19.25%	38.46%	
0.5		4	0.425	0.2727	0.5773	0.3	0.5	0.04787	0.09574	22.53%	56.41%	
1		4	0.125	0.04544	0.2046	0.1	0.2	0.025	0.05	40.0%	87.18%	
2		4	0.025	0	0.1046	0	0.1	0.025	0.05	200.0%	97.44%	
4		4	0	0	0	0	0	0	0		100.0%	
96h Survival Rate Detail												
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4							
0	Lab Control	1	1	1	0.9							
0.25		0.7	0.5	0.7	0.5							
0.5		0.3	0.5	0.5	0.4							
1		0.1	0.1	0.2	0.1							
2		0	0.1	0	0							
4		0	0	0	0							

ⓐ Q18 JCL 3/7/19

**CETIS Analytical Report**

Report Date: 07 Mar-19 09:32 (p 1 of 2)  
 Test Code: 190301abra | 03-3451-3339

Acute Amphipod Survival Test							Nautilus Environmental (CA)				
------------------------------	--	--	--	--	--	--	-----------------------------	--	--	--	--

Analysis ID: 02-4088-7192	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 07 Mar-19 9:31	Analysis: Parametric-Control vs Treatments	Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	9.65%	<0.25	0.25	NA	

Dunnett Multiple Comparison Test									
Control	vs	C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		0.25*	7.445	2.356	0.153	6	<0.0001	CDF	Significant Effect
		0.5*	10.21	2.356	0.153	6	<0.0001	CDF	Significant Effect
		1*	15.63	2.356	0.153	6	<0.0001	CDF	Significant Effect
		2*	18.06	2.356	0.153	6	<0.0001	CDF	Significant Effect

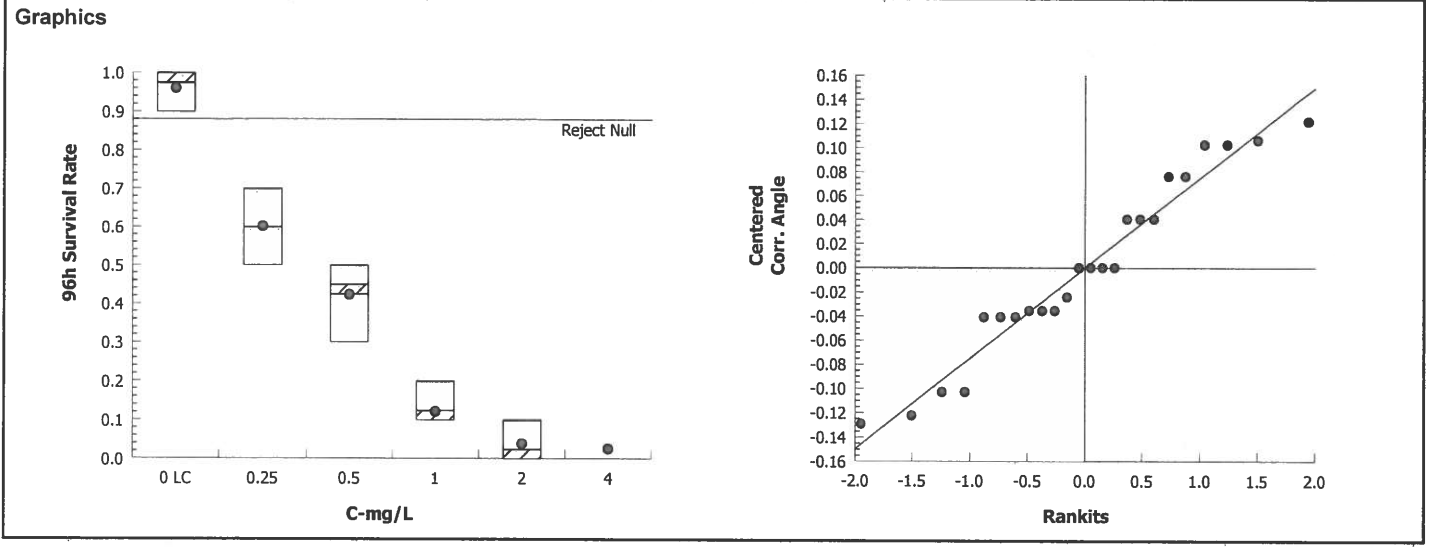
ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	3.41592	0.8539801	4	101.4	<0.0001	Significant Effect
Error	0.1262734	0.008418228	15			
Total	3.542194		19			

Distributional Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	0.8843	13.28	0.9268	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9186	0.866	0.0931	Normal Distribution

96h Survival Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	0.0%
0.25		4	0.6	0.4163	0.7837	0.6	0.5	0.7	0.05774	19.25%	38.46%
0.5		4	0.425	0.2727	0.5773	0.45	0.3	0.5	0.04787	22.53%	56.41%
1		4	0.125	0.04544	0.2046	0.1	0.1	0.2	0.025	40.0%	87.18%
2		4	0.025	0	0.1046	0	0	0.1	0.025	200.0%	97.44%
4		4	0	0	0	0	0	0	0		100.0%

Angular (Corrected) Transformed Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	0.0%
0.25		4	0.8883	0.6992	1.077	0.8883	0.7854	0.9912	0.0594	13.37%	35.22%
0.5		4	0.7088	0.5523	0.8652	0.7351	0.5796	0.7854	0.04916	13.87%	48.31%
1		4	0.3572	0.2443	0.4701	0.3218	0.3218	0.4636	0.03547	19.86%	73.95%
2		4	0.1995	0.06986	0.3292	0.1588	0.1588	0.3218	0.04074	40.84%	85.45%
4		4	0.1588	0.1588	0.1588	0.1588	0.1588	0.1588	0	0.0%	88.42%

Acute Amphipod Survival Test		Nautilus Environmental (CA)	
Analysis ID: 02-4088-7192	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7	
Analyzed: 07 Mar-19 9:31	Analysis: Parametric-Control vs Treatments	Official Results: Yes	



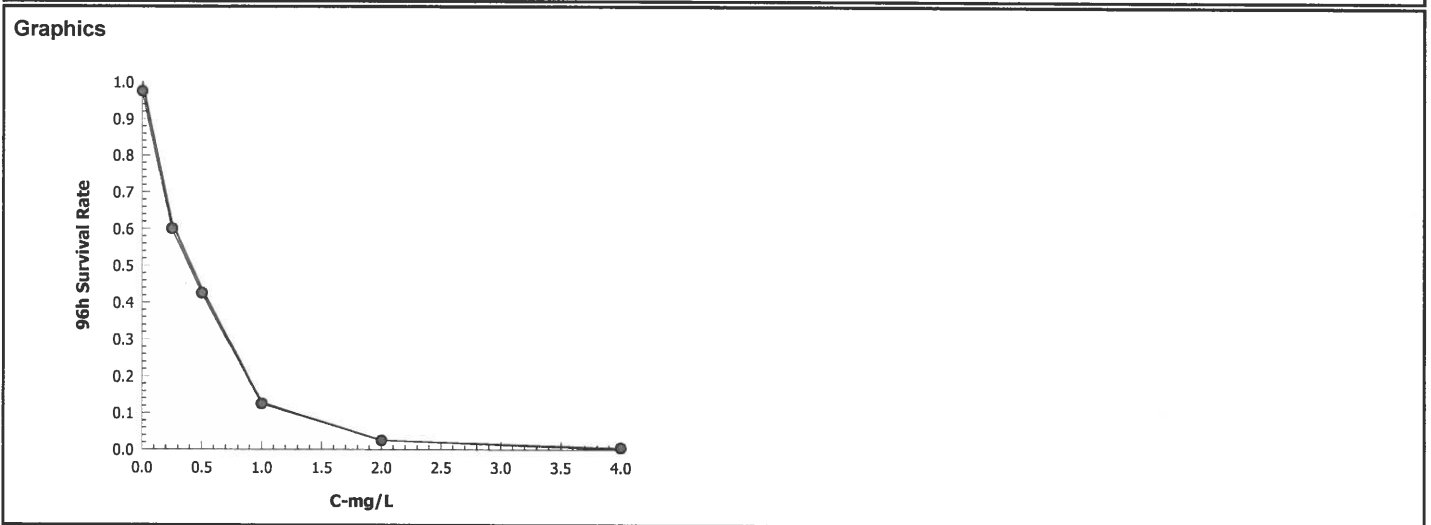
**CETIS Analytical Report**

Report Date: 07 Mar-19 09:32 (p 1 of 1)  
 Test Code: 190301abra | 03-3451-3339

Acute Amphipod Survival Test			Nautilus Environmental (CA)		
Analysis ID: 17-3909-6908	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7			
Analyzed: 07 Mar-19 9:31	Analysis: Trimmed Spearman-Kärber	Official Results: Yes			

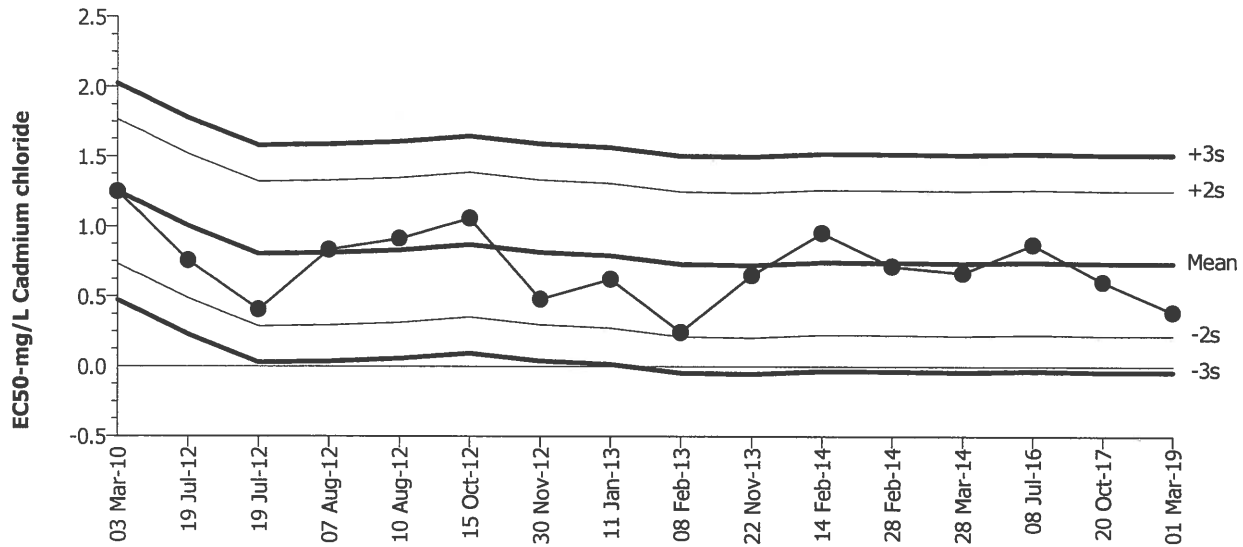
Trimmed Spearman-Kärber Estimates							
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0.025	38.46%	-0.4125	0.08352	0.3868	0.2633	0.5682

96h Survival Rate Summary			Calculated Variate(A/B)								
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	0.975	0.9	1	0.025	0.05	5.13%	0.0%	39	40
0.25		4	0.6	0.5	0.7	0.05774	0.1155	19.25%	38.46%	24	40
0.5		4	0.425	0.3	0.5	0.04787	0.09574	22.53%	56.41%	17	40
1		4	0.125	0.1	0.2	0.025	0.05	40.0%	87.18%	5	40
2		4	0.025	0	0.1	0.025	0.05	200.0%	97.44%	1	40
4		4	0	0	0	0	0		100.0%	0	40



<b>Acute Amphipod Survival Test</b>		<b>Nautilus Environmental (CA)</b>	
Test Type: Survival (96h)	Organism: Ampelisca abdita (Amphipod)	Material: Cadmium chloride	
Protocol: ASTM E1367-99 (1999)	Endpoint: 96h Survival Rate	Source: Reference Toxicant-REF	

**Acute Amphipod Survival Test**



Mean: 0.7344      Count: 15      -2s Warning Limit: 0.218      -3s Action Limit: -0.0402  
 Sigma: 0.2582      CV: 35.20%      +2s Warning Limit: 1.251      +3s Action Limit: 1.509

**Quality Control Data**

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2010	Mar	3	15:30	1.25	0.5153	1.996			07-5724-3236	06-4468-4449
2	2012	Jul	19	18:20	0.7558	0.02144	0.08304			12-7643-0557	08-4931-2236
3			19	18:30	0.4051	-0.3293	-1.275			02-8276-4382	00-7398-7319
4		Aug	7	17:00	0.8319	0.09755	0.3778			12-1585-1493	17-3963-0595
5			10	15:45	0.9128	0.1784	0.6911			11-5893-9604	11-2241-5585
6		Oct	15	14:15	1.058	0.3235	1.253			15-8471-0783	06-6319-8135
7		Nov	30	15:15	0.4798	-0.2546	-0.986			20-3386-7863	11-2233-7083
8	2013	Jan	11	15:40	0.6226	-0.1118	-0.433			04-7802-1286	06-7086-8887
9		Feb	8	14:30	0.2438	-0.4906	-1.9			10-0132-0688	11-6648-1752
10		Nov	22	16:00	0.6515	-0.08289	-0.321			19-3444-6218	07-2363-9639
11	2014	Feb	14	15:10	0.9522	0.2178	0.8434			18-9460-4808	13-4246-9357
12			28	13:00	0.715	-0.01939	-0.07508			12-9234-4868	05-9883-9375
13		Mar	28	16:50	0.6657	-0.06873	-0.2662			01-2364-3505	03-5001-3560
14	2016	Jul	8	14:05	0.8689	0.1345	0.5208			01-5765-3505	01-7702-6157
15	2017	Oct	20	16:25	0.6033	-0.1311	-0.5079			05-4737-9496	04-0516-3248
16	2019	Mar	1	14:40	0.3868	-0.3476	-1.346			03-3451-3339	17-3909-6908

96-hour Marine Acute Bioassay  
Static Conditions

Water Quality Measurements  
& Test Organism Survival

Client: Internal  
Sample ID: CdCl<sub>2</sub>  
Test No.: 190301abra

Test Species: A. abdita  
Start Date/Time: 3/1/2019 1440  
End Date/Time: 3/5/2019 1335

Tech Initials					
0	24	48	72	96	
YS	TN	DM	WP	AS	
TN	TN	DM	WP	DM	
Dilutions made by: <u>TN</u>					
High conc. made (mg/L): <u>4.0</u>					
Vol. Cd stock added (mL): <u>17.2</u>					
Final Volume (mL): <u>4000</u>					

Cd stock concentration (mg/L): 930

Concentration mg/L	Rand #	Number of Live Organisms					Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	24	10	10	10	10	10	30.0	30.0	29.8	29.8	30.1	19.5	20.7	21.1	20.6	19.9	7.6	6.7	7.0	7.1	6.8	8.01	7.94	7.98	7.96	7.96
	6	10	10	10	10	10																				
	2	10	10	10	10	10																				
	11	10	10	10	10	9																				
0.25	15	10	10	10	7	7	30.0	29.9	30.0	30.2	30.2	19.5	20.5	21.0	20.6	19.9	7.6	7.0	7.0	7.1	6.7	8.02	7.96	7.98	7.91	7.98
	8	10	10	10	7	5																				
	9	10	10	10	7	7																				
	21	10	10	10	7	5																				
0.5	14	10	10	10	4	13	30.0	29.9	29.9	29.9	30.2	19.5	20.7	21.1	20.7	19.9	7.6	7.1	7.0	6.9	6.6	8.02	7.97	7.98	7.94	7.97
	19	10	10	10	8	5																				
	10	10	10	10	5	5																				
	17	10	10	10	5	4																				
1.0	1	10	10	10	2	1	30.0	29.8	29.9	29.9	30.2	19.5	20.8	21.3	20.8	20.1	7.6	7.1	7.0	6.9	6.5	8.03	7.96	7.98	7.95	7.96
	5	10	10	9	2	1																				
	22	10	10	10	4	2																				
	20	10	10	9	1	1																				
2.0	3	10	10	10	0	-	30.0	29.9	29.9	30.1	30.1	19.5	20.5	21.1	20.7	20.0	7.6	7.2	6.9	6.9	6.6	8.03	7.98	7.99	7.97	7.98
	12	10	10	9	2	1																				
	4	10	10	9	0	-																				
	13	10	8	8	0	-																				
4.0	18	10	9	8	0	-	30.0	29.7	29.7	29.8	-	19.5	20.7	21.1	20.7	-	7.6	7.2	7.0	6.9	-	8.03	7.98	7.98	7.96	-
	16	10	9	9	0	-																				
	7	10	7	7	0	-																				
	23	10	5	5	0	-																				

Rand # QC: TN

Initial Count QC: YS

Initiated by: YS

Animal Source/Date Received: ARO 2/28/19

Size at Initiation: 2-4 mm

Comments: (A) 8/10/03/05/19

QC Check: AC 3/14/19

Final Review: KFP3/14/19



**CETIS Summary Report**

Report Date: 14 Mar-19 11:30 (p 1 of 1)  
 Test Code: 190301abraNH3 | 15-0560-7392

**Acute Amphipod Survival Test** **Nautilus Environmental (CA)**

<b>Batch ID:</b> 11-1652-4975	<b>Test Type:</b> Survival (96h)	<b>Analyst:</b>
<b>Start Date:</b> 01 Mar-19 14:45	<b>Protocol:</b> ASTM E1367-99 (1999)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 05 Mar-19 14:00	<b>Species:</b> Ampelisca abdita	<b>Brine:</b> Not Applicable
<b>Duration:</b> 95h	<b>Source:</b> Aquatic Research Organisms, NH	<b>Age:</b> Size: 2-4mm

<b>Sample ID:</b> 14-5217-7386	<b>Code:</b> 190301abraNH3	<b>Client:</b> Internal
<b>Sample Date:</b> 01 Mar-19	<b>Material:</b> Total Ammonia	<b>Project:</b>
<b>Receive Date:</b> 01 Mar-19	<b>Source:</b> Reference Toxicant	
<b>Sample Age:</b> 15h	<b>Station:</b> Ammonia	

**Comparison Summary**

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
19-1995-4132	96h Survival Rate	63.6	113.6	85	10.8%		Dunnett Multiple Comparison Test

**Point Estimate Summary**

Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
07-4241-9711	96h Survival Rate	EC50	92.73	84.21	102.1		Spearman-Kärber

**96h Survival Rate Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	0.975	0.8954	1	0.9	1	0.025	0.05	5.13%	0.0%
11.8		4	1	1	1	1	1	0	0	0.0%	-2.56%
27.3		4	0.95	0.8581	1	0.9	1	0.02887	0.05774	6.08%	2.56%
63.6		4	0.975	0.8954	1	0.9	1	0.025	0.05	5.13%	0.0%
113.6		4	0.2	0	0.425	0.1	0.4	0.07071	0.1414	70.71%	79.49%
221.6		4	0	0	0	0	0	0	0		100.0%

**96h Survival Rate Detail**

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Control	0.9	1	1	1
11.8		1	1	1	1
27.3		0.9	1	0.9	1
63.6		1	1	0.9	1
113.6		0.2	0.1	0.1	0.4
221.6		0	0	0	0

Ⓟ Q18 JCL 3/14/19

**CETIS Analytical Report**

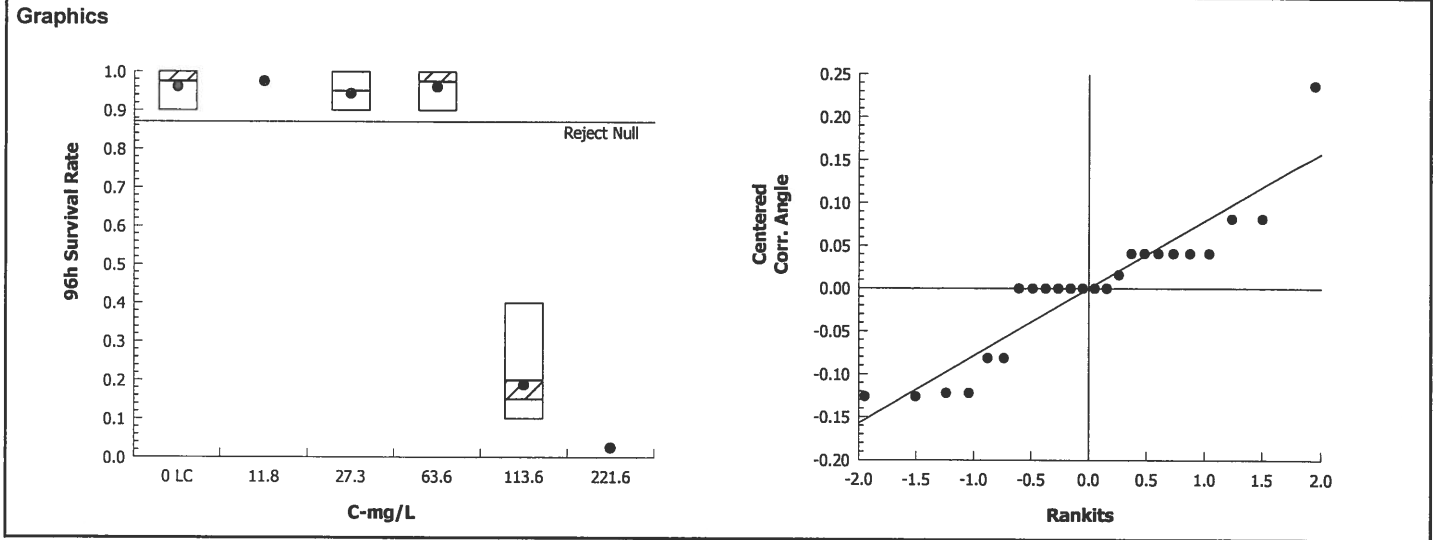
Report Date: 14 Mar-19 11:30 (p 1 of 2)  
 Test Code: 190301abraNH3 | 15-0560-7392

Acute Amphipod Survival Test										Nautilus Environmental (CA)	
Analysis ID: 19-1995-4132		Endpoint: 96h Survival Rate				CETIS Version: CETISv1.8.7					
Analyzed: 14 Mar-19 11:29		Analysis: Parametric-Control vs Treatments				Official Results: Yes					
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corrected)	NA	C > T	NA	NA	10.8%	63.6	113.6	85			
Dunnett Multiple Comparison Test											
Control	vs	C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)		
Lab Control		11.8	-0.5676	2.356	0.169	6	0.9318	CDF	Non-Significant Effect		
		27.3	0.5676	2.356	0.169	6	0.5744	CDF	Non-Significant Effect		
		63.6	0	2.356	0.169	6	0.8000	CDF	Non-Significant Effect		
		113.6*	12.86	2.356	0.169	6	<0.0001	CDF	Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)			
Between	2.741264		0.6853159		4	66.51	<0.0001	Significant Effect			
Error	0.154557		0.0103038		15						
Total	2.895821				19						
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Mod Levene Equality of Variance		1.797	4.893	0.1820	Equal Variances					
Variances	Levene Equality of Variance		3.606	4.893	0.0299	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.8886	0.866	0.0254	Normal Distribution					
96h Survival Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	0.0%
11.8		4	1	1	1	1	1	1	0	0.0%	-2.56%
27.3		4	0.95	0.8581	1	0.95	0.9	1	0.02887	6.08%	2.56%
63.6		4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	0.0%
113.6		4	0.2	0	0.425	0.15	0.1	0.4	0.07071	70.71%	79.49%
221.6		4	0	0	0	0	0	0	0		100.0%
Angular (Corrected) Transformed Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	0.0%
11.8		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	-2.97%
27.3		4	1.331	1.181	1.48	1.331	1.249	1.412	0.04705	7.07%	2.97%
63.6		4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	0.0%
113.6		4	0.448	0.1752	0.7207	0.3927	0.3218	0.6847	0.08571	38.27%	67.33%
221.6		4	0.1588	0.1588	0.1588	0.1588	0.1588	0.1588	0	0.0%	88.42%

# CETIS Analytical Report

Report Date: 14 Mar-19 11:30 (p 2 of 2)  
Test Code: 190301abraNH3 | 15-0560-7392

Acute Amphipod Survival Test		Nautilus Environmental (CA)	
Analysis ID: 19-1995-4132	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7	
Analyzed: 14 Mar-19 11:29	Analysis: Parametric-Control vs Treatments	Official Results: Yes	



# CETIS Analytical Report

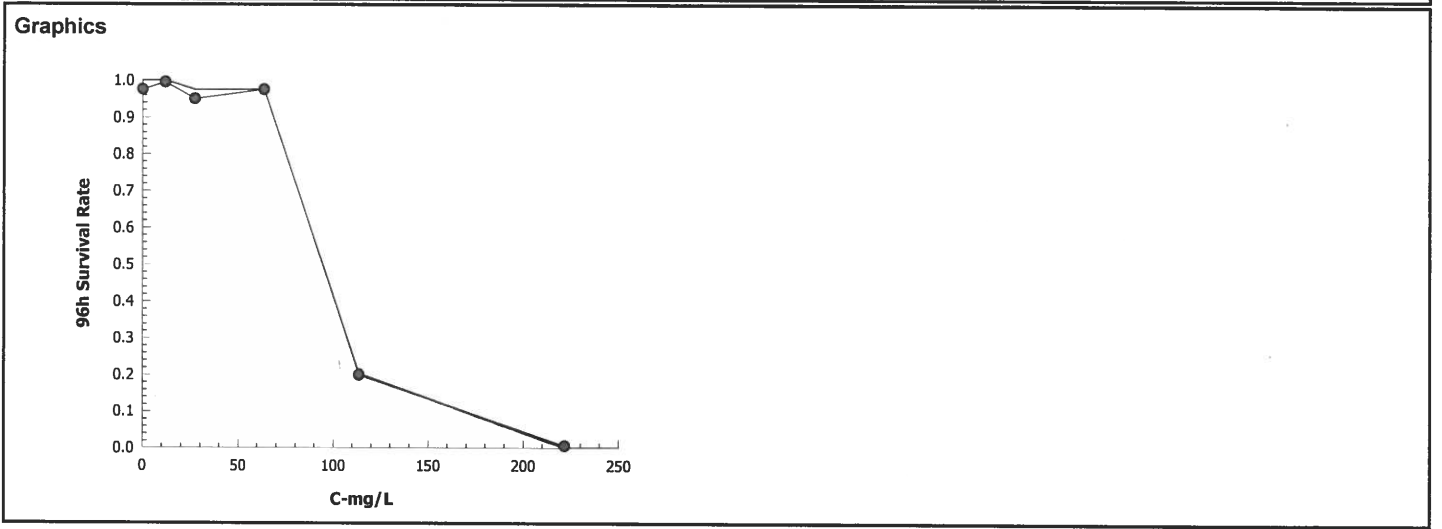
Report Date: 14 Mar-19 11:30 (p 1 of 1)  
 Test Code: 190301abraNH3 | 15-0560-7392

Acute Amphipod Survival Test Nautilus Environmental (CA)

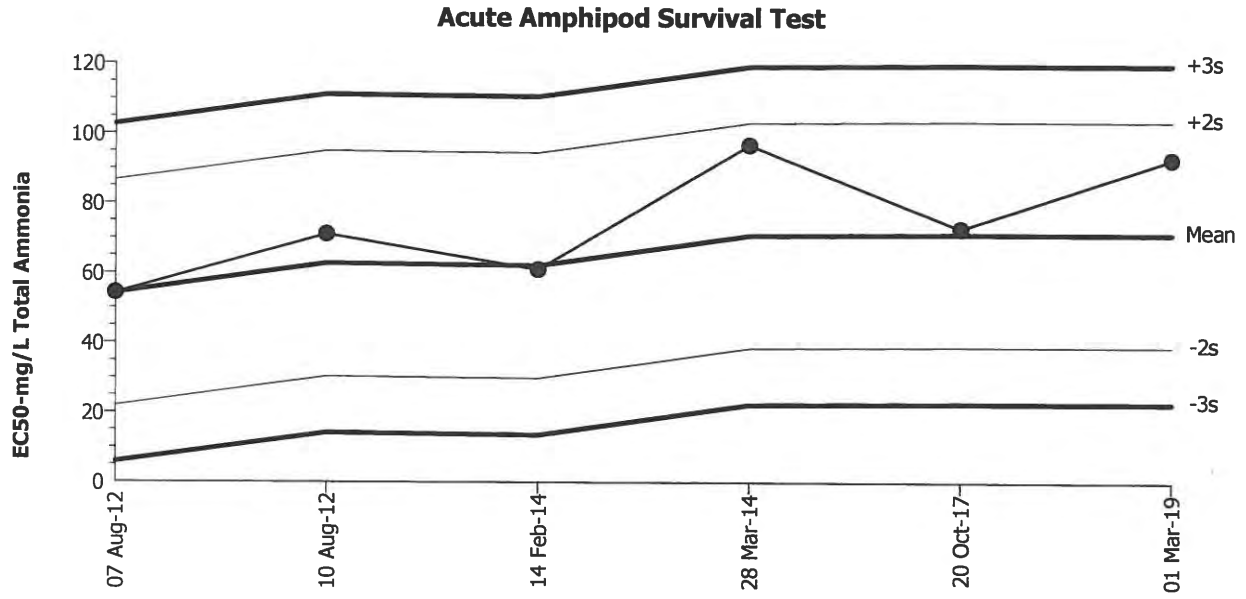
Analysis ID: 07-4241-9711 Endpoint: 96h Survival Rate CETIS Version: CETISv1.8.7  
 Analyzed: 14 Mar-19 11:29 Analysis: Untrimmed Spearman-Kärber Official Results: Yes

Spearman-Kärber Estimates							
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0.025	0.00%	1.967	0.02094	92.73	84.21	102.1

96h Survival Rate Summary			Calculated Variate(A/B)								
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	0.975	0.9	1	0.025	0.05	5.13%	0.0%	39	40
11.8		4	1	1	1	0	0	0.0%	-2.56%	40	40
27.3		4	0.95	0.9	1	0.02887	0.05773	6.08%	2.56%	38	40
63.6		4	0.975	0.9	1	0.025	0.05	5.13%	0.0%	39	40
113.6		4	0.2	0.1	0.4	0.07071	0.1414	70.71%	79.49%	8	40
221.6		4	0	0	0	0	0		100.0%	0	40



Acute Amphipod Survival Test		Nautilus Environmental (CA)	
Test Type: Survival (96h)	Organism: Ampelisca abdita (Amphipod)	Material: Total Ammonia	
Protocol: ASTM E1367-99 (1999)	Endpoint: 96h Survival Rate	Source: Reference Toxicant-REF	



Mean: 71.13      Count: 5      -2s Warning Limit: 38.81      -3s Action Limit: 22.65  
 Sigma: 16.16      CV: 22.70%      +2s Warning Limit: 103.5      +3s Action Limit: 119.6

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2012	Aug	7	17:00	54.3	-16.83	-1.042			10-4856-6533	02-5259-5412
2			10	16:10	71.06	-0.0749	-0.00464			07-1889-3736	15-9028-9408
3	2014	Feb	14	15:10	60.91	-10.22	-0.6321			06-6683-2829	14-1750-0762
4		Mar	28	16:40	96.7	25.57	1.583			20-9627-2169	01-1321-1902
5	2017	Oct	20	16:15	72.69	1.559	0.09648			13-0635-7278	02-7696-9474
6	2019	Mar	1	14:45	92.73	21.6	1.337			15-0560-7392	07-4241-9711

96-hour Marine Acute Bioassay  
Static Conditions

Water Quality Measurements  
& Test Organism Survival

Client: Internal  
Sample ID: NH<sub>3</sub>  
Test No.: 190301abraNH3

Test Species: A. abdita  
Start Date/Time: 3/1/2019 1445  
End Date/Time: 3/5/2019 1400

Tech Initials				
0	24	48	72	96
YS	TN	DM	WFP	AS
TN	TN	DM	WFP	DM
TN				
240				
46.3				
2000				

Counts:  
Readings:  
Dilutions made by:  
High conc. made (mg/L):  
Vol. NH3 stock added (mL):  
Final Volume (mL):

NH3 stock concentration (mg/L): 10,370

Concentration mg/L	Rand #	Number of Live Organisms					Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	24	10	10	10	10	9	30.0	29.9	30.2	31.3	31.5	19.5	20.3	20.8	19.9	19.4	7.6	6.5	7.1	7.4	6.8	8.01	7.90	7.90	7.97	7.97
	6	10	10	10	10	10																				
	2	10	10	10	10	10																				
	11	10	10	10	10	10																				
@ 7.5	15	10	10	10	10	10	30.0	29.9	29.9	30.0	30.3	19.5	20.5	20.9	20.4	19.8	7.6	6.9	7.1	7.1	6.7	7.95	7.89	7.92	7.96	7.97
11.8	8	10	10	10	10	10																				
	9	10	10	10	10	10																				
	21	10	10	10	10	10																				
@ 30	14	10	9	9	9	9	30.0	29.9	30.0	30.4	30.3	19.5	20.4	21.0	20.4	19.7	7.6	6.9	7.1	7.1	6.8	7.90	7.91	7.92	7.94	7.94
27.3	19	10	10	10	10	10																				
	10	10	10	10	10	9																				
	17	10	10	10	10	10																				
@ 80	1	10	10	10	10	10	30.0	30.0	30.0	30.3	30.3	19.5	20.4	20.9	20.4	19.8	7.6	7.0	7.1	7.1	6.7	7.82	7.88	7.89	7.93	7.95
63.6	5	10	10	10	10	10																				
	22	10	10	10	9	9																				
	20	10	10	10	10	10																				
@ 720	3	10	10	9	6	2	30.0	30.0	30.1	30.3	30.4	19.5	20.3	20.9	20.2	19.7	7.6	7.1	6.8	7.1	6.7	7.70	7.83	7.86	7.88	7.90
113.6	12	10	10	10	4	1																				
	4	10	9	9	4	1																				
	13	10	10	10	9	4																				
@ 240	18	10	1	1	0	-	30.4	30.3	30.4	30.7	-	19.5	20.2	20.9	20.3	-	7.6	7.1	7.0	7.0	-	7.54	7.73	7.77	7.80	-
221.6	16	10	3	3	0	-																				
	7	10	1	1	0	-																				
	23	10	1	1	0	-																				

Rand # QC: TN

Initial Count QC: EH

Initiated by: YS

Animal Source/Date Received: ARO 2/28/19

Size at Initiation: 2-4 mm

Comments: @ concentrations changed from nominal to measured values.

QC Check: AC 3/14/19

Final Review: WFP 3/14/19

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Internal  
Project: Ammonia Reference Toxicant  
Test Type: *Ampelisca* 96-hour

DI Blank: 0.0  
SW Blank: 0.0

Test Start Date: 3/1/2019

Analyst: SG  
Analysis Date: 3/6/19

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.8	10.7
Lab Control	98	3/1/2019	0	0.0	<0.5
15	99	3/1/2019	0	9.7	11.8
30	100	3/1/2019	0	22.4	27.3
60	101	3/1/2019	0	26.1	31.8
120	102	3/1/2019	0	23.3	28.4
240	103	3/1/2019	0	22.7	27.7
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.8	10.7
Sample Duplicate <sup>a</sup>	100	NA	NA	23.7	28.9
Sample Duplicate + Spike <sup>a</sup>		NA	NA	30.8	37.6
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.8	10.7

→ (x2) = 63.6  
→ (x4) = 113.3  
→ (x8) = 221.6

Relative Percent Difference (RPD) =  $\frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$

Acceptable Range: 0-20%

Percent Recovery =  $\frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.7	10	NA	107
100	27.3	28.9	37.6	10	5.7	103

Comments: Ⓐ Q18 SG 3/6/19

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: AC 3/14/19

Final Review: VFP 3/14/19

*Neanthes*



**CETIS Summary Report**

Report Date: 07 Mar-19 09:06 (p 1 of 1)  
 Test Code: 190301nara | 09-4495-1132

**Neanthes 96-h Survival Test** **Nautilus Environmental (CA)**

<b>Batch ID:</b> 04-3046-1592	<b>Test Type:</b> Survival	<b>Analyst:</b>
<b>Start Date:</b> 01 Mar-19 15:00	<b>Protocol:</b> ASTM E1611-00 (2000)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 05 Mar-19 14:15	<b>Species:</b> Neanthes arenaceodentata	<b>Brine:</b> Not Applicable
<b>Duration:</b> 95h	<b>Source:</b> Aquatic Research Organisms, NH	<b>Age:</b> 2-3 weeks post emergence

<b>Sample ID:</b> 05-2036-7396	<b>Code:</b> 190301nara	<b>Client:</b> Internal
<b>Sample Date:</b> 01 Mar-19	<b>Material:</b> Cadmium chloride	<b>Project:</b>
<b>Receive Date:</b> 01 Mar-19	<b>Source:</b> Reference Toxicant	
<b>Sample Age:</b> 15h	<b>Station:</b> Cadmium chloride	

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
18-7036-1045	Survival Rate	5	10	7.071	9.13%		Steel Many-One Rank Sum Test

Point Estimate Summary							
Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
21-3781-0104	Survival Rate	LC50	10.35	8.873	12.08		Spearman-Kärber

Survival Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
2.5		4	1	1	1	1	1	0	0	0.0%	0.0%
5		4	1	1	1	1	1	0	0	0.0%	0.0%
10		4	0.55	0.3909	0.7091	0.4	0.6	0.05	0.1	18.18%	45.0%
20		4	0	0	0	0	0	0	0		100.0%
40		4	0	0	0	0	0	0	0		100.0%

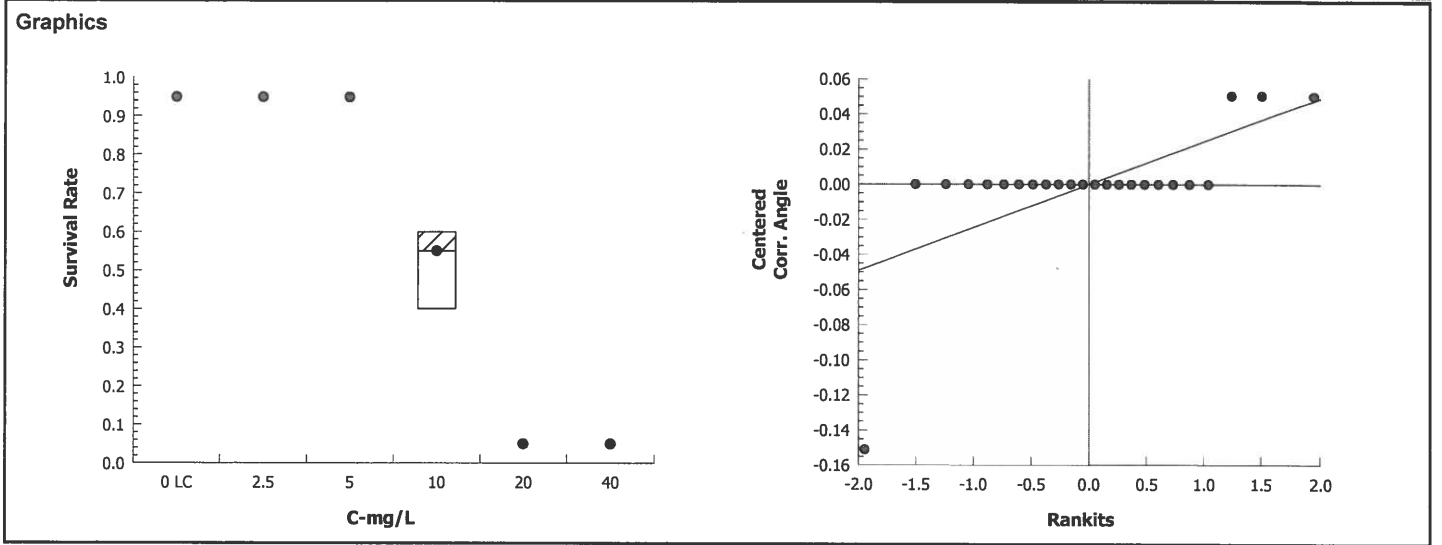
Survival Rate Detail					
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Control	1	1	1	1
2.5		1	1	1	1
5		1	1	1	1
10		0.6	0.6	0.4	0.6
20		0	0	0	0
40		0	0	0	0

**CETIS Analytical Report**

Report Date: 07 Mar-19 09:06 (p 1 of 2)  
 Test Code: 190301nara | 09-4495-1132

Neanthes 96-h Survival Test										Nautilus Environmental (CA)	
Analysis ID: 18-7036-1045		Endpoint: Survival Rate				CETIS Version: CETISv1.8.7					
Analyzed: 07 Mar-19 9:04		Analysis: Nonparametric-Control vs Treatments				Official Results: Yes					
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corrected)	NA	C > T	NA	NA	9.13%	5	10	7.071			
Steel Many-One Rank Sum Test											
Control	vs	C-mg/L	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)		
Lab Control		2.5	18	10	1	6	0.7500	Asymp	Non-Significant Effect		
		5	18	10	1	6	0.7500	Asymp	Non-Significant Effect		
		10*	10	10	0	6	0.0276	Asymp	Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)			
Between	0.7789091		0.2596364		3	102.5	<0.0001	Significant Effect			
Error	0.03040876		0.002534063		12						
Total	0.8093179				15						
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Mod Levene Equality of Variance		1	5.953	0.4262	Equal Variances					
Variances	Levene Equality of Variance		9	5.953	0.0021	Unequal Variances					
Distribution	Shapiro-Wilk W Normality		0.5647	0.8408	<0.0001	Non-normal Distribution					
Survival Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	1	0	0.0%	0.0%
2.5		4	1	1	1	1	1	1	0	0.0%	0.0%
5		4	1	1	1	1	1	1	0	0.0%	0.0%
10		4	0.55	0.3909	0.7091	0.6	0.4	0.6	0.05	18.18%	45.0%
20		4	0	0	0	0	0	0	0		100.0%
40		4	0	0	0	0	0	0	0		100.0%
Angular (Corrected) Transformed Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
2.5		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
5		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
10		4	0.8357	0.6755	0.9959	0.8861	0.6847	0.8861	0.05034	12.05%	37.88%
20		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	83.24%
40		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	83.24%

Neanthes 96-h Survival Test		Nautilus Environmental (CA)	
Analysis ID: 18-7036-1045	Endpoint: Survival Rate	CETIS Version: CETISv1.8.7	
Analyzed: 07 Mar-19 9:04	Analysis: Nonparametric-Control vs Treatments	Official Results: Yes	



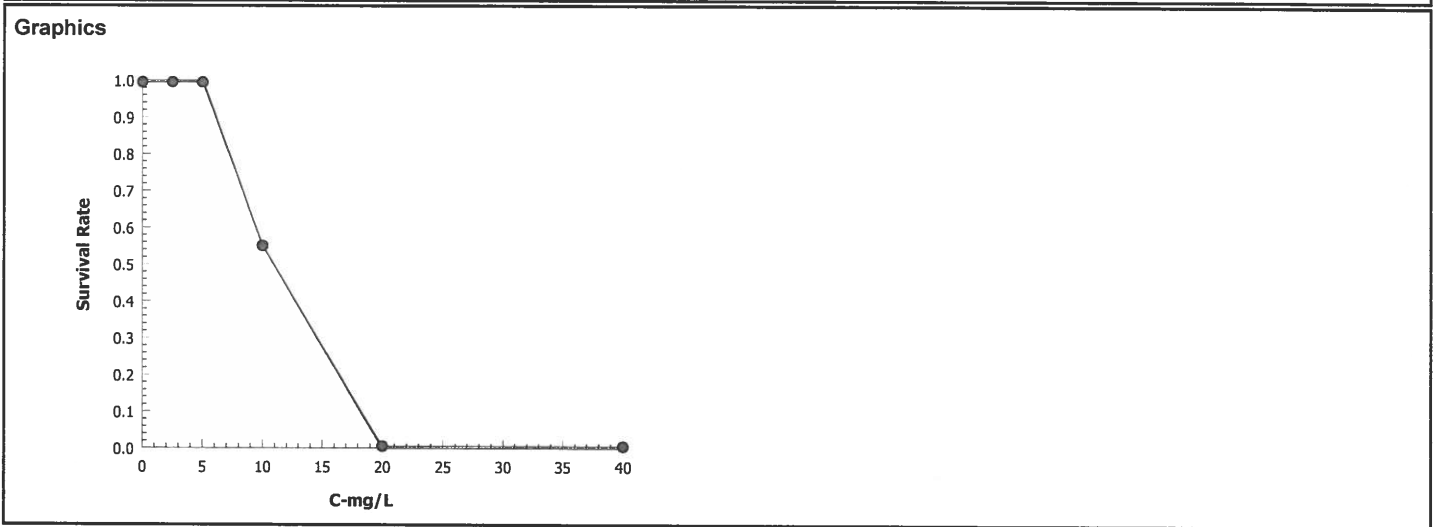
**CETIS Analytical Report**

Report Date: 07 Mar-19 09:06 (p 1 of 1)  
 Test Code: 190301nara | 09-4495-1132

Neanthes 96-h Survival Test			Nautilus Environmental (CA)		
Analysis ID: 21-3781-0104	Endpoint: Survival Rate	CETIS Version: CETISv1.8.7			
Analyzed: 07 Mar-19 9:04	Analysis: Untrimmed Spearman-Kärber	Official Results: Yes			

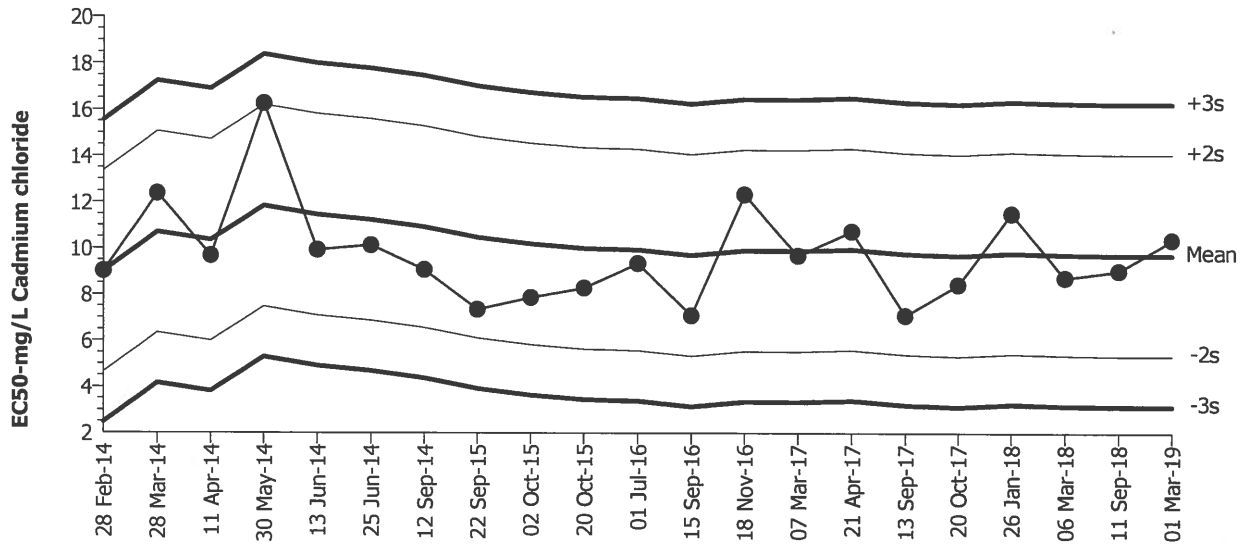
Spearman-Kärber Estimates							
Threshold Option	Threshold	Trim	Mu	Sigma	LC50	95% LCL	95% UCL
Control Threshold	0	0.00%	1.015	0.03349	10.35	8.873	12.08

Survival Rate Summary			Calculated Variate(A/B)								
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	1	1	1	0	0	0.0%	0.0%	20	20
2.5		4	1	1	1	0	0	0.0%	0.0%	20	20
5		4	1	1	1	0	0	0.0%	0.0%	20	20
10		4	0.55	0.4	0.6	0.05	0.1	18.18%	45.0%	11	20
20		4	0	0	0	0	0		100.0%	0	20
40		4	0	0	0	0	0		100.0%	0	20



Neanthes 96-h Survival Test		Nautilus Environmental (CA)	
Test Type: Survival	Organism: Neanthes arenaceodentata (Polycha)	Material: Cadmium chloride	
Protocol: ASTM E1611-00 (2000)	Endpoint: Survival Rate	Source: Reference Toxicant-REF	

Neanthes 96-h Survival Test



Mean: 9.68      Count: 20      -2s Warning Limit: 5.32      -3s Action Limit: 3.14  
 Sigma: 2.18      CV: 22.50%      +2s Warning Limit: 14.04      +3s Action Limit: 16.22

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2014	Feb	28	11:40	9.013	-0.6675	-0.3062			18-3416-7501	05-9505-9418
2		Mar	28	17:30	12.37	2.693	1.235			11-4554-8066	04-9287-5802
3		Apr	11	13:30	9.659	-0.02064	-0.00947			19-5430-1817	03-4444-9271
4		May	30	11:50	16.25	6.565	3.011	(+)	(+)	13-1191-8715	03-5109-4595
5		Jun	13	16:30	9.921	0.2412	0.1106			01-2316-9520	05-5854-9451
6			25	13:50	10.12	0.4402	0.2019			16-4307-9977	03-7926-5268
7		Sep	12	16:36	9.05	-0.6304	-0.2892			21-1201-0133	14-2688-4524
8	2015		22	13:20	7.334	-2.346	-1.076			07-6292-4493	08-7700-7971
9		Oct	2	15:25	7.846	-1.834	-0.8414			18-5002-0283	08-3181-1388
10			20	15:50	8.265	-1.415	-0.6493			06-4122-7603	04-4870-4123
11	2016	Jul	1	12:25	9.33	-0.3497	-0.1604			06-7168-8696	02-0891-8017
12		Sep	15	12:45	7.071	-2.609	-1.197			12-6456-8152	03-4194-6241
13		Nov	18	13:50	12.31	2.631	1.207			20-3058-1787	10-5446-8915
14	2017	Mar	7	15:05	9.659	-0.02064	-0.00947			13-1483-5189	04-6381-1478
15		Apr	21	11:50	10.72	1.038	0.476			05-9100-7012	17-2733-4925
16		Sep	13	14:25	7.071	-2.609	-1.197			03-7587-5857	09-4288-6161
17		Oct	20	10:40	8.409	-1.271	-0.583			14-4133-1178	02-0622-1122
18	2018	Jan	26	14:30	11.49	1.807	0.8289			05-1130-2847	03-6717-5563
19		Mar	6	15:50	8.706	-0.9745	-0.447			01-8043-0357	16-3999-8632
20		Sep	11	13:05	9.013	-0.6675	-0.3062			04-5831-9780	06-0589-0437
21	2019	Mar	1	15:00	10.35	0.6727	0.3086			09-4495-1132	21-3781-0104

**Marine Acute Bioassay  
Static Conditions**

**Water Quality Measurements  
& Test Organism Survival**

Client: Internal  
 Sample ID: CdCl<sub>2</sub>  
 Test No.: 190301nava

Test Species: N. arenaceodentata  
 Start Date/Time: 3/1/2019 1500  
 End Date/Time: 3/5/2019 1415

Tech Initials				
0	24	48	72	96
TN				AS
TN	TN	AS ONC DYM		WTPDM
TN				
40				
172				
400				

Counts:  
 Readings:  
 Dilutions made by:  
 High conc. made (mg/L):  
 Vol. Cd stock added (mL):  
 Final Volume (mL):

Cd stock concentration (mg/L): 930

Concentration mg/L	Rand #	Number of Live Organisms		Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	3	5	5	30.1	30.0	30.0	30.0	30.0	19.7	19.1	19.5	19.9	19.2	7.6	6.9	7.4	7.3	6.8	8.02	7.96	7.95	7.99	8.00
	4	5	5																				
	2	5	5																				
	9	5	5																				
2.5	22	5	5	30.0	30.0	30.0	30.2	30.2	19.6	18.9	19.5	19.3	19.2	7.6	7.1	7.4	7.2	6.8	8.02	7.97	7.96	7.99	8.00
	23	5	5																				
	19	5	5																				
	15	5	5																				
5	1	5	5	29.9	29.9	30.0	30.0	30.0	19.6	18.9	19.3	19.9	19.5	7.6	7.1	7.3	7.2	6.8	8.02	7.97	7.97	7.98	7.99
	18	5	5																				
	24	5	5																				
	16	5	5																				
10	6	5	3	29.8	29.7	29.7	29.8	29.8	19.5	18.8	19.4	19.4	19.3	7.6	7.2	7.5	7.2	6.8	8.02	7.98	7.99	7.99	8.00
	20	5	3																				
	5	5	2																				
	12	5	3																				
20	10	5	0	29.5	29.4	29.5	29.7	29.6	19.4	18.6	19.2	19.1	19.1	7.6	7.3	7.5	7.2	6.7	8.02	7.98	7.98	7.96	7.95
	7	5	0																				
	13	5	0																				
	17	5	0																				
40	8	5	0	29.1	28.7	28.9	28.9	29.0	19.2	18.8	19.4	19.4	19.4	7.7	7.4	7.5	7.1	6.7	8.01	7.99	7.99	7.96	7.95
	11	5	0																				
	14	5	0																				
	21	5	0																				

Rand # QC: TN  
 Initial Count QC'd by: TN OBO SBS  
 Initiated by: TN

Animal Source/Date Received: ARO 2/27/19      Age at Initiation: 2-3 WEEKS POST EMERGENCE

Comments: (A) TN 0193/1/19

QC Check: AC 3/14/19      Final Review: KFP 3/14/19

*Mytilus*

**CETIS Summary Report**

**Report Date:** 19 Mar-19 11:26 (p 1 of 3)  
**Test Code:** 190306msdv | 11-4050-7104

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Batch ID:</b> 15-6996-8226	<b>Test Type:</b> Development-Survival	<b>Analyst:</b>			
<b>Start Date:</b> 06 Mar-19 14:40	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Diluted Natural Seawater			
<b>Ending Date:</b> 08 Mar-19 14:20	<b>Species:</b> Mytilus galloprovincialis	<b>Brine:</b> Not Applicable			
<b>Duration:</b> 48h	<b>Source:</b> Taylor Shellfish	<b>Age:</b>			
<b>Sample ID:</b> 09-3831-4782	<b>Code:</b> 190306msdv	<b>Client:</b> Internal			
<b>Sample Date:</b> 06 Mar-19	<b>Material:</b> Copper chloride	<b>Project:</b>			
<b>Receive Date:</b> 06 Mar-19	<b>Source:</b> Reference Toxicant				
<b>Sample Age:</b> 15h	<b>Station:</b> Copper Chloride				

<b>Comparison Summary</b>							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
11-7636-1948	Combined Development Ra	5	10	7.071	7.93%		Dunnett Multiple Comparison Test
03-8434-3999	Development Rate	5	10	7.071	3.02%		Dunnett Multiple Comparison Test
07-5889-9658	Survival Rate	20	40	28.28	9.38%		Dunnett Multiple Comparison Test

<b>Point Estimate Summary</b>							
Analysis ID	Endpoint	Level	µg/L	95% LCL	95% UCL	TU	Method
03-7884-0450	Combined Development Ra	EC25	6.217	5.95	6.38		Linear Interpolation (ICPIN)
		EC50	7.555	7.365	7.707		
19-8242-5220	Development Rate	EC25	6.183	6.032	6.342		Linear Interpolation (ICPIN)
		EC50	7.531	7.404	7.666		
15-7196-8133	Survival Rate	EC25	23.8	22.35	24.88		Linear Interpolation (ICPIN)
		EC50	29.2	28.24	29.92		

<b>Test Acceptability</b>						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
03-8434-3999	Development Rate	Control Resp	0.9707	0.9 - NL	Yes	Passes Acceptability Criteria
19-8242-5220	Development Rate	Control Resp	0.9707	0.9 - NL	Yes	Passes Acceptability Criteria
07-5889-9658	Survival Rate	Control Resp	0.9389	0.5 - NL	Yes	Passes Acceptability Criteria
15-7196-8133	Survival Rate	Control Resp	0.9389	0.5 - NL	Yes	Passes Acceptability Criteria
11-7636-1948	Combined Development Ra	PMSD	0.07926	NL - 0.25	No	Passes Acceptability Criteria



**CETIS Summary Report**

Report Date: 19 Mar-19 11:26 (p 2 of 3)  
 Test Code: 190306msdv | 11-4050-7104

Bivalve Larval Survival and Development Test										Nautilus Environmental (CA)	
<b>Combined Development Rate Summary</b>											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9113	0.8347	0.9879	0.8408	0.9716	0.02757	0.06166	6.77%	0.0%
2.5		5	0.939	0.8612	1	0.828	0.977	0.02803	0.06267	6.67%	-3.05%
5		5	0.9067	0.8687	0.9447	0.8662	0.9503	0.01369	0.03061	3.38%	0.5%
10		5	0.04092	0.009914	0.07193	0.02235	0.0828	0.01117	0.02497	61.03%	95.51%
20		5	0	0	0	0	0	0	0		100.0%
40		5	0	0	0	0	0	0	0		100.0%
<b>Development Rate Summary</b>											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9707	0.9637	0.9777	0.9635	0.9781	0.002518	0.005631	0.58%	0.0%
2.5		5	0.9684	0.9535	0.9832	0.9553	0.9805	0.005345	0.01195	1.23%	0.24%
5		5	0.9421	0.9042	0.9801	0.9017	0.986	0.01367	0.03057	3.25%	2.94%
10		5	0.04259	0.008522	0.07666	0.02235	0.08844	0.01227	0.02744	64.42%	95.61%
20		5	0	0	0	0	0	0	0		100.0%
40		5	0	0	0	0	0	0	0		100.0%
<b>Survival Rate Summary</b>											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9389	0.8595	1	0.8726	1	0.0286	0.06395	6.81%	0.0%
2.5		5	0.9694	0.8971	1	0.8662	1	0.02606	0.05827	6.01%	-3.26%
5		5	0.9631	0.9123	1	0.9108	1	0.01828	0.04088	4.25%	-2.58%
10		5	0.9758	0.9345	1	0.9363	1	0.01486	0.03322	3.4%	-3.94%
20		5	0.8904	0.8244	0.9565	0.8344	0.9618	0.02378	0.05318	5.97%	5.16%
40		5	0	0	0	0	0	0	0		100.0%
<b>Combined Development Rate Detail</b>											
C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	0.9716	0.9236	0.8535	0.967	0.8408					
2.5		0.828	0.9618	0.977	0.9553	0.9731					
5		0.9017	0.8981	0.9503	0.9172	0.8662					
10		0.02235	0.04459	0.0828	0.02439	0.03049					
20		0	0	0	0	0					
40		0	0	0	0	0					
<b>Development Rate Detail</b>											
C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	0.9716	0.9732	0.9781	0.967	0.9635					
2.5		0.9559	0.9805	0.977	0.9553	0.9731					
5		0.9017	0.986	0.9503	0.9412	0.9315					
10		0.02235	0.0473	0.08844	0.02439	0.03049					
20		0	0	0	0	0					
40		0	0	0	0	0					
<b>Survival Rate Detail</b>											
C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	1	0.949	0.8726	1	0.8726					
2.5		0.8662	0.9809	1	1	1					
5		1	0.9108	1	0.9745	0.9299					
10		1	0.9427	0.9363	1	1					
20		0.9045	0.8344	0.9108	0.9618	0.8408					
40		0	0	0	0	0					

**CETIS Summary Report**

Report Date: 19 Mar-19 11:26 (p 3 of 3)  
 Test Code: 190306msdv | 11-4050-7104

Bivalve Larval Survival and Development Test						Nautilus Environmental (CA)
<b>Combined Development Rate Binomials</b>						
C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Control	171/176	145/157	134/157	176/182	132/157
2.5		130/157	151/157	170/174	171/179	181/186
5		156/173	141/157	153/161	144/157	136/157
10		4/179	7/157	13/157	4/164	5/164
20		0/157	0/157	0/157	0/157	0/157
40		0/157	0/157	0/157	0/157	0/157
<b>Development Rate Binomials</b>						
C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Control	171/176	145/149	134/137	176/182	132/137
2.5		130/136	151/154	170/174	171/179	181/186
5		156/173	141/143	153/161	144/153	136/146
10		4/179	7/148	13/147	4/164	5/164
20		0/142	0/131	0/143	0/151	0/132
40		0/1	0/1	0/1	0/1	0/1
<b>Survival Rate Binomials</b>						
C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Control	157/157	149/157	137/157	157/157	137/157
2.5		136/157	154/157	157/157	157/157	157/157
5		157/157	143/157	157/157	153/157	146/157
10		157/157	148/157	147/157	157/157	157/157
20		142/157	131/157	143/157	151/157	132/157
40		0/157	0/157	0/157	0/157	0/157

**CETIS Analytical Report**

Report Date: 19 Mar-19 11:26 (p 1 of 4)  
 Test Code: 190306msdv | 11-4050-7104

**Bivalve Larval Survival and Development Test** **Nautilus Environmental (CA)**

Analysis ID: 11-7636-1948      Endpoint: Combined Development Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 19 Mar-19 10:57      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	7.93%	5	10	7.071	

**Dunnnett Multiple Comparison Test**

Control	vs C-µg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control	2.5	-0.9955	2.227	0.126	8	0.9616	CDF	Non-Significant Effect
	5	0.3527	2.227	0.126	8	0.6092	CDF	Non-Significant Effect
	10*	19.24	2.227	0.126	8	<0.0001	CDF	Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	4.540146	1.513382	3	189.9	<0.0001	Significant Effect
Error	0.1275021	0.007968881	16			
Total	4.667648		19			

**Distributional Tests**

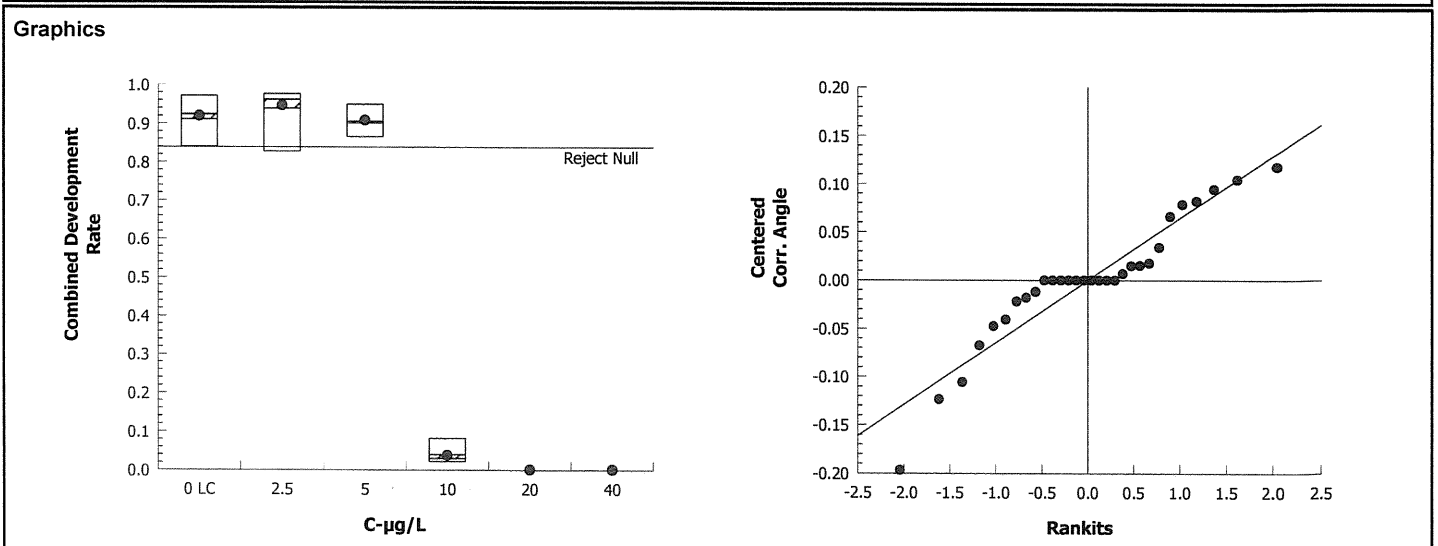
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	3.242	11.34	0.3558	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9582	0.866	0.5084	Normal Distribution

**Combined Development Rate Summary**

C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9113	0.8347	0.9879	0.9236	0.8408	0.9716	0.02757	6.77%	0.0%
2.5		5	0.939	0.8612	1	0.9618	0.828	0.977	0.02803	6.67%	-3.05%
5		5	0.9067	0.8687	0.9447	0.9017	0.8662	0.9503	0.01369	3.38%	0.5%
10		5	0.04092	0.009914	0.07193	0.03049	0.02235	0.0828	0.01117	61.03%	95.51%
20		5	0	0	0	0	0	0	0		100.0%
40		5	0	0	0	0	0	0	0		100.0%

**Angular (Corrected) Transformed Summary**

C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.284	1.143	1.424	1.291	1.16	1.401	0.05061	8.82%	0.0%
2.5		5	1.34	1.2	1.48	1.374	1.143	1.419	0.05038	8.41%	-4.38%
5		5	1.264	1.196	1.332	1.252	1.196	1.346	0.02449	4.33%	1.55%
10		5	0.1974	0.1252	0.2696	0.1755	0.15	0.2919	0.02601	29.46%	84.62%
20		5	0.03991	0.03991	0.03992	0.03991	0.03991	0.03991	0	0.0%	96.89%
40		5	0.03991	0.03991	0.03992	0.03991	0.03991	0.03991	0	0.0%	96.89%



# CETIS Analytical Report

Report Date: 19 Mar-19 11:26 (p 2 of 4)  
 Test Code: 190306msdv | 11-4050-7104

**Bivalve Larval Survival and Development Test** **Nautilus Environmental (CA)**

Analysis ID: 03-8434-3999      Endpoint: Development Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 19 Mar-19 10:57      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	3.02%	5	10	7.071	

**Dunnett Multiple Comparison Test**

Control	vs C-µg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control	2.5	0.1479	2.227	0.073	8	0.6942	CDF	Non-Significant Effect
	5	1.916	2.227	0.073	8	0.0870	CDF	Non-Significant Effect
	10*	36.49	2.227	0.073	8	<0.0001	CDF	Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	5.198708	1.732903	3	642.4	<0.0001	Significant Effect
Error	0.04316201	0.002697626	16			
Total	5.241869		19			

**Distributional Tests**

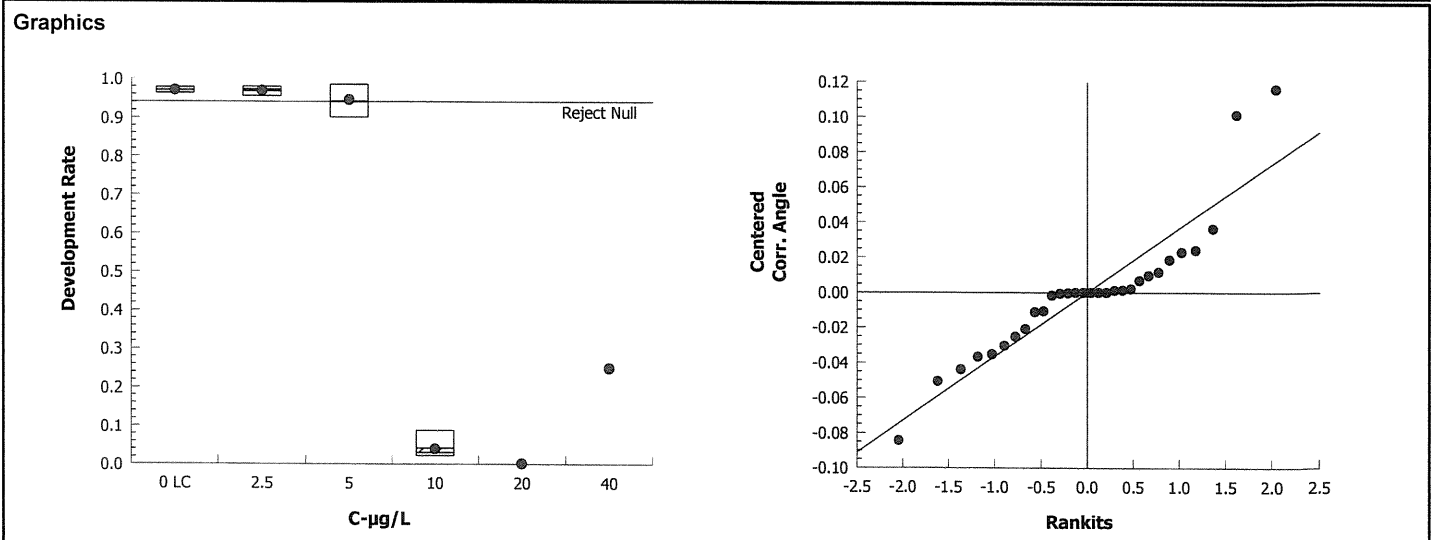
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	7.344	11.34	0.0617	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9272	0.866	0.1366	Normal Distribution

**Development Rate Summary**

C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9707	0.9637	0.9777	0.9716	0.9635	0.9781	0.002518	0.58%	0.0%
2.5		5	0.9684	0.9535	0.9832	0.9731	0.9553	0.9805	0.005345	1.23%	0.24%
5		5	0.9421	0.9042	0.9801	0.9412	0.9017	0.986	0.01367	3.25%	2.94%
10		5	0.04259	0.008522	0.07666	0.03049	0.02235	0.08844	0.01227	64.42%	95.61%
20		5	0	0	0	0	0	0	0		100.0%
40		5	0	0	0	0	0	0	0		100.0%

**Angular (Corrected) Transformed Summary**

C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.399	1.378	1.42	1.401	1.379	1.422	0.007525	1.2%	0.0%
2.5		5	1.394	1.352	1.437	1.406	1.358	1.431	0.01521	2.44%	0.35%
5		5	1.336	1.245	1.428	1.326	1.252	1.452	0.03293	5.51%	4.5%
10		5	0.2007	0.1229	0.2786	0.1755	0.15	0.3019	0.02804	31.23%	85.66%
20		5	0.04235	0.04078	0.04391	0.04197	0.0407	0.0437	0.000564	2.98%	96.97%
40		5	0.5236	0.5234	0.5238	0.5236	0.5236	0.5236	0	0.0%	62.58%



**CETIS Analytical Report**

Report Date: 19 Mar-19 11:26 (p 3 of 4)  
 Test Code: 190306msdv | 11-4050-7104

Bivalve Larval Survival and Development Test										Nautilus Environmental (CA)	
Analysis ID: 07-5889-9658		Endpoint: Survival Rate			CETIS Version: CETISv1.8.7						
Analyzed: 19 Mar-19 10:57		Analysis: Parametric-Control vs Treatments			Official Results: Yes						
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corrected)	NA	C > T	NA	NA	9.38%	20	40	28.28			

Dunnett Multiple Comparison Test									
Control	vs	C-µg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		2.5	-0.9862	2.305	0.189	8	0.9751	CDF	Non-Significant Effect
		5	-0.5513	2.305	0.189	8	0.9301	CDF	Non-Significant Effect
		10	-1.026	2.305	0.189	8	0.9775	CDF	Non-Significant Effect
		20	1.478	2.305	0.189	8	0.2056	CDF	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.1439976	0.03599941	4	2.139	0.1135	Non-Significant Effect
Error	0.3366452	0.01683226	20			
Total	0.4806428		24			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Bartlett Equality of Variance	1.395	13.28	0.8451	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.933	0.8877	0.1020	Normal Distribution	

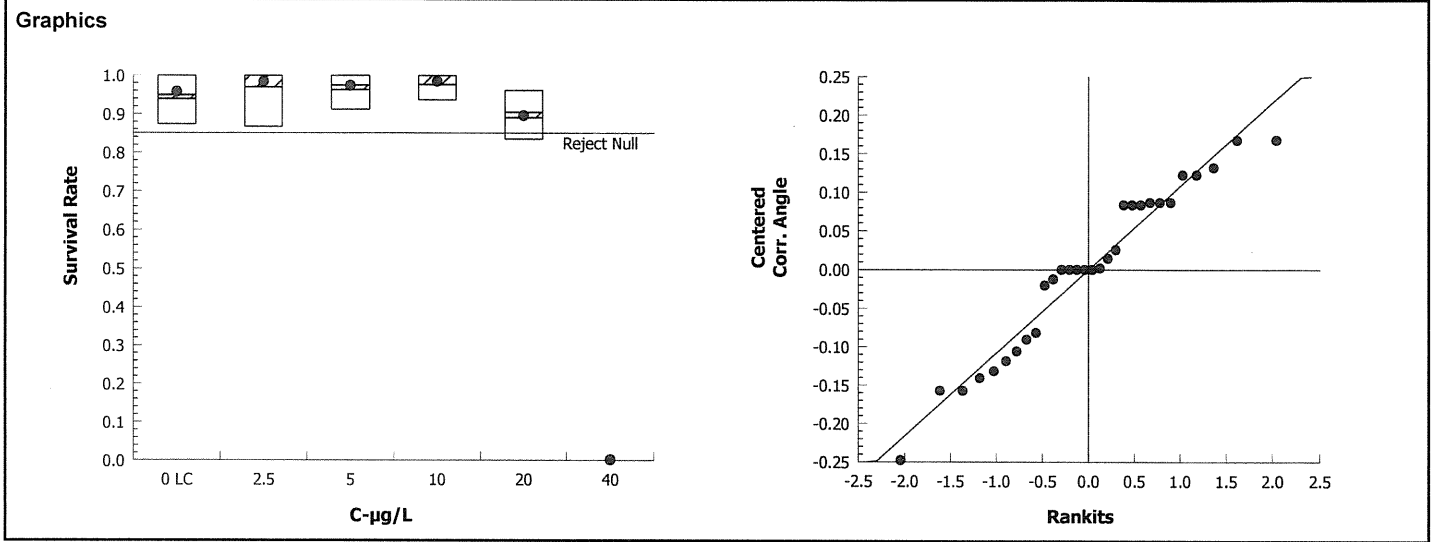
  

Survival Rate Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9389	0.8595	1	0.949	0.8726	1	0.0286	6.81%	0.0%
2.5		5	0.9694	0.8971	1	1	0.8662	1	0.02606	6.01%	-3.26%
5		5	0.9631	0.9123	1	0.9745	0.9108	1	0.01828	4.25%	-2.58%
10		5	0.9758	0.9345	1	1	0.9363	1	0.01486	3.4%	-3.94%
20		5	0.8904	0.8244	0.9565	0.9045	0.8344	0.9618	0.02378	5.97%	5.16%
40		5	0	0	0	0	0	0	0		100.0%

Angular (Corrected) Transformed Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.363	1.161	1.566	1.343	1.206	1.531	0.07286	11.95%	0.0%
2.5		5	1.444	1.264	1.624	1.531	1.196	1.531	0.06485	10.04%	-5.94%
5		5	1.409	1.255	1.562	1.41	1.268	1.531	0.05522	8.77%	-3.32%
10		5	1.447	1.306	1.589	1.531	1.316	1.531	0.05113	7.9%	-6.17%
20		5	1.242	1.129	1.355	1.257	1.152	1.374	0.0407	7.33%	8.9%
40		5	0.03991	0.03991	0.03992	0.03991	0.03991	0.03991	0	0.0%	97.07%

Bivalve Larval Survival and Development Test		Nautilus Environmental (CA)
Analysis ID: 07-5889-9658	Endpoint: Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 19 Mar-19 10:57	Analysis: Parametric-Control vs Treatments	Official Results: Yes



**CETIS Analytical Report**

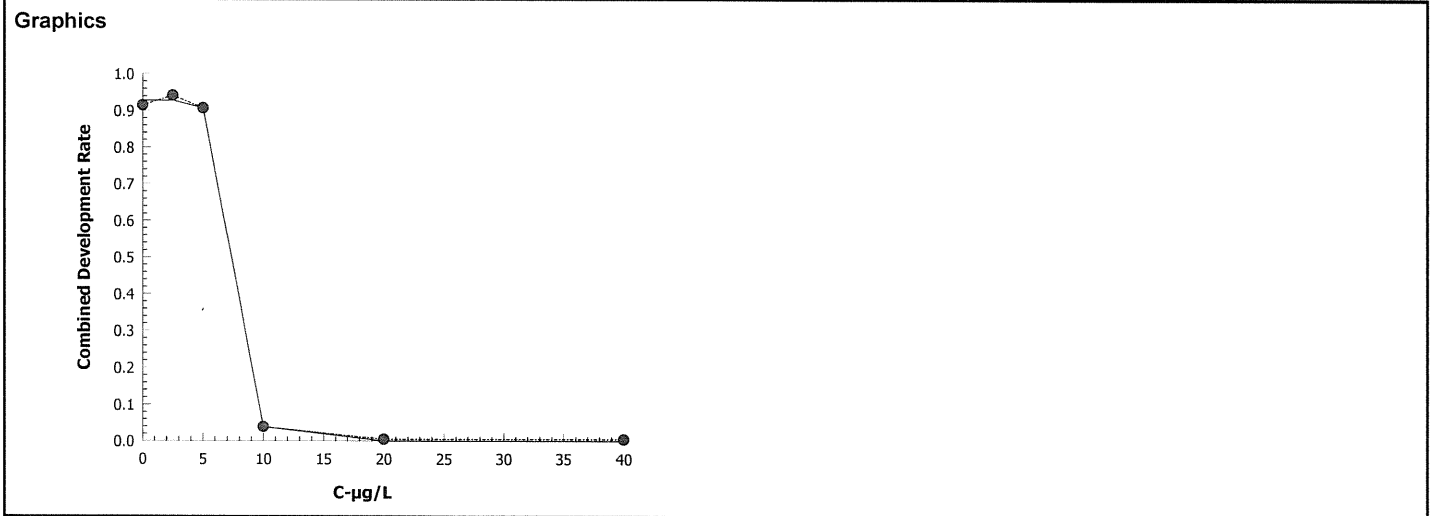
Report Date: 19 Mar-19 11:26 (p 1 of 3)  
 Test Code: 190306msdv | 11-4050-7104

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 03-7884-0450	<b>Endpoint:</b> Combined Development Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 19 Mar-19 10:57	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Official Results:</b> Yes			

<b>Linear Interpolation Options</b>					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	885506	1000	Yes	Two-Point Interpolation

<b>Point Estimates</b>			
Level	µg/L	95% LCL	95% UCL
EC25	6.217	5.95	6.38
EC50	7.555	7.365	7.707

<b>Combined Development Rate Summary</b>			<b>Calculated Variate(A/B)</b>								
C-µg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	0.9113	0.8408	0.9716	0.02757	0.06166	6.77%	0.0%	758	829
2.5		5	0.939	0.828	0.977	0.02803	0.06267	6.67%	-3.05%	803	853
5		5	0.9067	0.8662	0.9503	0.01369	0.03061	3.38%	0.5%	730	805
10		5	0.04092	0.02235	0.0828	0.01117	0.02497	61.03%	95.51%	32	821
20		5	0	0	0	0	0		100.0%	0	785
40		5	0	0	0	0	0		100.0%	0	785



**CETIS Analytical Report**

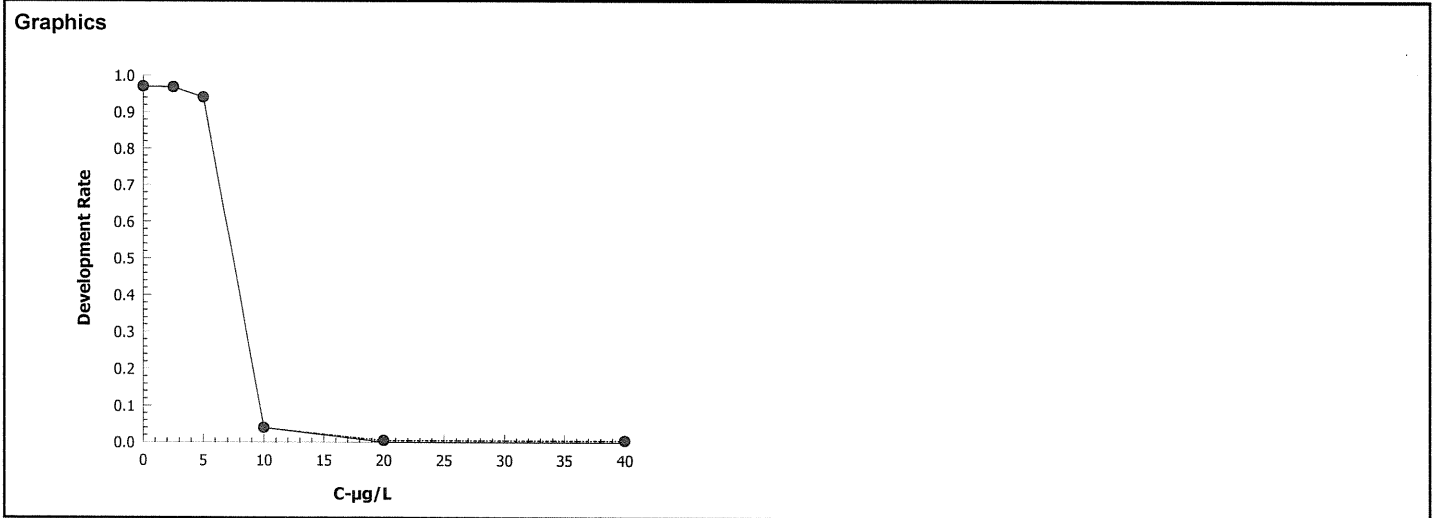
Report Date: 19 Mar-19 11:26 (p 2 of 3)  
 Test Code: 190306msdv | 11-4050-7104

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
Analysis ID: 19-8242-5220	Endpoint: Development Rate	CETIS Version: CETISv1.8.7			
Analyzed: 19 Mar-19 10:57	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes			

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1199816	1000	Yes	Two-Point Interpolation

Point Estimates			
Level	µg/L	95% LCL	95% UCL
EC25	6.183	6.032	6.342
EC50	7.531	7.404	7.666

Development Rate Summary			Calculated Variate(A/B)								
C-µg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	0.9707	0.9635	0.9781	0.002518	0.005631	0.58%	0.0%	758	781
2.5		5	0.9684	0.9553	0.9805	0.005345	0.01195	1.23%	0.24%	803	829
5		5	0.9421	0.9017	0.986	0.01367	0.03057	3.25%	2.94%	730	776
10		5	0.04259	0.02235	0.08844	0.01227	0.02744	64.42%	95.61%	32	802
20		5	0	0	0	0	0		100.0%	0	699
40		5	0	0	0	0	0		100.0%	0	5





**CETIS Analytical Report**

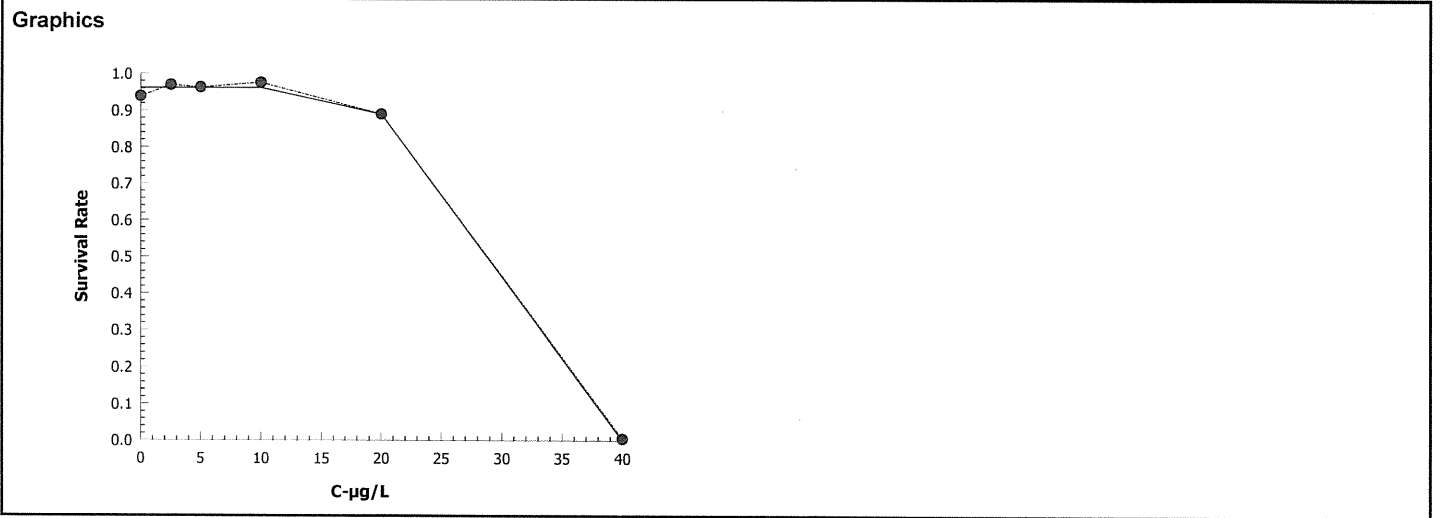
Report Date: 19 Mar-19 11:26 (p 3 of 3)  
 Test Code: 190306msdv | 11-4050-7104

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 15-7196-8133	<b>Endpoint:</b> Survival Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 19 Mar-19 10:58	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Official Results:</b> Yes			

<b>Linear Interpolation Options</b>					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	670691	1000	Yes	Two-Point Interpolation

<b>Point Estimates</b>			
Level	µg/L	95% LCL	95% UCL
EC25	23.8	22.35	24.88
EC50	29.2	28.24	29.92

<b>Survival Rate Summary</b>			<b>Calculated Variate(A/B)</b>								
C-µg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	0.9389	0.8726	1	0.0286	0.06395	6.81%	0.0%	737	785
2.5		5	0.9694	0.8662	1	0.02606	0.05827	6.01%	-3.26%	761	785
5		5	0.9631	0.9108	1	0.01828	0.04088	4.25%	-2.58%	756	785
10		5	0.9758	0.9363	1	0.01486	0.03322	3.4%	-3.94%	766	785
20		5	0.8904	0.8344	0.9618	0.02378	0.05318	5.97%	5.16%	699	785
40		5	0	0	0	0	0		100.0%	0	785



Bivalve Larval Survival and Development Test

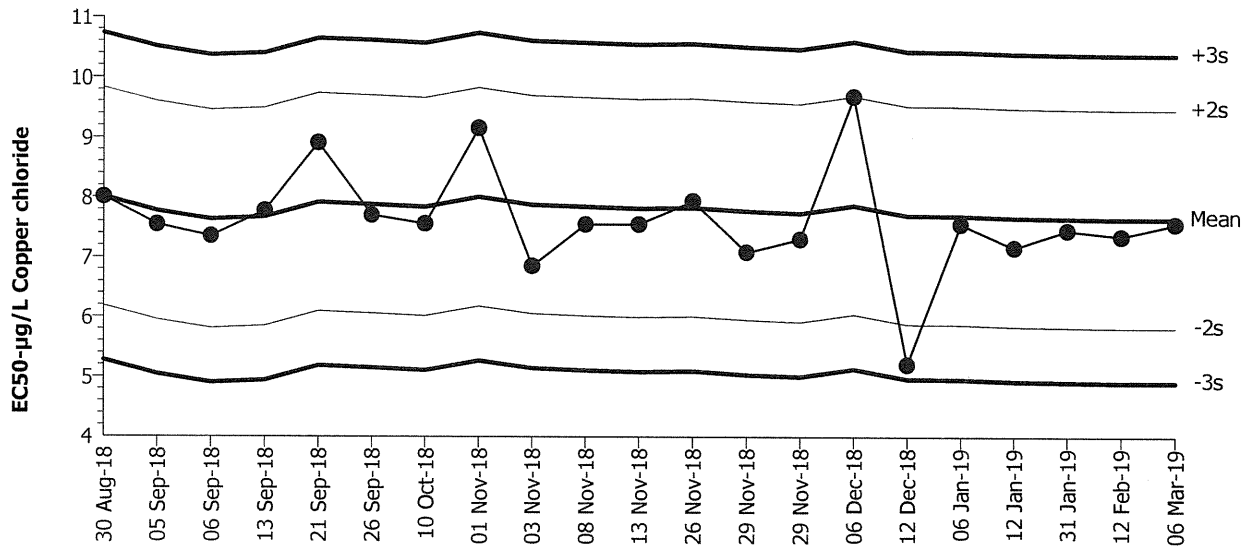
Nautilus Environmental (CA)

Test Type: Development-Survival  
 Protocol: EPA/600/R-95/136 (1995)

Organism: Mytilus galloprovincialis (Bay Mussel)  
 Endpoint: Combined Development Rate

Material: Copper chloride  
 Source: Reference Toxicant-REF

Bivalve Larval Survival and Development Test



Mean: 7.632      Count: 20      -2s Warning Limit: 5.81      -3s Action Limit: 4.9  
 Sigma: 0.9106      CV: 11.90%      +2s Warning Limit: 9.453      +3s Action Limit: 10.36

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Aug	30	12:40	8.007	0.3753	0.4121			04-5323-0718	12-8296-1271
2		Sep	5	13:20	7.546	-0.08647	-0.09496			19-1012-9409	17-6300-0161
3			6	14:20	7.352	-0.2799	-0.3074			07-3859-0678	17-1869-4075
4			13	13:45	7.772	0.14	0.1537			05-2434-4016	18-1252-3060
5			21	14:30	8.908	1.276	1.401			02-0289-2516	20-3309-6290
6			26	14:30	7.698	0.06642	0.07295			14-5297-9976	05-2024-1647
7		Oct	10	15:15	7.554	-0.07759	-0.08521			01-3786-4049	16-8922-8681
8		Nov	1	14:30	9.15	1.518	1.667			18-8008-0024	06-2080-3928
9			3	13:30	6.851	-0.7815	-0.8582			13-3014-0314	15-4510-7321
10			8	15:30	7.548	-0.08446	-0.09275			18-8284-7572	06-5807-1390
11			13	13:45	7.548	-0.08446	-0.09275			19-8628-7209	13-8978-9468
12			26	14:50	7.933	0.3015	0.3311			05-6256-7096	05-0142-7867
13			29	16:30	7.082	-0.5505	-0.6045			00-5944-3746	07-6331-4646
14			29	20:25	7.3	-0.3323	-0.3649			02-0971-0800	10-0317-7113
15		Dec	6	19:10	9.677	2.045	2.246	(+)		16-3949-4890	04-8210-0425
16			12	13:55	5.202	-2.43	-2.669	(-)		05-3477-8648	14-5219-2764
17	2019	Jan	6	18:10	7.549	-0.08259	-0.0907			00-4814-4263	10-6652-1953
18			12	16:40	7.158	-0.4736	-0.5201			02-7901-0365	04-0206-8014
19			31	20:05	7.448	-0.184	-0.2021			11-0188-3209	19-4158-0070
20		Feb	12	14:30	7.347	-0.2847	-0.3127			05-4773-4064	14-0529-6566
21		Mar	6	14:40	7.555	-0.07673	-0.08427			11-4050-7104	03-7884-0450

Bivalve Larval Survival and Development Test

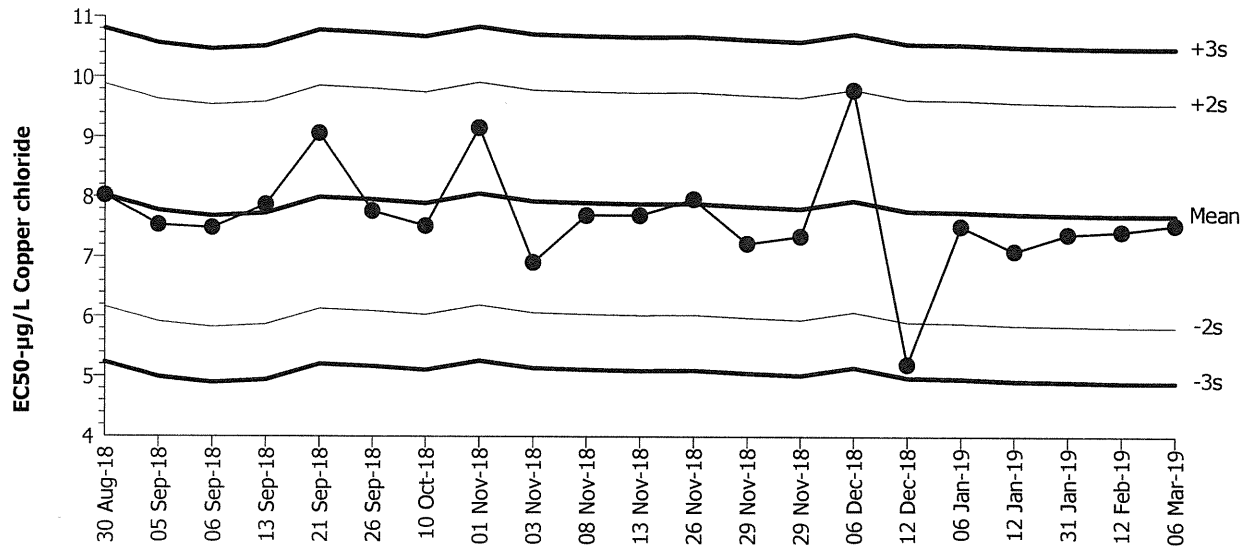
Nautilus Environmental (CA)

Test Type: Development-Survival  
 Protocol: EPA/600/R-95/136 (1995)

Organism: Mytilus galloprovincialis (Bay Mussel)  
 Endpoint: Development Rate

Material: Copper chloride  
 Source: Reference Toxicant-REF

Bivalve Larval Survival and Development Test



Mean: 7.679      Count: 20      -2s Warning Limit: 5.821      -3s Action Limit: 4.892  
 Sigma: 0.929      CV: 12.10%      +2s Warning Limit: 9.537      +3s Action Limit: 10.47

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Aug	30	12:40	8.019	0.3402	0.3662			04-5323-0718	07-7037-6589
2		Sep	5	13:20	7.533	-0.1462	-0.1573			19-1012-9409	19-7681-8197
3			6	14:20	7.486	-0.1927	-0.2074			07-3859-0678	06-9273-0813
4			13	13:45	7.865	0.1863	0.2005			05-2434-4016	10-4201-7804
5			21	14:30	9.055	1.376	1.481			02-0289-2516	06-7733-9627
6			26	14:30	7.763	0.0838	0.09021			14-5297-9976	09-2075-5640
7		Oct	10	15:15	7.517	-0.1624	-0.1748			01-3786-4049	18-2433-5674
8		Nov	1	14:30	9.149	1.47	1.583			18-8008-0024	14-9885-9137
9			3	13:30	6.905	-0.7741	-0.8333			13-3014-0314	14-1522-9033
10			8	15:30	7.691	0.01188	0.01279			18-8284-7572	13-3039-9929
11			13	13:45	7.691	0.01188	0.01279			19-8628-7209	00-1366-0167
12			26	14:50	7.958	0.2788	0.3001			05-6256-7096	05-6433-7919
13			29	16:30	7.221	-0.4581	-0.4931			00-5944-3746	12-1835-1530
14			29	20:25	7.342	-0.337	-0.3628			02-0971-0800	14-6758-9802
15		Dec	6	19:10	9.781	2.102	2.262	(+)		16-3949-4890	03-2778-3085
16			12	13:55	5.198	-2.481	-2.67	(-)		05-3477-8648	07-1234-5247
17	2019	Jan	6	18:10	7.509	-0.1697	-0.1827			00-4814-4263	13-5934-9717
18			12	16:40	7.094	-0.5855	-0.6302			02-7901-0365	06-1305-7196
19			31	20:05	7.377	-0.3025	-0.3256			11-0188-3209	01-6713-0404
20		Feb	12	14:30	7.421	-0.2583	-0.2781			05-4773-4064	11-5918-1928
21		Mar	6	14:40	7.531	-0.1475	-0.1588			11-4050-7104	19-8242-5220

Bivalve Larval Survival and Development Test

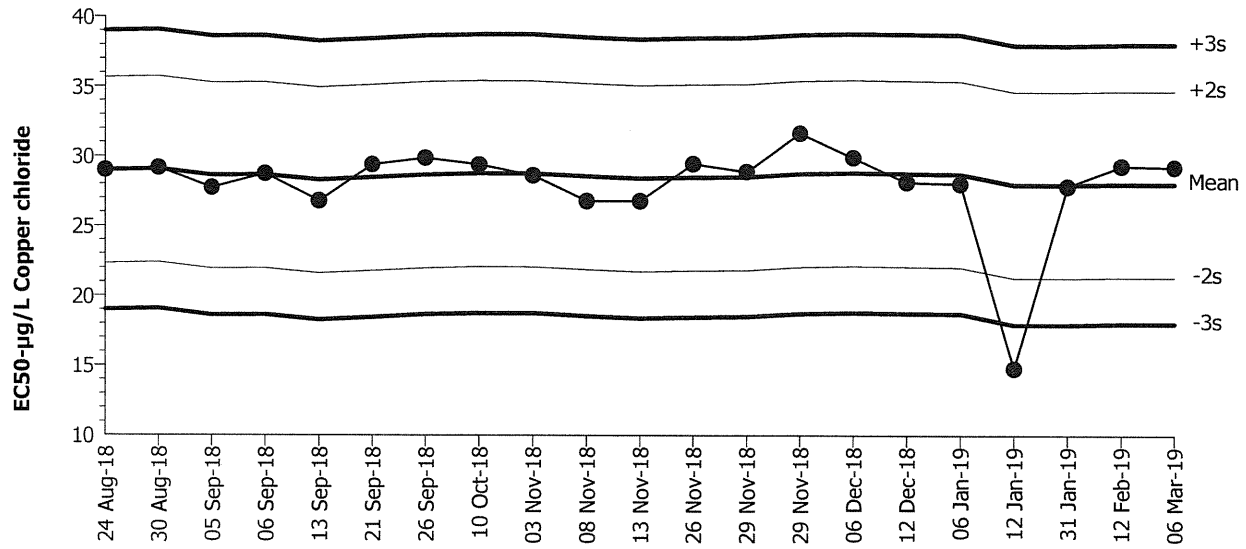
Nautilus Environmental (CA)

Test Type: Development-Survival  
 Protocol: EPA/600/R-95/136 (1995)

Organism: Mytilus galloprovincialis (Bay Mussel)  
 Endpoint: Survival Rate

Material: Copper chloride  
 Source: Reference Toxicant-REF

Bivalve Larval Survival and Development Test



Mean: 28      Count: 20      -2s Warning Limit: 21.33      -3s Action Limit: 18  
 Sigma: 3.335      CV: 11.90%      +2s Warning Limit: 34.67      +3s Action Limit: 38.01

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Aug	24	12:00	29	0.9986	0.2994			14-8354-6273	16-9027-5701
2			30	12:40	29.15	1.154	0.346			04-5323-0718	17-0214-3213
3		Sep	5	13:20	27.72	-0.2759	-0.08272			19-1012-9409	12-4890-7502
4			6	14:20	28.73	0.7287	0.2185			07-3859-0678	08-3450-9811
5			13	13:45	26.78	-1.216	-0.3645			05-2434-4016	13-8372-0203
6			21	14:30	29.39	1.39	0.4169			02-0289-2516	02-1350-9917
7			26	14:30	29.86	1.86	0.5577			14-5297-9976	08-9946-4918
8		Oct	10	15:15	29.38	1.378	0.4133			01-3786-4049	16-7437-4645
9		Nov	3	13:30	28.6	0.5953	0.1785			13-3014-0314	19-1258-0474
10			8	15:30	26.77	-1.23	-0.3688			18-8284-7572	02-4676-6589
11			13	13:45	26.77	-1.23	-0.3688			19-8628-7209	03-9393-7697
12			26	14:50	29.44	1.435	0.4303			05-6256-7096	11-5015-6962
13			29	16:30	28.87	0.8693	0.2607			00-5944-3746	20-1962-0376
14			29	20:25	31.65	3.645	1.093			02-0971-0800	21-2341-9901
15		Dec	6	19:10	29.9	1.897	0.5689			16-3949-4890	19-4410-1396
16			12	13:55	28.13	0.1322	0.03965			05-3477-8648	20-2904-3770
17	2019	Jan	6	18:10	28.01	0.006115	0.001834			00-4814-4263	00-6198-2529
18			12	16:40	14.78	-13.22	-3.965	(-)	(-)	02-7901-0365	08-0441-2945
19			31	20:05	27.83	-0.1742	-0.05224			11-0188-3209	12-1004-4079
20		Feb	12	14:30	29.28	1.281	0.3841			05-4773-4064	07-6241-6865
21		Mar	6	14:40	29.2	1.199	0.3595			11-4050-7104	15-7196-8133

**CETIS Test Data Worksheet**

Report Date: 02 Mar-19 15:35 (p 1 of 1)  
 Test Code: 11-4050-7104/190306msdv

**Bivalve Larval Survival and Development Test**

**Nautilus Environmental (CA)**

Start Date: 06 Mar-19      Species: *Mytilus galloprovincialis*      Sample Code: 190306msdv  
 End Date: 08 Mar-19      Protocol: EPA/600/R-95/136 (1995)      Sample Source: Reference Toxicant  
 Sample Date: 06 Mar-19      Material: Copper chloride      Sample Station: Copper Chloride

C-µg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			1			164	4	3/19/19
			2			<del>175</del> 179	4	
			3			164	5	
			4			137	134	
			5			131	0	
			6			161	153	
			7			149	145	
			8			143	0	
			9		147	<del>156</del> 146	13	re-read by JCL 3/19/19
			10			186	181	
			11			173	156	
			12			179	171	
			13			148	7	
			14			0	0	
			15			136	130	
			16			153	144	
			17			0	0	
			18			174	170	
			19			0	0	
			20			182	176	
			21			132	0	
			22			137	132	
			23			142	0	
			24			146	136	
			25			176	171	
			26			154	151	
			27			0	0	
			28			143	141	
			29			0	0	
			30			151	0	

Ⓐ Q18 JCL 3/19/19

**CETIS Test Data Worksheet**

Report Date: 02 Mar-19 15:35 (p 1 of 1)  
 Test Code: 11-4050-7104/190306msdv

**Bivalve Larval Survival and Development Test**

**Nautilus Environmental (CA)**

Start Date: 06 Mar-19      Species: *Mytilus galloprovincialis*      Sample Code: 190306msdv  
 End Date: 08 Mar-19      Protocol: EPA/600/R-95/136 (1995)      Sample Source: Reference Toxicant  
 Sample Date: 06 Mar-19      Material: Copper chloride      Sample Station: Copper Chloride

C-µg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	LC	1	25			179	173	AC 3/11/19
0	LC	2	7					
0	LC	3	4					
0	LC	4	20					
0	LC	5	22					
2.5		1	15			131	126	
2.5		2	26					
2.5		3	18					
2.5		4	12					
2.5		5	10					
5		1	11			157	147	
5		2	28					
5		3	6					
5		4	16					
5		5	24					
10		1	2			167	4	
10		2	13					
10		3	9					
10		4	1					
10		5	3					
20		1	23			142	0	
20		2	5					
20		3	8					
20		4	30					
20		5	21					
40		1	14			0	0	Cells lysed
40		2	27					
40		3	19					
40		4	17					
40		5	29					

QC=AC

# Marine Chronic Bioassay

# Water Quality Measurements

Client: Internal  
 Sample ID: CuCl<sub>2</sub>  
 Test No.: 190306msdv

Test Species: M. galloprovincialis  
 Start Date/Time: 3/6/2019 1440  
 End Date/Time: 3/8/2019 1420

Concentration (µg/L)	Salinity (ppt)			Temperature (°C)			Dissolved Oxygen (mg/L)			pH (pH units)		
	0	24	48	0	24	48	0	24	48	0	24	48
Lab Control	31.6	31.6	31.5	15.2	15.0	15.0	8.2	8.1	8.4	8.04	7.98	7.89
2.5	31.8	31.9	31.7	15.3	14.8	14.7	8.1	8.2	8.4	8.05	8.00	7.90
5	31.8	31.8	31.9	15.4	14.6	14.6	8.1	8.2	8.5	8.04	8.00	7.90
10	31.7	31.8	31.8	15.6	14.9	14.6	8.0	8.1	8.5	8.06	8.00	7.90
20	31.7	31.8	31.8	15.7	14.8	14.7	7.8	8.1	8.6	8.04	8.00	7.90
40	31.7	31.9	31.8	15.5	14.8	14.8	7.8	8.2	8.5	8.05	8.00	7.89

Technician Initials: \_\_\_\_\_  
 WQ Readings: 

0	24	48
BO	RT	KTP

  
 Dilutions made by: 

BO	000	AC
----	-----	----

High conc. made (µg/L):	40
Vol. Cu stock added (mL):	2.2
Final Volume (mL):	500
Cu stock concentration (µg/L):	9,000

Comments: 0 hrs: @Q18 BO 3/6/19  
 24 hrs: \_\_\_\_\_  
 48 hrs: \_\_\_\_\_

QC Check: AC 3/25/19

Final Review: EU 3/27/19

Marine Chronic Bioassay

Larval Development Worksheet

Client: Internal  
 Test No.: 190306msdv  
 Test Species: M. galloprovincialis  
 Animal Source: Mission Bay  
 Date Received: 3/5/19  
 Test Chambers: 30ml glass vial  
 Sample Volume: 10ml

Start Date/Time: 3/6/2019 1440  
 End Date/Time: 3/8/2019 1420  
 Technician Initials: KS/BO

Spawn Information

First Gamete Release Time: 1105

Sex	Number Spawning
Male	5+
Female	6+

Gamete Selection

Sex	Beaker Number(s)	Condition (sperm motility, egg density, color, shape, etc.)
Male	1, 5, 4	good motility, very dense
Female 1	1	yellow, high density, good quality
Female 2	2	yellow, very high density, okay quality
Female 3	—	—

Egg Fertilization Time: 1210

Embryo Stock Selection

Stock Number	% of embryos at 2-cell division stage
Female 1	98%
Female 2	94%
Female 3	—

Stock(s) chosen for testing: 1

Embryo Inoculum Preparation

Target count on Sedgwick-Rafter slide for desired density is 6 embryos

Number Counted: 10      9  
12                      12  
7                         14  
13                      13  
16                      11

Mean: 11.7

Mean 11.7 X 50 = 585 embryos/ml

Initial Density: 585 = 1.95 (dilution factor)  
 Desired Final Density: 300  
 (to inoculate with 0.5 ml)

Prepare the embryo inoculum according to the calculated dilution factor. For example, if the dilution factor is 2.25, use 100 ml of existing stock (1 part) and 125 ml of dilution water (1.25 parts).

Time Zero Control Counts

Rand. No.	No. Dividing	Total	% Dividing	Mean % Dividing
T0 1	149	152	98	99
T0 2	163	165	99	
T0 3	159	163	98	
T0 4	150	152	99	
T0 5	160	162	99	
T0 6	158	159	99	11

48-h QC: 156/159 98.1%

Comments:

$\bar{x} = 157$

QC Check: AC 3/11/19

Final Review: EA 3/27/19



**CETIS Summary Report**

Report Date: 20 Mar-19 09:17 (p 1 of 3)  
 Test Code: 190306msnh | 08-3470-5684

Bivalve Larval Survival and Development Test				Nautilus Environmental (CA)			
Batch ID:	16-1637-1359	Test Type:	Development-Survival	Analyst:			
Start Date:	06 Mar-19 14:40	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Diluted Natural Seawater		
Ending Date:	08 Mar-19 14:20	Species:	Mytilus galloprovincialis	Brine:	Not Applicable		
Duration:	48h	Source:	Mission Bay	Age:			
Sample ID:	21-1968-2670	Code:	190306msnh	Client:	Internal		
Sample Date:	06 Mar-19	Material:	Total Ammonia	Project:			
Receive Date:	06 Mar-19	Source:	Reference Toxicant				
Sample Age:	15h	Station:	Total Ammonia				
Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
09-7408-1350	Combined Development Ra	4.5	8.2	6.075	4.1%		Dunnett Multiple Comparison Test
04-8479-4945	Development Rate	4.5	8.2	6.075	2.52%		Dunnett Multiple Comparison Test
21-3701-6278	Survival Rate	29.9	>29.9	NA	3.7%		Dunnett Multiple Comparison Test
Point Estimate Summary							
Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
04-6335-1332	Combined Development Ra	EC25	9.662	9.441	9.84		Linear Interpolation (ICPIN)
		EC50	11.44	11.29	11.56		
18-9441-2205	Development Rate	EC25	9.676	9.438	9.845		Linear Interpolation (ICPIN)
		EC50	11.45	11.29	11.56		
06-6432-0665	Survival Rate	EC25	>29.9	N/A	N/A		Linear Interpolation (ICPIN)
		EC50	>29.9	N/A	N/A		
Test Acceptability							
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision	
04-8479-4945	Development Rate	Control Resp	0.961	0.9 - NL	Yes	Passes Acceptability Criteria	
18-9441-2205	Development Rate	Control Resp	0.961	0.9 - NL	Yes	Passes Acceptability Criteria	
06-6432-0665	Survival Rate	Control Resp	0.9962	0.5 - NL	Yes	Passes Acceptability Criteria	
21-3701-6278	Survival Rate	Control Resp	0.9962	0.5 - NL	Yes	Passes Acceptability Criteria	
09-7408-1350	Combined Development Ra	PMSD	0.04104	NL - 0.25	No	Passes Acceptability Criteria	

**CETIS Summary Report**

Report Date: 20 Mar-19 09:17 (p 2 of 3)  
 Test Code: 190306msnh | 08-3470-5684

Bivalve Larval Survival and Development Test											Nautilus Environmental (CA)
<b>Combined Development Rate Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9573	0.9361	0.9785	0.9398	0.9814	0.007632	0.01707	1.78%	0.0%
2.4		5	0.9085	0.8516	0.9654	0.8599	0.982	0.02051	0.04586	5.05%	5.1%
4.5		5	0.9526	0.9325	0.9728	0.9363	0.9719	0.007249	0.01621	1.7%	0.49%
8.2		5	0.9133	0.8811	0.9455	0.8765	0.9399	0.0116	0.02594	2.84%	4.59%
15		5	0	0	0	0	0	0	0		100.0%
29.9		5	0	0	0	0	0	0	0		100.0%
<b>Development Rate Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.961	0.9424	0.9796	0.9398	0.9814	0.006701	0.01498	1.56%	0.0%
2.4		5	0.9688	0.9553	0.9824	0.9589	0.982	0.004875	0.0109	1.13%	-0.82%
4.5		5	0.9575	0.9396	0.9754	0.9441	0.9744	0.006448	0.01442	1.51%	0.36%
8.2		5	0.9242	0.888	0.9605	0.8765	0.9527	0.01307	0.02922	3.16%	3.82%
15		5	0	0	0	0	0	0	0		100.0%
29.9		5	0	0	0	0	0	0	0		100.0%
<b>Survival Rate Summary</b>											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	5	0.9962	0.9856	1	0.9809	1	0.003822	0.008545	0.86%	0.0%
2.4		5	0.9376	0.8853	0.9899	0.8917	1	0.01883	0.04211	4.49%	5.88%
4.5		5	0.9949	0.9883	1	0.9873	1	0.002383	0.005329	0.54%	0.13%
8.2		5	0.9885	0.9567	1	0.9427	1	0.01146	0.02564	2.59%	0.77%
15		5	0.9707	0.9268	1	0.9236	1	0.01581	0.03535	3.64%	2.56%
29.9		5	0.9503	0.8857	1	0.8726	1	0.02326	0.05202	5.47%	4.6%
<b>Combined Development Rate Detail</b>											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	0.9398	0.9573	0.9427	0.9653	0.9814					
2.4		0.8917	0.982	0.9172	0.8917	0.8599					
4.5		0.9427	0.9363	0.9682	0.9441	0.9719					
8.2		0.9198	0.9399	0.8765	0.9323	0.8981					
15		0	0	0	0	0					
29.9		0	0	0	0	0					
<b>Development Rate Detail</b>											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	0.9398	0.9573	0.961	0.9653	0.9814					
2.4		0.979	0.982	0.96	0.9589	0.9643					
4.5		0.9487	0.9484	0.9744	0.9441	0.9719					
8.2		0.9198	0.9399	0.8765	0.9323	0.9527					
15		0	0	0	0	0					
29.9		0	0	0	0	0					
<b>Survival Rate Detail</b>											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Lab Control	1	1	0.9809	1	1					
2.4		0.9108	1	0.9554	0.9299	0.8917					
4.5		0.9936	0.9873	0.9936	1	1					
8.2		1	1	1	1	0.9427					
15		0.9873	0.9236	1	0.9427	1					
29.9		1	0.9554	0.9936	0.8726	0.9299					

**CETIS Summary Report**

Report Date: 20 Mar-19 09:17 (p 3 of 3)  
 Test Code: 190306msnh | 08-3470-5684

Bivalve Larval Survival and Development Test							Nautilus Environmental (CA)
<b>Combined Development Rate Binomials</b>							
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	156/166	157/164	148/157	167/173	158/161	
2.4		140/157	164/167	144/157	140/157	135/157	
4.5		148/157	147/157	152/157	152/161	173/178	
8.2		149/162	172/183	142/162	179/192	141/157	
15		0/157	0/157	0/178	0/157	0/167	
29.9		0/177	0/157	0/157	0/157	0/157	
<b>Development Rate Binomials</b>							
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	156/166	157/164	148/154	167/173	158/161	
2.4		140/143	164/167	144/150	140/146	135/140	
4.5		148/156	147/155	152/156	152/161	173/178	
8.2		149/162	172/183	142/162	179/192	141/148	
15		0/155	0/145	0/178	0/148	0/167	
29.9		0/177	0/150	0/156	0/137	0/146	
<b>Survival Rate Binomials</b>							
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	Lab Control	157/157	157/157	154/157	157/157	157/157	
2.4		143/157	157/157	150/157	146/157	140/157	
4.5		156/157	155/157	156/157	157/157	157/157	
8.2		157/157	157/157	157/157	157/157	148/157	
15		155/157	145/157	157/157	148/157	157/157	
29.9		157/157	150/157	156/157	137/157	146/157	

# CETIS Analytical Report

Report Date: 20 Mar-19 09:17 (p 1 of 4)  
 Test Code: 190306msnh | 08-3470-5684

**Bivalve Larval Survival and Development Test** **Nautilus Environmental (CA)**

Analysis ID: 09-7408-1350      Endpoint: Combined Development Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 20 Mar-19 9:12      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	4.1%	4.5	8.2	6.075	

**Dunnett Multiple Comparison Test**

Control	vs C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control	2.4*	2.375	2.227	0.086	8	0.0380	CDF	Significant Effect
	4.5	0.3175	2.227	0.086	8	0.6243	CDF	Non-Significant Effect
	8.2*	2.382	2.227	0.086	8	0.0374	CDF	Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.03711462	0.01237154	3	3.318	0.0467	Significant Effect
Error	0.05965588	0.003728492	16			
Total	0.0967705		19			

**Distributional Tests**

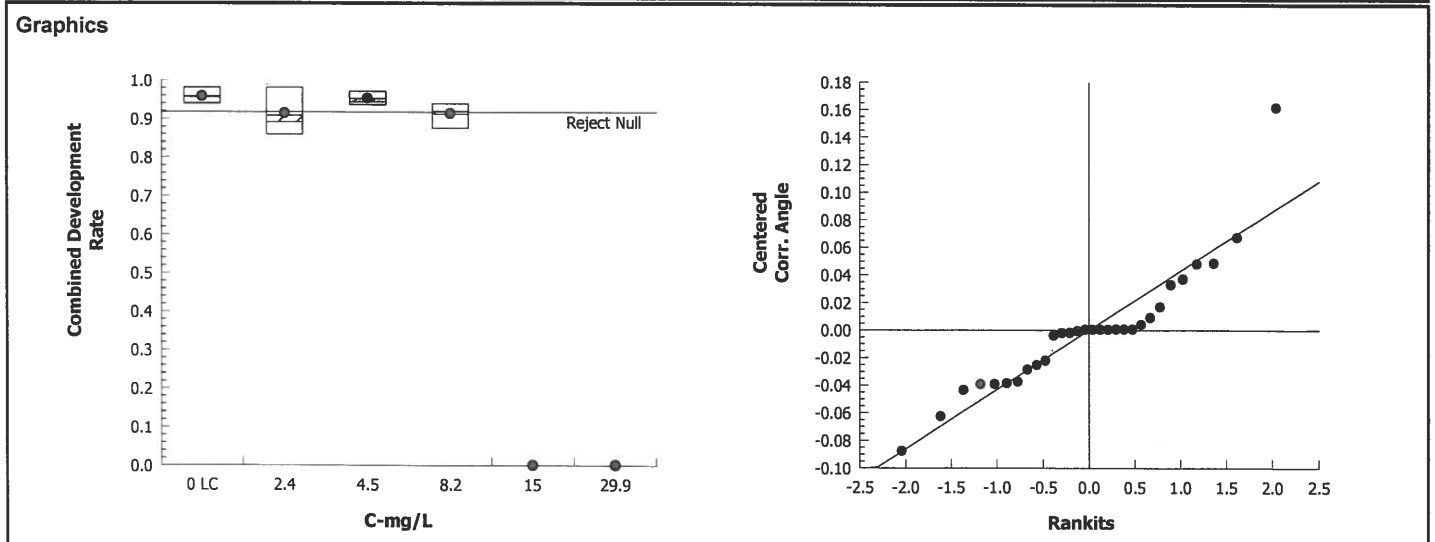
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	4.147	11.34	0.2460	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9165	0.866	0.0850	Normal Distribution

**Combined Development Rate Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9573	0.9361	0.9785	0.9573	0.9398	0.9814	0.007632	1.78%	0.0%
2.4		5	0.9085	0.8516	0.9654	0.8917	0.8599	0.982	0.02051	5.05%	5.1%
4.5		5	0.9526	0.9325	0.9728	0.9441	0.9363	0.9719	0.007249	1.7%	0.49%
8.2		5	0.9133	0.8811	0.9455	0.9198	0.8765	0.9399	0.0116	2.84%	4.59%
15		5	0	0	0	0	0	0	0		100.0%
29.9		5	0	0	0	0	0	0	0		100.0%

**Angular (Corrected) Transformed Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.366	1.31	1.422	1.363	1.323	1.434	0.02019	3.3%	0.0%
2.4		5	1.275	1.155	1.394	1.235	1.187	1.436	0.04295	7.54%	6.71%
4.5		5	1.354	1.305	1.403	1.332	1.316	1.402	0.01777	2.93%	0.9%
8.2		5	1.274	1.218	1.331	1.284	1.212	1.323	0.02036	3.57%	6.73%
15		5	0.03919	0.03784	0.04054	0.03991	0.03749	0.03991	0.000486	2.77%	97.13%
29.9		5	0.03945	0.03816	0.04074	0.03991	0.03759	0.03991	0.000465	2.63%	97.11%



# CETIS Analytical Report

Report Date: 20 Mar-19 09:17 (p 2 of 4)  
 Test Code: 190306msnh | 08-3470-5684

**Bivalve Larval Survival and Development Test** **Nautilus Environmental (CA)**

Analysis ID: 04-8479-4945      Endpoint: Development Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 20 Mar-19 9:12      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	2.52%	4.5	8.2	6.075	

**Dunnett Multiple Comparison Test**

Control	vs C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control	2.4	-0.7906	2.227	0.058	8	0.9396	CDF	Non-Significant Effect
	4.5	0.3549	2.227	0.058	8	0.6082	CDF	Non-Significant Effect
	8.2*	3.032	2.227	0.058	8	0.0104	CDF	Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.02837322	0.009457741	3	5.507	0.0086	Significant Effect
Error	0.02748035	0.001717522	16			
Total	0.05585357		19			

**Distributional Tests**

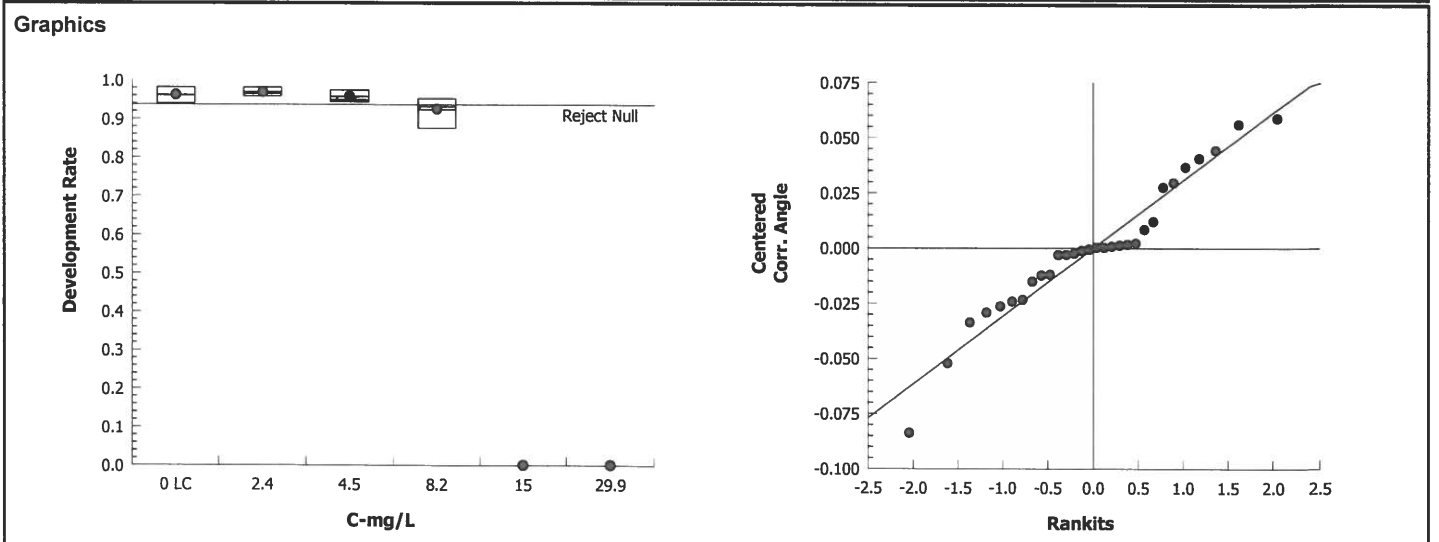
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	0.9402	11.34	0.8157	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9629	0.866	0.6042	Normal Distribution

**Development Rate Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.961	0.9424	0.9796	0.961	0.9398	0.9814	0.006701	1.56%	0.0%
2.4		5	0.9688	0.9553	0.9824	0.9643	0.9589	0.982	0.004875	1.13%	-0.82%
4.5		5	0.9575	0.9396	0.9754	0.9487	0.9441	0.9744	0.006448	1.51%	0.36%
8.2		5	0.9242	0.888	0.9605	0.9323	0.8765	0.9527	0.01307	3.16%	3.82%
15		5	0	0	0	0	0	0	0		100.0%
29.9		5	0	0	0	0	0	0	0		100.0%

**Angular (Corrected) Transformed Summary**

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.375	1.325	1.425	1.372	1.323	1.434	0.01791	2.91%	0.0%
2.4		5	1.396	1.355	1.436	1.381	1.367	1.436	0.01466	2.35%	-1.51%
4.5		5	1.366	1.319	1.412	1.342	1.332	1.41	0.01668	2.73%	0.68%
8.2		5	1.296	1.23	1.361	1.308	1.212	1.352	0.02367	4.09%	5.78%
15		5	0.0398	0.0377	0.0419	0.04017	0.03749	0.04153	0.000756	4.25%	97.11%
29.9		5	0.04052	0.03815	0.04289	0.04084	0.03759	0.04273	0.000853	4.71%	97.05%



# CETIS Analytical Report

Report Date: 20 Mar-19 09:17 (p 3 of 4)  
 Test Code: 190306msnh | 08-3470-5684

Bivalve Larval Survival and Development Test										Nautilus Environmental (CA)	
Analysis ID: 21-3701-6278		Endpoint: Survival Rate				CETIS Version: CETISv1.8.7					
Analyzed: 20 Mar-19 9:12		Analysis: Parametric-Control vs Treatments				Official Results: Yes					
Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corrected)	NA	C > T	NA	NA	3.7%	29.9	>29.9	NA			
Dunnett Multiple Comparison Test											
Control	vs	C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)		
Lab Control		2.4*	2.836	2.362	0.143	8	0.0184	CDF	Significant Effect		
		4.5	0.1792	2.362	0.143	8	0.7750	CDF	Non-Significant Effect		
		8.2	0.3397	2.362	0.143	8	0.7142	CDF	Non-Significant Effect		
		15	1.372	2.362	0.143	8	0.2679	CDF	Non-Significant Effect		
		29.9	2.198	2.362	0.143	8	0.0689	CDF	Non-Significant Effect		
ANOVA Table											
Source	Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)			
Between	0.127339		0.0254678		5	2.765	0.0414	Significant Effect			
Error	0.221068		0.009211167		24						
Total	0.348407				29						
Distributional Tests											
Attribute	Test			Test Stat	Critical	P-Value	Decision(α:1%)				
Variances	Bartlett Equality of Variance			9.317	15.09	0.0971	Equal Variances				
Distribution	Shapiro-Wilk W Normality			0.9683	0.9031	0.4940	Normal Distribution				
Survival Rate Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	0.9962	0.9856	1	1	0.9809	1	0.003822	0.86%	0.0%
2.4		5	0.9376	0.8853	0.9899	0.9299	0.8917	1	0.01883	4.49%	5.88%
4.5		5	0.9949	0.9883	1	0.9936	0.9873	1	0.002384	0.54%	0.13%
8.2		5	0.9885	0.9567	1	1	0.9427	1	0.01146	2.59%	0.77%
15		5	0.9707	0.9268	1	0.9873	0.9236	1	0.01581	3.64%	2.56%
29.9		5	0.9503	0.8857	1	0.9554	0.8726	1	0.02326	5.47%	4.6%
Angular (Corrected) Transformed Summary											
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	5	1.511	1.456	1.566	1.531	1.432	1.531	0.01975	2.92%	0.0%
2.4		5	1.339	1.194	1.484	1.303	1.235	1.531	0.05211	8.7%	11.39%
4.5		5	1.5	1.462	1.539	1.491	1.458	1.531	0.0139	2.07%	0.72%
8.2		5	1.491	1.378	1.603	1.531	1.329	1.531	0.04037	6.06%	1.37%
15		5	1.428	1.288	1.568	1.458	1.291	1.531	0.05035	7.89%	5.51%
29.9		5	1.378	1.211	1.544	1.358	1.206	1.531	0.05992	9.73%	8.83%

Bivalve Larval Survival and Development Test

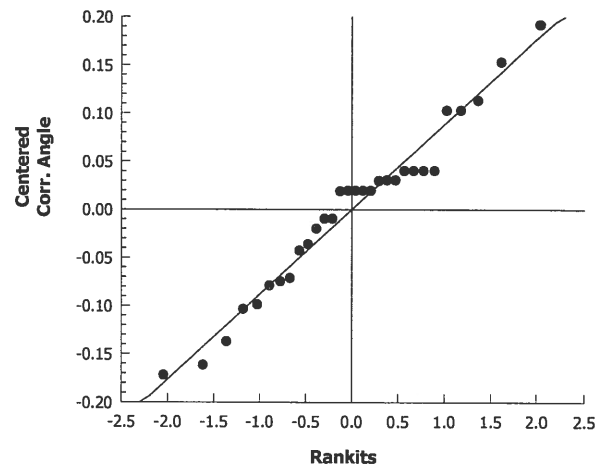
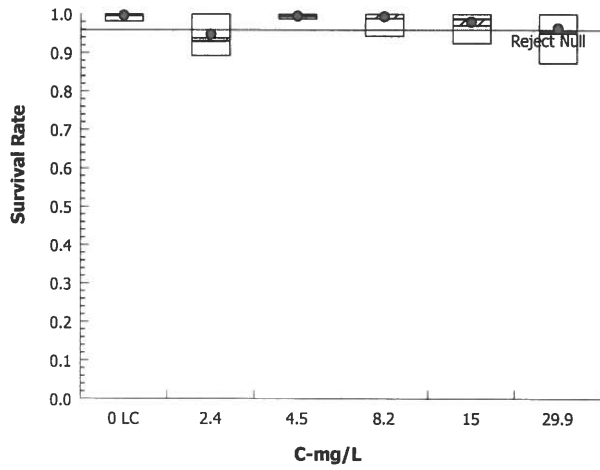
Nautilus Environmental (CA)

Analysis ID: 21-3701-6278  
Analyzed: 20 Mar-19 9:12

Endpoint: Survival Rate  
Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.8.7  
Official Results: Yes

Graphics



# CETIS Analytical Report

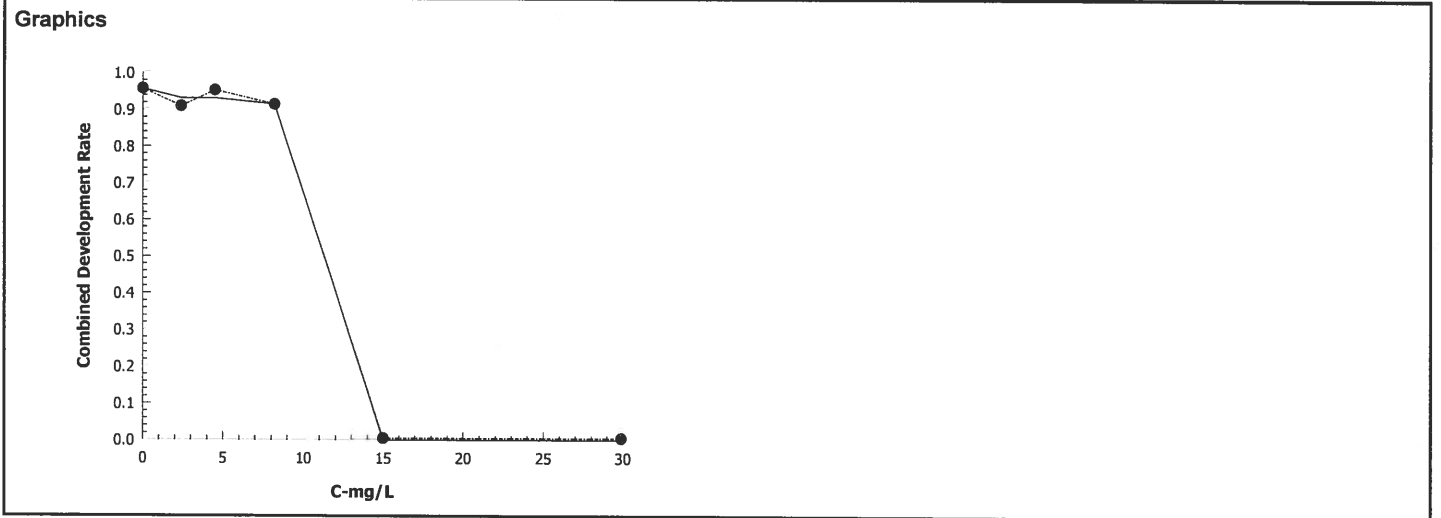
Report Date: 20 Mar-19 09:17 (p 1 of 3)  
 Test Code: 190306msnh | 08-3470-5684

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 04-6335-1332	<b>Endpoint:</b> Combined Development Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 20 Mar-19 9:13	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Official Results:</b> Yes			

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	89514	1000	Yes	Two-Point Interpolation

Point Estimates			
Level	mg/L	95% LCL	95% UCL
EC25	9.662	9.441	9.84
EC50	11.44	11.29	11.56

Combined Development Rate Summary			Calculated Variate(A/B)								
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	0.9573	0.9398	0.9814	0.007632	0.01707	1.78%	0.0%	786	821
2.4		5	0.9085	0.8599	0.982	0.02051	0.04586	5.05%	5.1%	723	795
4.5		5	0.9526	0.9363	0.9719	0.007249	0.01621	1.7%	0.49%	772	810
8.2		5	0.9133	0.8765	0.9399	0.0116	0.02594	2.84%	4.59%	783	856
15		5	0	0	0	0	0		100.0%	0	816
29.9		5	0	0	0	0	0		100.0%	0	805





**CETIS Analytical Report**

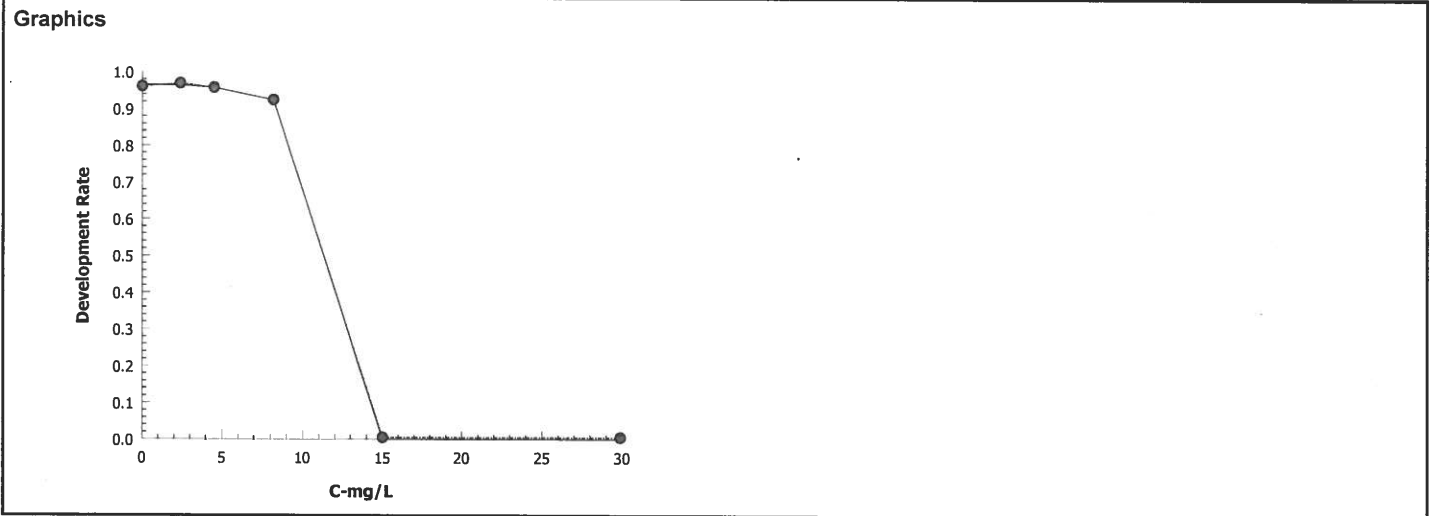
Report Date: 20 Mar-19 09:17 (p 2 of 3)  
 Test Code: 190306msnh | 08-3470-5684

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
Analysis ID: 18-9441-2205	Endpoint: Development Rate	CETIS Version: CETISv1.8.7			
Analyzed: 20 Mar-19 9:13	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes			

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	2086587	1000	Yes	Two-Point Interpolation

Point Estimates			
Level	mg/L	95% LCL	95% UCL
EC25	9.676	9.438	9.845
EC50	11.45	11.29	11.56

Development Rate Summary			Calculated Variate(A/B)								
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	5	0.961	0.9398	0.9814	0.006701	0.01498	1.56%	0.0%	786	818
2.4		5	0.9688	0.9589	0.982	0.004875	0.0109	1.13%	-0.82%	723	746
4.5		5	0.9575	0.9441	0.9744	0.006448	0.01442	1.51%	0.36%	772	806
8.2		5	0.9242	0.8765	0.9527	0.01307	0.02922	3.16%	3.82%	783	847
15		5	0	0	0	0	0		100.0%	0	793
29.9		5	0	0	0	0	0		100.0%	0	766



**CETIS Analytical Report**

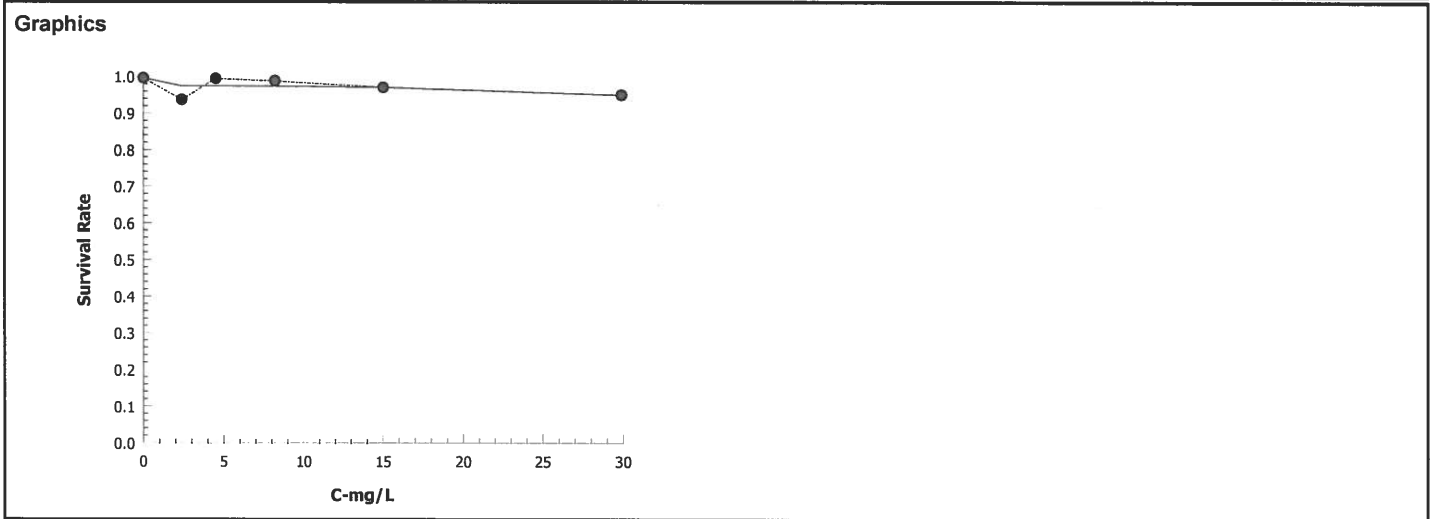
Report Date: 20 Mar-19 09:17 (p 3 of 3)  
 Test Code: 190306msnh | 08-3470-5684

<b>Bivalve Larval Survival and Development Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 06-6432-0665	<b>Endpoint:</b> Survival Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 20 Mar-19 9:13	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Official Results:</b> Yes			

<b>Linear Interpolation Options</b>					
<b>X Transform</b>	<b>Y Transform</b>	<b>Seed</b>	<b>Resamples</b>	<b>Exp 95% CL</b>	<b>Method</b>
Linear	Linear	333106	1000	Yes	Two-Point Interpolation

<b>Point Estimates</b>			
<b>Level</b>	<b>mg/L</b>	<b>95% LCL</b>	<b>95% UCL</b>
EC25	>29.9	N/A	N/A
EC50	>29.9	N/A	N/A

<b>Survival Rate Summary</b>			<b>Calculated Variate(A/B)</b>									
<b>C-mg/L</b>	<b>Control Type</b>	<b>Count</b>	<b>Mean</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	<b>A</b>	<b>B</b>	
0	Lab Control	5	0.9962	0.9809	1	0.003822	0.008546	0.86%	0.0%	782	785	
2.4		5	0.9376	0.8917	1	0.01883	0.04211	4.49%	5.88%	736	785	
4.5		5	0.9949	0.9873	1	0.002384	0.005331	0.54%	0.13%	781	785	
8.2		5	0.9885	0.9427	1	0.01146	0.02564	2.59%	0.77%	776	785	
15		5	0.9707	0.9236	1	0.01581	0.03535	3.64%	2.56%	762	785	
29.9		5	0.9503	0.8726	1	0.02326	0.05202	5.47%	4.6%	746	785	



Bivalve Larval Survival and Development Test

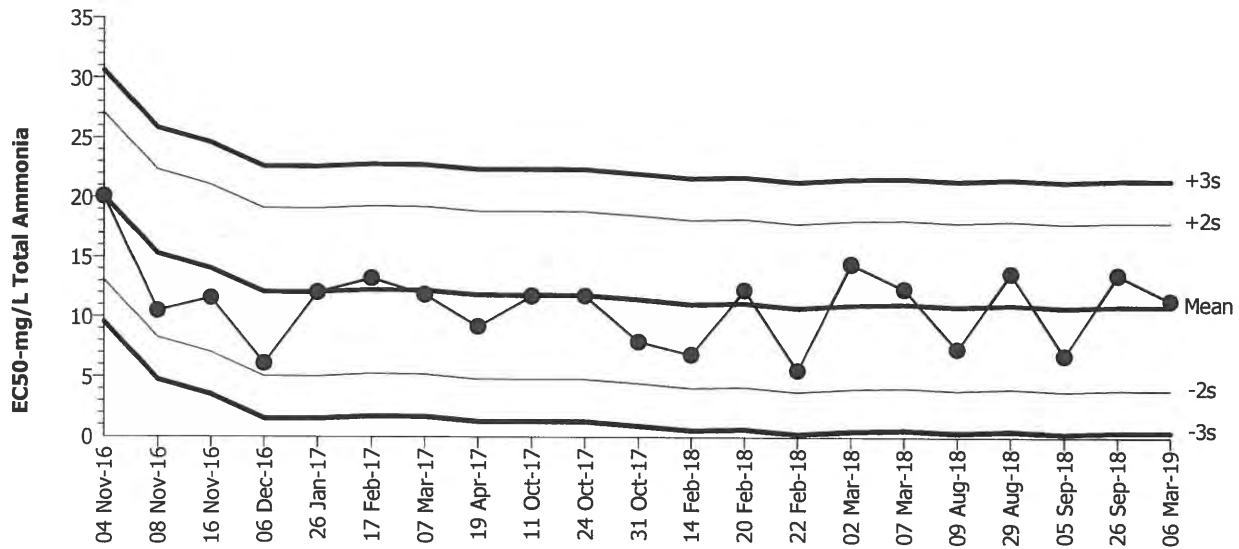
Nautilus Environmental (CA)

Test Type: Development-Survival  
 Protocol: EPA/600/R-95/136 (1995)

Organism: Mytilus galloprovincialis (Bay Mussel)  
 Endpoint: Combined Development Rate

Material: Total Ammonia  
 Source: Reference Toxicant-REF

Bivalve Larval Survival and Development Test



Mean: 10.94      Count: 20      -2s Warning Limit: 3.924      -3s Action Limit: 0.415  
 Sigma: 3.509      CV: 32.10%      +2s Warning Limit: 17.96      +3s Action Limit: 21.47

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2016	Nov	4	15:00	20.08	9.136	2.604	(+)		01-4657-1532	14-9165-5966
2			8	17:00	10.49	-0.4458	-0.1271			15-3853-5607	03-1619-5125
3			16	14:00	11.57	0.6338	0.1806			18-2336-6703	21-0897-2883
4		Dec	6	15:00	6.11	-4.83	-1.376			06-9917-3855	19-2950-6299
5	2017	Jan	26	15:30	12.05	1.108	0.3158			11-5726-2456	20-0571-9143
6		Feb	17	17:15	13.21	2.266	0.6457			01-2551-7080	11-4287-1999
7		Mar	7	16:00	11.84	0.9019	0.257			21-2722-6816	19-3306-8336
8		Apr	19	16:45	9.194	-1.746	-0.4976			16-8954-4460	14-3970-5247
9		Oct	11	17:05	11.74	0.7996	0.2279			08-7402-7277	21-1693-8729
10			24	15:25	11.75	0.8129	0.2317			02-0819-0163	19-2502-8946
11			31	15:40	7.927	-3.013	-0.8585			01-0309-5599	07-5368-8597
12	2018	Feb	14	16:00	6.858	-4.082	-1.163			07-2826-0236	18-4634-3151
13			20	16:05	12.25	1.313	0.3743			00-8429-6887	05-3030-7509
14			22	15:45	5.554	-5.386	-1.535			18-8122-6546	13-1799-5427
15		Mar	2	16:10	14.45	3.508	0.9997			10-5559-9774	17-8187-4740
16			7	16:20	12.35	1.411	0.4021			03-7212-7732	16-1165-6632
17		Aug	9	16:30	7.351	-3.589	-1.023			11-3988-1154	03-2530-5697
18			29	12:55	13.67	2.733	0.779			11-3860-9954	09-8293-0302
19		Sep	5	13:20	6.818	-4.122	-1.175			19-4717-3587	00-8826-7122
20			26	14:30	13.57	2.628	0.749			15-2932-9135	11-6460-2907
21	2019	Mar	6	14:40	11.44	0.5015	0.1429			08-3470-5684	04-6335-1332

Bivalve Larval Survival and Development Test

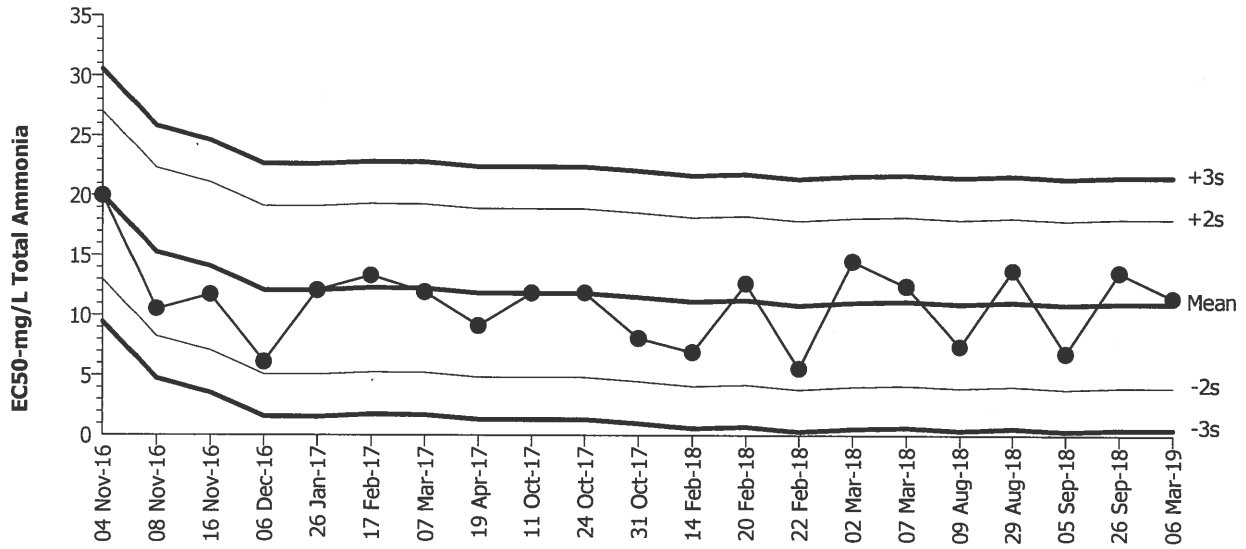
Nautilus Environmental (CA)

Test Type: Development-Survival  
Protocol: EPA/600/R-95/136 (1995)

Organism: Mytilus galloprovincialis (Bay Mussel)  
Endpoint: Development Rate

Material: Total Ammonia  
Source: Reference Toxicant-REF

Bivalve Larval Survival and Development Test



Mean: 11      Count: 20      -2s Warning Limit: 3.98      -3s Action Limit: 0.4689  
Sigma: 3.511      CV: 31.90%      +2s Warning Limit: 18.02      +3s Action Limit: 21.53

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2016	Nov	4	15:00	19.98	8.976	2.557	(+)		01-4657-1532	08-5518-3347
2			8	17:00	10.52	-0.4824	-0.1374			15-3853-5607	10-7282-8669
3			16	14:00	11.71	0.7148	0.2036			18-2336-6703	07-0745-7031
4		Dec	6	15:00	6.096	-4.904	-1.397			06-9917-3855	08-1193-6848
5	2017	Jan	26	15:30	12.06	1.058	0.3013			11-5726-2456	02-3529-0155
6		Feb	17	17:15	13.3	2.3	0.6551			01-2551-7080	05-4072-5029
7		Mar	7	16:00	11.92	0.9218	0.2625			21-2722-6816	14-1164-3152
8		Apr	19	16:45	9.106	-1.894	-0.5394			16-8954-4460	08-2921-2011
9		Oct	11	17:05	11.84	0.8358	0.2381			08-7402-7277	11-2843-2936
10			24	15:25	11.86	0.8596	0.2448			02-0819-0163	04-3277-1820
11			31	15:40	8.079	-2.921	-0.832			01-0309-5599	12-0877-7753
12	2018	Feb	14	16:00	6.905	-4.095	-1.166			07-2826-0236	12-6715-8810
13			20	16:05	12.64	1.641	0.4673			00-8429-6887	15-6081-4246
14			22	15:45	5.554	-5.446	-1.551			18-8122-6546	02-1601-6609
15		Mar	2	16:10	14.5	3.5	0.9968			10-5559-9774	16-1631-4793
16			7	16:20	12.42	1.421	0.4049			03-7212-7732	14-7776-4100
17		Aug	9	16:30	7.395	-3.605	-1.027			11-3988-1154	01-2161-8913
18			29	12:55	13.74	2.741	0.7808			11-3860-9954	00-8477-7728
19		Sep	5	13:20	6.83	-4.17	-1.188			19-4717-3587	08-6509-3391
20			26	14:30	13.59	2.586	0.7366			15-2932-9135	15-1359-6445
21	2019	Mar	6	14:40	11.45	0.4507	0.1284			08-3470-5684	18-9441-2205

**CETIS Test Data Worksheet**

Report Date: 19 Mar-19 09:26 (p 1 of 1)  
 Test Code: 08-3470-5684/190306msnh

**Bivalve Larval Survival and Development Test**

**Nautilus Environmental (CA)**

Start Date: 06 Mar-19      Species: Mytilus galloprovincialis      Sample Code: 7E57CA6E  
 End Date: 08 Mar-19      Protocol: EPA/600/R-95/136 (1995)      Sample Source: Reference Toxicant  
 Sample Date: 06 Mar-19      Material: Total Ammonia      Sample Station: Total Ammonia

C-mg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			31			173	167	3/20/19 ↓
			32			148	0	
			33			140	135	
			34			162	142	
			35			155	0	
			36			137	0	
			37			167	0	
			38			156	148	
			39			162	149	
			40			164	157	
			41			161	152	
			42			143	140	
			43			146	0	
			44			156	0	
			45			145	0	
			46			183	172	
			47			155	147	
			48			161	158	
			49			146	140	
			50			177	0	
			51			154	148	
			52			178	0	
			53			148	141	
			54			150	144	
			55			192	179	
			56			166	156	
			57			167	164	
			58			156	152	
			59			178	173	
			60			150	0	

**CETIS Test Data Worksheet**

Report Date: 05 Mar-19 16:15 (p 1 of 1)  
 Test Code: 08-3470-5684/190306msnh

**Bivalve Larval Survival and Development Test**

*018 AC 3/11* Nautilus Environmental (CA)

Start Date: 06 Mar-19 Species: *Mytilus galloprovincialis* Sample Code: ~~7E57GAE~~ (90306msnh)  
 End Date: 08 Mar-19 Protocol: EPA/600/R-95/136 (1995) Sample Source: Reference Toxicant  
 Sample Date: 06 Mar-19 Material: Total Ammonia Sample Station: Total Ammonia

C-mg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	LC	1	56			157	148	
0	LC	2	40					
0	LC	3	51					
0	LC	4	31					
0	LC	5	48					
2		1	42			141	138	
2		2	57					
2		3	54					
2		4	49					
2		5	33					
4		1	38			154	144	
4		2	47					
4		3	58					
4		4	41					
4		5	59					
8		1	39			161	149	
8		2	46					
8		3	34					
8		4	55					
8		5	53					
16		1	35			152	0	
16		2	45					
16		3	52					
16		4	32					
16		5	37					
32		1	50			173	0	
32		2	60					
32		3	44					
32		4	36					
32		5	43					

*QC/AL*

# Marine Chronic Bioassay

# Water Quality Measurements

Client: Internal  
 Sample ID: Ammonia  
 Test No.: 190306msnh

Test Species: M. galloprovincialis  
 Start Date/Time: 3/6/2019 14450 Q18 vs 3/8/19  
 End Date/Time: 3/8/2019 1420

Concentration (mg/L)	Salinity (ppt)			Temperature (°C)			Dissolved Oxygen (mg/L)			pH (pH units)		
	0	24	48	0	24	48	0	24	48	0	24	48
Lab Control	31.7	31.8	31.7	14.9	14.9	14.6	8.0	8.3	8.2	8.01	7.98	7.89
2	31.9	32.0	31.9	15.0	14.7	14.4	8.1	8.3	8.4	8.03	8.00	7.88
4	31.9	32.0	32.1	15.3	14.6	14.5	8.0	8.2	8.3	8.03	7.99	7.88
8	31.6	31.5	31.8	15.6	14.8	14.5	7.9	8.2	8.6	7.98	7.95	7.84
16	31.6	31.8	31.7	15.6	14.7	14.6	7.9	8.2	8.6	8.01	7.97	7.86
32	31.4	31.9	31.7	15.6	14.6	14.9	7.8	8.2	8.5	7.98	7.99	7.85

Technician Initials: \_\_\_\_\_  
 WQ Readings: 

0	24	48
BD	RT	KFP
BD 080		
AL		
BD 080		
AL		

  
 Dilutions made by: \_\_\_\_\_  
 Collect NH<sub>3</sub> Subsample: \_\_\_\_\_

High conc. made (mg/L):	32
Vol. Ammonia stock added (mL):	13.1
Final Volume (mL):	500
Ammonia stock concentration (mg/L):	1000

Comments: 0 hrs: \_\_\_\_\_  
 24 hrs: \_\_\_\_\_  
 48 hrs: \_\_\_\_\_

QC Check: vs 4/1/19 Final Review: AC 4/3/19

**Total Ammonia Analysis  
Marine**

**Overlying Water**

Client: Internal  
 Project: Ammonia Reference Toxicant  
 Test Type: Mytilus 48-Hr

DI Blank: 0.0  
 SW Blank: 0.0

Test Start Date: 3/6/2019

Analyst: SG  
 Analysis Date: 3/7/19

N x 1.22

Sample ID	Nautilus ID	Sub-Sample Date	Test Day	NH3-N (mg/L)	Ammonia (mg/L)
Blank Spike (10 mg/L NH <sub>3</sub> )		NA	NA	8.2	10.0
Lab Control	76	3/6/2019	0	0.4	10.5
2	77	3/6/2019	0	2.0	2.4
4	78	3/6/2019	0	3.7	4.5
8	79	3/6/2019	0	6.7	8.2
16	80	3/6/2019	0	12.3	15.0
32	81	3/6/2019	0	24.5	29.9
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.2	10.0
Sample Duplicate <sup>a</sup>	80	NA	NA	12.0	14.7
Sample Duplicate + Spike <sup>a</sup>		NA	NA	20.3	24.8
Spike Check (10 mg/L NH <sub>3</sub> )		NA	NA	8.2	10.0

$$\text{Relative Percent Difference (RPD)} = \frac{[\text{sample}] (\text{mg/L}) - [\text{sample duplicate}] (\text{mg/L})}{[\text{average ammonia}] (\text{mg/L})} \times 100$$

Acceptable Range: 0-20%

$$\text{Percent Recovery} = \frac{[\text{spiked sample}] (\text{mg/L}) - [\text{sample}] (\text{mg/L})}{\text{nominal} [\text{spike}] (\text{mg/L})} \times 100$$

Acceptable Range: 80-120%<sup>b</sup>

QC Sample ID	[NH <sub>3</sub> ]	[Sample Dup]	Measured [Spike]	Nominal [Spike]	RPD	% Recovery
Blank	0.0	NA	10.0	10	NA	100
80	15.0	14.7	24.8	10	2.0	98

Comments: \_\_\_\_\_

Notes: <sup>a</sup> Unless otherwise noted, the last sample listed on the datasheet is used for duplicate and duplicate + spike QC check.

<sup>b</sup> Acceptable range for % recovery applies only to the blank spike. Spike recoveries in samples may vary based on sample matrix and are for information only.

<sup>c</sup> Calculation not performed due to one or both values below the method detection limit.

Method Detection Limit (MDL) = 0.5 mg/L

QC Check: Ac 3/10/19

Final Review: 3/4/19



Marine Chronic Bioassay

Larval Development Worksheet

Client: Internal  
 Test No.: 190306 msnh  
 Test Species: M. galloprovincialis  
 Animal Source: Mission Bay  
 Date Received: 3/5/19  
 Test Chambers: 30 mL glass vial  
 Sample Volume: 10 mL

Start Date/Time: 3/6/2019 1440  
 End Date/Time: 3/8/2019 1420  
 Technician Initials: VS/BO

Spawn Information

First Gamete Release Time: 1105

Sex	Number Spawning
Male	5+
Female	6+

Gamete Selection

Sex	Beaker Number(s)	Condition (sperm motility, egg density, color, shape, etc.)
Male	1, 5, 4	good motility, very dense
Female 1	1	yellow, high density, good quality
Female 2	2	yellow, very high density, okay quality
Female 3	—	—

Egg Fertilization Time: 1210

Embryo Stock Selection

Stock Number	% of embryos at 2-cell division stage
Female 1	98%
Female 2	94%
Female 3	—

Stock(s) chosen for testing: 1

Embryo Inoculum Preparation

Target count on Sedgwick-Rafter slide for desired density is 6 embryos

Number Counted: 10      9  
12                      12  
7                         14  
13                      13  
16                      11

Mean: 11.7

Mean 11.7 X 50 = 585 embryos/ml

Initial Density: 585 = 1.95 (dilution factor)  
 Desired Final Density: 300  
 (to inoculate with 0.5 ml)

Prepare the embryo inoculum according to the calculated dilution factor. For example, if the dilution factor is 2.25, use 100 ml of existing stock (1 part) and 125 ml of dilution water (1.25 parts).

Time Zero Control Counts

Rand. No.	No. Dividing	Total	% Dividing	Mean % Dividing
T0 1	149	152	98	99
T0 2	163	165	99	
T0 3	159	163	98	
T0 4	150	152	99	
T0 5	160	162	99	
T0 6	158	159	99	

48-h QC: 156/159 98.1%

Comments:

$\bar{x} = 157$

QC Check: AC 3/11/19

Final Review: VS/1/19

*Americamysis*

**CETIS Summary Report**

Report Date: 05 Mar-19 12:51 (p 1 of 1)  
 Test Code: 190227myra | 18-0439-0628

**Mysid 96-h Acute Survival Test** **Nautilus Environmental (CA)**

<b>Batch ID:</b> 07-5889-1499	<b>Test Type:</b> Survival (96h)	<b>Analyst:</b>
<b>Start Date:</b> 27 Feb-19 15:45	<b>Protocol:</b> EPA/821/R-02-012 (2002)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 03 Mar-19 14:05	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 94h	<b>Source:</b> Aquatic Biosystems, CO	<b>Age:</b> 4d

<b>Sample ID:</b> 11-9708-6637	<b>Code:</b> 190227myra	<b>Client:</b> Internal
<b>Sample Date:</b> 27 Feb-19	<b>Material:</b> Copper chloride	<b>Project:</b>
<b>Receive Date:</b> 27 Feb-19	<b>Source:</b> Reference Toxicant	
<b>Sample Age:</b> 16h	<b>Station:</b> Copper Chloride	

**Comparison Summary**

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
00-8400-5644	48h Survival Rate	200	400	282.8	23.9%		Dunnett Multiple Comparison Test
14-9521-7167	96h Survival Rate	200	400	282.8	16.4%		Dunnett Multiple Comparison Test

**Point Estimate Summary**

Analysis ID	Endpoint	Level	µg/L	95% LCL	95% UCL	TU	Method
11-4083-2551	48h Survival Rate	EC50	286.4	251.4	326.3		Spearman-Kärber
14-6353-1021	96h Survival Rate	EC50	256.2	229.8	285.5		Spearman-Kärber

**48h Survival Rate Summary**

C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	0.9	0.7163	1	0.8	1	0.05774	0.1155	12.83%	0.0%
50		4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	-5.56%
100		4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	-5.56%
200		4	0.85	0.6909	1	0.8	1	0.05	0.1	11.76%	5.56%
400		4	0.1	0	0.4182	0	0.4	0.1	0.2	200.0%	88.89%
800		4	0	0	0	0	0	0	0	100.0%	100.0%

**96h Survival Rate Summary**

C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	0.9	0.7163	1	0.8	1	0.05774	0.1155	12.83%	0.0%
50		4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	-5.56%
100		4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	-5.56%
200		4	0.8	0.8	0.8	0.8	0.8	0	0	0.0%	11.11%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%

**48h Survival Rate Detail**

C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Control	1	1	0.8	0.8
50		0.8	1	1	1
100		0.8	1	1	1
200		0.8	1	0.8	0.8
400		0.4	0	0	0
800		0	0	0	0

**96h Survival Rate Detail**

C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Control	1	1	0.8	0.8
50		0.8	1	1	1
100		0.8	1	1	1
200		0.8	0.8	0.8	0.8
400		0	0	0	0
800		0	0	0	0

**CETIS Analytical Report**

Report Date: 05 Mar-19 12:51 (p 1 of 4)  
 Test Code: 190227myra | 18-0439-0628

<b>Mysid 96-h Acute Survival Test</b>							<b>Nautilus Environmental (CA)</b>				
---------------------------------------	--	--	--	--	--	--	------------------------------------	--	--	--	--

<b>Analysis ID:</b> 00-8400-5644	<b>Endpoint:</b> 48h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7
<b>Analyzed:</b> 05 Mar-19 12:48	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	23.9%	200	400	282.8	

<b>Dunnett Multiple Comparison Test</b>									
Control	vs	C-µg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		50	-0.5572	2.356	0.252	6	0.9303	CDF	Non-Significant Effect
		100	-0.5572	2.356	0.252	6	0.9303	CDF	Non-Significant Effect
		200	0.5572	2.356	0.252	6	0.5791	CDF	Non-Significant Effect
		400*	8.292	2.356	0.252	6	<0.0001	CDF	Significant Effect

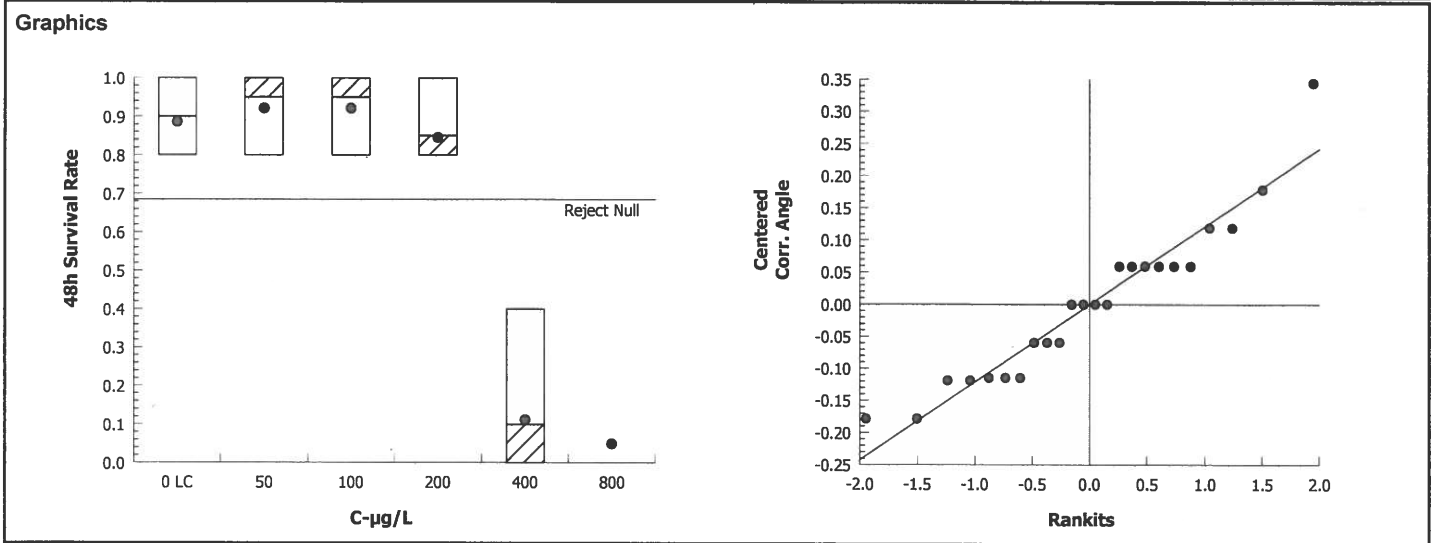
<b>ANOVA Table</b>						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.635507	0.6588767	4	28.86	<0.0001	Significant Effect
Error	0.3424532	0.02283021	15			
Total	2.97796		19			

<b>Distributional Tests</b>						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Bartlett Equality of Variance	2.068	13.28	0.7232	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.9111	0.866	0.0668	Normal Distribution	

<b>48h Survival Rate Summary</b>											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	0.9	0.7163	1	0.9	0.8	1	0.05774	12.83%	0.0%
50		4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	-5.56%
100		4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	-5.56%
200		4	0.85	0.6909	1	0.8	0.8	1	0.05	11.76%	5.56%
400		4	0.1	0	0.4182	0	0	0.4	0.1	200.0%	88.89%
800		4	0	0	0	0	0	0	0	100.0%	100.0%

<b>Angular (Corrected) Transformed Summary</b>											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.226	1.007	1.445	1.226	1.107	1.345	0.06874	11.21%	0.0%
50		4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	-4.86%
100		4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	-4.86%
200		4	1.167	0.9772	1.356	1.107	1.107	1.345	0.05953	10.21%	4.86%
400		4	0.3403	-0.02503	0.7057	0.2255	0.2255	0.6847	0.1148	67.47%	72.25%
800		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	81.61%

Mysid 96-h Acute Survival Test		Nautilus Environmental (CA)	
Analysis ID: 00-8400-5644	Endpoint: 48h Survival Rate	CETIS Version: CETISv1.8.7	
Analyzed: 05 Mar-19 12:48	Analysis: Parametric-Control vs Treatments	Official Results: Yes	



**CETIS Analytical Report**

Report Date: 05 Mar-19 12:51 (p 3 of 4)  
 Test Code: 190227myra | 18-0439-0628

Mysid 96-h Acute Survival Test						Nautilus Environmental (CA)					
--------------------------------	--	--	--	--	--	-----------------------------	--	--	--	--	--

Analysis ID: 14-9521-7167	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 05 Mar-19 12:48	Analysis: Parametric-Control vs Treatments	Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	16.4%	200	400	282.8	

Dunnett Multiple Comparison Test									
Control	vs	C-µg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		50	-0.7746	2.287	0.176	6	0.9362	CDF	Non-Significant Effect
		100	-0.7746	2.287	0.176	6	0.9362	CDF	Non-Significant Effect
		200	1.549	2.287	0.176	6	0.1630	CDF	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.08506185	0.02835395	3	2.4	0.1187	Non-Significant Effect
Error	0.1417698	0.01181415	12			
Total	0.2268316		15			

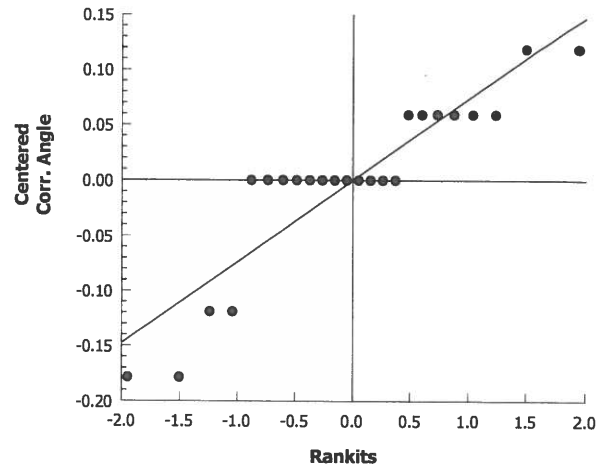
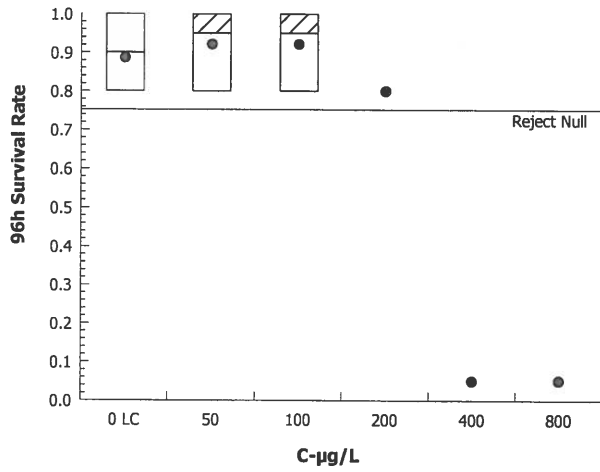
Distributional Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	1.333	5.953	0.3096	Equal Variances
Variances	Levene Equality of Variance	6	5.953	0.0097	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.8514	0.8408	0.0143	Normal Distribution

96h Survival Rate Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	0.9	0.7163	1	0.9	0.8	1	0.05774	12.83%	0.0%
50		4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	-5.56%
100		4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	-5.56%
200		4	0.8	0.7997	0.8003	0.8	0.8	0.8	0	0.0%	11.11%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%

Angular (Corrected) Transformed Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.226	1.007	1.445	1.226	1.107	1.345	0.06874	11.21%	0.0%
50		4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	-4.86%
100		4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	-4.86%
200		4	1.107	1.107	1.108	1.107	1.107	1.107	0	0.0%	9.71%
400		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	81.61%
800		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	81.61%

Mysid 96-h Acute Survival Test		Nautilus Environmental (CA)	
Analysis ID: 14-9521-7167	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7	
Analyzed: 05 Mar-19 12:48	Analysis: Parametric-Control vs Treatments	Official Results: Yes	

Graphics



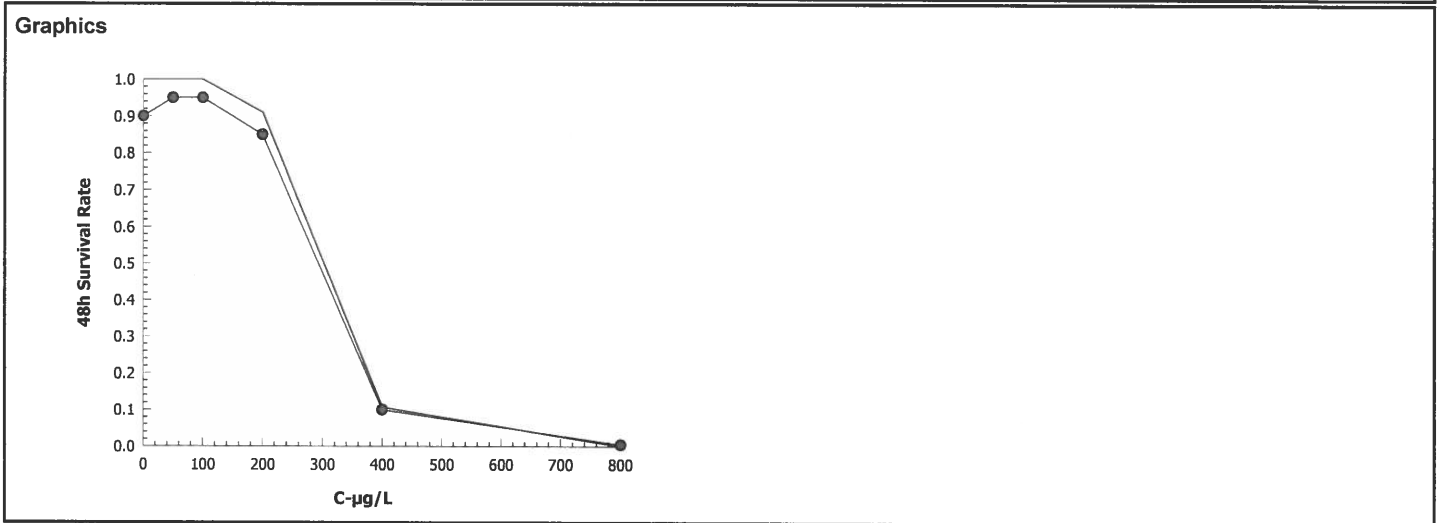
**CETIS Analytical Report**

Report Date: 05 Mar-19 12:51 (p 1 of 2)  
 Test Code: 190227myra | 18-0439-0628

<b>Mysid 96-h Acute Survival Test</b>			<b>Nautilus Environmental (CA)</b>		
<b>Analysis ID:</b> 11-4083-2551	<b>Endpoint:</b> 48h Survival Rate	<b>CETIS Version:</b> CETISv1.8.7			
<b>Analyzed:</b> 05 Mar-19 12:48	<b>Analysis:</b> Untrimmed Spearman-Kärber	<b>Official Results:</b> Yes			

<b>Spearman-Kärber Estimates</b>							
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0.1	0.00%	2.457	0.02832	286.4	251.4	326.3

<b>48h Survival Rate Summary</b>			<b>Calculated Variate(A/B)</b>								
C-µg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	0.9	0.8	1	0.05774	0.1155	12.83%	0.0%	18	20
50		4	0.95	0.8	1	0.05	0.1	10.53%	-5.56%	19	20
100		4	0.95	0.8	1	0.05	0.1	10.53%	-5.56%	19	20
200		4	0.85	0.8	1	0.05	0.1	11.76%	5.56%	17	20
400		4	0.1	0	0.4	0.1	0.2	200.0%	88.89%	2	20
800		4	0	0	0	0	0		100.0%	0	20





# CETIS Analytical Report

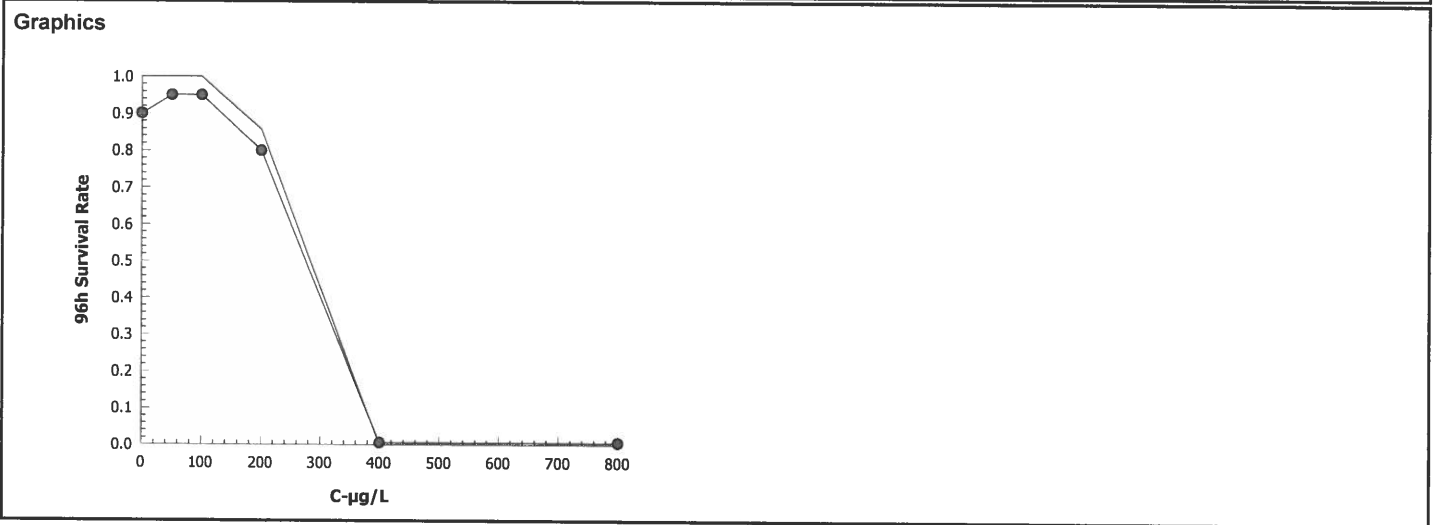
Report Date: 05 Mar-19 12:51 (p 2 of 2)  
 Test Code: 190227myra | 18-0439-0628

Mysid 96-h Acute Survival Test Nautilus Environmental (CA)

Analysis ID: 14-6353-1021 Endpoint: 96h Survival Rate CETIS Version: CETISv1.8.7  
 Analyzed: 05 Mar-19 12:48 Analysis: Untrimmed Spearman-Kärber Official Results: Yes

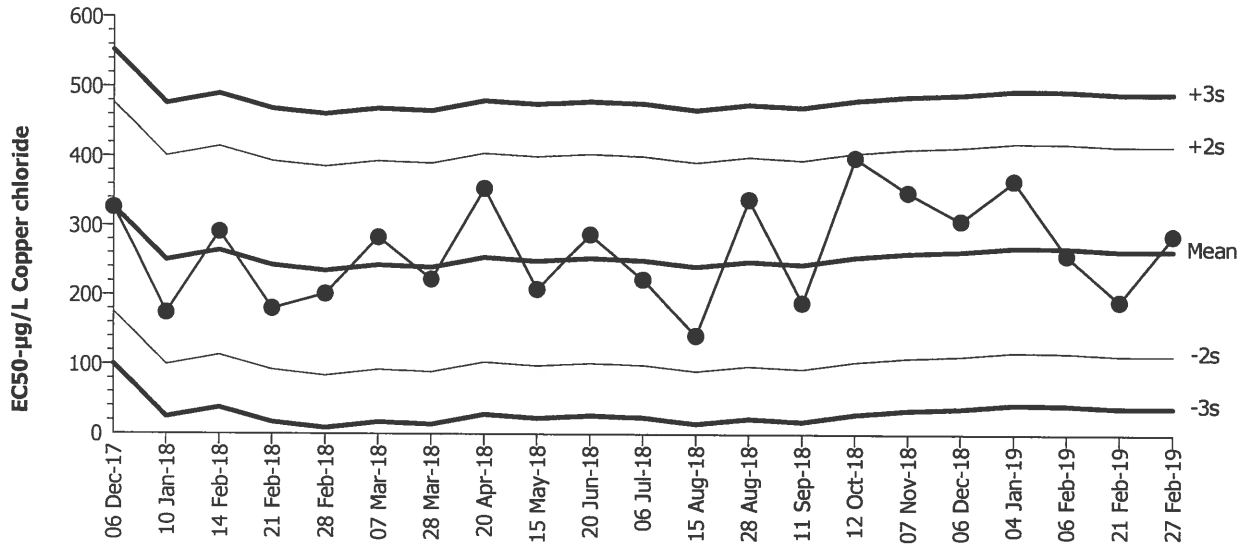
Spearman-Kärber Estimates							
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0.1	0.00%	2.409	0.02355	256.2	229.8	285.5

96h Survival Rate Summary			Calculated Variate(A/B)								
C-µg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	0.9	0.8	1	0.05774	0.1155	12.83%	0.0%	18	20
50		4	0.95	0.8	1	0.05	0.1	10.53%	-5.56%	19	20
100		4	0.95	0.8	1	0.05	0.1	10.53%	-5.56%	19	20
200		4	0.8	0.8	0.8	0	0	0.0%	11.11%	16	20
400		4	0	0	0	0	0		100.0%	0	20
800		4	0	0	0	0	0		100.0%	0	20



**Mysid 96-h Acute Survival Test** **Nautilus Environmental (CA)**  
**Test Type:** Survival (96h) **Organism:** Americamysis bahia (Opossum Shri) **Material:** Copper chloride  
**Protocol:** EPA/821/R-02-012 (2002) **Endpoint:** 48h Survival Rate **Source:** Reference Toxicant-REF

**Mysid 96-h Acute Survival Test**



**Mean:** 264.1 **Count:** 20 **-2s Warning Limit:** 113.4 **-3s Action Limit:** 38.09  
**Sigma:** 75.35 **CV:** 28.50% **+2s Warning Limit:** 414.8 **+3s Action Limit:** 490.2

**Quality Control Data**

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Dec	6	15:30	326.1	61.96	0.8223			05-7061-5305	08-4813-7322
2	2018	Jan	10	16:10	174.1	-89.99	-1.194			19-5198-6454	14-1913-8860
3		Feb	14	14:30	291.1	27.03	0.3587			09-8473-5109	02-7257-6506
4			21	13:05	180.3	-83.85	-1.113			02-7695-3118	17-0506-8696
5			28	16:35	201.2	-62.92	-0.8351			14-6766-9314	20-5746-4495
6		Mar	7	16:25	282.8	18.74	0.2487			10-8646-9178	05-6049-9266
7			28	16:10	221.9	-42.19	-0.5599			15-4374-6741	11-5664-4039
8		Apr	20	15:45	353.6	89.48	1.188			10-4473-7155	03-6870-9073
9		May	15	13:50	207.9	-56.25	-0.7465			14-4944-1297	06-5339-6371
10		Jun	20	15:30	287	22.86	0.3033			04-4231-0903	07-3012-3160
11		Jul	6	14:55	221.9	-42.19	-0.5599			20-2728-1377	06-2839-1792
12		Aug	15	14:00	141.4	-122.7	-1.628			14-8303-0655	09-9519-6980
13			28	16:10	337.9	73.76	0.9789			21-2933-4468	08-9274-2637
14		Sep	11	16:35	188.5	-75.61	-1.003			16-0699-3926	11-2760-5538
15		Oct	12	15:40	398	133.9	1.777			04-3284-8017	01-9110-2945
16		Nov	7	15:15	348.2	84.12	1.116			05-2361-5235	05-6677-0931
17		Dec	6	15:45	307.1	42.99	0.5705			02-8370-7066	03-1957-0006
18	2019	Jan	4	16:20	365.1	101	1.341			15-2358-5025	00-6334-9175
19		Feb	6	15:15	257.5	-6.63	-0.08798			02-9902-9095	09-9328-1865
20			21	15:50	191.3	-72.79	-0.9661			08-2049-6233	08-1016-4407
21			27	15:45	286.4	22.27	0.2955			18-0439-0628	11-4083-2551

Mysid 96-h Acute Survival Test

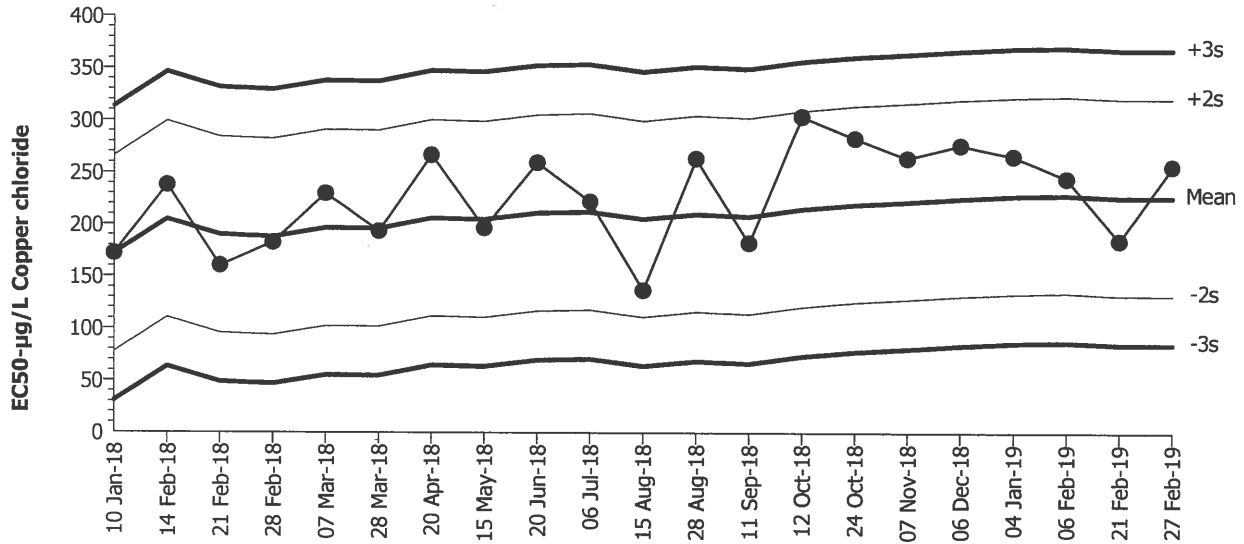
Nautilus Environmental (CA)

Test Type: Survival (96h)  
 Protocol: EPA/821/R-02-012 (2002)

Organism: Americamysis bahia (Opossum Shri  
 Endpoint: 96h Survival Rate

Material: Copper chloride  
 Source: Reference Toxicant-REF

Mysid 96-h Acute Survival Test



Mean: 226.2      Count: 20      -2s Warning Limit: 131.9      -3s Action Limit: 84.77  
 Sigma: 47.14      CV: 20.80%      +2s Warning Limit: 320.5      +3s Action Limit: 367.6

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Jan	10	16:10	172	-54.24	-1.151			19-5198-6454	19-5862-9045
2		Feb	14	14:30	237.9	11.71	0.2485			09-8473-5109	07-9224-4059
3			21	13:05	160.2	-66.04	-1.401			02-7695-3118	10-4055-2096
4			28	16:35	182.6	-43.63	-0.9256			14-6766-9314	10-1761-4245
5		Mar	7	16:25	229.7	3.54	0.07509			10-8646-9178	16-7811-8736
6			28	16:10	193.2	-33.01	-0.7003			15-4374-6741	15-6199-7890
7		Apr	20	15:45	266.7	40.51	0.8593			10-4473-7155	05-7699-1337
8		May	15	13:50	196.6	-29.64	-0.6287			14-4944-1297	02-2365-6992
9		Jun	20	15:30	259.4	33.17	0.7036			04-4231-0903	16-8168-7125
10		Jul	6	14:55	221.9	-4.286	-0.09092			20-2728-1377	02-5699-0099
11		Aug	15	14:00	136.6	-89.6	-1.901			14-8303-0655	01-5941-7563
12			28	16:10	263.4	37.23	0.7898			21-2933-4468	03-8009-1017
13		Sep	11	16:35	182.1	-44.12	-0.9359			16-0699-3926	16-7253-9506
14		Oct	12	15:40	303.7	77.48	1.644			04-3284-8017	12-8637-0903
15			24	15:15	282.8	56.64	1.202			13-1692-3940	19-7279-9581
16		Nov	7	15:15	263.9	37.7	0.7998			05-2361-5235	10-0369-9874
17		Dec	6	15:45	276.3	50.07	1.062			02-8370-7066	14-9907-2370
18	2019	Jan	4	16:20	265.9	39.67	0.8415			15-2358-5025	06-4259-8181
19		Feb	6	15:15	244.4	18.24	0.3869			02-9902-9095	01-2344-0730
20			21	15:50	184.6	-41.57	-0.8819			08-2049-6233	21-2714-8308
21			27	15:45	256.2	29.98	0.6359			18-0439-0628	14-6353-1021

Marine Acute Bioassay  
Static-Renewal Conditions

Water Quality Measurements  
& Test Organism Survival

Client: Internal  
Sample ID: CuCl<sub>2</sub>  
Test No.: 190227myra

Test Species: A. bahia  
Start Date/Time: 2/27/2019 1445 1545  
Renewal Date/Time: 3/1/2019 1430  
End Date/Time: 3/3/2019 1405

Tech Initials				
0	24	48	72	96
DM	BO	RT	BO	LTP
RTS	BO	RT	BO	DM
RT		RT		
800	-	800	-	-
17.4	-	17.4	-	-
2000	-	2000	-	-

Cu stock concentration (µg/L): 92,000

Dilutions made by: RT  
High conc. made (µg/L):  
Vol. Cu stock added (mL):  
Final Volume (mL):

Concentration (µg/L)	Rand #	Number of Live Organisms					Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	8	5	5	5	5	5	30.4	30.8	29.7	30.1	30.1	24.8	24.7	24.1	24.6	25.0	6.6	6.3	7.1	6.0	5.9	7.9	7.83	7.95	7.83	7.77
	7	5	5	5	5			31.1					25.2					5.7						7.68		
	15	5	4	4	4	4																				
	4	5	4	4	4	4																				
50	11	5	4	4	4	4	30.4	30.9	29.4	29.7	29.8	24.9	24.7	24.1	24.7	25.1	6.7	5.9	7.1	5.8	5.7	7.98	7.89	7.97	7.89	7.80
	12	5	5	5	5	5		30.8					25.4					5.0						7.62		
	2	5	5	5	5	5																				
	21	5	5	5	5	5																				
100	10	5	4	4	4	4	30.3	30.7	29.4	29.8	30.0	24.8	25.0	24.0	24.7	25.0	6.6	5.9	7.1	5.6	5.3	7.99	7.80	7.99	7.86	7.80
	13	5	5	5	5	5		30.6					25.4					5.1						7.67		
	1	5	5	5	5	5																				
	23	5	5	5	5	5																				
200	20	5	4	4	4	4	30.3	30.7	29.4	29.7	29.8	24.7	24.8	24.1	24.9	25.1	6.6	5.9	7.1	5.6	5.7	7.99	7.83	7.97	7.89	7.83
	14	5	5	5	5	4		30.9					25.0					5.4						7.76		
	6	5	5	4	4	4																				
	22	5	5	4	4	4																				
400	3	5	2	2	1	0	30.3	30.7	29.3	29.6	29.9	25.0	24.8	24.0	25.0	24.9	6.6	6.0	7.1	6.0	6.0	7.97	7.83	7.97	7.82	7.73
	19	5	0	-	-	-		31.9					25.1					5.7						7.80		
	16	5	0	-	-	-																				
	9	5	0	-	-	-																				
800	5	5	0	-	-	-	30.0	30.6	29.2	-	-	24.9	24.9	24.0	-	-	6.7	6.1	7.2	6.7	-	7.96	7.83	7.94	-	
	24	5	0	-	-	-		31.0					25.0					5.8						7.81		
	18	5	3	0	-	-																				
	17	5	0	-	-	-																				

Rand # QC: ACS  
Initial Counts QC'd by: DM obo LTP  
Initiated by: DM

Animal Source/Date Received: ABS/2/26/19 Age at Initiation: 4d  
Animal Acclimation Qualifiers (circle all that apply): Q22 / Q23 / Q24 / none

Feeding Times				
0	24	48	72	96
AM: -	0900	0905	0930	0820
PM: 1715	1555	1555	1710	-

Comments: i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal @ 18 BO 3/1/19  
Organisms fed prior to initiation, circle one (y) / n ) (A) Q18 DM 2/27/19

QC Check: EG 3/6/19 Final Review: KFP 3/6/19  
Nautilus Environmental. 4340 Vandever Avenue. San Diego, CA 92120.

*Menidia*

**CETIS Summary Report**

**Report Date:** 05 Mar-19 12:37 (p 1 of 1)  
**Test Code:** 190227mbra | 14-0947-0420

**Inland SilverSide 96-h Acute Survival Test** **Nautilus Environmental (CA)**

<b>Batch ID:</b> 13-1304-5297	<b>Test Type:</b> Survival (96h)	<b>Analyst:</b>
<b>Start Date:</b> 27 Feb-19 16:25	<b>Protocol:</b> EPA/821/R-02-012 (2002)	<b>Diluent:</b> Diluted Natural Seawater
<b>Ending Date:</b> 03 Mar-19 14:30	<b>Species:</b> Menidia beryllina	<b>Brine:</b> Not Applicable
<b>Duration:</b> 94h	<b>Source:</b> Aquatic Biosystems, CO	<b>Age:</b> 9d

<b>Sample ID:</b> 00-1745-5310	<b>Code:</b> 190227mbra	<b>Client:</b> Internal
<b>Sample Date:</b> 27 Feb-19	<b>Material:</b> Copper chloride	<b>Project:</b>
<b>Receive Date:</b> 27 Feb-19	<b>Source:</b> Reference Toxicant	
<b>Sample Age:</b> 16h	<b>Station:</b> Copper Chloride	

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
04-0707-4803	96h Survival Rate	100	200	141.4	17.7%		Dunnett Multiple Comparison Test

Point Estimate Summary							
Analysis ID	Endpoint	Level	µg/L	95% LCL	95% UCL	TU	Method
00-4247-8099	96h Survival Rate	EC50	135.8	120.5	153		Trimmed Spearman-Kärber

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
00-4247-8099	96h Survival Rate	Control Resp	0.95	0.9 - NL	Yes	Passes Acceptability Criteria
04-0707-4803	96h Survival Rate	Control Resp	0.95	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	0.0%
50		4	0.9	0.7163	1	0.8	1	0.05774	0.1155	12.83%	5.26%
100		4	0.85	0.6909	1	0.8	1	0.05	0.1	11.76%	10.53%
200		4	0.05	0	0.2091	0	0.2	0.05	0.1	200.0%	94.74%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%

96h Survival Rate Detail					
C-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Control	1	1	0.8	1
50		0.8	1	0.8	1
100		0.8	0.8	0.8	1
200		0	0.2	0	0
400		0	0	0	0
800		0	0	0	0

# CETIS Analytical Report

Report Date: 05 Mar-19 12:37 (p 1 of 1)  
 Test Code: 190227mbra | 14-0947-0420

Inland Silverside 96-h Acute Survival Test Nautilus Environmental (CA)

Analysis ID: 04-0707-4803      Endpoint: 96h Survival Rate      CETIS Version: CETISv1.8.7  
 Analyzed: 05 Mar-19 12:35      Analysis: Parametric-Control vs Treatments      Official Results: Yes

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	17.7%	100	200	141.4	

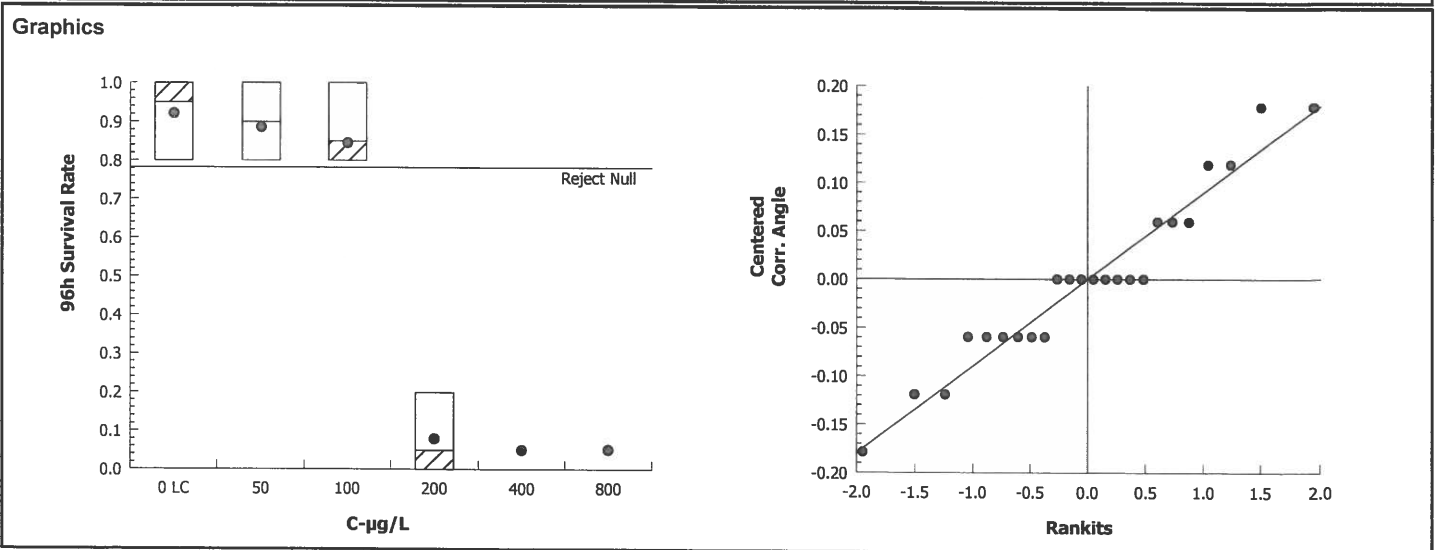
Dunnnett Multiple Comparison Test									
Control	vs	C-µg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Control		50	0.6794	2.287	0.200	6	0.4672	CDF	Non-Significant Effect
		100	1.359	2.287	0.200	6	0.2133	CDF	Non-Significant Effect
		200*	11.42	2.287	0.200	6	<0.0001	CDF	Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.68575	0.8952501	3	58.29	<0.0001	Significant Effect
Error	0.1843007	0.01535839	12			
Total	2.870051		15			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Bartlett Equality of Variance	0.08558	11.34	0.9935	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.9098	0.8408	0.1154	Normal Distribution	

96h Survival Rate Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
50		4	0.9	0.7163	1	0.9	0.8	1	0.05774	12.83%	5.26%
100		4	0.85	0.6909	1	0.8	0.8	1	0.05	11.76%	10.53%
200		4	0.05	0	0.2091	0	0	0.2	0.05	200.0%	94.74%
400		4	0	0	0	0	0	0	0		100.0%
800		4	0	0	0	0	0	0	0		100.0%

Angular (Corrected) Transformed Summary											
C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
50		4	1.226	1.007	1.445	1.226	1.107	1.345	0.06874	11.21%	4.63%
100		4	1.167	0.9772	1.356	1.107	1.107	1.345	0.05953	10.21%	9.26%
200		4	0.285	0.09558	0.4745	0.2255	0.2255	0.4636	0.05953	41.77%	77.83%
400		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	82.46%
800		4	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0	0.0%	82.46%



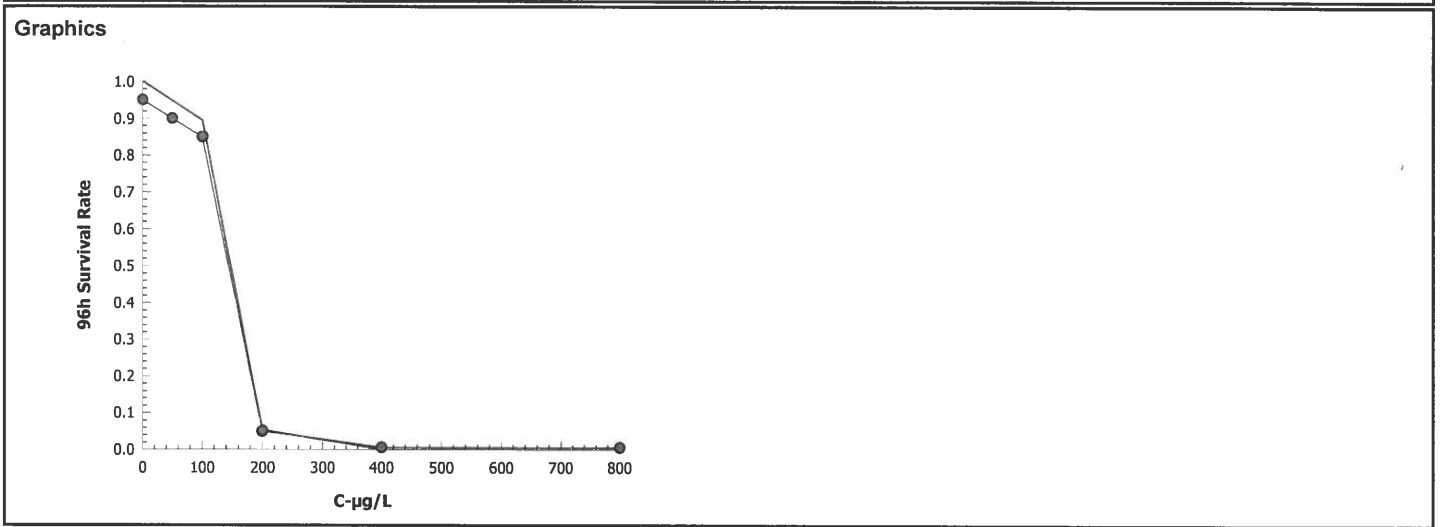
**CETIS Analytical Report**

Report Date: 05 Mar-19 12:37 (p 1 of 1)  
 Test Code: 190227mbra | 14-0947-0420

<b>Inland Silverside 96-h Acute Survival Test</b>			<b>Nautilus Environmental (CA)</b>		
Analysis ID: 00-4247-8099	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.8.7			
Analyzed: 05 Mar-19 12:35	Analysis: Trimmed Spearman-Kärber	Official Results: Yes			

Trimmed Spearman-Kärber Estimates							
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0.05	5.26%	2.133	0.02596	135.8	120.5	153

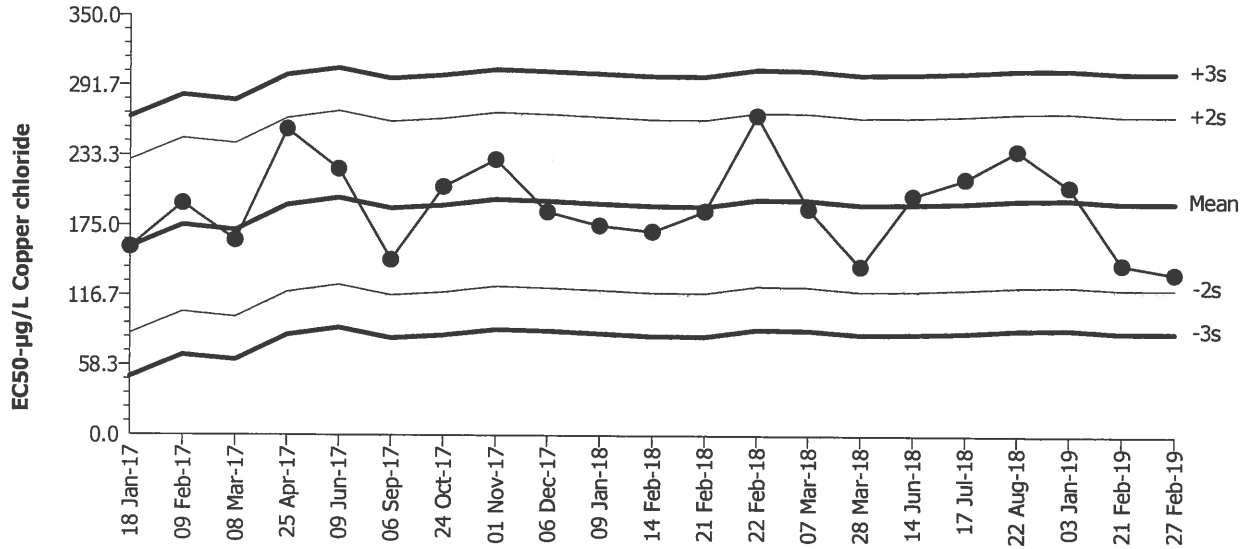
96h Survival Rate Summary			Calculated Variate(A/B)								
C-µg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Lab Control	4	0.95	0.8	1	0.05	0.1	10.53%	0.0%	19	20
50		4	0.9	0.8	1	0.05774	0.1155	12.83%	5.26%	18	20
100		4	0.85	0.8	1	0.05	0.1	11.76%	10.53%	17	20
200		4	0.05	0	0.2	0.05	0.1	200.0%	94.74%	1	20
400		4	0	0	0	0	0		100.0%	0	20
800		4	0	0	0	0	0		100.0%	0	20





Inland Silverside 96-h Acute Survival Test		Nautilus Environmental (CA)	
Test Type: Survival (96h)	Organism: Menidia beryllina (Inland Silverside)	Material: Copper chloride	
Protocol: EPA/821/R-02-012 (2002)	Endpoint: 96h Survival Rate	Source: Reference Toxicant-REF	

Inland Silverside 96-h Acute Survival Test



Mean: 194.6      Count: 20      -2s Warning Limit: 122.4      -3s Action Limit: 86.31  
 Sigma: 36.11      CV: 18.60%      +2s Warning Limit: 266.9      +3s Action Limit: 303

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Jan	18	16:10	156.9	-37.68	-1.044			08-3080-1498	15-7184-5634
2		Feb	9	12:00	193.2	-1.413	-0.03912			00-6390-0484	15-2790-9508
3		Mar	8	15:15	162.5	-32.15	-0.8903			19-2708-9742	07-1568-1665
4		Apr	25	17:00	254.9	60.31	1.67			20-8848-5762	06-2422-4286
5		Jun	9	17:15	221.9	27.31	0.7564			04-5405-2533	13-3732-1084
6		Sep	6	15:50	146.4	-48.19	-1.335			01-8301-6131	10-0799-2130
7		Oct	24	16:10	207.1	12.45	0.3449			10-0714-4627	19-6697-7894
8		Nov	1	10:15	229.7	35.14	0.9731			14-0848-4500	09-3507-0741
9		Dec	6	15:25	186.6	-7.993	-0.2214			17-2716-0280	10-6923-1723
10	2018	Jan	9	16:05	175.2	-19.4	-0.5372			15-9782-4320	14-5127-3080
11		Feb	14	14:50	170.3	-24.33	-0.6737			14-7429-6310	14-6416-7425
12			21	12:25	187.2	-7.422	-0.2055			20-0148-6736	18-8740-2809
13			22	17:20	266.7	72.11	1.997			21-2244-9573	15-2512-9013
14		Mar	7	16:25	189.3	-5.25	-0.1454			06-3891-7579	03-5981-6406
15			28	17:15	141.4	-53.18	-1.473			18-3798-9831	05-5342-2351
16		Jun	14	14:35	200	5.4	0.1495			01-9952-0614	00-3575-1747
17		Jul	17	14:30	214.4	19.75	0.5471			11-1445-3115	12-3693-5336
18		Aug	22	16:25	237.8	43.24	1.197			08-6172-7555	12-4329-0617
19	2019	Jan	3	16:50	207.9	13.25	0.367			16-0506-4055	11-1190-1934
20		Feb	21	16:05	143.5	-51.12	-1.416			10-4228-2556	08-7111-9529
21			27	16:25	135.8	-58.83	-1.629			14-0947-0420	00-4247-8099

**Marine Acute Bioassay**  
**Static-Renewal Conditions**

**Water Quality Measurements**  
**& Test Organism Survival**

Client: Internal  
 Sample ID: CuCl<sub>2</sub>  
 Test No.: 190227mbra

Test Species: M. beryllina  
 Start Date/Time: 2/27/2019 1025  
 End Date/Time: 3/3/2019 1430

Tech Initials				
0	24	48	72	96
LR	AS	RT	BO	UP
AS	BO	RT	BO	DM
AS		RT		
800	--	200	--	--
17A	--	4.4	--	--
2000	--	2000	--	--

Cu stock concentration (µg/L): 92,000

Concentration (µg/L)	Rand #	Number of Live Organisms					Salinity (ppt)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Lab Control	19	5	5	5	5	5	30.6	30.7	29.4	29.7	29.9	24.8	24.8	24.1	24.7	25.0	6.6	5.8	6.9	5.9	5.7	7.99	7.87	7.91	7.86	7.86
	14	5	5	5	5	5			30.9					25.5					5.7					7.75		
	6	5	4	4	4	4																				
	24	5	5	5	5	5																				
50	11	5	4	4	4	4	30.4	30.3	29.4	29.8	30.0	24.7	25.1	24.2	25.1	25.2	6.7	5.9	7.0	5.9	5.7	7.97	7.84	7.96	7.86	7.87
	20	5	5	5	5	5			30.7					25.6					5.6					7.74		
	1	5	4	4	4	4																				
	7	5	5	5	5	5																				
100	5	5	4	4	4	4	30.3	30.6	29.6	29.7	29.9	24.9	25.0	24.2	24.9	25.2	6.7	5.7	7.0	5.9	5.8	7.97	7.83	7.96	7.88	7.87
	9	5	5	4	4	4			30.9					25.3					5.8					7.82		
	18	5	4	4	4	4																				
	2	5	5	5	5	5																				
200	21	5	0	-	-	-	30.3	30.7	29.6	29.8	30.0	24.9	24.9	24.1	25.1	25.2	6.7	5.8	7.0	5.8	5.8	7.91	7.82	7.96	7.93	7.97
	4	5	1	1	1	1			32.3					24.9					6.0					7.87		
	17	5	0	-	-	-																				
	22	5	0	-	-	-																				
400	10	5	0	-	-	-	30.2	30.4	-	-	-	25.0	25.1	-	-	-	6.7	6.0	-	-	-	7.97	7.83	-	-	
	23	5	0	-	-	-			-	-	-			-	-	-			-	-			-	-	-	
	12	5	0	-	-	-			-	-	-			-	-	-			-	-			-	-	-	
	8	5	0	-	-	-			-	-	-			-	-	-			-	-			-	-	-	
800	16	5	0	-	-	-	30.3	30.6	-	-	-	25.0	24.9	-	-	-	6.7	5.9	-	-	-	7.96	7.83	-	-	
	13	5	0	-	-	-			-	-	-			-	-	-			-	-			-	-	-	
	3	5	0	-	-	-			-	-	-			-	-	-			-	-			-	-	-	
	15	5	0	-	-	-			-	-	-			-	-	-			-	-			-	-	-	

Rand # QC: ACS  
 Initial Counts QC'd by: PT  
 Initiated by: LR

Animal Source/Date Received: ABS 02/26/19 Age at Initiation: 9d  
 Animal Acclimation Qualifiers (circle all that apply): Q22 / Q23 / Q24 / none

Comments: i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal  
 Organisms fed prior to initiation, circle one (y) / n )

Feeding Times				
0	24	48	72	96
AM: 0900	0905	0930	0920	
PM: 1715				

QC Check: EG 3/6/19 Final Review: VF 3/6/19

**Appendix F**  
**Laboratory Qualifier Codes**

### Glossary of Qualifier Codes:

- Q1 - Temperatures out of recommended range; corrective action taken and recorded in Test Temperature Correction Log
- Q2 - Temperatures out of recommended range; no action taken, test terminated same day
- Q3 - Sample aerated prior to initiation or renewal due to dissolved oxygen (D.O.) levels below 6.0 mg/L
- Q4 - Test aerated; D.O. levels dropped below 4.0 mg/L
- Q5 - Test initiated with aeration due to an anticipated drop in D.O.
- Q6 - Airline obstructed or fell out of replicate and replaced; drop in D.O. occurred
- Q7 - Salinity out of recommended range
- Q8 - Spilled test chamber/ Unable to recover test organism(s)
- Q9 - Inadequate sample volume remaining, 50% renewal performed
- Q10 - Inadequate sample volume remaining, no renewal performed
- Q11 - Sample out of holding time; refer to QA section of report
- Q12 - Replicate(s) not initiated; excluded from data analysis
- Q13 - Survival counts not recorded due to poor visibility or heavy debris
- Q14 - D.O. percent saturation was checked and was  $\leq 110\%$
- Q15 - Did not meet minimum test acceptability criteria. Refer to QA section of report.
- Q16 - Percent minimum significant difference (PMSD) was below the lower bound limit for acceptability. This indicates that statistics may be over-sensitive in detecting a difference from the control due to low variability in the data set.
- Q17 - Percent minimum significant difference (PMSD) was above the upper bound limit for acceptability. This indicates that statistics may be under-sensitive in detecting a difference from the control due to high variability in the data set.
- Q18 - Incorrect Entry
- Q19 - Illegible Entry
- Q20 - Miscalculation
- Q21 - Other (provide reason in comments section)
- Q22 - Greater than 10% mortality observed upon receipt and/or in holding prior to test initiation. Organisms acclimated to test conditions at Nautilus and ultimately deemed fit to use for testing.
- Q23 - Test organisms received at a temperature greater than 3°C outside the recommended test temperature range. However, due to age-specific protocol requirements and/or sample holding time constraints, the organisms were used to initiate tests upon the day of arrival. Organisms were acclimated to the appropriate test conditions upon receipt and prior to test initiation.
- Q24 - Test organisms received at salinity greater than 3 ppt outside of the recommended test salinity range. However, due to age-specific protocol requirements and/or sample holding time constraints, the organisms were used to initiate tests upon the day of arrival. Organisms were acclimated to the appropriate test conditions upon receipt and prior to test initiation.

# Appendix E

## STFATE Output

---

LNB Federal Channels

Lower Newport Federal Channels

MODEL: SHORT-TERM FATE OF DREDGED MATERIAL FROM SPLIT HULL BARGE OR HOPPER DREDGE  
(PC Version 5.01 MAY, 1993)  
(Extended Memory Modification: December, 1997)  
This Version Supports Grid Sizes up to 96 x 96 Points

TITLE: Lower Newport Federal Channels

FILE: TmpFile .DUE

AREA: THE PROJECT AREA IS DESCRIBED BY A 61 X 61 GRID.  
THERE ARE 61 GRID POINTS (NMAX) IN THE Z-DIRECTION (FROM LEFT TO RIGHT)  
AND 61 GRID POINTS (MMAX) IN THE X-DIRECTION (FROM TOP TO BOTTOM).

SITE: THE DISPOSAL SITE IS REPRESENTED AS A RECTANGLE ON THE SITE GRID.  
THE TOPMOST BOUNDARY IS LOCATED AT POINT #24 (MDS1) FROM THE TOP OF THE GRID.  
THE BOTTOMMOST BOUNDARY IS LOCATED AT POINT #39 (MDS2) FROM THE TOP OF THE GRID.  
THE LEFTMOST BOUNDARY IS LOCATED AT POINT #24 (NDS1) FROM THE LEFT OF THE GRID.  
THE RIGHTMOST BOUNDARY IS LOCATED AT POINT #39 (NDS2) FROM THE LEFT OF THE GRID.

EXECUTION PARAMETERS:

MODEL COEFFICIENTS SPECIFIED IN INPUT DATA (KEY1 = 1).

PERFORM COMPLETE ANALYSIS INCLUDING DESCENT, COLLAPSE, AND TRANSPORT-DIFFUSION (KEY2 = 0).

PERFORM TIER III OCEAN DUMPING INITIAL MIXING EVALUATION  
TO COMPARE WITH TOXICITY CRITERIA (KEY3 = 3).

LNB Federal Channels

PRINTING OF CONVECTIVE DESCENT RESULTS REQUESTED (IPCN = 1).

PRINTING OF CONVECTIVE DESCENT RESULTS REQUESTED (IPCN = 1).

PRINTING OF DYNAMIC COLLAPSE RESULTS REQUESTED (IPCL = 1).

QUARTERLY PRINTING OF LONG-TERM TRANSPORT DIFFUSION RESULTS REQUESTED (IPLT = 0).

LONG-TERM TRANSPORT DIFFUSION RESULTS REQUESTED AT THE FOLLOWING 4 DEPTH(S):

- 0.00 FT
- 50.00 FT
- 750.00 FT
- 1500.00 FT

GRID: NUMBER OF LONG TERM GRID POINTS IN Z-DIRECTION (NMAX) = 61

NUMBER OF LONG TERM GRID POINTS IN X-DIRECTION (MMAX) = 61

GRID SPACING IN Z-DIRECTION (DZ) = 400.00000 FT

GRID SPACING IN X-DIRECTION (DX) = 400.00000 FT

CONSTANT DEPTH GRID SPECIFIED HAVING A DEPTH (DEPC) OF 1600.00000 FT.

DEPTH GRID, FEET:

M N =	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17																
1	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
2	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
3	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
4	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
5	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
6	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
7	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
8	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.







LNB Federal Channels

1600.	1600.															
53	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
54	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
55	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
56	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
57	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
58	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
59	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
60	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															
61	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.															

M N =18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
34															
1	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.														
2	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.														
3	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.														
4	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.														
5	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.														
6	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.														
7	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.														
8	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.														
9	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.														
10	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.	1600.
1600.	1600.														























LNB Federal Channels

THE BOTTOM SLOPE IN THE X-DIRECTION AT THE DUMP SITE (SLOPEX, POSITIVE IF DEPTH INCREASES FROM TOP OF GRID TO BOTTOM OF GRID) IS 0.00 DEGREES.

THE BOTTOM SLOPE IN THE Z-DIRECTION AT THE DUMP SITE (SLOPEZ, POSITIVE IF DEPTH INCREASES FROM LEFT SIDE OF GRID TO RIGHT SIDE OF GRID) IS 0.00 DEGREES.

THE DISPOSAL LOCATION IS NOT AT A HOLE OR DEPRESSION. (DHOLE = 0.0)

AMBIENT DENSITY PROFILE:

DEPTH (FT)	DENSITY (G/CC)
0.0000E+00	1.0247
1600.	1.0282

COMPUTED DEPTH:

THE DEPTH AT THE DUMP LOCATION WAS INTERPOLATED TO BE 1600. FT.

VELOCITY DISTRIBUTION:

TWO-VELOCITY PROFILES ARE SPECIFIED IN BOTH X AND Z DIRECTIONS FOR USE AT ALL GRID POINTS PROVIDING "QUICK LOOKS".

DEPTH IN FT IS ASSUMED CONSTANT AND VELOCITIES IN FPS ARE CONSIDERED STEADY IN TIME.

VELOCITY PROFILE PARAMETERS FOLLOW...

LEFT TO RIGHT ON GRID		FROM TOP TO BOTTOM ON GRID				FROM	
UPPER:	DEPTH, DU1 = 59.0	X-VELOCITY, UU1 = 0.850	DEPTH, DW1 = 59.0				
Z-VELOCITY, WW1 = 0.850							
LOWER:	DEPTH, DU2 = 950.	X-VELOCITY, UU2 = -0.120	DEPTH, DW2 = 950.				
Z-VELOCITY, WW2 = -0.120							

BOTTOM SHEAR STRESS, LBS/SQ FT:

M N=	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17																
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000															
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000























LNB Federal Channels

DURATION OF THE DISPOSAL, TREL = 30.00 SECONDS  
DURATION OF THE SIMULATION, TSTOP = 14400.00 SECONDS  
LONG-TERM TIME STEP USED IN THE SIMULATION, DTL = 3600.00 SECONDS

BARGE DESCRIPTION:

LENGTH OF BARGE, BARGL = 0.20E+03 FT  
WIDTH OF BARGE, BARGW = 50. FT  
DRAFT OF LOADED BARGE, DREL1 = 14.0 FT  
DRAFT OF UNLOADED BARGE, DREL2 = 5.00 FT

MODEL COEFFICIENTS READ FROM INPUT:

TURBULENT THERMAL ENTRAINMENT	ALPHA0 =	0.2350
SETTLING COEFFICIENT	BETA =	0.0000
APPARENT MASS COEFFICIENT	CM =	1.0000
DRAG COEFFICIENT FOR A SPHERE	CD =	0.5000
RATIO--CLOUD/AMBIENT DENSITY GRADIENTS	GAMA =	0.2500
FORM DRAG FOR COLLAPSING CLOUD	CDRAG =	1.0000
SKIN FRICTION FOR COLLAPSING CLOUD	CFRIC =	0.0100
DRAG FOR AN ELLIPSOIDAL WEDGE	CD3 =	0.1000
DRAG FOR A PLATE	CD4 =	1.0000
ENTRAINMENT IN COLLAPSE	ALPHAC =	0.1000
FRICTION BETWEEN CLOUD AND BOTTOM	FRICTN =	0.0100
4/3 LAW HORIZ. DIFF. DISSIPATION FACTOR	ALAMDA =	0.0010



UNSTRATIFIED WATER VERT. DIFF. COEF. LNB Federal Channels  
 AKYO = 0.0250

STRIPPING COEF. OF FINES DURING CONVERTIVE DESCENT= 0.0030

MATERIAL DESCRIPTION: 3 SOLIDS FRACTIONS

L A Y E R 1

DESCRIPTION	SPEC. GRAV. OR DENSITY (GM/CC)	VOLUMETRIC CONCENTRATION (VOL/VOL)	FALL VELOCITY (FPS)	DEPOSITIONAL VOID RATIO	CHARACTER
Silt	2.650	0.2380	0.01000	4.500	NONCOHESIVE
CRITICAL SHEAR STRESS FOR DEPOSITION = 0.8500E-02 LBS/SQ. FT. SEDIMENT FRACTION WILL BE STRIPPED DURING CONVECTIVE DESCENT.					
Clay	2.650	0.8900E-01	0.00200	7.500	NONCOHESIVE
CRITICAL SHEAR STRESS FOR DEPOSITION = 0.3800E-02 LBS/SQ. FT. SEDIMENT FRACTION WILL BE STRIPPED DURING CONVECTIVE DESCENT.					
SAND	2.700	0.1510	0.10000	0.6000	NONCOHESIVE
CRITICAL SHEAR STRESS FOR DEPOSITION = 0.2500E-01 LBS/SQ. FT. SEDIMENT FRACTION WILL BE STRIPPED DURING CONVECTIVE DESCENT.					

TOXICITY ANALYSIS DATA:

CONCENTRATIONS OF FLUID IN TERMS OF PERCENT OF THE DREDGED MATERIAL  
 FOLLOWING INITIAL MIXING ARE COMPUTED FOR WATER QUALITY EVALUATIONS.

THE INITIAL CONCENTRATION OF FLUID IS 100. PERCENT  
 AND ITS BACKGROUND CONCENTRATION IS 0.000E+00 PERCENT.

THE DILUTION REQUIRED TO MEET TOXICITY CRITERIA IS 0.734000 PERCENT.  
 (TYPICALLY, 1 PERCENT OF THE LC50)

DESCRIPTION	SPEC. GRAV. OR DENSITY (GM/CC)	VOLUMETRIC CONCENTRATION (VOL/VOL)
-------------	--------------------------------	------------------------------------

LNB Federal Channels

FLUID 1.025 0.5220  
DISCHARGE PARAMETERS:

VOLUME OF LAYER 1 = 12.00 CU YD  
INITIAL RADIUS OF CLOUD, RB = 5.368203 FT  
INITIAL DEPTH OF CLOUD CENTROID, DREL = 16.00 FT

INITIAL CLOUD VELOCITIES...

X-DIRECTION (FROM TOP TO BOTTOM OF GRID), CU(1) = 3.380 FPS  
Y-DIRECTION (FROM SURFACE TO BOTTOM), CV(1) = 0.9829E-03 FPS  
Z-DIRECTION (FROM LEFT TO RIGHT OF GRID), CW(1) = 0.0000E+00 FPS

BULK PARAMETERS:

BULK DENSITY, R00 = 1.809248 G/CC  
AGGREGATE OR BULK VOIDS RATIO, BVOID = 3.827

CONVECTIVE DESCENT PHASE:

IN TRIAL #1 THE DESCENT PHASE TIME STEP (DT) WAS 0.69380552E-03 SECONDS.  
THE TOTAL NUMBER OF INTEGRATION TIME STEPS (ISTEP) WAS 1200.  
THE BOTTOM WAS NOT ENCOUNTERED DURING CONVECTIVE DESCENT.  
THE DISCHARGE DID NOT OBTAIN A NEUTRALLY BUOYANT CONDITION DURING CONVECTIVE DESCENT.

IN TRIAL #2 THE DESCENT PHASE TIME STEP (DT) WAS 0.20814165E-02 SECONDS.  
THE TOTAL NUMBER OF INTEGRATION TIME STEPS (ISTEP) WAS 1200.  
THE BOTTOM WAS NOT ENCOUNTERED DURING CONVECTIVE DESCENT.  
THE DISCHARGE DID NOT OBTAIN A NEUTRALLY BUOYANT CONDITION DURING CONVECTIVE DESCENT.

LNB Federal Channels

- IN TRIAL #3 THE DESCENT PHASE TIME STEP (DT) WAS 0.62442496E-02 SECONDS.  
THE TOTAL NUMBER OF INTEGRATION TIME STEPS (ISTEP) WAS 1200.  
THE BOTTOM WAS NOT ENCOUNTERED DURING CONVECTIVE DESCENT.  
THE DISCHARGE DID NOT OBTAIN A NEUTRALLY BUOYANT CONDITION DURING CONVECTIVE DESCENT.
- IN TRIAL #4 THE DESCENT PHASE TIME STEP (DT) WAS 0.18732749E-01 SECONDS.  
THE TOTAL NUMBER OF INTEGRATION TIME STEPS (ISTEP) WAS 1200.  
THE BOTTOM WAS NOT ENCOUNTERED DURING CONVECTIVE DESCENT.  
THE DISCHARGE DID NOT OBTAIN A NEUTRALLY BUOYANT CONDITION DURING CONVECTIVE DESCENT.
- IN TRIAL #5 THE DESCENT PHASE TIME STEP (DT) WAS 0.56198247E-01 SECONDS.  
THE TOTAL NUMBER OF INTEGRATION TIME STEPS (ISTEP) WAS 1200.  
THE BOTTOM WAS NOT ENCOUNTERED DURING CONVECTIVE DESCENT.  
THE DISCHARGE DID NOT OBTAIN A NEUTRALLY BUOYANT CONDITION DURING CONVECTIVE DESCENT.
- IN TRIAL #6 THE DESCENT PHASE TIME STEP (DT) WAS 0.16859475 SECONDS.  
THE TOTAL NUMBER OF INTEGRATION TIME STEPS (ISTEP) WAS 1200.  
THE BOTTOM WAS NOT ENCOUNTERED DURING CONVECTIVE DESCENT.  
THE DISCHARGE DID NOT OBTAIN A NEUTRALLY BUOYANT CONDITION DURING CONVECTIVE DESCENT.
- IN TRIAL #7 THE DESCENT PHASE TIME STEP (DT) WAS 0.50578427 SECONDS.  
THE TOTAL NUMBER OF INTEGRATION TIME STEPS (ISTEP) WAS 518.  
THE BOTTOM WAS NOT ENCOUNTERED DURING CONVECTIVE DESCENT.  
THE DISCHARGE REACHED A NEUTRALLY BUOYANT POSITION DURING CONVECTIVE DESCENT.

LNB Federal Channels

IN TRIAL #8 THE DESCENT PHASE TIME STEP (DT) WAS 0.65499061 SECONDS.

THE TOTAL NUMBER OF INTEGRATION TIME STEPS (ISTEP) WAS 400.

THE BOTTOM WAS NOT ENCOUNTERED DURING CONVECTIVE DESCENT.

THE DISCHARGE REACHED A NEUTRALLY BUOYANT POSITION DURING CONVECTIVE DESCENT.

CONVECTIVE DESCENT RESULTS:

TIME FROM DISPOSAL (SEC)	PLUME CENTROID (DISTANCE FROM BARGE)			PLUME VELOCITY			DIFFERENCE OF PLUME & WATER DENSITIES (G/CC)	PLUME RADIUS (FT)	TRACER VOLUM. CONC. (VOL/VOL)	VOLUME OF SOLID FRACTIONS (CU FT)	SOLIDS VOL. CONC. BY FRACTION (VOL/VOL)
	X-DIR (FT)	DEPTH (FT)	Z-DIR (FT)	X-DIR (FPS)	DOWN (FPS)	Z-DIR (FPS)					
30.00	0.00	16.00	0.00	3.38	0.001	0.00	0.7845E+00	5.37	0.5220E+00	0.7711E+02 0.2884E+02	0.2380E+00 0.8900E-01
33.93	8.35	42.92	1.66	1.10	6.056	0.77	0.8176E-01	11.27	0.5639E-01	0.4892E+02 0.7443E+02 0.2783E+02 0.4722E+02	0.1510E+00 0.2481E-01 0.9280E-02 0.1574E-01
37.86	12.27	63.12	4.80	0.92	4.230	0.83	0.2952E-01	15.75	0.2067E-01	0.7339E+02 0.2744E+02 0.4656E+02	0.8968E-02 0.3354E-02 0.5690E-02
41.79	15.81	78.29	8.07	0.88	3.437	0.83	0.1615E-01	19.20	0.1141E-01	0.7281E+02 0.2723E+02 0.4619E+02	0.4914E-02 0.1837E-02 0.3117E-02
45.72	19.21	90.96	11.33	0.85	2.966	0.83	0.1049E-01	22.10	0.7476E-02	0.7240E+02 0.2707E+02 0.4594E+02	0.3200E-02 0.1197E-02 0.2031E-02
49.65	22.55	102.06	14.58	0.84	2.646	0.82	0.7498E-02	24.67	0.5381E-02	0.7209E+02 0.2696E+02 0.4574E+02	0.2294E-02 0.8577E-03 0.1455E-02
53.58	25.83	112.05	17.80	0.83	2.410	0.82	0.5690E-02	26.98	0.4112E-02	0.7184E+02 0.2686E+02 0.4558E+02	0.1747E-02 0.6531E-03 0.1108E-02
57.51	29.06	121.21	20.99	0.82	2.227	0.81	0.4501E-02	29.10	0.3275E-02	0.7162E+02 0.2678E+02 0.4544E+02	0.1387E-02 0.5187E-03 0.8801E-03
61.44	32.26	129.71	24.15	0.81	2.078	0.80	0.3669E-02	31.08	0.2690E-02	0.7144E+02 0.2672E+02	0.1136E-02 0.4249E-03

LNB Federal Channels

65.37	35.43	137.67	27.29	0.80	1.955	0.80	0.3061E-02	32.93	0.2261E-02	0.4533E+02	0.7208E-03
										0.7128E+02	0.9528E-03
										0.2666E+02	0.3563E-03
69.30	38.56	145.17	30.41	0.79	1.850	0.79	0.2600E-02	34.68	0.1936E-02	0.4522E+02	0.6045E-03
										0.7114E+02	0.8142E-03
										0.2660E+02	0.3045E-03
73.23	41.67	152.29	33.50	0.79	1.760	0.78	0.2240E-02	36.34	0.1682E-02	0.4513E+02	0.5165E-03
										0.7101E+02	0.7063E-03
										0.2655E+02	0.2641E-03
77.16	44.76	159.08	36.57	0.78	1.681	0.78	0.1954E-02	37.93	0.1480E-02	0.4505E+02	0.4481E-03
										0.7089E+02	0.6204E-03
										0.2651E+02	0.2320E-03
81.09	47.82	165.57	39.62	0.78	1.611	0.77	0.1721E-02	39.44	0.1316E-02	0.4498E+02	0.3936E-03
										0.7078E+02	0.5508E-03
										0.2647E+02	0.2060E-03
85.02	50.85	171.79	42.64	0.77	1.548	0.77	0.1528E-02	40.90	0.1180E-02	0.4491E+02	0.3494E-03
										0.7068E+02	0.4934E-03
										0.2643E+02	0.1845E-03
88.95	53.87	177.78	45.65	0.76	1.491	0.76	0.1367E-02	42.30	0.1067E-02	0.4485E+02	0.3130E-03
										0.7059E+02	0.4454E-03
										0.2640E+02	0.1665E-03
92.88	56.86	183.56	48.63	0.76	1.440	0.76	0.1230E-02	43.65	0.9710E-03	0.4479E+02	0.2826E-03
										0.7051E+02	0.4048E-03
										0.2637E+02	0.1514E-03
96.81	59.83	189.14	51.60	0.75	1.392	0.75	0.1113E-02	44.96	0.8888E-03	0.4473E+02	0.2568E-03
										0.7043E+02	0.3701E-03
										0.2634E+02	0.1384E-03
100.74	62.79	194.54	54.55	0.75	1.349	0.75	0.1011E-02	46.22	0.8178E-03	0.4468E+02	0.2348E-03
										0.7035E+02	0.3402E-03
										0.2631E+02	0.1272E-03
104.67	65.72	199.77	57.48	0.74	1.308	0.74	0.9228E-03	47.45	0.7561E-03	0.4464E+02	0.2158E-03
										0.7028E+02	0.3142E-03
										0.2628E+02	0.1175E-03
108.60	68.64	204.85	60.39	0.74	1.270	0.74	0.8451E-03	48.64	0.7019E-03	0.4459E+02	0.1993E-03
										0.7021E+02	0.2914E-03
										0.2626E+02	0.1090E-03
112.53	71.54	209.78	63.28	0.74	1.235	0.73	0.7763E-03	49.79	0.6541E-03	0.4455E+02	0.1849E-03
										0.7015E+02	0.2713E-03
										0.2623E+02	0.1015E-03
116.46	74.43	214.58	66.16	0.73	1.202	0.73	0.7149E-03	50.92	0.6117E-03	0.4451E+02	0.1721E-03
										0.7009E+02	0.2535E-03
										0.2621E+02	0.9480E-04
120.39	77.29	219.25	69.03	0.73	1.171	0.73	0.6601E-03	52.01	0.5738E-03	0.4447E+02	0.1608E-03
										0.7003E+02	0.2376E-03

LNB Federal Channels

124.32	80.15	223.80	71.87	0.72	1.141	0.72	0.6108E-03	53.08	0.5399E-03	0.2619E+02	0.8886E-04
										0.4443E+02	0.1508E-03
										0.6998E+02	0.2234E-03
										0.2617E+02	0.8354E-04
128.25	82.98	228.24	74.71	0.72	1.113	0.72	0.5662E-03	54.12	0.5093E-03	0.4440E+02	0.1417E-03
										0.6993E+02	0.2106E-03
										0.2615E+02	0.7874E-04
										0.4436E+02	0.1336E-03
132.18	85.80	232.57	77.52	0.72	1.086	0.71	0.5257E-03	55.14	0.4817E-03	0.6988E+02	0.1990E-03
										0.2613E+02	0.7441E-04
										0.4433E+02	0.1263E-03
136.11	88.61	236.80	80.33	0.71	1.061	0.71	0.4888E-03	56.13	0.4565E-03	0.6983E+02	0.1885E-03
										0.2611E+02	0.7049E-04
										0.4430E+02	0.1196E-03
140.04	91.40	240.93	83.11	0.71	1.037	0.71	0.4551E-03	57.10	0.4337E-03	0.6978E+02	0.1789E-03
										0.2609E+02	0.6691E-04
										0.4427E+02	0.1135E-03
143.97	94.18	244.97	85.89	0.70	1.013	0.70	0.4242E-03	58.05	0.4127E-03	0.6974E+02	0.1702E-03
										0.2608E+02	0.6364E-04
										0.4425E+02	0.1080E-03
147.90	96.94	248.91	88.65	0.70	0.991	0.70	0.3957E-03	58.98	0.3936E-03	0.6969E+02	0.1622E-03
										0.2606E+02	0.6065E-04
										0.4422E+02	0.1029E-03
151.83	99.69	252.77	91.40	0.70	0.969	0.70	0.3694E-03	59.89	0.3760E-03	0.6965E+02	0.1548E-03
										0.2605E+02	0.5790E-04
										0.4419E+02	0.9823E-04
155.76	102.43	256.55	94.13	0.69	0.949	0.69	0.3450E-03	60.78	0.3597E-03	0.6961E+02	0.1481E-03
										0.2603E+02	0.5537E-04
										0.4417E+02	0.9394E-04
159.69	105.15	260.24	96.86	0.69	0.929	0.69	0.3225E-03	61.65	0.3447E-03	0.6958E+02	0.1418E-03
										0.2602E+02	0.5303E-04
										0.4414E+02	0.8997E-04
163.62	107.86	263.86	99.57	0.69	0.909	0.69	0.3015E-03	62.50	0.3308E-03	0.6954E+02	0.1360E-03
										0.2600E+02	0.5086E-04
										0.4412E+02	0.8629E-04
167.55	110.56	267.40	102.26	0.69	0.890	0.68	0.2818E-03	63.33	0.3179E-03	0.6950E+02	0.1306E-03
										0.2599E+02	0.4885E-04
										0.4410E+02	0.8288E-04
171.48	113.25	270.87	104.95	0.68	0.872	0.68	0.2635E-03	64.15	0.3059E-03	0.6947E+02	0.1256E-03
										0.2598E+02	0.4699E-04
										0.4408E+02	0.7972E-04
175.41	115.93	274.27	107.62	0.68	0.854	0.68	0.2464E-03	64.95	0.2947E-03	0.6944E+02	0.1210E-03
										0.2597E+02	0.4525E-04
										0.4405E+02	0.7677E-04

LNB Federal Channels											
179.34	118.59	277.60	110.28	0.68	0.837	0.68	0.2303E-03	65.74	0.2843E-03	0.6940E+02	0.1167E-03
										0.2595E+02	0.4362E-04
										0.4403E+02	0.7401E-04
183.27	121.24	280.86	112.94	0.67	0.820	0.67	0.2152E-03	66.51	0.2745E-03	0.6937E+02	0.1126E-03
										0.2594E+02	0.4211E-04
										0.4401E+02	0.7144E-04
187.20	123.89	284.06	115.58	0.67	0.804	0.67	0.2010E-03	67.26	0.2654E-03	0.6934E+02	0.1088E-03
										0.2593E+02	0.4069E-04
										0.4400E+02	0.6903E-04
191.13	126.52	287.19	118.21	0.67	0.788	0.67	0.1876E-03	68.00	0.2568E-03	0.6931E+02	0.1053E-03
										0.2592E+02	0.3936E-04
										0.4398E+02	0.6678E-04
195.06	129.14	290.26	120.82	0.67	0.772	0.66	0.1749E-03	68.73	0.2488E-03	0.6929E+02	0.1019E-03
										0.2591E+02	0.3811E-04
										0.4396E+02	0.6466E-04
198.99	131.75	293.27	123.43	0.66	0.757	0.66	0.1630E-03	69.44	0.2412E-03	0.6926E+02	0.9877E-04
										0.2590E+02	0.3694E-04
										0.4394E+02	0.6267E-04
202.92	134.35	296.22	126.03	0.66	0.742	0.66	0.1517E-03	70.14	0.2341E-03	0.6923E+02	0.9582E-04
										0.2589E+02	0.3583E-04
										0.4392E+02	0.6079E-04
206.85	136.94	299.11	128.62	0.66	0.727	0.66	0.1410E-03	70.82	0.2273E-03	0.6921E+02	0.9303E-04
										0.2588E+02	0.3479E-04
										0.4391E+02	0.5902E-04
210.78	139.52	301.95	131.20	0.66	0.713	0.65	0.1308E-03	71.49	0.2210E-03	0.6918E+02	0.9040E-04
										0.2587E+02	0.3381E-04
										0.4389E+02	0.5736E-04
214.71	142.09	304.73	133.77	0.65	0.699	0.65	0.1212E-03	72.15	0.2150E-03	0.6916E+02	0.8792E-04
										0.2586E+02	0.3288E-04
										0.4388E+02	0.5578E-04
218.64	144.65	307.45	136.33	0.65	0.685	0.65	0.1119E-03	72.79	0.2093E-03	0.6913E+02	0.8557E-04
										0.2585E+02	0.3200E-04
										0.4386E+02	0.5429E-04
222.57	147.20	310.12	138.88	0.65	0.671	0.65	0.1032E-03	73.43	0.2040E-03	0.6911E+02	0.8335E-04
										0.2584E+02	0.3117E-04
										0.4385E+02	0.5288E-04
226.50	149.74	312.73	141.42	0.65	0.658	0.65	0.9493E-04	74.05	0.1989E-03	0.6909E+02	0.8124E-04
										0.2584E+02	0.3038E-04
										0.4383E+02	0.5155E-04
230.43	152.27	315.30	143.95	0.64	0.645	0.64	0.8701E-04	74.66	0.1941E-03	0.6907E+02	0.7925E-04
										0.2583E+02	0.2963E-04
										0.4382E+02	0.5028E-04
234.36	154.80	317.81	146.47	0.64	0.631	0.64	0.7933E-04	75.25	0.1895E-03	0.6905E+02	0.7735E-04
										0.2582E+02	0.2893E-04

LNB Federal Channels

238.29	157.31	320.27	148.99	0.64	0.619	0.64	0.7220E-04	75.84	0.1851E-03	0.4381E+02	0.4908E-04
										0.6902E+02	0.7555E-04
										0.2581E+02	0.2825E-04
										0.4379E+02	0.4794E-04
242.22	159.82	322.68	151.50	0.64	0.606	0.64	0.6526E-04	76.41	0.1810E-03	0.6900E+02	0.7384E-04
										0.2580E+02	0.2761E-04
										0.4378E+02	0.4685E-04
246.15	162.32	325.04	154.00	0.63	0.593	0.63	0.5862E-04	76.98	0.1770E-03	0.6899E+02	0.7222E-04
										0.2580E+02	0.2701E-04
										0.4377E+02	0.4582E-04
250.08	164.81	327.35	156.49	0.63	0.581	0.63	0.5235E-04	77.53	0.1733E-03	0.6897E+02	0.7067E-04
										0.2579E+02	0.2643E-04
										0.4376E+02	0.4483E-04
254.01	167.30	329.62	158.97	0.63	0.569	0.63	0.4627E-04	78.07	0.1697E-03	0.6895E+02	0.6919E-04
										0.2578E+02	0.2587E-04
										0.4374E+02	0.4390E-04
257.94	169.77	331.83	161.44	0.63	0.557	0.63	0.4049E-04	78.60	0.1663E-03	0.6893E+02	0.6779E-04
										0.2578E+02	0.2535E-04
										0.4373E+02	0.4301E-04
261.87	172.24	334.00	163.91	0.63	0.545	0.63	0.3496E-04	79.12	0.1631E-03	0.6891E+02	0.6644E-04
										0.2577E+02	0.2485E-04
										0.4372E+02	0.4216E-04
265.80	174.70	336.12	166.37	0.63	0.533	0.62	0.2968E-04	79.62	0.1600E-03	0.6890E+02	0.6516E-04
										0.2576E+02	0.2437E-04
										0.4371E+02	0.4134E-04
269.73	177.16	338.20	168.83	0.62	0.521	0.62	0.2458E-04	80.12	0.1570E-03	0.6888E+02	0.6394E-04
										0.2576E+02	0.2391E-04
										0.4370E+02	0.4057E-04
273.66	179.60	340.23	171.27	0.62	0.510	0.62	0.1960E-04	80.61	0.1542E-03	0.6886E+02	0.6278E-04
										0.2575E+02	0.2348E-04
										0.4369E+02	0.3983E-04
277.59	182.04	342.21	173.71	0.62	0.498	0.62	0.1493E-04	81.08	0.1515E-03	0.6885E+02	0.6166E-04
										0.2575E+02	0.2306E-04
										0.4368E+02	0.3912E-04
281.52	184.48	344.15	176.14	0.62	0.487	0.62	0.1045E-04	81.55	0.1489E-03	0.6883E+02	0.6060E-04
										0.2574E+02	0.2266E-04
										0.4367E+02	0.3845E-04
285.45	186.90	346.04	178.57	0.62	0.475	0.62	0.6083E-05	82.01	0.1464E-03	0.6882E+02	0.5958E-04
										0.2573E+02	0.2228E-04
										0.4366E+02	0.3780E-04
289.38	189.32	347.89	180.99	0.61	0.464	0.61	0.1905E-05	82.45	0.1441E-03	0.6880E+02	0.5860E-04
										0.2573E+02	0.2191E-04
										0.4365E+02	0.3718E-04



LNB Federal Channels

CLOUD COLLAPSE PHASE:

IN TRIAL #1 THE COLLAPSE PHASE TIME STEP (DT) WAS 6.4347410 SECONDS.  
 THE TOTAL NUMBER OF INTEGRATION TIME STEPS (ISTEP) FOR CONVECTIVE DESCENT AND COLAPSE WAS 668.

THE INTEGRATION TIME STEP NUMBER WHEN THE BED WAS ENCOUNTERED (IBED) WAS 0.  
 THE BOTTOM WAS NOT ENCOUNTERED DURING CONVECTIVE DESCENT.  
 DIFFUSION OF THE DISCHARGE IS GREATER THAN DYNAMIC SPREADING FROM THE COLLAPSE.

COLLAPSE PHASE RESULTS:

TIME VOLUME OF FROM SOLID DISPOSAL FRACTIONS (SEC) FT)	CLOUD CENTROID (DI STANCE FROM BARGE)			VELOCITY OF CLOUD CENTROID			DIFFERENCE OF CLOUD & WATER DENSITIES (G/CC)	ELLI PSOIDAL CLOUD AXIS LENGTHS			TRACER VOLUMETRIC CONC. (VOL/VOL)	(CU
	X-DIR CONC. BY FRACTION (FT) (VOL/VOL)	DEPTH (FT)	Z-DIR (FT)	X-DIR (FPS)	DOWN (FPS)	Z-DIR (FPS)		THICKNESS (FT)	MINOR (FT)	MAJOR (FT)		
291.34 0.6880E+02	190.53 0.5813E-04	348.80	182.19	0.61	0.46	0.61	-0.1229E-06	82.67	165.35	165.35	0.1429E-03	
0.2573E+02	0.2174E-04											
0.4365E+02 317.08 0.6880E+02	0.3688E-04 206.32 0.5700E-04	354.56	197.98	0.61	0.21	0.61	-0.1259E-04	82.33	167.33	167.33	0.1401E-03	
0.2573E+02	0.2131E-04											
0.4365E+02 342.82 0.6880E+02	0.3616E-04 222.06 0.5586E-04	359.83	213.71	0.61	0.19	0.61	-0.2382E-04	81.12	170.28	170.28	0.1373E-03	
0.2573E+02	0.2089E-04											
0.4365E+02 368.56 0.6880E+02	0.3544E-04 237.74 0.5477E-04	364.48	229.39	0.61	0.16	0.61	-0.3343E-04	79.19	174.06	174.06	0.1346E-03	
0.2573E+02	0.2048E-04											

LNB Federal Channels

0. 4365E+02	0. 3475E-04											
394. 30	253. 38	368. 43	245. 03	0. 61	0. 14	0. 61	-0. 4133E-04	76. 73	178. 54	178. 54	0. 1321E-03	
0. 6880E+02	0. 5372E-04											
0. 2573E+02	0. 2009E-04											
0. 4365E+02	0. 3408E-04											
420. 04	268. 97	371. 67	260. 61	0. 60	0. 11	0. 60	-0. 4761E-04	73. 93	183. 59	183. 59	0. 1296E-03	
0. 6880E+02	0. 5273E-04											
0. 2573E+02	0. 1972E-04											
0. 4365E+02	0. 3346E-04											
445. 77	284. 51	374. 21	276. 14	0. 60	0. 08	0. 60	-0. 5379E-04	70. 95	189. 10	189. 10	0. 1273E-03	
0. 6880E+02	0. 5179E-04											
0. 2573E+02	0. 1937E-04											
0. 4249E+02	0. 3198E-04											
471. 51	300. 00	376. 11	291. 63	0. 60	0. 06	0. 60	-0. 5979E-04	67. 93	194. 98	194. 98	0. 1251E-03	
0. 6880E+02	0. 5088E-04											
0. 2573E+02	0. 1903E-04											
0. 4019E+02	0. 2972E-04											
497. 25	315. 44	377. 41	307. 07	0. 60	0. 04	0. 60	-0. 6430E-04	64. 96	201. 13	201. 13	0. 1229E-03	
0. 6880E+02	0. 5000E-04											
0. 2573E+02	0. 1870E-04											
0. 3791E+02	0. 2755E-04											
522. 99	330. 83	378. 17	322. 46	0. 60	0. 02	0. 60	-0. 6762E-04	62. 11	207. 48	207. 48	0. 1208E-03	
0. 6880E+02	0. 4914E-04											
0. 2573E+02	0. 1838E-04											
0. 3567E+02	0. 2548E-04											
548. 73	346. 19	378. 46	337. 81	0. 60	0. 00	0. 60	-0. 6985E-04	59. 43	213. 96	213. 96	0. 1187E-03	
0. 6858E+02	0. 4814E-04											
0. 2573E+02	0. 1806E-04											
0. 3347E+02	0. 2350E-04											
574. 47	361. 49	378. 34	353. 11	0. 59	-0. 01	0. 59	-0. 7130E-04	56. 92	220. 52	220. 52	0. 1167E-03	

LNB Federal Channels

0. 6824E+02	0. 4709E-04											
0. 2572E+02	0. 1775E-04											
0. 3131E+02	0. 2161E-04											
600. 21	376. 76	377. 86	368. 37	0. 59	-0. 03	0. 59	-0. 7149E-04	54. 59	227. 11	227. 11	0. 1147E-03	
0. 6824E+02	0. 4629E-04											
0. 2572E+02	0. 1744E-04											
0. 2921E+02	0. 1981E-04											
625. 95	391. 98	377. 09	383. 59	0. 59	-0. 04	0. 59	-0. 7083E-04	52. 45	233. 69	233. 69	0. 1128E-03	
0. 6824E+02	0. 4550E-04											
0. 2572E+02	0. 1715E-04											
0. 2717E+02	0. 1812E-04											
651. 69	407. 16	376. 06	398. 77	0. 59	-0. 04	0. 59	-0. 6951E-04	50. 47	240. 24	240. 24	0. 1109E-03	
0. 6824E+02	0. 4474E-04											
0. 2572E+02	0. 1686E-04											
0. 2520E+02	0. 1652E-04											
677. 43	422. 30	374. 83	413. 91	0. 59	-0. 05	0. 59	-0. 6775E-04	48. 66	246. 73	246. 73	0. 1090E-03	
0. 6824E+02	0. 4399E-04											
0. 2572E+02	0. 1658E-04											
0. 2330E+02	0. 1502E-04											
703. 16	437. 41	373. 44	429. 01	0. 59	-0. 06	0. 59	-0. 6556E-04	47. 00	253. 14	253. 14	0. 1072E-03	
0. 6824E+02	0. 4327E-04											
0. 2572E+02	0. 1631E-04											
0. 2148E+02	0. 1362E-04											
728. 90	452. 48	371. 91	444. 08	0. 58	-0. 06	0. 58	-0. 6296E-04	45. 48	259. 47	259. 47	0. 1055E-03	
0. 6824E+02	0. 4256E-04											
0. 2572E+02	0. 1604E-04											
0. 1975E+02	0. 1232E-04											
754. 64	467. 51	370. 28	459. 11	0. 58	-0. 07	0. 58	-0. 6013E-04	44. 08	265. 70	265. 70	0. 1038E-03	
0. 6824E+02	0. 4188E-04											

LNB Federal Channels

0. 2572E+02	0. 1578E-04												
0. 1811E+02	0. 1111E-04	780. 38	482. 52	368. 57	474. 11	0. 58	-0. 07	0. 58	-0. 5701E-04	42. 80	271. 82	271. 82	0. 1021E-03
0. 6824E+02	0. 4121E-04												
0. 2572E+02	0. 1553E-04												
0. 1656E+02	0. 9999E-05	806. 12	497. 49	366. 81	489. 08	0. 58	-0. 07	0. 58	-0. 5370E-04	41. 62	277. 82	277. 82	0. 1006E-03
0. 6824E+02	0. 4057E-04												
0. 2572E+02	0. 1529E-04												
0. 1510E+02	0. 8976E-05	831. 86	512. 43	365. 00	504. 02	0. 58	-0. 07	0. 58	-0. 5035E-04	40. 53	283. 71	283. 71	0. 9901E-04
0. 6824E+02	0. 3995E-04												
0. 2572E+02	0. 1506E-04												
0. 1373E+02	0. 8039E-05	857. 60	527. 35	363. 16	518. 94	0. 58	-0. 07	0. 58	-0. 4683E-04	39. 53	289. 47	289. 47	0. 9752E-04
0. 6824E+02	0. 3935E-04												
0. 2572E+02	0. 1483E-04												
0. 1246E+02	0. 7183E-05	883. 34	542. 25	361. 32	533. 83	0. 58	-0. 07	0. 58	-0. 4322E-04	38. 60	295. 12	295. 12	0. 9608E-04
0. 6824E+02	0. 3877E-04												
0. 2572E+02	0. 1461E-04												
0. 1127E+02	0. 6405E-05	909. 08	557. 12	359. 47	548. 70	0. 58	-0. 07	0. 58	-0. 3961E-04	37. 74	300. 63	300. 63	0. 9469E-04
0. 6824E+02	0. 3821E-04												
0. 2572E+02	0. 1440E-04												
0. 1018E+02	0. 5699E-05	934. 82	571. 97	357. 62	563. 54	0. 58	-0. 07	0. 58	-0. 3595E-04	36. 95	306. 02	306. 02	0. 9335E-04
0. 6824E+02	0. 3767E-04												
0. 2572E+02	0. 1420E-04												

LNB Federal Channels

0. 9169E+01	0. 5061E-05												
960. 55	586. 80	355. 80	578. 37	0. 58	-0. 07	0. 58	-0. 3238E-04	36. 21	311. 29	311. 29	0. 9206E-04		
0. 6824E+02	0. 3714E-04												
0. 2572E+02	0. 1400E-04												
0. 8241E+01	0. 4486E-05												
986. 29	601. 61	353. 99	593. 18	0. 58	-0. 07	0. 57	-0. 2868E-04	35. 53	316. 42	316. 42	0. 9081E-04		
0. 6824E+02	0. 3664E-04												
0. 2572E+02	0. 1381E-04												
0. 7391E+01	0. 3969E-05												
1012. 03	616. 40	352. 22	607. 97	0. 57	-0. 07	0. 57	-0. 2516E-04	34. 89	321. 43	321. 43	0. 8961E-04		
0. 6824E+02	0. 3616E-04												
0. 2572E+02	0. 1363E-04												
0. 6615E+01	0. 3505E-05												
1037. 77	631. 18	350. 47	622. 75	0. 57	-0. 07	0. 57	-0. 2165E-04	34. 29	326. 32	326. 32	0. 8845E-04		
0. 6824E+02	0. 3569E-04												
0. 2572E+02	0. 1345E-04												
0. 5908E+01	0. 3090E-05												
1063. 51	645. 95	348. 76	637. 51	0. 57	-0. 07	0. 57	-0. 1822E-04	33. 74	331. 08	331. 08	0. 8734E-04		
0. 6824E+02	0. 3524E-04												
0. 2572E+02	0. 1328E-04												
0. 5267E+01	0. 2720E-05												
1089. 25	660. 70	347. 10	652. 26	0. 57	-0. 06	0. 57	-0. 1488E-04	33. 22	335. 71	335. 71	0. 8627E-04		
0. 6824E+02	0. 3481E-04												
0. 2572E+02	0. 1312E-04												
0. 4686E+01	0. 2391E-05												
1114. 99	675. 44	345. 47	666. 99	0. 57	-0. 06	0. 57	-0. 1157E-04	32. 74	340. 21	340. 21	0. 8524E-04		
0. 6824E+02	0. 3439E-04												
0. 2572E+02	0. 1296E-04												
0. 4162E+01	0. 2098E-05												
1140. 73	690. 17	343. 89	681. 72	0. 57	-0. 06	0. 57	-0. 8424E-05	32. 29	344. 60	344. 60	0. 8425E-04		

LNB Federal Channels

0. 6824E+02	0. 3399E-04												
0. 2572E+02	0. 1281E-04												
0. 3690E+01	0. 1838E-05	1166. 47	704. 88	342. 36	696. 43	0. 57	-0. 06	0. 57	-0. 5318E-05	31. 86	348. 86	348. 86	0. 8330E-04
0. 6824E+02	0. 3361E-04												
0. 2572E+02	0. 1267E-04												
0. 3266E+01	0. 1609E-05	1192. 20	719. 59	340. 88	711. 14	0. 57	-0. 06	0. 57	-0. 2321E-05	31. 46	353. 00	353. 00	0. 8239E-04
0. 6824E+02	0. 3324E-04												
0. 2572E+02	0. 1253E-04												
0. 2886E+01	0. 1406E-05	1217. 94	734. 29	339. 44	725. 84	0. 57	-0. 05	0. 57	0. 5048E-06	31. 09	357. 01	357. 01	0. 8151E-04
0. 6824E+02	0. 3289E-04												
0. 2572E+02	0. 1240E-04												
0. 2547E+01	0. 1227E-05	1243. 68	748. 99	338. 06	740. 53	0. 57	-0. 05	0. 57	0. 3279E-05	30. 74	360. 91	360. 91	0. 8067E-04
0. 6824E+02	0. 3255E-04												
0. 2572E+02	0. 1227E-04												
0. 2244E+01	0. 1070E-05	1269. 42	763. 67	336. 74	755. 21	0. 57	-0. 05	0. 57	0. 5938E-05	30. 41	364. 68	364. 68	0. 7987E-04
0. 6824E+02	0. 3222E-04												
0. 2572E+02	0. 1214E-04												
0. 1974E+01	0. 9321E-06	1295. 16	778. 35	335. 46	769. 89	0. 57	-0. 05	0. 57	0. 8480E-05	30. 10	368. 34	368. 34	0. 7909E-04
0. 6824E+02	0. 3191E-04												
0. 2572E+02	0. 1203E-04												
0. 1734E+01	0. 8109E-06	1320. 90	793. 03	334. 24	784. 56	0. 57	-0. 05	0. 57	0. 1090E-04	29. 81	371. 88	371. 88	0. 7835E-04
0. 6824E+02	0. 3161E-04												

LNB Federal Channels

0. 2572E+02	0. 1191E-04												
0. 1521E+01	0. 7048E-06												
1346. 64	807. 70	333. 07	799. 23	0. 57	-0. 04	0. 57	0. 1315E-04	29. 54	375. 30	375. 30	0. 7765E-04		
0. 6824E+02	0. 3133E-04												
0. 2572E+02	0. 1181E-04												
0. 1333E+01	0. 6120E-06												
1372. 38	822. 36	331. 96	813. 89	0. 57	-0. 04	0. 57	0. 1540E-04	29. 28	378. 60	378. 60	0. 7697E-04		
0. 6824E+02	0. 3105E-04												
0. 2572E+02	0. 1170E-04												
0. 1167E+01	0. 5309E-06												
1398. 11	837. 02	330. 90	828. 55	0. 57	-0. 04	0. 57	0. 1746E-04	29. 04	381. 79	381. 79	0. 7632E-04		
0. 6824E+02	0. 3079E-04												
0. 2572E+02	0. 1161E-04												
0. 1020E+01	0. 4602E-06												
1423. 85	851. 68	329. 90	843. 21	0. 57	-0. 04	0. 57	0. 1941E-04	28. 81	384. 87	384. 87	0. 7570E-04		
0. 6824E+02	0. 3054E-04												
0. 2572E+02	0. 1151E-04												
0. 8904E+00	0. 3986E-06												
1449. 59	866. 34	328. 95	857. 86	0. 57	-0. 04	0. 57	0. 2118E-04	28. 59	387. 83	387. 83	0. 7511E-04		
0. 6824E+02	0. 3031E-04												
0. 2572E+02	0. 1142E-04												
0. 7767E+00	0. 3449E-06												
1475. 33	880. 99	328. 06	872. 51	0. 57	-0. 03	0. 57	0. 2295E-04	28. 39	390. 67	390. 67	0. 7455E-04		
0. 6824E+02	0. 3008E-04												
0. 2572E+02	0. 1134E-04												
0. 6767E+00	0. 2983E-06												
1501. 07	895. 64	327. 22	887. 16	0. 57	-0. 03	0. 57	0. 2448E-04	28. 20	393. 41	393. 41	0. 7401E-04		
0. 6824E+02	0. 2986E-04												
0. 2572E+02	0. 1125E-04												

LNB Federal Channels

0.5891E+00	0.2578E-06											
1526.81	910.29	326.44	901.80	0.57	-0.03	0.57	0.2601E-04	28.02	396.04	396.04	0.7350E-04	
0.6824E+02	0.2966E-04											
0.2572E+02	0.1118E-04											
0.5123E+00	0.2226E-06											
1552.55	924.93	325.70	916.45	0.57	-0.03	0.57	0.2736E-04	27.85	398.55	398.55	0.7301E-04	
0.6824E+02	0.2946E-04											
0.2572E+02	0.1110E-04											
0.4451E+00	0.1922E-06											
1578.29	939.58	325.03	931.09	0.57	-0.03	0.57	0.2866E-04	27.69	400.95	400.95	0.7255E-04	
0.6824E+02	0.2927E-04											
0.2572E+02	0.1103E-04											
0.3864E+00	0.1658E-06											
1604.02	954.22	324.40	945.73	0.57	-0.02	0.57	0.2978E-04	27.55	403.25	403.25	0.7211E-04	
0.6824E+02	0.2910E-04											
0.2572E+02	0.1097E-04											
0.3352E+00	0.1429E-06											
1629.76	968.86	323.83	960.37	0.57	-0.02	0.57	0.3079E-04	27.41	405.44	405.44	0.7170E-04	
0.6824E+02	0.2893E-04											
0.2572E+02	0.1090E-04											
0.2906E+00	0.1232E-06											
1655.50	983.50	323.31	975.01	0.57	-0.02	0.57	0.3174E-04	27.28	407.52	407.52	0.7131E-04	
0.6824E+02	0.2877E-04											
0.2572E+02	0.1084E-04											
0.2517E+00	0.1061E-06											
1681.24	998.14	322.84	989.64	0.57	-0.02	0.57	0.3258E-04	27.15	409.49	409.49	0.7094E-04	
0.6824E+02	0.2862E-04											
0.2572E+02	0.1079E-04											
0.2178E+00	0.9137E-07											
1706.98	1012.78	322.43	1004.28	0.57	-0.01	0.57	0.3336E-04	27.04	411.36	411.36	0.7060E-04	



LNB Federal Channels

0. 6824E+02	0. 2848E-04												
0. 2572E+02	0. 1074E-04												
0. 1884E+00	0. 7865E-07	1732. 72	1027. 42	322. 06	1018. 92	0. 57	-0. 01	0. 57	0. 3398E-04	26. 93	413. 12	413. 12	0. 7027E-04
0. 6824E+02	0. 2835E-04												
0. 2572E+02	0. 1069E-04												
0. 1629E+00	0. 6768E-07	1758. 46	1042. 05	321. 75	1033. 55	0. 57	-0. 01	0. 57	0. 3448E-04	26. 83	414. 78	414. 78	0. 6997E-04
0. 6824E+02	0. 2823E-04												
0. 2572E+02	0. 1064E-04												
0. 1407E+00	0. 5822E-07	1784. 20	1056. 69	321. 48	1048. 19	0. 57	-0. 01	0. 57	0. 3469E-04	26. 74	416. 33	416. 33	0. 6968E-04
0. 6799E+02	0. 2801E-04												
0. 2572E+02	0. 1060E-04												
0. 1215E+00	0. 5007E-07	1809. 93	1071. 33	321. 27	1062. 82	0. 57	-0. 01	0. 57	0. 3443E-04	26. 66	417. 78	417. 78	0. 6942E-04
0. 6702E+02	0. 2751E-04												
0. 2572E+02	0. 1056E-04												
0. 1049E+00	0. 4306E-07	1835. 67	1085. 96	321. 10	1077. 45	0. 57	-0. 01	0. 57	0. 3406E-04	26. 58	419. 12	419. 12	0. 6918E-04
0. 6605E+02	0. 2702E-04												
0. 2572E+02	0. 1052E-04												
0. 9050E-01	0. 3701E-07	1861. 41	1100. 60	320. 98	1092. 09	0. 57	0. 00	0. 57	0. 3352E-04	26. 51	420. 37	420. 37	0. 6895E-04
0. 6509E+02	0. 2654E-04												
0. 2572E+02	0. 1049E-04												
0. 7804E-01	0. 3182E-07	1887. 15	1115. 23	320. 90	1106. 72	0. 57	0. 00	0. 57	0. 3295E-04	26. 44	421. 51	421. 51	0. 6875E-04
0. 6415E+02	0. 2608E-04												

LNB Federal Channels

0. 2572E+02	0. 1045E-04												
0. 6727E-01	0. 2734E-07	1912. 89	1129. 87	320. 87	1121. 35	0. 57	0. 00	0. 57	0. 3229E-04	26. 39	422. 56	422. 56	0. 6856E-04
0. 6322E+02	0. 2563E-04												
0. 2564E+02	0. 1040E-04												
0. 5797E-01	0. 2350E-07	1938. 63	1144. 50	320. 88	1135. 99	0. 57	0. 00	0. 57	0. 3153E-04	26. 33	423. 50	423. 50	0. 6839E-04
0. 6230E+02	0. 2519E-04												
0. 2557E+02	0. 1034E-04												
0. 4993E-01	0. 2019E-07	1964. 37	1159. 14	320. 93	1150. 62	0. 57	0. 00	0. 57	0. 3074E-04	26. 29	424. 34	424. 34	0. 6824E-04
0. 6139E+02	0. 2477E-04												
0. 2553E+02	0. 1030E-04												
0. 4300E-01	0. 1735E-07	1990. 11	1173. 77	321. 02	1165. 25	0. 57	0. 00	0. 57	0. 2987E-04	26. 24	425. 09	425. 09	0. 6811E-04
0. 6049E+02	0. 2436E-04												
0. 2553E+02	0. 1028E-04												
0. 3702E-01	0. 1491E-07	2015. 84	1188. 41	321. 15	1179. 88	0. 57	0. 01	0. 57	0. 2898E-04	26. 21	425. 74	425. 74	0. 6799E-04
0. 5961E+02	0. 2396E-04												
0. 2553E+02	0. 1026E-04												
0. 3186E-01	0. 1281E-07												

TIME FROM TIME STEP WHEN DISPOSAL PREVIOUS CLOUD WAS CREATED (SEC)	CLOUD CENTROID X-LOCATION (FT)	Z-LOCATION (FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	T O T A L M A S S (CU FT)	ENTRAINED MASS (CU FT)	TIME STEP WHEN THIS CLOUD WAS CREATED
NEW CLOUD CREATED, NTCLD(K) (K = 1) = 1 73. 23 1	0. 1214E+05	0. 1203E+05	64. 42	13. 99	136. 3	6. 103	0. 0000E+00	67

LNB Federal Channels

NEW CLOUD CREATED, NTCLD(K) (K = 1) = 2	116.5 67	0.1218E+05	0.1207E+05	90.25	150.3	62.29	0.9185	0.0000E+00	133
NEW CLOUD CREATED, NTCLD(K) (K = 1) = 3	159.7 133	0.1221E+05	0.1210E+05	109.3	212.6	45.66	0.5137	0.0000E+00	199
NEW CLOUD CREATED, NTCLD(K) (K = 1) = 4	202.9 199	0.1224E+05	0.1213E+05	124.3	258.2	35.98	0.3439	0.0000E+00	265
NEW CLOUD CREATED, NTCLD(K) (K = 1) = 5	246.1 265	0.1226E+05	0.1215E+05	136.4	294.2	28.82	0.2468	0.0000E+00	331
NEW CLOUD CREATED, NTCLD(K) (K = 1) = 6	289.4 331	0.1229E+05	0.1218E+05	146.1	323.0	22.85	0.1817	0.0000E+00	397
NEW CLOUD CREATED, NTCLD(K) (K = 1) = 7	696.7 400	0.1254E+05	0.1243E+05	222.9	390.1	4.054	0.5639	0.0000E+00	463
NEW CLOUD CREATED, NTCLD(K) (K = 1) = 8	1971. 463	0.1326E+05	0.1315E+05	376.2	397.5	12.74	7.076	0.0000E+00	661
NEW CLOUD CREATED, NTCLD(K) (K = 1) = 9	2016. 661	0.1329E+05	0.1318E+05	377.3	308.0	26.21	61.16	0.0000E+00	668

NOTE -- When all solid material has settled from a cloud, the cloud is erased and the remaining clouds for this solids type are renumbered.

TIME FROM TIME STEP WHEN DISPOSAL PREVIOUS CLOUD	CLOUD CENTROID X-LOCATION Z-LOCATION	CLOUD X-Z DIAMETER	DEPTH OF TOP OF CLOUD	CLOUD VERT. THICKNESS	T O T A L M A S S	ENTRAINED MASS	TIME STEP WHEN THIS CLOUD
---	---	-----------------------	--------------------------	--------------------------	----------------------	-------------------	------------------------------

(SEC) WAS CREATED	(FT)	(FT)	LNB Federal Channels		(FT)	(CU FT)	(CU FT)	WAS CREATED	
			(FT)	(FT)	(FT)				
NEW CLOUD CREATED, NTCLD(K) (K = 73.23 1	0.1214E+05	0.1203E+05	2) = 64.42	1	13.99	136.3	2.282	0.0000E+00	67
NEW CLOUD CREATED, NTCLD(K) (K = 116.5 67	0.1218E+05	0.1207E+05	2) = 90.25	2	150.3	62.29	0.3435	0.0000E+00	133
NEW CLOUD CREATED, NTCLD(K) (K = 159.7 133	0.1221E+05	0.1210E+05	2) = 109.3	3	212.6	45.66	0.1921	0.0000E+00	199
NEW CLOUD CREATED, NTCLD(K) (K = 202.9 199	0.1224E+05	0.1213E+05	2) = 124.3	4	258.2	35.98	0.1286	0.0000E+00	265
NEW CLOUD CREATED, NTCLD(K) (K = 246.1 265	0.1226E+05	0.1215E+05	2) = 136.4	5	294.2	28.82	0.9231E-01	0.0000E+00	331
NEW CLOUD CREATED, NTCLD(K) (K = 289.4 331	0.1229E+05	0.1218E+05	2) = 146.1	6	323.0	22.85	0.6793E-01	0.0000E+00	397
NEW CLOUD CREATED, NTCLD(K) (K = 696.7 400	0.1254E+05	0.1243E+05	2) = 222.9	7	390.1	0.8108	0.1099E-01	0.0000E+00	463
NEW CLOUD CREATED, NTCLD(K) (K = 1971. 463	0.1326E+05	0.1315E+05	2) = 376.2	8	397.5	2.548	0.1876	0.0000E+00	661
NEW CLOUD CREATED, NTCLD(K) (K = 2016. 661	0.1329E+05	0.1318E+05	2) = 377.3	9	308.0	26.21	25.53	0.0000E+00	668

NOTE -- When all solid material has settled from a cloud, the cloud is erased and the remaining clouds for this solids type are renumbered.

LNB Federal Channels

TIME FROM TIME STEP WHEN DISPOSAL PREVIOUS CLOUD WAS CREATED (SEC)	CLOUD CENTROID X-LOCATION (FT)	Z-LOCATION (FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	T O T A L M A S S (CU FT)	ENTRAINED MASS (CU FT)	TIME STEP WHEN THIS CLOUD WAS CREATED
NEW CLOUD CREATED, NTCLD(K) (K = 3) = 1 73.23 1	0.1214E+05	0.1203E+05	64.42	13.99	136.3	3.872	0.0000E+00	67
NEW CLOUD CREATED, NTCLD(K) (K = 3) = 2 116.5 67	0.1218E+05	0.1207E+05	90.25	150.3	62.29	0.5827	0.0000E+00	133
NEW CLOUD CREATED, NTCLD(K) (K = 3) = 3 159.7 133	0.1221E+05	0.1210E+05	109.3	212.6	45.66	0.3259	0.0000E+00	199
NEW CLOUD CREATED, NTCLD(K) (K = 3) = 4 202.9 199	0.1224E+05	0.1213E+05	124.3	258.2	35.98	0.2182	0.0000E+00	265
NEW CLOUD CREATED, NTCLD(K) (K = 3) = 5 246.1 265	0.1226E+05	0.1215E+05	136.4	294.2	28.82	0.1566	0.0000E+00	331
NEW CLOUD CREATED, NTCLD(K) (K = 3) = 6 289.4 331	0.1229E+05	0.1218E+05	146.1	323.0	22.85	0.1153	0.0000E+00	397
NEW CLOUD CREATED, NTCLD(K) (K = 3) = 7 696.7 400	0.1254E+05	0.1243E+05	222.9	390.1	40.54	21.73	0.0000E+00	463
NEW CLOUD CREATED, NTCLD(K) (K = 3) = 8 1121. 463	0.1278E+05	0.1267E+05	302.5	397.5	42.47	17.89	0.0000E+00	529
NEW CLOUD CREATED, NTCLD(K) (K = 3) = 9 1546. 529	0.1302E+05	0.1291E+05	352.7	361.4	42.47	3.578	0.0000E+00	595

LNB Federal Channels

NEW CLOUD CREATED, NTCLD(K) (K = 3) = 10								
1971.595	0.1326E+05	0.1315E+05	376.2	339.8	42.47	0.4197	0.0000E+00	661
NEW CLOUD CREATED, NTCLD(K) (K = 3) = 11								
2016.661	0.1329E+05	0.1318E+05	377.3	308.0	26.21	0.4142E-01	0.0000E+00	668

NOTE -- When all solid material has settled from a cloud, the cloud is erased and the remaining clouds for this solids type are renumbered.

TIME FROM TIME STEP WHEN DISPOSAL PREVIOUS CLOUD WAS CREATED (SEC)	CLOUD CENTROID X-LOCATION (FT)	CLOUD CENTROID Z-LOCATION (FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	T O T A L M A S S (CU FT)	ENTRAINED MASS (CU FT)	TIME STEP WHEN THIS CLOUD WAS CREATED
NEW CLOUD CREATED, NTCLD(K) (K = 4) = 1								
2016.1	0.1329E+05	0.1318E+05	377.3	308.0	26.21	169.1	0.0000E+00	668

NOTE -- When all solid material has settled from a cloud, the cloud is erased and the remaining clouds for this solids type are renumbered.

LONG TERM DIFFUSION RESULTS:

BEGIN LONG TERM SIMULATION OF FATE OF Si I t

SUMMARY OF Si I t DISTRIBUTIONS AFTER 3600.00 SEC.

LNB Federal Channels

TOTAL SUSPENDED MATERIAL (CU FT) = 77.112  
 TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 0.00000E+00

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 0.00 FT

MAX CONC IS 0.00000001 OUTPUT SUPPRESSED AT 50.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 750.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 1500.00 FT

SMALL CLOUDS AT 3600.00 SECONDS ELAPSED TIME FOR SiIt

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID LEFT OF GRID		MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	0.1502E+05	0.1491E+05	6.103	0.0000E+00	311.3	48.22	138.4	0.100000E-01
2	0.1464E+05	0.1453E+05	0.9185	0.0000E+00	356.3	184.1	64.34	0.100000E-01
3	0.1444E+05	0.1433E+05	0.5137	0.0000E+00	385.6	245.9	47.71	0.100000E-01
4	0.1429E+05	0.1418E+05	0.3439	0.0000E+00	406.7	291.2	38.03	0.100000E-01
5	0.1417E+05	0.1406E+05	0.2468	0.0000E+00	422.2	326.7	30.87	0.100000E-01
6	0.1408E+05	0.1397E+05	0.1817	0.0000E+00	433.5	355.1	24.90	0.100000E-01
7	0.1393E+05	0.1382E+05	0.5639	0.0000E+00	504.4	418.2	6.064	0.100000E-01
8	0.1404E+05	0.1393E+05	7.076	0.0000E+00	550.6	412.9	14.56	0.100000E-01
9	0.1418E+05	0.1407E+05	61.16	0.0000E+00	546.3	323.0	27.99	0.100000E-01

SUMMARY OF SiIt DISTRIBUTIONS AFTER 7200.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 77.112  
 TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 0.00000E+00

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 0.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 50.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 750.00 FT

LNB Federal Channels

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 1500.00 FT

SMALL CLOUDS AT 7200.00 SECONDS ELAPSED TIME FOR SiIt

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID		LEFT OF GRID	MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	0.1785E+05	0.1774E+05	6.103	0.0000E+00	671.4	82.88	141.0	0.100000E-01	
2	0.1708E+05	0.1697E+05	0.9185	0.0000E+00	733.1	218.7	67.03	0.100000E-01	
3	0.1667E+05	0.1656E+05	0.5137	0.0000E+00	772.5	280.6	50.40	0.100000E-01	
4	0.1636E+05	0.1625E+05	0.3439	0.0000E+00	800.5	325.8	40.71	0.100000E-01	
5	0.1612E+05	0.1601E+05	0.2468	0.0000E+00	820.9	361.4	33.55	0.100000E-01	
6	0.1593E+05	0.1582E+05	0.1817	0.0000E+00	835.6	389.8	27.58	0.100000E-01	
7	0.1557E+05	0.1546E+05	0.5639	0.0000E+00	927.4	452.8	8.747	0.100000E-01	
8	0.1568E+05	0.1557E+05	7.076	0.0000E+00	986.1	447.5	17.25	0.100000E-01	
9	0.1615E+05	0.1604E+05	61.16	0.0000E+00	980.7	357.7	30.67	0.100000E-01	

SUMMARY OF SiIt DISTRIBUTIONS AFTER 10800.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 77.112  
 TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 0.00000E+00

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 0.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 50.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 750.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 1500.00 FT

SMALL CLOUDS AT 10800.00 SECONDS ELAPSED TIME FOR SiIt

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID		LEFT OF GRID	MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	0.2054E+05	0.2043E+05	6.103	0.0000E+00	1137.	117.5	143.7	0.100000E-01	



	LNB Federal Channels							
2	0.1939E+05	0.1928E+05	0.9185	0.0000E+00	1212.	253.4	69.71	0.100000E-01
3	0.1876E+05	0.1866E+05	0.5137	0.0000E+00	1260.	315.3	53.08	0.100000E-01
4	0.1830E+05	0.1819E+05	0.3439	0.0000E+00	1294.	360.5	43.39	0.100000E-01
5	0.1793E+05	0.1782E+05	0.2468	0.0000E+00	1319.	396.0	36.23	0.100000E-01
6	0.1764E+05	0.1753E+05	0.1817	0.0000E+00	1336.	424.4	30.26	0.100000E-01
7	0.1707E+05	0.1696E+05	0.5639	0.0000E+00	1446.	487.5	11.43	0.100000E-01
8	0.1718E+05	0.1707E+05	7.076	0.0000E+00	1515.	482.2	19.93	0.100000E-01
9	0.1798E+05	0.1787E+05	61.16	0.0000E+00	1509.	392.3	33.36	0.100000E-01

SUMMARY OF Silt DISTRIBUTIONS AFTER 14400.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 77.112  
 TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 0.00000E+00

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 0.00 FT  
 MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 50.00 FT  
 MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 750.00 FT  
 MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 1500.00 FT

SMALL CLOUDS AT 14400.00 SECONDS ELAPSED TIME FOR Silt

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID		LEFT OF GRID	MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	0.2309E+05	0.2298E+05	6.103	0.0000E+00	1691.	152.2	146.4	0.100000E-01	
2	0.2155E+05	0.2144E+05	0.9185	0.0000E+00	1779.	288.1	72.39	0.100000E-01	
3	0.2072E+05	0.2061E+05	0.5137	0.0000E+00	1834.	349.9	55.76	0.100000E-01	
4	0.2009E+05	0.1998E+05	0.3439	0.0000E+00	1873.	395.2	46.08	0.100000E-01	
5	0.1960E+05	0.1949E+05	0.2468	0.0000E+00	1901.	430.7	38.92	0.100000E-01	
6	0.1921E+05	0.1910E+05	0.1817	0.0000E+00	1922.	459.1	32.95	0.100000E-01	
7	0.1843E+05	0.1832E+05	0.5639	0.0000E+00	2047.	522.1	14.11	0.100000E-01	
8	0.1855E+05	0.1844E+05	7.076	0.0000E+00	2126.	516.9	22.61	0.100000E-01	
9	0.1967E+05	0.1956E+05	61.16	0.0000E+00	2118.	427.0	36.04	0.100000E-01	

BEGIN LONG TERM SIMULATION OF FATE OF Clay

LNB Federal Channels

SUMMARY OF Clay DISTRIBUTIONS AFTER 3600.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 28.836  
 TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 0.00000E+00

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 0.00 FT

MAX CONC IS 0.00000002 OUTPUT SUPPRESSED AT 50.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 750.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 1500.00 FT

SMALL CLOUDS AT 3600.00 SECONDS ELAPSED TIME FOR Clay

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID LEFT OF GRID		MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	0.1505E+05	0.1494E+05	2.282	0.0000E+00	311.3	20.01	138.4	0.200000E-02
2	0.1467E+05	0.1456E+05	0.3435	0.0000E+00	356.3	156.2	64.34	0.200000E-02
3	0.1446E+05	0.1435E+05	0.1921	0.0000E+00	385.6	218.4	47.71	0.200000E-02
4	0.1431E+05	0.1420E+05	0.1286	0.0000E+00	406.7	264.0	38.03	0.200000E-02
5	0.1420E+05	0.1409E+05	0.9231E-01	0.0000E+00	422.2	299.9	30.87	0.200000E-02
6	0.1411E+05	0.1400E+05	0.6793E-01	0.0000E+00	433.5	328.6	24.90	0.200000E-02
7	0.1395E+05	0.1384E+05	0.1099E-01	0.0000E+00	504.4	394.9	2.820	0.200000E-02
8	0.1405E+05	0.1394E+05	0.1876	0.0000E+00	550.6	399.9	4.371	0.200000E-02
9	0.1418E+05	0.1407E+05	25.53	0.0000E+00	546.3	310.3	27.99	0.200000E-02

SUMMARY OF Clay DISTRIBUTIONS AFTER 7200.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 28.836  
 TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 0.00000E+00

LNB Federal Channels

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 0.00 FT

MAX CONC IS 0.00000004 OUTPUT SUPPRESSED AT 50.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 750.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 1500.00 FT

SMALL CLOUDS AT 7200.00 SECONDS ELAPSED TIME FOR Clay

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID		MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	0.1799E+05	0.1788E+05	2.282	0.0000E+00	671.4	25.87	141.0	0.200000E-02
2	0.1722E+05	0.1711E+05	0.3435	0.0000E+00	733.1	162.1	67.03	0.200000E-02
3	0.1681E+05	0.1670E+05	0.1921	0.0000E+00	772.5	224.3	50.40	0.200000E-02
4	0.1650E+05	0.1639E+05	0.1286	0.0000E+00	800.5	269.9	40.71	0.200000E-02
5	0.1625E+05	0.1614E+05	0.9231E-01	0.0000E+00	820.9	305.8	33.55	0.200000E-02
6	0.1606E+05	0.1595E+05	0.6793E-01	0.0000E+00	835.6	334.5	27.58	0.200000E-02
7	0.1569E+05	0.1558E+05	0.1099E-01	0.0000E+00	927.4	400.8	5.504	0.200000E-02
8	0.1576E+05	0.1565E+05	0.1876	0.0000E+00	986.1	405.7	7.054	0.200000E-02
9	0.1620E+05	0.1609E+05	25.53	0.0000E+00	980.7	316.2	30.67	0.200000E-02

SUMMARY OF Clay DISTRIBUTIONS AFTER 10800.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 28.836  
 TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 0.00000E+00

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 0.00 FT

MAX CONC IS 0.00000001 OUTPUT SUPPRESSED AT 50.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 750.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 1500.00 FT

SMALL CLOUDS AT 10800.00 SECONDS ELAPSED TIME FOR Clay

LNB Federal Channels

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID		MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	0.2090E+05	0.2079E+05	2.282	0.0000E+00	1137.	31.73	143.7	0.200000E-02
2	0.1974E+05	0.1963E+05	0.3435	0.0000E+00	1212.	167.9	69.71	0.200000E-02
3	0.1912E+05	0.1901E+05	0.1921	0.0000E+00	1260.	230.1	53.08	0.200000E-02
4	0.1865E+05	0.1854E+05	0.1286	0.0000E+00	1294.	275.7	43.39	0.200000E-02
5	0.1828E+05	0.1817E+05	0.9231E-01	0.0000E+00	1319.	311.6	36.23	0.200000E-02
6	0.1799E+05	0.1788E+05	0.6793E-01	0.0000E+00	1336.	340.3	30.26	0.200000E-02
7	0.1740E+05	0.1729E+05	0.1099E-01	0.0000E+00	1446.	406.7	8.187	0.200000E-02
8	0.1745E+05	0.1734E+05	0.1876	0.0000E+00	1515.	411.6	9.737	0.200000E-02
9	0.1820E+05	0.1809E+05	25.53	0.0000E+00	1509.	322.0	33.36	0.200000E-02

SUMMARY OF Clay DISTRIBUTIONS AFTER 14400.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 28.836  
 TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 0.00000E+00

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 0.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 50.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 750.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 1500.00 FT

SMALL CLOUDS AT 14400.00 SECONDS ELAPSED TIME FOR Clay

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID		MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	0.2379E+05	0.2368E+05	2.282	0.0000E+00	1691.	37.58	146.4	0.200000E-02
2	0.2224E+05	0.2213E+05	0.3435	0.0000E+00	1779.	173.8	72.39	0.200000E-02
3	0.2140E+05	0.2129E+05	0.1921	0.0000E+00	1834.	236.0	55.76	0.200000E-02
4	0.2078E+05	0.2067E+05	0.1286	0.0000E+00	1873.	281.6	46.08	0.200000E-02
5	0.2028E+05	0.2017E+05	0.9231E-01	0.0000E+00	1901.	317.5	38.92	0.200000E-02

LNB Federal Channels

6	0. 1988E+05	0. 1978E+05	0. 6793E-01	0. 0000E+00	1922.	346. 2	32. 95	0. 200000E-02
7	0. 1908E+05	0. 1897E+05	0. 1099E-01	0. 0000E+00	2047.	412. 5	10. 87	0. 200000E-02
8	0. 1911E+05	0. 1900E+05	0. 1876	0. 0000E+00	2126.	417. 4	12. 42	0. 200000E-02
9	0. 2016E+05	0. 2005E+05	25. 53	0. 0000E+00	2118.	327. 9	36. 04	0. 200000E-02

BEGIN LONG TERM SIMULATION OF FATE OF SAND

SUMMARY OF SAND DISTRIBUTIONS AFTER 3600.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 48.924  
 TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 0.00000E+00

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 0.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 50.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 750.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 1500.00 FT

SMALL CLOUDS AT 3600.00 SECONDS ELAPSED TIME FOR SAND

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID	LEFT OF GRID	MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	0. 1472E+05	0. 1461E+05	3. 872	0. 0000E+00	311. 3	365. 6	138. 4	0. 100000
2	0. 1434E+05	0. 1424E+05	0. 5827	0. 0000E+00	356. 3	497. 6	64. 34	0. 100000
3	0. 1415E+05	0. 1404E+05	0. 3259	0. 0000E+00	385. 6	555. 6	47. 71	0. 100000
4	0. 1401E+05	0. 1390E+05	0. 2182	0. 0000E+00	406. 7	596. 9	38. 03	0. 100000
5	0. 1390E+05	0. 1379E+05	0. 1566	0. 0000E+00	422. 2	628. 6	30. 87	0. 100000
6	0. 1381E+05	0. 1370E+05	0. 1153	0. 0000E+00	433. 5	653. 1	24. 90	0. 100000
7	0. 1366E+05	0. 1355E+05	21. 73	0. 0000E+00	504. 4	679. 5	42. 55	0. 100000
8	0. 1376E+05	0. 1365E+05	17. 89	0. 0000E+00	562. 1	644. 4	44. 44	0. 100000
9	0. 1396E+05	0. 1385E+05	3. 578	0. 0000E+00	574. 2	565. 8	44. 39	0. 100000
10	0. 1411E+05	0. 1400E+05	0. 4197	0. 0000E+00	550. 6	501. 8	44. 29	0. 100000
11	0. 1418E+05	0. 1407E+05	0. 4142E-01	0. 0000E+00	546. 3	465. 6	27. 99	0. 100000

LNB Federal Channels

SUMMARY OF SAND DISTRIBUTIONS AFTER 7200.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 48.924  
 TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 0.00000E+00

MAX CONCENTRATION IS 0.00000000 OUTPUT SUPPRESSED AT 0.00 FT

MAX CONCENTRATION IS 0.00000000 OUTPUT SUPPRESSED AT 50.00 FT

MAX CONCENTRATION IS 0.00000004 OUTPUT SUPPRESSED AT 750.00 FT

MAX CONCENTRATION IS 0.00000000 OUTPUT SUPPRESSED AT 1500.00 FT

SMALL CLOUDS AT 7200.00 SECONDS ELAPSED TIME FOR SAND

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID		MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	0.1630E+05	0.1619E+05	3.872	0.0000E+00	671.4	724.3	141.0	0.100000
2	0.1556E+05	0.1545E+05	0.5827	0.0000E+00	733.1	856.3	67.03	0.100000
3	0.1517E+05	0.1506E+05	0.3259	0.0000E+00	772.5	914.2	50.40	0.100000
4	0.1488E+05	0.1477E+05	0.2182	0.0000E+00	800.5	955.6	40.71	0.100000
5	0.1467E+05	0.1456E+05	0.1566	0.0000E+00	820.9	987.2	33.55	0.100000
6	0.1450E+05	0.1439E+05	0.1153	0.0000E+00	835.6	1012.	27.58	0.100000
7	0.1421E+05	0.1410E+05	21.73	0.0000E+00	927.4	1038.	45.23	0.100000
8	0.1444E+05	0.1433E+05	17.89	0.0000E+00	1001.	1003.	47.12	0.100000
9	0.1495E+05	0.1484E+05	3.578	0.0000E+00	1016.	924.5	47.07	0.100000
10	0.1534E+05	0.1523E+05	0.4197	0.0000E+00	986.1	860.5	46.97	0.100000
11	0.1560E+05	0.1549E+05	0.4142E-01	0.0000E+00	980.7	824.2	30.67	0.100000

SUMMARY OF SAND DISTRIBUTIONS AFTER 10800.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 48.924  
 TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 0.00000E+00

LNB Federal Channels

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 0.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 50.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 750.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 1500.00 FT

SMALL CLOUDS AT 10800.00 SECONDS ELAPSED TIME FOR SAND

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID		LEFT OF GRID	MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	0.1648E+05	0.1637E+05		3.872	0.0000E+00	1137.	1083.	143.7	0.100000
2	0.1536E+05	0.1525E+05		0.5827	0.0000E+00	1212.	1215.	69.71	0.100000
3	0.1478E+05	0.1467E+05		0.3259	0.0000E+00	1260.	1273.	53.08	0.100000
4	0.1447E+05	0.1436E+05		0.2182	0.0000E+00	1294.	1314.	43.39	0.100000
5	0.1427E+05	0.1416E+05		0.1566	0.0000E+00	1319.	1346.	36.23	0.100000
6	0.1412E+05	0.1401E+05		0.1153	0.0000E+00	1336.	1370.	30.26	0.100000
7	0.1385E+05	0.1374E+05		21.73	0.0000E+00	1446.	1397.	47.92	0.100000
8	0.1406E+05	0.1395E+05		17.89	0.0000E+00	1532.	1362.	49.80	0.100000
9	0.1453E+05	0.1442E+05		3.578	0.0000E+00	1550.	1283.	49.75	0.100000
10	0.1517E+05	0.1506E+05		0.4197	0.0000E+00	1515.	1219.	49.66	0.100000
11	0.1560E+05	0.1549E+05		0.4142E-01	0.0000E+00	1509.	1183.	33.36	0.100000

SUMMARY OF SAND DISTRIBUTIONS AFTER 14400.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 4.3048  
 TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 44.619  
 MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 0.00 FT  
 MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 50.00 FT  
 MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 750.00 FT  
 MAX CONC IS 0.00000002 OUTPUT SUPPRESSED AT 1500.00 FT

LNB Federal Channels

BOTTOM ACCUMULATION OF SAND (CU FT/GRID SQUARE) 14400.00 SECONDS AFTER DUMP  
... MULTIPLY DISPLAYED VALUES BY 1.000 (LEGEND... + = .LT. .01 . = .LT. .0001 0 = .LT. .000001)

M N=	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



LNB Federal Channels

0	0	0																								
22	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
23	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
24	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
25	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
26	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
27	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
28	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
29	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
30	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
31	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.	.	.																								
32	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.	.	.																								
33	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
.	.	.																								
34	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
+	+	+																								
35	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
+	+	+																								
36	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
+	+	+																								
37	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
+	+	+																								
38	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
.	.	.																								
39	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
.	.	.																								
40	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.	.	.																								
41	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
42	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
43	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



LNB Federal Channels

00000																										
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

LNB Federal Channel s

00000																										
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
28	0	.	.	.	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
29	.	.	+	+	+	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
30	+	+	+	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
31	+	+	.01	.02	.02	.01	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
32	.01	.05	.12	.16	.14	.08	.02	+	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
33	.06	.22	.48	.67	.59	.33	.12	.02	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
34	.15	.55	1.2	1.6	1.5	.86	.32	.08	.01	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
35	.24	.86	1.9	2.7	2.4	1.4	.57	.15	.02	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
36	.24	.86	1.9	2.8	2.6	1.6	.67	.19	.04	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
37	.15	.55	1.2	1.8	1.8	1.2	.56	.18	.04	+	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
38	.06	.22	.54	.83	.87	.63	.34	.14	.04	.01	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
39	.01	.06	.15	.25	.28	.24	.16	.08	.03	+	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
40	+	.01	.03	.05	.06	.07	.06	.04	.01	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
41	+	+	+	+	.01	.01	.01	.01	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
42	.	+	+	+	+	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
43	.	.	.	.	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
44	0	0	.	.	.	.	.	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
45	0	0	0	0	0	0	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



LNB Federal Channels

BOTTOM ACCUMULATION OF SAND (CU FT/GRID SQUARE) , 14400.00 SECONDS AFTER DUMP  
 ... MULTIPLY DISPLAYED VALUES BY 1.000 (LEGEND... + = .LT. .01 . = .LT. .0001 0 = .LT. .000001)  
 M N= 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LNB Federal Channels

0	0	0																								
22	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
23	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
24	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
25	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
26	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
27	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
28	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
29	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
30	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	.	.																								
31	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.	.	+																								
32	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.	.	+	+																							
33	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
.	.	+	+	.01																						
34	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
+	+	+	+	.02																						
35	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
+	+	+	+	.04																						
36	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
+	+	+	+	.04																						
37	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
+	+	+	+	.02																						
38	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
.	.	+	+	.01																						
39	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
.	.	+	+	.																						
40	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.	.	.	+	.																						
41	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	.	.	.	.																						
42	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	.	.	.																						
43	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0







LNB Federal Channel s

00000																										
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
28	0	.	.	.	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
29	.	.	+	+	+	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
30	+	+	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
31	+	+	.01	.02	.02	.01	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
32	.01	.05	.12	.16	.14	.08	.02	+	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
33	.06	.22	.48	.67	.59	.33	.12	.02	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
34	.15	.55	1.2	1.6	1.5	.86	.32	.08	.01	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
35	.24	.86	1.9	2.7	2.4	1.4	.57	.15	.02	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
36	.24	.86	1.9	2.8	2.6	1.6	.67	.19	.04	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
37	.15	.55	1.2	1.8	1.8	1.2	.56	.18	.04	+	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
38	.06	.22	.54	.83	.87	.63	.34	.14	.04	.01	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
39	.01	.06	.15	.25	.28	.24	.16	.08	.03	+	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
40	+	.01	.03	.05	.06	.07	.06	.04	.01	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
41	+	+	+	+	.01	.01	.01	.01	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
42	.	+	+	+	+	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
43	.	.	.	.	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
44	0	0	.	.	.	.	.	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
45	0	0	0	0	0	0	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



		LNB Federal Channel s																									
0	7	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	8	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	9	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	10	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	11	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	12	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	13	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	14	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	15	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	16	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	17	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	18	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	19	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	20	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	21	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	22	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	23	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	24	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	25	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	26	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	27	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	28	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

											LNB	Federal	Channel	s													
29	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																										
30	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0																											
31	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.																											
32	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.																											
33	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.																											
34	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+																											
35	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+																											
36	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+																											
37	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+																											
38	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.																											
39	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.																											
40	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.																											
41	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0																											
42	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0																											
43	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0																											
44	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0																											
45	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0																											
46	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0																											
47	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0																											
48	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0																											
49	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0																											
50	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0																											



											LNB Federal Channels																
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
28	0	.	.	.	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
29	.	.	+	+	+	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
30	+	+	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
31	+	+	.01	.02	.02	.01	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											
32	.01	.05	.12	.16	.14	.08	.02	+	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																											

												LNB	Federal	Channel	s												
33	.06	.22	.48	.67	.59	.33	.12	.02	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
34	.15	.55	1.2	1.6	1.5	.86	.32	.08	.01	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
35	.24	.86	1.9	2.7	2.4	1.4	.57	.15	.02	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
36	.24	.86	1.9	2.8	2.6	1.6	.67	.19	.04	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
37	.15	.55	1.2	1.8	1.8	1.2	.56	.18	.04	+	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
38	.06	.22	.54	.83	.87	.63	.34	.14	.04	.01	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
39	.01	.06	.15	.25	.28	.24	.16	.08	.03	+	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
40	+	.01	.03	.05	.06	.07	.06	.04	.01	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
41	+	+	+	+	.01	.01	.01	.01	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
42	.	+	+	+	+	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
43	.	.	.	.	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
44	0	0	.	.	.	.	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
45	0	0	0	0	0	0	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											







LNB Federal Channels

0	0	0																								
27	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
28	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
29	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
30	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
31	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
32	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
33	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
34	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
35	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
36	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
37	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
38	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
39	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
40	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
41	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
42	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
43	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
44	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
45	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
46	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
47	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
48	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



LNB Federal Channel s

00000																									
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

LNB Federal Channel s

00000																									
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
35	0	0	0	.	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
36	0	0	0	.02	2.8	.33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
37	0	0	0	.02	2.1	.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
38	0	0	0	.	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																									
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



LNB Federal Channels

THESE CONCENTRATIONS ARE THE MAXIMUM OCCURING IN THE WATER COLUMN AT THIS TIME

... MULTIPLY DISPLAYED VALUES BY 0.1000E-04 (LEGEND... + = .LT. .01 . = .LT. .0001 0 = .LT. .000001)

M N=	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
29	30	31																										
2																												
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
3	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



LNB Federal Channels

0	0	0																								
21	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
22	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
23	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
24	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
25	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
26	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
27	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
28	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
29	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
30	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
31	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
32	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
33	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
34	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
35	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
36	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
37	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
38	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
39	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
40	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
41	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
42	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



LNB Federal Channel s

00																										
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00000																										
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

LNB Federal Channel s

00000																										
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
38	0	0	0	0	0	0	0	0	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
39	0	0	0	0	0	0	.	+	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
40	0	0	0	0	0	0	.	+	.02	.14	.08	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
41	0	0	0	0	0	0	.	+	.25	1.2	.76	.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
42	0	0	0	0	0	0	.	+	.27	1.3	.83	.06	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
43	0	0	0	0	0	0	.	+	.03	.18	.11	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0





LNB Federal Channels

0	0	0																								
15	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
16	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
17	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
18	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
19	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
20	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
21	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
22	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
23	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
24	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
25	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
26	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
27	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
28	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
29	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
30	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
31	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
32	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
33	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
34	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
35	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
36	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LNB Federal Channels

0	0	0																								
37	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
38	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
39	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
40	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
41	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
42	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
43	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
44	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
45	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
46	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
47	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
48	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
49	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
50	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
51	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
52	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
53	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
54	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
55	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
56	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
57	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
58	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0





LNB Federal Channels

00000																										
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LNB Federal Channel s

00000																									
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
42	0	0	0	0	0	0	0	0	0	0	0	.	.	+	+	+	+	.	0	0	0	0	0	0	0
00000																									
43	0	0	0	0	0	0	0	0	0	0	0	.	+	+	+	.02	.01	+	+	0	0	0	0	0	0
00000																									
44	0	0	0	0	0	0	0	0	0	.	.	+	.02	.15	.32	.28	.10	.01	0	0	0	0	0	0	0
00000																									
45	0	0	0	0	0	0	0	0	0	.	+	.01	.19	.99	2.1	1.8	.66	.09	0	0	0	0	0	0	0
00000																									
46	0	0	0	0	0	0	0	0	0	.	+	.04	.52	2.6	5.6	4.9	1.7	.26	0	0	0	0	0	0	0
00000																									
47	0	0	0	0	0	0	0	0	0	.	+	.04	.58	2.9	6.3	5.5	2.0	.29	0	0	0	0	0	0	0
00000																									
48	0	0	0	0	0	0	0	0	0	.	+	.02	.26	1.3	2.9	2.5	.92	.13	0	0	0	0	0	0	0
00000																									
49	0	0	0	0	0	0	0	0	0	.	+	+	.05	.26	.55	.48	.17	.02	0	0	0	0	0	0	0
00000																									
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
60	000																								

SMALL CLOUDS AT 10800.00 SECONDS ELAPSED TIME FOR FLUID

LNB Federal Channels

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM		MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
	TOP OF GRID	LEFT OF GRID						
1	0.1825E+05	0.1814E+05	169.1	0.0000E+00	1509.	304.5	33.36	0.000000E+00

SUMMARY OF FLUID DISTRIBUTIONS AFTER 14400.00 SEC

TOTAL FLUID FRACTION VOLUME FROM DISPOSAL (CU FT) = 169.13

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 0.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 50.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 750.00 FT

MAX CONC IS 0.00000000 OUTPUT SUPPRESSED AT 1500.00 FT

CONCENTRATIONS ABOVE BACKGROUND OF FLUID (VOLUMETRIC RATIO OF DUMP FLUID TO AMBIENT WATER) IN THE CLOUD 14400.00 SECONDS AFTER DUMP

THESE CONCENTRATIONS ARE THE MAXIMUM OCCURING IN THE WATER COLUMN AT THIS TIME

... MULTIPLY DISPLAYED VALUES BY 0.1000E-05 (LEGEND... + = .LT. .01 . = .LT. .0001 0 = .LT. .000001)

M N=	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LNB Federal Channels

0	0	0																								
9	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
10	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
11	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
12	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
13	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
14	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
15	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
16	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
17	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
18	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
19	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
20	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
21	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
22	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
23	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
24	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
25	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
26	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
27	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
28	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
29	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
30	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LNB Federal Channels

0	0	0																								
31	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
32	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
33	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
34	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
35	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
36	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
37	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
38	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
39	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
40	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
41	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
42	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
43	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
44	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
45	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
46	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
47	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
48	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
49	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
50	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
51	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																								
52	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



	LNB Federal Channels																									
00000																										
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0







											LNB	Federal	Channel	s													
14	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
15	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
16	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
17	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
18	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
19	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
20	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
21	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
22	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
23	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
24	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
25	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
26	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
27	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
28	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
29	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
30	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
31	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
32	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
33	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
34	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									
35	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																									

		LNB Federal Channel s																										
36	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0																										
37	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
38	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
39	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
40	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
41	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
42	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
43	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
44	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
45	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
46	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
47	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
48	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
49	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
50	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
51	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
52	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
53	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
54	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
55	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
56	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										
57	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0																										













											LNB	Federal	Channel	s														
38	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
	+ .01																											.
39	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.
	+ +																											.
40	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	+ +																											0
41	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0																												0
42	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
43	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
44	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
45	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
46	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
47	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
48	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
49	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
50	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
51	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
52	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
53	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
54	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
55	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
56	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
57	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
58	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0
59	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0																											0



											LNB	Federal	Channel	s													
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
28	0	.	.	.	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
29	.	.	+	+	+	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
30	+	+	+	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
31	+	+	.01	.02	.02	.01	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
32	.01	.05	.12	.16	.14	.08	.02	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
33	.06	.22	.48	.67	.59	.33	.12	.02	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
34	.15	.55	1.2	1.6	1.5	.86	.32	.08	.01	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
35	.24	.86	1.9	2.7	2.4	1.4	.57	.15	.02	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
36	.24	.86	1.9	2.8	2.6	1.6	.67	.19	.04	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
37	.15	.55	1.2	1.8	1.8	1.2	.56	.18	.04	+	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
38	.06	.22	.54	.83	.87	.63	.34	.14	.04	.01	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
39	.01	.06	.15	.25	.28	.24	.16	.08	.03	+	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
40	+	.01	.03	.05	.06	.07	.06	.04	.01	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											
41	+	+	+	+	.01	.01	.01	.01	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																											











LNB Federal Channels

00000																									
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																									
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	LNB Federal Channel s																								
00000	28	.	.	.	.	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000	29	.	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000	30	+	+	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000	31	+	.02	.05	.07	.06	.03	.01	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0
00000	32	.04	.16	.36	.50	.44	.24	.08	.02	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0
00000	33	.19	.66	1.4	2.0	1.7	1.0	.36	.09	.01	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0
00000	34	.47	1.6	3.6	5.1	4.5	2.6	.98	.25	.04	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0
00000	35	.74	2.6	5.8	8.2	7.4	4.4	1.7	.46	.08	.01	+	.	0	0	0	0	0	0	0	0	0	0	0	0
00000	36	.73	2.6	5.8	8.4	7.9	4.8	2.0	.60	.12	.01	+	+	.	0	0	0	0	0	0	0	0	0	0	0
00000	37	.46	1.6	3.8	5.6	5.5	3.6	1.6	.56	.14	.02	+	+	.	0	0	0	0	0	0	0	0	0	0	0
00000	38	.18	.69	1.6	2.5	2.6	1.9	1.0	.43	.13	.03	+	+	.	0	0	0	0	0	0	0	0	0	0	0
00000	39	.05	.19	.46	.76	.87	.73	.49	.27	.10	.02	+	+	.	0	0	0	0	0	0	0	0	0	0	0
00000	40	+	.03	.09	.16	.20	.21	.18	.12	.05	.01	+	+	.	0	0	0	0	0	0	0	0	0	0	0
00000	41	+	+	.01	.02	.03	.04	.04	.03	.01	+	+	.	0	0	0	0	0	0	0	0	0	0	0	0
00000	42	.	+	+	+	+	+	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0
00000	43	.	.	.	+	+	+	+	+	+	+	.	.	0	0	0	0	0	0	0	0	0	0	0	0
00000	44	0	.	.	.	.	.	.	.	.	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0
00000	45	0	0	0	0	.	.	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LNB Federal Channels

00000																										
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00000																										
60																										

INITIAL MIXING COMPUTATIONS RESULTS FOR Site :

TIME (HR)	DEPTH (FT)	MAX CONC ABOVE	X-LOC (FT)	Z-LOC (FT)	MAX CONC ABOVE
		BACKGROUND ON ENTIRE GRID (MG/L)			BACKGROUND OUTSIDE DISPOSAL SITE (MG/L)
1.00	0.0	0.133E-02	15200.	14800.	0.133E-02
2.00	0.0	0.699E-04	18000.	17600.	0.699E-04
3.00	0.0	0.466E-06	20400.	20400.	0.466E-06
4.00	0.0	0.130E-08	23200.	22800.	0.130E-08
1.00	50.0	0.316E-01	15200.	14800.	0.316E-01
2.00	50.0	0.612E-02	18000.	17600.	0.612E-02
3.00	50.0	0.136E-03	20400.	20400.	0.136E-03
4.00	50.0	0.115E-05	23200.	22800.	0.115E-05

LNB Federal Channels

1.00	750.0	0.104E-35	12400.	12000.	0.104E-35
2.00	750.0	0.275E-36	13600.	13600.	0.275E-36
3.00	750.0	0.965E-37	14800.	14800.	0.965E-37
4.00	750.0	0.446E-37	16000.	15600.	0.446E-37

1.00	1500.0	0.104E-35	12400.	12000.	0.104E-35
2.00	1500.0	0.275E-36	13600.	13600.	0.275E-36
3.00	1500.0	0.965E-37	14800.	14800.	0.965E-37
4.00	1500.0	0.446E-37	16000.	15600.	0.446E-37

INITIAL MIXING COMPUTATIONS RESULTS FOR Clay :

TIME (HR)	DEPTH (FT)	MAX CONC ABOVE BACKGROUND ON ENTIRE GRID (MG/L)	X-LOC (FT)	Z-LOC (FT)	MAX CONC ABOVE BACKGROUND OUTSIDE DISPOSAL SITE (MG/L)
1.00	0.0	0.665E-02	15200.	14800.	0.665E-02
2.00	0.0	0.117E-01	18000.	18000.	0.117E-01
3.00	0.0	0.310E-02	20800.	20800.	0.310E-02
4.00	0.0	0.864E-03	23600.	23600.	0.864E-03

1.00	50.0	0.486E-01	15200.	14800.	0.486E-01
2.00	50.0	0.103E+00	18000.	18000.	0.103E+00
3.00	50.0	0.325E-01	20800.	20800.	0.325E-01
4.00	50.0	0.106E-01	23600.	23600.	0.106E-01

1.00	750.0	0.349E-36	12400.	12000.	0.349E-36
2.00	750.0	0.891E-37	13600.	13600.	0.891E-37

			LNB Federal Channels		
3.00	750.0	0.371E-37	15200.	15200.	0.371E-37
4.00	750.0	0.149E-37	16400.	16400.	0.149E-37
1.00	1500.0	0.349E-36	12400.	12000.	0.349E-36
2.00	1500.0	0.891E-37	13600.	13600.	0.891E-37
3.00	1500.0	0.371E-37	15200.	15200.	0.371E-37
4.00	1500.0	0.149E-37	16400.	16400.	0.149E-37

INITIAL MIXING COMPUTATIONS RESULTS FOR SAND :

TIME (HR)	DEPTH (FT)	MAX CONC ABOVE BACKGROUND ON ENTIRE GRID (MG/L)	X-LOC (FT)	Z-LOC (FT)	MAX CONC ABOVE BACKGROUND OUTSIDE DISPOSAL SITE (MG/L)
1.00	0.0	0.143E-34	14800.	14800.	0.416E-36
2.00	0.0	0.114E-36	12400.	12000.	0.114E-36
3.00	0.0	0.378E-37	11600.	11600.	0.378E-37
4.00	0.0	0.000E+00	0.	0.	0.000E+00
1.00	50.0	0.191E-27	14800.	14800.	0.805E-34
2.00	50.0	0.114E-36	12400.	12000.	0.114E-36
3.00	50.0	0.378E-37	11600.	11600.	0.378E-37
4.00	50.0	0.000E+00	0.	0.	0.000E+00
1.00	750.0	0.326E-03	13600.	13600.	0.561E-25
2.00	750.0	0.121E+00	16400.	16000.	0.121E+00
3.00	750.0	0.474E-28	16400.	16400.	0.474E-28
4.00	750.0	0.000E+00	0.	0.	0.000E+00

LNB Federal Channels					
1.00	1500.0	0.416E-36	12000.	12000.	0.416E-36
2.00	1500.0	0.114E-36	12400.	12000.	0.114E-36
3.00	1500.0	0.510E-09	14000.	13600.	0.230E-11
4.00	1500.0	0.673E-01	16000.	16000.	0.673E-01

INITIAL MIXING COMPUTATIONS RESULTS FOR FLUID :

TIME (HR)	DEPTH (FT)	MAX CONC ABOVE BACKGROUND ON ENTIRE GRID (PERCENT)	X-LOC (FT)	Z-LOC (FT)	MAX CONC ABOVE BACKGROUND OUTSIDE DISPOSAL SITE (PERCENT)
1.00	0.0	0.117E-39	12400.	12400.	0.000E+00
2.00	0.0	0.332E-40	14400.	14000.	0.332E-40
3.00	0.0	0.130E-40	16000.	16000.	0.130E-40
4.00	0.0	0.589E-41	17600.	17600.	0.589E-41
1.00	50.0	0.117E-39	12400.	12400.	0.000E+00
2.00	50.0	0.332E-40	14400.	14000.	0.332E-40
3.00	50.0	0.130E-40	16000.	16000.	0.130E-40
4.00	50.0	0.589E-41	17600.	17600.	0.589E-41
1.00	750.0	0.117E-39	12400.	12400.	0.000E+00
2.00	750.0	0.332E-40	14400.	14000.	0.332E-40
3.00	750.0	0.130E-40	16000.	16000.	0.130E-40
4.00	750.0	0.589E-41	17600.	17600.	0.589E-41
1.00	1500.0	0.117E-39	12400.	12400.	0.000E+00
2.00	1500.0	0.332E-40	14400.	14000.	0.332E-40
3.00	1500.0	0.130E-40	16000.	16000.	0.130E-40
4.00	1500.0	0.589E-41	17600.	17600.	0.589E-41

LNB Federal Channel s

1.00	321.1	0.282E-02	14000.	14000.	0.000E+00
2.00	321.1	0.136E-02	16400.	16000.	0.136E-02
3.00	321.1	0.633E-03	18400.	18000.	0.633E-03
4.00	321.1	0.314E-03	20400.	20000.	0.314E-03

RESULT: THE TOXICITY CRITERIA FOR THE DISPOSAL SITE WAS NOT VIOLATED.

\*\*\* RUN COMPLETED \*\*\*

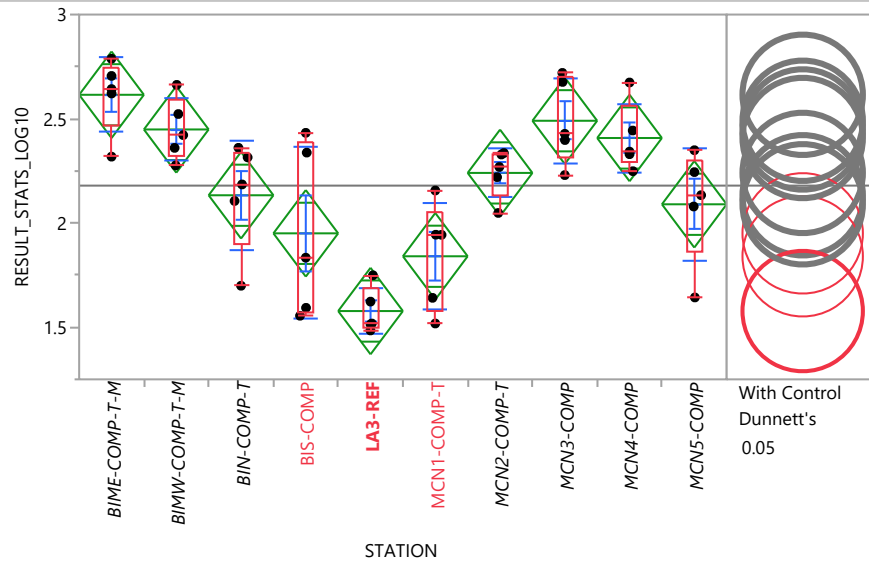
# Appendix F

## Statistical Analyses of Tissue Concentrations

---



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDD**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	2.31829	2.31829	2.46983	2.64249	2.746755	2.78791	2.78791
BIMW-COMP-T-M	2.27621	2.27621	2.318275	2.42185	2.59282	2.66276	2.66276
BIN-COMP-T	1.69897	1.69897	1.902385	2.18505	2.337885	2.3608	2.3608
BIS-COMP	1.55506	1.55506	1.574115	1.83367	2.385225	2.4327	2.4327
LA3-REF	1.48467	1.48467	1.49911	1.51792	1.686085	1.74919	1.74919
MCN1-COMP-T	1.51792	1.51792	1.57945	1.94327	2.049975	2.15607	2.15607
MCN2-COMP-T	2.0483	2.0483	2.13415	2.26885	2.3322	2.33579	2.33579
MCN3-COMP	2.22985	2.22985	2.313895	2.4279	2.698425	2.72016	2.72016
MCN4-COMP	2.24864	2.24864	2.289415	2.34242	2.558925	2.67415	2.67415
MCN5-COMP	1.64285	1.64285	1.861015	2.13354	2.29677	2.34933	2.34933

**Oneway Anova**

**Summary of Fit**

Rsquare	0.693491
Adj Rsquare	0.624526
Root Mean Square Error	0.229661
Mean of Response	2.179407
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	4.7734275	0.530381	10.0557	<.0001*
Error	40	2.1097626	0.052744		
C. Total	49	6.8831900			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDD**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.61513	0.10271	2.4076	2.8227
BIMW-COMP-T-M	5	2.44881	0.10271	2.2412	2.6564
BIN-COMP-T	5	2.13312	0.10271	1.9255	2.3407
BIS-COMP	5	1.95047	0.10271	1.7429	2.1580
LA3-REF	5	1.57766	0.10271	1.3701	1.7852
MCN1-COMP-T	5	1.84042	0.10271	1.6328	2.0480
MCN2-COMP-T	5	2.24031	0.10271	2.0327	2.4479
MCN3-COMP	5	2.49051	0.10271	2.2829	2.6981
MCN4-COMP	5	2.40782	0.10271	2.2002	2.6154
MCN5-COMP	5	2.08982	0.10271	1.8822	2.2974

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.61513	0.178143	0.07967	2.3939	2.8363
BIMW-COMP-T-M	5	2.44881	0.149671	0.06693	2.2630	2.6346
BIN-COMP-T	5	2.13312	0.263076	0.11765	1.8065	2.4598
BIS-COMP	5	1.95047	0.412367	0.18442	1.4384	2.4625
LA3-REF	5	1.57766	0.109319	0.04889	1.4419	1.7134
MCN1-COMP-T	5	1.84042	0.257245	0.11504	1.5210	2.1598
MCN2-COMP-T	5	2.24031	0.117269	0.05244	2.0947	2.3859
MCN3-COMP	5	2.49051	0.204838	0.09161	2.2362	2.7448
MCN4-COMP	5	2.40782	0.164211	0.07344	2.2039	2.6117
MCN5-COMP	5	2.08982	0.270642	0.12103	1.7538	2.4259

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDD**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIME-COMP-T-M	0.629	<.0001*
MCN3-COMP	0.504	<.0001*
BIMW-COMP-T-M	0.463	<.0001*
MCN4-COMP	0.422	<.0001*
MCN2-COMP-T	0.254	0.0004*
BIN-COMP-T	0.147	0.0035*
MCN5-COMP	0.104	0.0080*
BIS-COMP	-0.04	0.0876
MCN1-COMP-T	-0.15	0.3733
LA3-REF	-0.41	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	213.000	127.500	42.6000	2.749
BIMW-COMP-T-M	5	186.000	127.500	37.2000	1.876
BIN-COMP-T	5	110.000	127.500	22.0000	-0.550
BIS-COMP	5	95.000	127.500	19.0000	-1.035
LA3-REF	5	24.500	127.500	4.9000	-3.315
MCN1-COMP-T	5	57.500	127.500	11.5000	-2.248
MCN2-COMP-T	5	121.000	127.500	24.2000	-0.194
MCN3-COMP	5	194.000	127.500	38.8000	2.134
MCN4-COMP	5	174.000	127.500	34.8000	1.488
MCN5-COMP	5	100.000	127.500	20.0000	-0.873

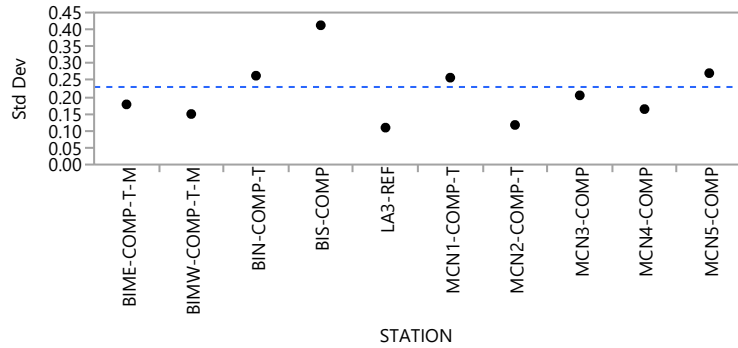
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
32.9305	9	0.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDD**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1781427	0.1187368	0.1107700
BIMW-COMP-T-M	5	0.1496709	0.1152096	0.1098180
BIN-COMP-T	5	0.2630765	0.1845864	0.1742000
BIS-COMP	5	0.4123670	0.3478040	0.3244440
LA3-REF	5	0.1093190	0.0867384	0.0747900
MCN1-COMP-T	5	0.2572448	0.2087792	0.1882100
MCN2-COMP-T	5	0.1172691	0.0849280	0.0792200
MCN3-COMP	5	0.2048383	0.1663336	0.1538120
MCN4-COMP	5	0.1642109	0.1208840	0.1078040
MCN5-COMP	5	0.2706421	0.1830456	0.1743020

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	2.0815	9	40	0.0547
Brown-Forsythe	1.1272	9	40	0.3668
Levene	2.3202	9	40	0.0330*
Bartlett	1.2602	9	.	0.2530

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

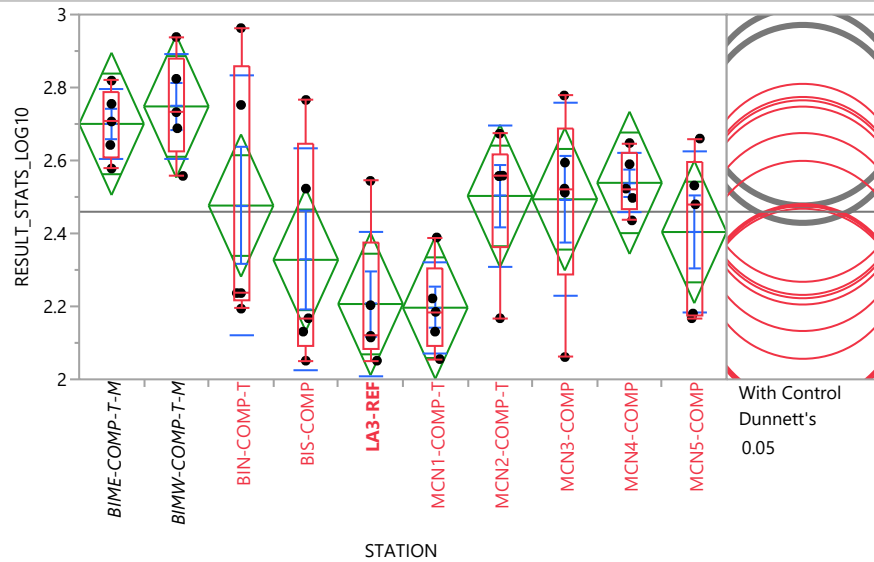
q*		Alpha							
1.95996		0.05							
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.70563	0.42532	0.84394	
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.91327	0.60687	1.20661	
MCN3-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.71193	0.24187	1.15877	
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.82072	0.58100	1.16060	
MCN4-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.51808	0.17412	1.03317	
MCN2-COMP-T	MCN1-COMP-T	4.40000	1.914854	2.29783	0.0216*	0.38534	0.06393	0.81069	
MCN5-COMP	LA3-REF	4.40000	1.914854	2.29783	0.0216*	0.59451	0.01987	0.83578	
MCN3-COMP	BIN-COMP-T	4.00000	1.914854	2.08893	0.0367*	0.32210	-0.08512	0.97772	
MCN3-COMP	MCN2-COMP-T	3.60000	1.914854	1.88004	0.0601	0.20790	-0.09876	0.62839	

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDD**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
MCN1-COMP-T	LA3-REF	3.40000	1.909043	1.78100	0.0749	0.32029	-0.10821	0.64252	
MCN3-COMP	BIS-COMP	3.20000	1.914854	1.67115	0.0947	0.59423	-0.10790	1.12699	
MCN4-COMP	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	0.22439	-0.06633	0.74473	
MCN4-COMP	MCN2-COMP-T	3.20000	1.914854	1.67115	0.0947	0.11509	-0.07997	0.45415	
MCN4-COMP	BIS-COMP	2.80000	1.914854	1.46225	0.1437	0.50875	-0.10251	1.08098	
MCN5-COMP	MCN1-COMP-T	2.80000	1.914854	1.46225	0.1437	0.19326	-0.30103	0.72629	
MCN2-COMP-T	BIN-COMP-T	0.80000	1.914854	0.41779	0.6761	0.03495	-0.26667	0.62964	
MCN2-COMP-T	BIS-COMP	0.80000	1.914854	0.41779	0.6761	0.43518	-0.28945	0.77355	
MCN3-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.03760	-0.29303	0.40048	
MCN5-COMP	BIS-COMP	0.80000	1.914854	0.41779	0.6761	0.08779	-0.69490	0.75616	
MCN1-COMP-T	BIS-COMP	-0.40000	1.914854	-0.20889	0.8345	-0.07525	-0.81983	0.56290	
BIS-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.14391	-0.76763	0.63878	
MCN4-COMP	BIMW-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.03015	-0.33257	0.31381	
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.05151	-0.67212	0.54524	
MCN3-COMP	BIME-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.11122	-0.47575	0.35840	
MCN4-COMP	MCN3-COMP	-1.20000	1.914854	-0.62668	0.5309	-0.06775	-0.42805	0.27621	
MCN5-COMP	MCN2-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.09158	-0.68576	0.19591	
BIMW-COMP-T-M	BIME-COMP-T-M	-2.40000	1.914854	-1.25336	0.2101	-0.19952	-0.42939	0.20459	
MCN4-COMP	BIME-COMP-T-M	-2.40000	1.914854	-1.25336	0.2101	-0.27895	-0.45772	0.12541	
BIS-COMP	BIMW-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.58818	-1.06959	0.07236	
LA3-REF	BIS-COMP	-3.20000	1.914854	-1.67115	0.0947	-0.31575	-0.91915	0.15602	
MCN1-COMP-T	BIN-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-0.24178	-0.79705	0.24491	
BIN-COMP-T	BIMW-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-0.25454	-0.82391	0.03876	
MCN5-COMP	MCN4-COMP	-3.60000	1.914854	-1.88004	0.0601	-0.25101	-0.80085	0.01914	
BIS-COMP	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.76323	-1.19474	0.01946	
MCN2-COMP-T	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.37699	-0.65730	0.01032	
MCN2-COMP-T	BIMW-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.19427	-0.47458	0.05240	
MCN5-COMP	MCN3-COMP	-4.00000	1.914854	-2.08893	0.0367*	-0.34872	-1.03384	0.01436	
BIN-COMP-T	BIME-COMP-T-M	-4.40000	1.914854	-2.29783	0.0216*	-0.45744	-1.00663	-0.00332	
LA3-REF	BIN-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-0.61161	-0.84725	-0.07599	
MCN5-COMP	BIME-COMP-T-M	-4.40000	1.914854	-2.29783	0.0216*	-0.50895	-1.06275	-0.07408	
MCN5-COMP	BIMW-COMP-T-M	-4.40000	1.914854	-2.29783	0.0216*	-0.28831	-0.88003	-0.01101	
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.10345	-1.27436	-0.69531	
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.87567	-1.14921	-0.61115	
MCN1-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.76172	-1.18768	-0.37441	
MCN1-COMP-T	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.57961	-1.02178	-0.20427	

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDE**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	2.57793	2.57793	2.61021	2.7068	2.78712	2.81895	2.81895
BIMW-COMP-T-M	2.55764	2.55764	2.622945	2.73239	2.881195	2.93848	2.93848
BIN-COMP-T	2.19382	2.19382	2.215195	2.23657	2.85754	2.96286	2.96286
BIS-COMP	2.05115	2.05115	2.09096	2.16749	2.6444	2.76592	2.76592
LA3-REF	2.05115	2.05115	2.082985	2.11919	2.373655	2.54407	2.54407
MCN1-COMP-T	2.05552	2.05552	2.093145	2.18505	2.30542	2.38899	2.38899
MCN2-COMP-T	2.16749	2.16749	2.36229	2.55764	2.615885	2.67342	2.67342
MCN3-COMP	2.06114	2.06114	2.28651	2.52288	2.68619	2.77815	2.77815
MCN4-COMP	2.43573	2.43573	2.466525	2.52288	2.618825	2.64782	2.64782
MCN5-COMP	2.16749	2.16749	2.173975	2.47984	2.595765	2.66005	2.66005

**Oneway Anova**

**Summary of Fit**

Rsquare	0.449808
Adj Rsquare	0.326015
Root Mean Square Error	0.215802
Mean of Response	2.459444
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	1.5229467	0.169216	3.6335	0.0022*
Error	40	1.8628239	0.046571		
C. Total	49	3.3857706			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDE**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.70029	0.09651	2.5052	2.8953
BIMW-COMP-T-M	5	2.74813	0.09651	2.5531	2.9432
BIN-COMP-T	5	2.47641	0.09651	2.2814	2.6715
BIS-COMP	5	2.32764	0.09651	2.1326	2.5227
LA3-REF	5	2.20649	0.09651	2.0114	2.4015
MCN1-COMP-T	5	2.19644	0.09651	2.0014	2.3915
MCN2-COMP-T	5	2.50280	0.09651	2.3077	2.6979
MCN3-COMP	5	2.49366	0.09651	2.2986	2.6887
MCN4-COMP	5	2.53872	0.09651	2.3437	2.7338
MCN5-COMP	5	2.40386	0.09651	2.2088	2.5989

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.70029	0.094155	0.04211	2.5834	2.8172
BIMW-COMP-T-M	5	2.74813	0.143262	0.06407	2.5703	2.9260
BIN-COMP-T	5	2.47641	0.356233	0.15931	2.0341	2.9187
BIS-COMP	5	2.32764	0.304574	0.13621	1.9495	2.7058
LA3-REF	5	2.20649	0.196294	0.08779	1.9628	2.4502
MCN1-COMP-T	5	2.19644	0.124521	0.05569	2.0418	2.3510
MCN2-COMP-T	5	2.50280	0.194026	0.08677	2.2619	2.7437
MCN3-COMP	5	2.49366	0.264248	0.11818	2.1655	2.8218
MCN4-COMP	5	2.53872	0.082290	0.03680	2.4365	2.6409
MCN5-COMP	5	2.40386	0.219927	0.09835	2.1308	2.6769

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDE**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIMW-COMP-T-M	0.158	0.0023*
BIME-COMP-T-M	0.11	0.0062*
MCN4-COMP	-0.05	0.1166
MCN2-COMP-T	-0.09	0.1980
MCN3-COMP	-0.1	0.2246
BIN-COMP-T	-0.11	0.2819
MCN5-COMP	-0.19	0.6182
BIS-COMP	-0.26	0.9473
LA3-REF	-0.38	1.0000
MCN1-COMP-T	-0.37	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	201.000	127.500	40.2000	2.361
BIMW-COMP-T-M	5	209.500	127.500	41.9000	2.636
BIN-COMP-T	5	142.000	127.500	28.4000	0.453
BIS-COMP	5	89.000	127.500	17.8000	-1.229
LA3-REF	5	55.500	127.500	11.1000	-2.313
MCN1-COMP-T	5	58.500	127.500	11.7000	-2.216
MCN2-COMP-T	5	140.500	127.500	28.1000	0.404
MCN3-COMP	5	133.000	127.500	26.6000	0.162
MCN4-COMP	5	138.000	127.500	27.6000	0.323
MCN5-COMP	5	108.000	127.500	21.6000	-0.615

**1-Way Test, ChiSquare Approximation**

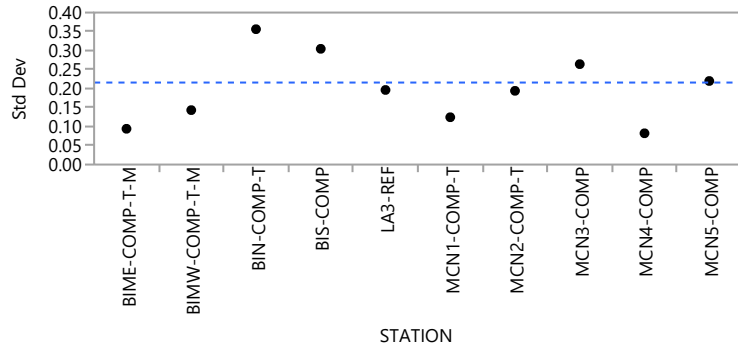
ChiSquare	DF	Prob>ChiSq
23.0283	9	0.0061*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDE**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0941546	0.0720656	0.0707640
BIMW-COMP-T-M	5	0.1432616	0.1064488	0.1033000
BIN-COMP-T	5	0.3562332	0.3049056	0.2569380
BIS-COMP	5	0.3045737	0.2534064	0.2213760
LA3-REF	5	0.1962944	0.1350304	0.1162680
MCN1-COMP-T	5	0.1245210	0.0871872	0.0849100
MCN2-COMP-T	5	0.1940262	0.1341232	0.1014380
MCN3-COMP	5	0.2642481	0.1730064	0.1598720
MCN4-COMP	5	0.0822904	0.0640872	0.0609200
MCN5-COMP	5	0.2199270	0.1839112	0.1687160

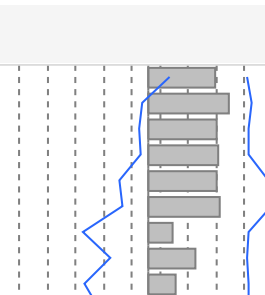
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.5915	9	40	0.1510
Brown-Forsythe	0.6764	9	40	0.7252
Levene	2.8613	9	40	0.0106*
Bartlett	1.5365	9	.	0.1286

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

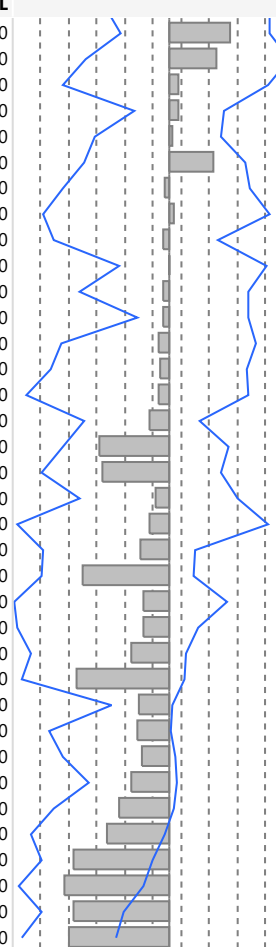
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN4-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.366550	0.108330	0.534310
MCN2-COMP-T	LA3-REF	4.00000	1.914854	2.08893	0.0367*	0.437900	-0.035750	0.558600
MCN2-COMP-T	MCN1-COMP-T	3.60000	1.914854	1.88004	0.0601	0.372040	-0.054360	0.542650
MCN4-COMP	LA3-REF	3.60000	1.914854	1.88004	0.0601	0.384580	-0.046750	0.538680
MCN3-COMP	MCN1-COMP-T	3.20000	1.914854	1.67115	0.0947	0.372380	-0.160710	0.647380
MCN3-COMP	LA3-REF	2.40000	1.914854	1.25336	0.2101	0.392690	-0.142100	0.663330
MCN5-COMP	LA3-REF	2.40000	1.914854	1.25336	0.2101	0.129310	-0.363610	0.545230
MCN5-COMP	MCN1-COMP-T	2.40000	1.914854	1.25336	0.2101	0.257990	-0.208530	0.529280
MCN2-COMP-T	BIS-COMP	2.20000	1.909043	1.15241	0.2492	0.150540	-0.355390	0.542650



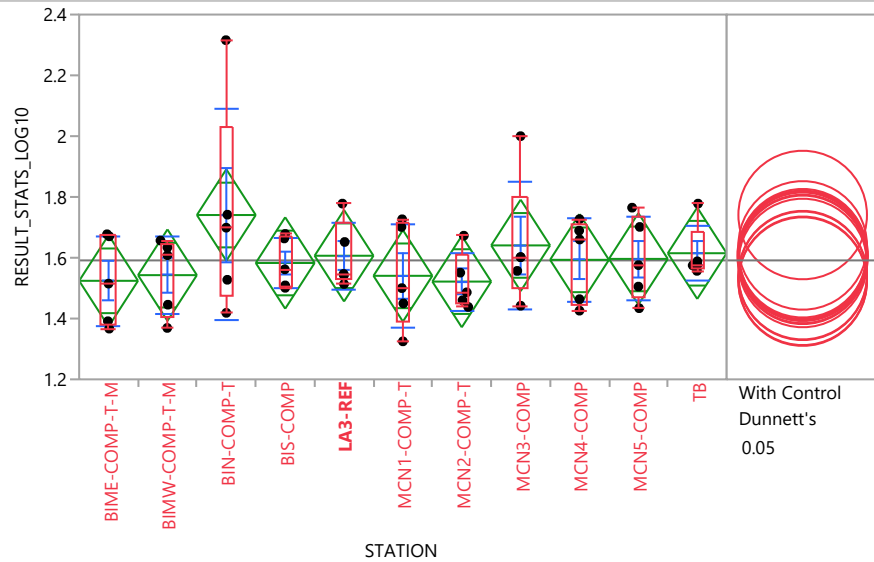
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDE**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges- Lehmann	Lower CL	Upper CL	
MCN4-COMP	BIS-COMP	1.80000	1.909043	0.94288	0.3457	0.329830	-0.268600	0.538680	
MCN3-COMP	BIS-COMP	1.40000	1.909043	0.73335	0.4633	0.255270	-0.461740	0.647380	
MCN5-COMP	BIS-COMP	1.40000	1.909043	0.73335	0.4633	0.049690	-0.585460	0.529280	
BIMW-COMP-T-M	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.045760	-0.197650	0.295990	
MCN1-COMP-T	LA3-REF	0.80000	1.914854	0.41779	0.6761	0.015950	-0.413300	0.274170	
MCN4-COMP	BIN-COMP-T	0.80000	1.909043	0.41906	0.6752	0.241910	-0.465540	0.411250	
MCN2-COMP-T	BIN-COMP-T	0.00000	1.909043	0.00000	1.0000	-0.026330	-0.584730	0.436850	
MCN3-COMP	BIN-COMP-T	0.00000	1.909043	0.00000	1.0000	0.025930	-0.691080	0.541580	
MCN1-COMP-T	BIS-COMP	-0.20000	1.909043	-0.10476	0.9166	-0.036720	-0.635150	0.258220	
MCN4-COMP	MCN3-COMP	-0.20000	1.909043	-0.10476	0.9166	-0.004400	-0.280830	0.528690	
MCN3-COMP	MCN2-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.034760	-0.497210	0.426740	
MCN4-COMP	MCN2-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.034210	-0.176100	0.422340	
MCN5-COMP	MCN3-COMP	-0.80000	1.914854	-0.41779	0.6761	-0.062750	-0.597690	0.470340	
LA3-REF	BIS-COMP	-1.00000	1.909043	-0.52382	0.6004	-0.048300	-0.651100	0.413300	
MCN5-COMP	BIN-COMP-T	-1.20000	1.909043	-0.62859	0.5296	-0.056110	-0.782400	0.423480	
MCN5-COMP	MCN4-COMP	-1.20000	1.914854	-0.62668	0.5309	-0.109990	-0.467360	0.162730	
BIN-COMP-T	BIME-COMP-T-M	-1.60000	1.909043	-0.83812	0.4020	-0.384110	-0.582380	0.320370	
BIN-COMP-T	BIMW-COMP-T-M	-1.60000	1.909043	-0.83812	0.4020	-0.363820	-0.701910	0.274610	
MCN5-COMP	MCN2-COMP-T	-1.80000	1.909043	-0.94288	0.3457	-0.077250	-0.492960	0.363990	
BIS-COMP	BIN-COMP-T	-2.00000	1.909043	-1.04765	0.2948	-0.105800	-0.832090	0.529350	
MCN3-COMP	BIME-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-0.161060	-0.694150	0.135660	
BIS-COMP	BIME-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.475000	-0.704140	0.123430	
LA3-REF	BIN-COMP-T	-3.20000	1.909043	-1.67623	0.0937	-0.142670	-0.848040	0.307500	
MCN1-COMP-T	BIN-COMP-T	-3.20000	1.909043	-1.67623	0.0937	-0.138300	-0.832090	0.152420	
MCN3-COMP	BIMW-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.209510	-0.762770	0.089900	
BIS-COMP	BIMW-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-0.506490	-0.807710	0.077670	
MCN4-COMP	BIME-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-0.165460	-0.321630	0.011900	
MCN2-COMP-T	BIMW-COMP-T-M	-3.80000	1.909043	-1.99053	<b>0.0465*</b>	-0.175300	-0.656420	0.000710	
MCN2-COMP-T	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	<b>0.0367*</b>	-0.149160	-0.587800	0.030930	
MCN4-COMP	BIMW-COMP-T-M	-4.00000	1.914854	-2.08893	<b>0.0367*</b>	-0.209510	-0.441160	0.032190	
MCN5-COMP	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	<b>0.0367*</b>	-0.275450	-0.638490	0.017560	
MCN5-COMP	BIMW-COMP-T-M	-4.40000	1.914854	-2.29783	<b>0.0216*</b>	-0.344070	-0.758020	-0.026160	
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	<b>0.0122*</b>	-0.527670	-0.704140	-0.098420	
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	<b>0.0122*</b>	-0.573430	-0.823660	-0.144180	
MCN1-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	<b>0.0122*</b>	-0.521750	-0.699770	-0.253500	
MCN1-COMP-T	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	<b>0.0122*</b>	-0.549490	-0.807710	-0.299260	



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDT**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.36685	1.36685	1.37903	1.51491	1.673915	1.67731	1.67731
BIMW-COMP-T-M	1.36915	1.36915	1.407375	1.60848	1.64538	1.65673	1.65673
BIN-COMP-T	1.41879	1.41879	1.47318	1.69897	2.028735	2.31575	2.31575
BIS-COMP	1.50112	1.50112	1.505105	1.56194	1.670985	1.67845	1.67845
LA3-REF	1.51364	1.51364	1.528075	1.54688	1.715045	1.77815	1.77815
MCN1-COMP-T	1.32503	1.32503	1.3875	1.50014	1.71394	1.72657	1.72657
MCN2-COMP-T	1.4382	1.4382	1.44919	1.48626	1.611775	1.67264	1.67264
MCN3-COMP	1.44214	1.44214	1.4995	1.60206	1.80103	2	2
MCN4-COMP	1.42597	1.42597	1.444865	1.66005	1.708105	1.727	1.727
MCN5-COMP	1.43409	1.43409	1.46962	1.57573	1.733115	1.76479	1.76479
TB	1.55686	1.55686	1.565885	1.57637	1.68321	1.77815	1.77815

**Oneway Anova**

**Summary of Fit**

Rsquare	0.139949
Adj Rsquare	-0.05552
Root Mean Square Error	0.166898
Mean of Response	1.591289
Observations (or Sum Wgts)	55

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDT**

**Oneway Anova**

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	10	0.1994335	0.019943	0.7160	0.7049
Error	44	1.2256128	0.027855		
C. Total	54	1.4250463			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.52416	0.07464	1.3737	1.6746
BIMW-COMP-T-M	5	1.54280	0.07464	1.3924	1.6932
BIN-COMP-T	5	1.74056	0.07464	1.5901	1.8910
BIS-COMP	5	1.58282	0.07464	1.4324	1.7332
LA3-REF	5	1.60662	0.07464	1.4562	1.7570
MCN1-COMP-T	5	1.54060	0.07464	1.3902	1.6910
MCN2-COMP-T	5	1.52164	0.07464	1.3712	1.6721
MCN3-COMP	5	1.64062	0.07464	1.4902	1.7910
MCN4-COMP	5	1.59320	0.07464	1.4428	1.7436
MCN5-COMP	5	1.59624	0.07464	1.4458	1.7467
TB	5	1.61491	0.07464	1.4645	1.7653

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.52416	0.147804	0.06610	1.3406	1.7077
BIMW-COMP-T-M	5	1.54280	0.127690	0.05710	1.3842	1.7013
BIN-COMP-T	5	1.74056	0.346942	0.15516	1.3098	2.1713
BIS-COMP	5	1.58282	0.083971	0.03755	1.4786	1.6871
LA3-REF	5	1.60662	0.109317	0.04889	1.4709	1.7424
MCN1-COMP-T	5	1.54060	0.170832	0.07640	1.3285	1.7527
MCN2-COMP-T	5	1.52164	0.094405	0.04222	1.4044	1.6389
MCN3-COMP	5	1.64062	0.211269	0.09448	1.3783	1.9029
MCN4-COMP	5	1.59320	0.138121	0.06177	1.4217	1.7647
MCN5-COMP	5	1.59624	0.136461	0.06103	1.4268	1.7657
TB	5	1.61491	0.091940	0.04112	1.5008	1.7291

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.83292	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDT**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.17	0.7712
MCN3-COMP	-0.27	1.0000
TB	-0.29	1.0000
LA3-REF	-0.3	1.0000
MCN5-COMP	-0.29	1.0000
MCN4-COMP	-0.29	1.0000
BIS-COMP	-0.28	1.0000
BIMW-COMP-T-M	-0.24	0.9971
MCN1-COMP-T	-0.23	0.9962
BIME-COMP-T-M	-0.22	0.9817
MCN2-COMP-T	-0.21	0.9777

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	108.000	140.000	21.6000	-0.922
BIMW-COMP-T-M	5	119.000	140.000	23.8000	-0.600
BIN-COMP-T	5	176.000	140.000	35.2000	1.039
BIS-COMP	5	143.000	140.000	28.6000	0.073
LA3-REF	5	152.500	140.000	30.5000	0.351
MCN1-COMP-T	5	121.000	140.000	24.2000	-0.542
MCN2-COMP-T	5	99.000	140.000	19.8000	-1.186
MCN3-COMP	5	153.500	140.000	30.7000	0.381
MCN4-COMP	5	150.000	140.000	30.0000	0.278
MCN5-COMP	5	151.000	140.000	30.2000	0.307
TB	5	167.000	140.000	33.4000	0.776

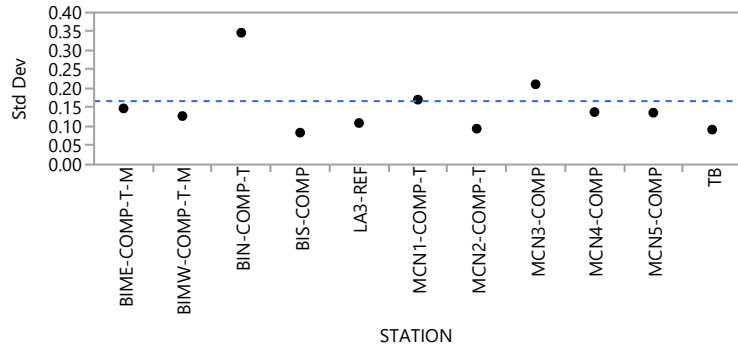
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
4.7542	10	0.9070

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDT**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478038	0.1198040	0.1179540
BIMW-COMP-T-M	5	0.1276900	0.1083384	0.0952020
BIN-COMP-T	5	0.3469421	0.2305400	0.2222220
BIS-COMP	5	0.0839711	0.0705288	0.0663520
LA3-REF	5	0.1093168	0.0867368	0.0747880
MCN1-COMP-T	5	0.1708316	0.1386688	0.1305760
MCN2-COMP-T	5	0.0944048	0.0721096	0.0650340
MCN3-COMP	5	0.2112687	0.1437504	0.1206120
MCN4-COMP	5	0.1381212	0.1186664	0.1052960
MCN5-COMP	5	0.1364614	0.1095000	0.1053980
TB	5	0.0919404	0.0652952	0.0469300

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.1880	10	44	0.3247
Brown-Forsythe	0.7941	10	44	0.6346
Levene	1.2380	10	44	0.2946
Bartlett	1.5144	10	.	0.1269

Warning: Small sample sizes. Use Caution.

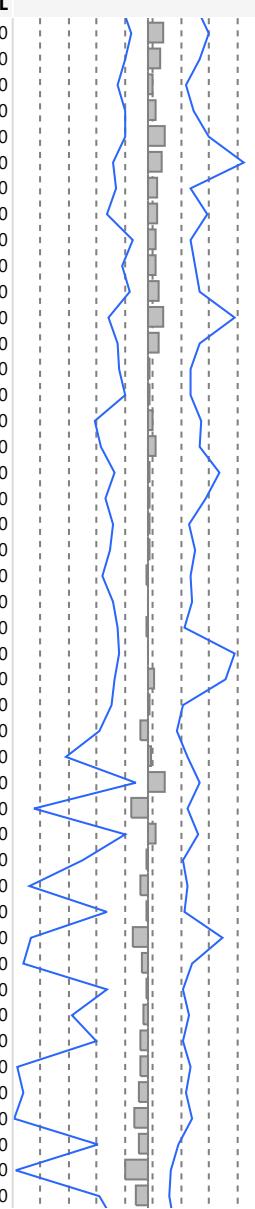
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha											
1.95996		0.05											
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL					
TB	MCN2-COMP-T	3.20000	1.914854	1.67115	0.0947	0.102010	-0.097730	0.3179700					
BIN-COMP-T	BIME-COMP-T-M	2.80000	1.914854	1.46225	0.1437	0.136360	-0.251730	0.9245400					
BIN-COMP-T	BIMW-COMP-T-M	2.00000	1.914854	1.04447	0.2963	0.090490	-0.215240	0.8701500					
MCN3-COMP	MCN2-COMP-T	2.00000	1.909043	1.04765	0.2948	0.096680	-0.115780	0.5398200					
MCN4-COMP	BIMW-COMP-T-M	2.00000	1.914854	1.04447	0.2963	0.055180	-0.208060	0.3200600					
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.056480	-0.244550	0.3357900					
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067240	-0.236430	0.3735800					
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066950	-0.167490	0.3046100					

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDT**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
TB	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.113660	0.3869400	
TB	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	0.076840	-0.151660	0.3281800	
TB	LA3-REF	1.40000	1.909043	0.73335	0.4633	0.029490	-0.203240	0.2356400	
BIS-COMP	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.044420	-0.147640	0.2943700	
LA3-REF	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.107630	-0.156880	0.3869400	
MCN3-COMP	BIME-COMP-T-M	1.20000	1.909043	0.62859	0.5296	0.087150	-0.228380	0.6087900	
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054360	-0.208880	0.2668200	
MCN5-COMP	MCN1-COMP-T	1.20000	1.914854	0.62668	0.5309	0.055180	-0.267220	0.3764100	
TB	BIS-COMP	1.20000	1.914854	0.62668	0.5309	0.047770	-0.106660	0.2690600	
BIS-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.047030	-0.169400	0.2966700	
LA3-REF	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.068040	-0.120390	0.3325500	
MCN3-COMP	MCN1-COMP-T	0.80000	1.909043	0.41906	0.6752	0.101920	-0.259170	0.5500300	
MCN5-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.064940	-0.199940	0.3322900	
TB	MCN5-COMP	0.80000	1.914854	0.41779	0.6761	0.013360	-0.189880	0.2730000	
LA3-REF	BIS-COMP	0.40000	1.914854	0.20889	0.8345	0.012520	-0.149880	0.2690600	
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.030790	-0.345490	0.3353600	
MCN1-COMP-T	BIMW-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.044580	-0.309000	0.3321600	
MCN3-COMP	LA3-REF	0.40000	1.909043	0.20953	0.8340	0.014350	-0.221290	0.4574900	
MCN4-COMP	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.013790	-0.275340	0.3641800	
MCN5-COMP	BIS-COMP	0.40000	1.914854	0.20889	0.8345	0.013790	-0.229430	0.2557000	
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012230	-0.255120	0.3010300	
BIMW-COMP-T-M	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.013790	-0.301370	0.2671800	
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.002120	-0.232320	0.2814300	
MCN2-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.007400	-0.196550	0.2270400	
MCN3-COMP	BIMW-COMP-T-M	0.00000	1.909043	0.00000	1.0000	-0.003460	-0.191890	0.5544000	
MCN3-COMP	BIS-COMP	0.00000	1.909043	0.00000	1.0000	0.040120	-0.221380	0.4909100	
MCN4-COMP	BIS-COMP	0.00000	1.914854	0.00000	1.0000	0.010760	-0.237550	0.2179100	
MCN4-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	-0.049880	-0.314390	0.1844900	
MCN4-COMP	MCN3-COMP	0.00000	1.909043	0.00000	1.0000	0.021620	-0.536240	0.2470700	
TB	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.111260	-0.081820	0.3325500	
TB	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.110700	-0.740840	0.2505800	
TB	MCN4-COMP	0.00000	1.914854	0.00000	1.0000	0.051150	-0.152090	0.3143900	
TB	MCN3-COMP	-0.20000	1.903214	-0.10509	0.9163	-0.013790	-0.425090	0.2212900	
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.047030	-0.773240	0.2505800	
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.013880	-0.266390	0.2258800	
MCN3-COMP	BIN-COMP-T	-0.40000	1.909043	-0.20953	0.8340	-0.096910	-0.758890	0.4724300	
MCN5-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.040280	-0.810600	0.2826500	
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.013360	-0.273000	0.2222800	
MCN5-COMP	MCN3-COMP	-0.40000	1.909043	-0.20953	0.8340	-0.026330	-0.494850	0.2593000	
MCN1-COMP-T	BIS-COMP	-0.80000	1.914854	-0.41779	0.6761	-0.051150	-0.338490	0.2174800	
MCN4-COMP	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.052510	-0.851990	0.2704200	
BIS-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.063270	-0.806660	0.2447300	
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.093760	-0.865780	0.2825200	
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.063670	-0.328180	0.1876700	
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.148060	-0.855570	0.1450700	
MCN2-COMP-T	LA3-REF	-2.00000	1.914854	-1.04447	0.2963	-0.082330	-0.317970	0.1301300	

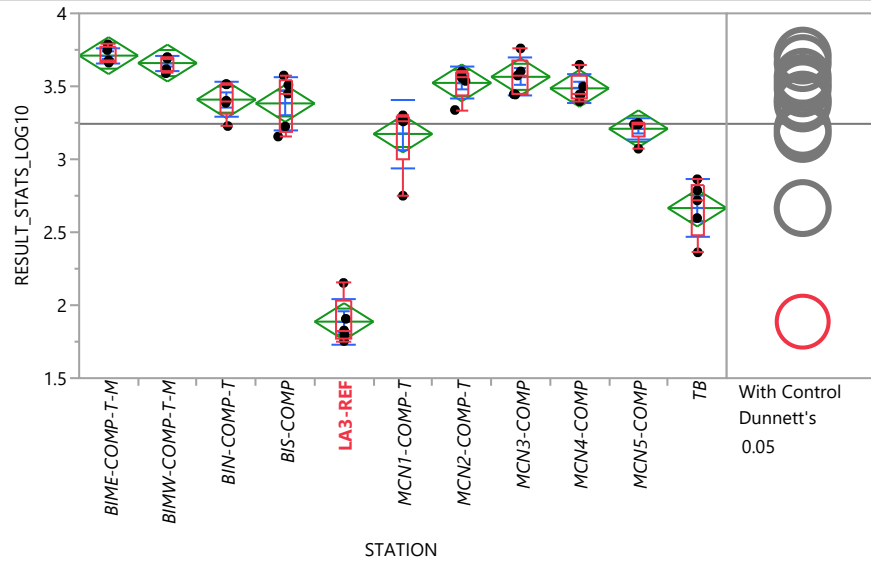


**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=2,4'-DDT**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN2-COMP-T	BIS-COMP	-2.40000	1.914854	-1.25336	0.2101	-0.062920	-0.225320	0.1635500

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDD**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	3.66225	3.66225	3.66843	3.67845	3.768425	3.78791	3.78791
BIMW-COMP-T-M	3.58983	3.58983	3.60375	3.6907	3.69897	3.69897	3.69897
BIN-COMP-T	3.2278	3.2278	3.30737	3.40092	3.514515	3.5157	3.5157
BIS-COMP	3.15589	3.15589	3.19004	3.45033	3.54197	3.57403	3.57403
LA3-REF	1.75449	1.75449	1.775185	1.82676	2.029595	2.15261	2.15261
MCN1-COMP-T	2.75012	2.75012	3.00488	3.26503	3.296555	3.30103	3.30103
MCN2-COMP-T	3.33775	3.33775	3.43732	3.55764	3.592615	3.60206	3.60206
MCN3-COMP	3.4437	3.4437	3.444705	3.57403	3.680865	3.75967	3.75967
MCN4-COMP	3.39794	3.39794	3.42082	3.4437	3.57257	3.64782	3.64782
MCN5-COMP	3.07255	3.07255	3.15596	3.23951	3.246915	3.24832	3.24832
TB	2.3623	2.3623	2.47964	2.71828	2.825275	2.86316	2.86316



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDD**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.94283
Adj Rsquare	0.929837
Root Mean Square Error	0.140324
Mean of Response	3.242874
Observations (or Sum Wgts)	55

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	10	14.288386	1.42884	72.5635	<.0001*
Error	44	0.866399	0.01969		
C. Total	54	15.154785			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	3.71043	0.06275	3.5840	3.8369
BIMW-COMP-T-M	5	3.65923	0.06275	3.5328	3.7857
BIN-COMP-T	5	3.40894	0.06275	3.2825	3.5354
BIS-COMP	5	3.38287	0.06275	3.2564	3.5093
LA3-REF	5	1.88726	0.06275	1.7608	2.0137
MCN1-COMP-T	5	3.17358	0.06275	3.0471	3.3001
MCN2-COMP-T	5	3.52350	0.06275	3.3970	3.6500
MCN3-COMP	5	3.56503	0.06275	3.4386	3.6915
MCN4-COMP	5	3.48610	0.06275	3.3596	3.6126
MCN5-COMP	5	3.20905	0.06275	3.0826	3.3355
TB	5	2.66562	0.06275	2.5391	2.7921

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	3.71043	0.055030	0.02461	3.6421	3.7788
BIMW-COMP-T-M	5	3.65923	0.051702	0.02312	3.5950	3.7234
BIN-COMP-T	5	3.40894	0.117957	0.05275	3.2625	3.5554
BIS-COMP	5	3.38287	0.182983	0.08183	3.1557	3.6101
LA3-REF	5	1.88726	0.158447	0.07086	1.6905	2.0840
MCN1-COMP-T	5	3.17358	0.237368	0.10615	2.8788	3.4683
MCN2-COMP-T	5	3.52350	0.106747	0.04774	3.3910	3.6560
MCN3-COMP	5	3.56503	0.130667	0.05844	3.4028	3.7273
MCN4-COMP	5	3.48610	0.097014	0.04339	3.3656	3.6066
MCN5-COMP	5	3.20905	0.076405	0.03417	3.1142	3.3039
TB	5	2.66562	0.195792	0.08756	2.4225	2.9087

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDD**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**Confidence Quantile**

d	Alpha
2.83292	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIME-COMP-T-M	1.572	<.0001*
BIMW-COMP-T-M	1.521	<.0001*
MCN3-COMP	1.426	<.0001*
MCN2-COMP-T	1.385	<.0001*
MCN4-COMP	1.347	<.0001*
BIN-COMP-T	1.27	<.0001*
BIS-COMP	1.244	<.0001*
MCN5-COMP	1.07	<.0001*
MCN1-COMP-T	1.035	<.0001*
TB	0.527	<.0001*
LA3-REF	-0.25	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	252.000	140.000	50.4000	3.265
BIMW-COMP-T-M	5	240.000	140.000	48.0000	2.913
BIN-COMP-T	5	138.000	140.000	27.6000	-0.044
BIS-COMP	5	132.500	140.000	26.5000	-0.205
LA3-REF	5	15.000	140.000	3.0000	-3.645
MCN1-COMP-T	5	95.000	140.000	19.0000	-1.303
MCN2-COMP-T	5	183.500	140.000	36.7000	1.259
MCN3-COMP	5	197.000	140.000	39.4000	1.654
MCN4-COMP	5	163.000	140.000	32.6000	0.659
MCN5-COMP	5	82.000	140.000	16.4000	-1.684
TB	5	42.000	140.000	8.4000	-2.855

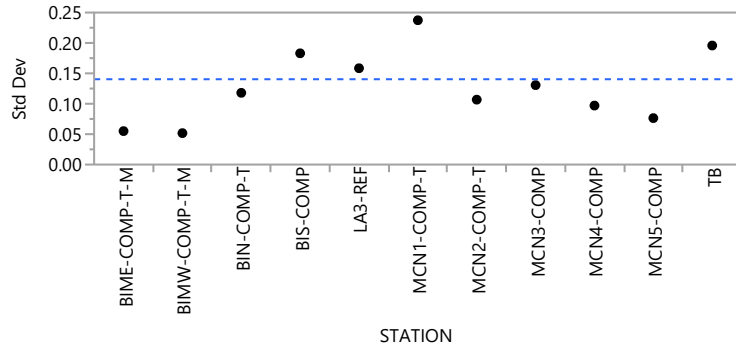
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
45.9019	10	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDD**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0550302	0.0463944	0.0399980
BIMW-COMP-T-M	5	0.0517022	0.0443824	0.0380880
BIN-COMP-T	5	0.1179565	0.0844616	0.0828580
BIS-COMP	5	0.1829832	0.1542640	0.1407720
LA3-REF	5	0.1584474	0.1138648	0.1017640
MCN1-COMP-T	5	0.2373676	0.1693840	0.1166700
MCN2-COMP-T	5	0.1067475	0.0743008	0.0621180
MCN3-COMP	5	0.1306667	0.0962632	0.0944640
MCN4-COMP	5	0.0970141	0.0691792	0.0607000
MCN5-COMP	5	0.0764049	0.0546008	0.0363820
TB	5	0.1957917	0.1487856	0.1382540

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.8297	10	44	0.6027
Brown-Forsythe	0.6099	10	44	0.7969
Levene	1.7003	10	44	0.1110
Bartlett	1.6018	10	.	0.0991

Warning: Small sample sizes. Use Caution.

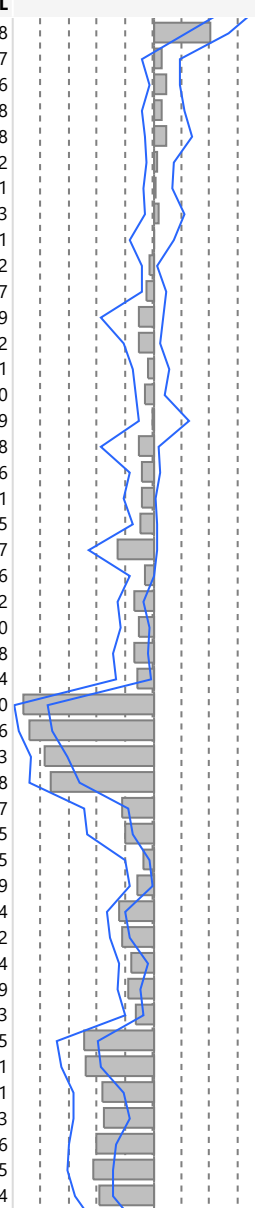
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.39445	0.84354	1.53759
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.69548	1.38428	1.82868
MCN2-COMP-T	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.29261	0.04567	0.83305
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.68921	1.29310	1.96379
MCN3-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.30998	0.14468	0.85194
MCN4-COMP	LA3-REF	4.80000	1.909043	2.51435	0.0119*	1.61694	1.29109	1.85194
MCN4-COMP	MCN1-COMP-T	4.80000	1.909043	2.51435	0.0119*	0.19629	0.10586	0.74720
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.34174	1.08676	1.49102

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDD**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.81170	0.44437	1.06728
MCN2-COMP-T	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	0.10995	-0.17558	0.35537
MCN3-COMP	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	0.17311	-0.06999	0.37426
MCN2-COMP-T	BIS-COMP	2.80000	1.914854	1.46225	0.1437	0.10731	-0.17216	0.42728
MCN3-COMP	BIS-COMP	2.20000	1.909043	1.15241	0.2492	0.18564	-0.12832	0.53548
MCN4-COMP	BIN-COMP-T	1.20000	1.909043	0.62859	0.5296	0.05676	-0.11539	0.26952
MCN3-COMP	MCN2-COMP-T	0.60000	1.909043	0.31429	0.7533	0.01889	-0.15635	0.26431
MCN4-COMP	BIS-COMP	0.40000	1.909043	0.20953	0.8340	0.07379	-0.13033	0.42363
BIS-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.00361	-0.35744	0.28211
BIMW-COMP-T-M	BIME-COMP-T-M	-1.20000	1.909043	-0.62859	0.5296	-0.05694	-0.17024	0.03672
MCN4-COMP	MCN2-COMP-T	-1.20000	1.909043	-0.62859	0.5296	-0.09319	-0.18523	0.15957
MCN1-COMP-T	BIS-COMP	-1.60000	1.914854	-0.83557	0.4034	-0.20888	-0.75979	0.13619
MCN5-COMP	BIS-COMP	-1.60000	1.914854	-0.83557	0.4034	-0.21082	-0.43736	0.08962
MCN4-COMP	MCN3-COMP	-2.00000	1.891501	-1.05736	0.2903	-0.07671	-0.31597	0.20211
MCN3-COMP	BIMW-COMP-T-M	-2.40000	1.909043	-1.25717	0.2087	-0.11667	-0.25527	0.14200
MCN5-COMP	MCN1-COMP-T	-2.80000	1.914854	-1.46225	0.1437	-0.02566	-0.21953	0.49539
MCN1-COMP-T	BIN-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-0.21230	-0.76321	0.06428
MCN3-COMP	BIME-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.17491	-0.34220	0.08506
MCN5-COMP	BIN-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-0.16155	-0.44078	0.01771
MCN4-COMP	BIMW-COMP-T-M	-4.00000	1.903214	-2.10171	0.0356*	-0.19338	-0.30103	0.03015
TB	MCN1-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.51364	-0.92978	0.03727
MCN2-COMP-T	BIMW-COMP-T-M	-4.40000	1.909043	-2.30482	0.0212*	-0.11580	-0.36122	-0.00666
BIN-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.27531	-0.52114	-0.14892
BIN-COMP-T	BIMW-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-0.21675	-0.47117	-0.07650
BIS-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.27800	-0.59305	-0.10058
BIS-COMP	BIMW-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-0.24037	-0.54308	-0.04364
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.86637	-1.99445	-1.52200
LA3-REF	BIMW-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-1.79395	-1.94448	-1.46506
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.57416	-1.75884	-1.23433
LA3-REF	BIS-COMP	-4.80000	1.914854	-2.50672	0.0122*	-1.46970	-1.77815	-1.07158
MCN1-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.44791	-0.99882	-0.37017
MCN1-COMP-T	BIMW-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-0.40689	-0.94885	-0.29775
MCN2-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.14688	-0.41119	-0.07255
MCN4-COMP	BIME-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-0.23475	-0.35100	-0.02679
MCN5-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.50062	-0.67639	-0.41674
MCN5-COMP	BIMW-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-0.45119	-0.62642	-0.34432
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.31827	-0.51062	-0.09224
MCN5-COMP	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.35374	-0.52951	-0.19739
MCN5-COMP	MCN4-COMP	-4.80000	1.909043	-2.51435	0.0119*	-0.24900	-0.42477	-0.15243
TB	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.00052	-1.38664	-0.81145
TB	BIMW-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-0.97242	-1.33667	-0.75451
TB	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.72594	-1.15103	-0.44041
TB	BIS-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.72252	-1.14761	-0.36103
TB	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.81861	-1.22087	-0.55036
TB	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.85575	-1.23976	-0.58255
TB	MCN4-COMP	-4.80000	1.909043	-2.51435	0.0119*	-0.78466	-1.13502	-0.58054

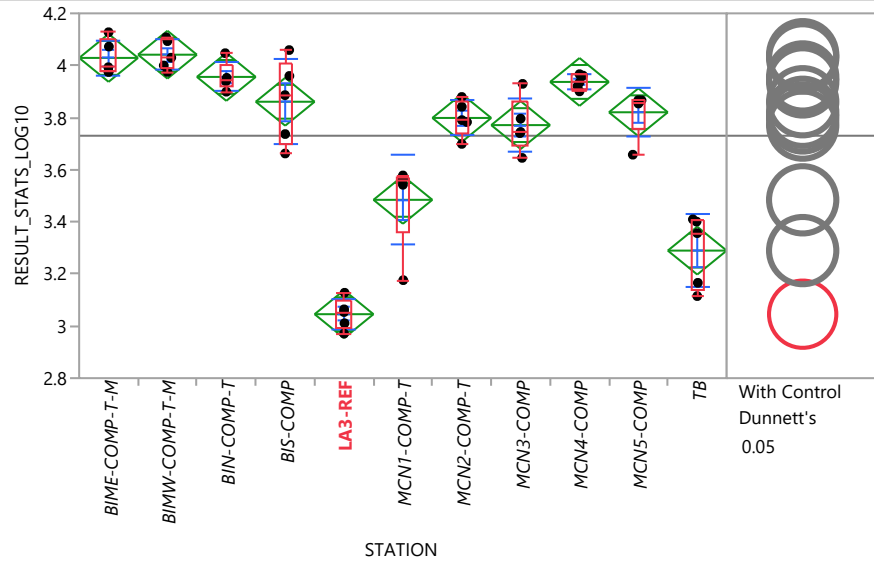


**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDD**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN5-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.52109	-0.88321	-0.28516

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDE**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	3.97564	3.97564	3.975755	3.99327	4.100065	4.12758	4.12758
BIMW-COMP-T-M	3.97518	3.97518	3.98759	4.02996	4.100825	4.10823	4.10823
BIN-COMP-T	3.89933	3.89933	3.919315	3.94201	3.99988	4.04718	4.04718
BIS-COMP	3.66225	3.66225	3.699505	3.88606	4.0095	4.05912	4.05912
LA3-REF	2.97104	2.97104	2.99088	3.05368	3.095955	3.12779	3.12779
MCN1-COMP-T	3.17609	3.17609	3.359135	3.56067	3.571505	3.57793	3.57793
MCN2-COMP-T	3.69897	3.69897	3.74092	3.7903	3.86041	3.87918	3.87918
MCN3-COMP	3.64529	3.64529	3.692825	3.74473	3.86265	3.92942	3.92942
MCN4-COMP	3.90062	3.90062	3.91072	3.93506	3.96383	3.96658	3.96658
MCN5-COMP	3.65758	3.65758	3.755725	3.85733	3.866625	3.86679	3.86679
TB	3.11495	3.11495	3.14041	3.35655	3.405125	3.40952	3.40952

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDE**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.918837
Adj Rsquare	0.90039
Root Mean Square Error	0.101919
Mean of Response	3.730326
Observations (or Sum Wgts)	55

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	10	5.1741590	0.517416	49.8116	<.0001*
Error	44	0.4570481	0.010387		
C. Total	54	5.6312071			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	4.02898	0.04558	3.9371	4.1208
BIMW-COMP-T-M	5	4.04136	0.04558	3.9495	4.1332
BIN-COMP-T	5	3.95608	0.04558	3.8642	4.0479
BIS-COMP	5	3.86081	0.04558	3.7690	3.9527
LA3-REF	5	3.04547	0.04558	2.9536	3.1373
MCN1-COMP-T	5	3.48439	0.04558	3.3925	3.5762
MCN2-COMP-T	5	3.79859	0.04558	3.7067	3.8905
MCN3-COMP	5	3.77114	0.04558	3.6793	3.8630
MCN4-COMP	5	3.93683	0.04558	3.8450	4.0287
MCN5-COMP	5	3.82041	0.04558	3.7285	3.9123
TB	5	3.28952	0.04558	3.1977	3.3814

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	4.02898	0.068120	0.03046	3.9444	4.1136
BIMW-COMP-T-M	5	4.04136	0.057884	0.02589	3.9695	4.1132
BIN-COMP-T	5	3.95608	0.054799	0.02451	3.8880	4.0241
BIS-COMP	5	3.86081	0.161705	0.07232	3.6600	4.0616
LA3-REF	5	3.04547	0.059032	0.02640	2.9722	3.1188
MCN1-COMP-T	5	3.48439	0.172821	0.07729	3.2698	3.6990
MCN2-COMP-T	5	3.79859	0.068169	0.03049	3.7139	3.8832
MCN3-COMP	5	3.77114	0.103860	0.04645	3.6422	3.9001
MCN4-COMP	5	3.93683	0.027585	0.01234	3.9026	3.9711
MCN5-COMP	5	3.82041	0.091198	0.04078	3.7072	3.9336
TB	5	3.28952	0.138767	0.06206	3.1172	3.4618

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDE**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**Confidence Quantile**

d	Alpha
2.83292	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIMW-COMP-T-M	0.813	<.0001*
BIME-COMP-T-M	0.801	<.0001*
BIN-COMP-T	0.728	<.0001*
MCN4-COMP	0.709	<.0001*
BIS-COMP	0.633	<.0001*
MCN5-COMP	0.592	<.0001*
MCN2-COMP-T	0.571	<.0001*
MCN3-COMP	0.543	<.0001*
MCN1-COMP-T	0.256	<.0001*
TB	0.061	0.0039*
LA3-REF	-0.18	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	245.000	140.000	49.0000	3.059
BIMW-COMP-T-M	5	248.000	140.000	49.6000	3.147
BIN-COMP-T	5	200.000	140.000	40.0000	1.742
BIS-COMP	5	162.000	140.000	32.4000	0.629
LA3-REF	5	16.000	140.000	3.2000	-3.616
MCN1-COMP-T	5	62.000	140.000	12.4000	-2.269
MCN2-COMP-T	5	123.000	140.000	24.6000	-0.483
MCN3-COMP	5	120.000	140.000	24.0000	-0.571
MCN4-COMP	5	191.000	140.000	38.2000	1.478
MCN5-COMP	5	131.000	140.000	26.2000	-0.249
TB	5	42.000	140.000	8.4000	-2.855

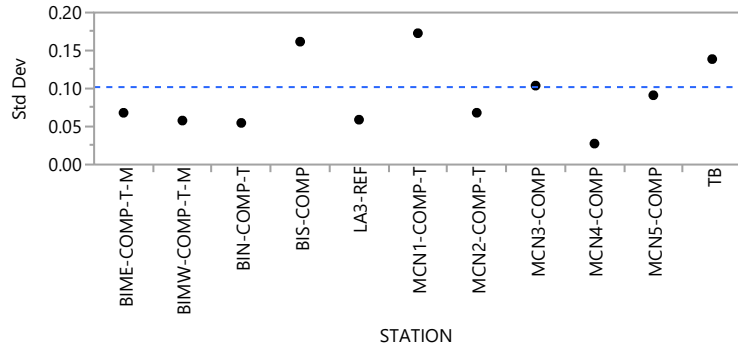
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
47.6945	10	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDE**

**Tests that the Variances are Equal**



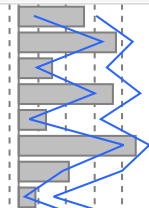
Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0681200	0.0568664	0.0497240
BIMW-COMP-T-M	5	0.0578840	0.0475736	0.0452940
BIN-COMP-T	5	0.0547986	0.0364400	0.0322260
BIS-COMP	5	0.1617048	0.1290472	0.1239980
LA3-REF	5	0.0590322	0.0436720	0.0420300
MCN1-COMP-T	5	0.1728206	0.1233200	0.0849480
MCN2-COMP-T	5	0.0681690	0.0494544	0.0477960
MCN3-COMP	5	0.1038602	0.0732112	0.0679300
MCN4-COMP	5	0.0275851	0.0215984	0.0212440
MCN5-COMP	5	0.0911976	0.0651304	0.0443600
TB	5	0.1387666	0.1192912	0.1058860

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.1515	10	44	0.3482
Brown-Forsythe	0.8052	10	44	0.6246
Levene	2.5683	10	44	0.0153*
Bartlett	1.9348	10	.	0.0361*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.500960	0.11197	0.594040
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.751390	0.63485	0.870600
MCN2-COMP-T	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.263710	0.13389	0.665550
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.729640	0.58117	0.918700
MCN3-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.217950	0.08021	0.619790
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.896960	0.79303	0.990040
MCN4-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.388650	0.33554	0.784990
MCN4-COMP	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.130520	0.04164	0.262110

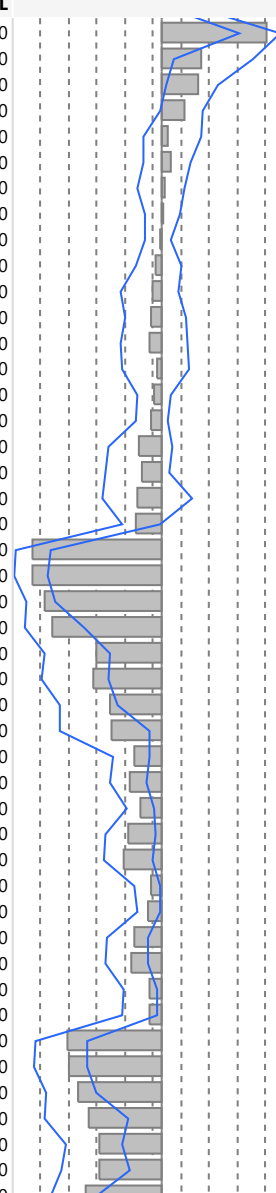




**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDE**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.802340	0.59346	0.895420
MCN5-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.301380	0.09250	0.690370
TB	LA3-REF	4.40000	1.914854	2.29783	0.0216*	0.281730	0.03808	0.429690
MCN4-COMP	MCN3-COMP	4.00000	1.914854	2.08893	0.0367*	0.176090	-0.00860	0.315790
MCN4-COMP	BIS-COMP	1.60000	1.914854	0.83557	0.4034	0.049000	-0.13830	0.298830
MCN5-COMP	MCN3-COMP	1.60000	1.914854	0.83557	0.4034	0.070910	-0.13830	0.221170
MCN5-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.025150	-0.18406	0.167490
BIMW-COMP-T-M	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.020870	-0.12758	0.132360
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.006950	-0.12636	0.061750
MCN3-COMP	MCN2-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.045570	-0.19635	0.146550
BIS-COMP	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.066520	-0.31042	0.119820
MCN2-COMP-T	BIS-COMP	-1.20000	1.914854	-0.62668	0.5309	-0.080700	-0.27625	0.179390
MCN3-COMP	BIS-COMP	-1.20000	1.914854	-0.62668	0.5309	-0.091470	-0.31876	0.192660
MCN5-COMP	BIS-COMP	-1.60000	1.914854	-0.83557	0.4034	-0.032190	-0.30230	0.204210
BIN-COMP-T	BIME-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-0.053970	-0.18828	0.071310
BIN-COMP-T	BIMW-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-0.077380	-0.19409	0.047180
BIS-COMP	BIME-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-0.167700	-0.41030	0.083250
BIS-COMP	BIMW-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-0.148350	-0.43117	0.059120
TB	MCN1-COMP-T	-3.60000	1.914854	-1.88004	0.0601	-0.177200	-0.45013	0.224640
MCN3-COMP	BIN-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-0.197280	-0.30729	-0.009880
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.982550	-1.11686	-0.848080
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.989280	-1.12238	-0.872210
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.898900	-1.03646	-0.811510
LA3-REF	BIS-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.832090	-1.04840	-0.598130
MCN1-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.494620	-0.89646	-0.397940
MCN1-COMP-T	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.515490	-0.91733	-0.410100
MCN1-COMP-T	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.391910	-0.77649	-0.334250
MCN1-COMP-T	BIS-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.381950	-0.78379	-0.097170
MCN2-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.210400	-0.37358	-0.096690
MCN2-COMP-T	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.239660	-0.39445	-0.120820
MCN2-COMP-T	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.156430	-0.26431	-0.057690
MCN3-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.248540	-0.42726	-0.046450
MCN3-COMP	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.285230	-0.44813	-0.070580
MCN4-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.075020	-0.20676	-0.009290
MCN4-COMP	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.099380	-0.19280	-0.014100
MCN5-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.205760	-0.41497	-0.109080
MCN5-COMP	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.226630	-0.43584	-0.108720
MCN5-COMP	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.086120	-0.29500	-0.032870
MCN5-COMP	MCN4-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.094290	-0.30350	-0.034160
TB	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.718060	-0.96171	-0.566350
TB	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.707500	-0.97847	-0.574450
TB	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.637660	-0.88131	-0.498600
TB	BIS-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.559150	-0.89325	-0.261520
TB	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.478450	-0.72669	-0.298240
TB	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.479420	-0.76355	-0.244560
TB	MCN4-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.578510	-0.84613	-0.499890

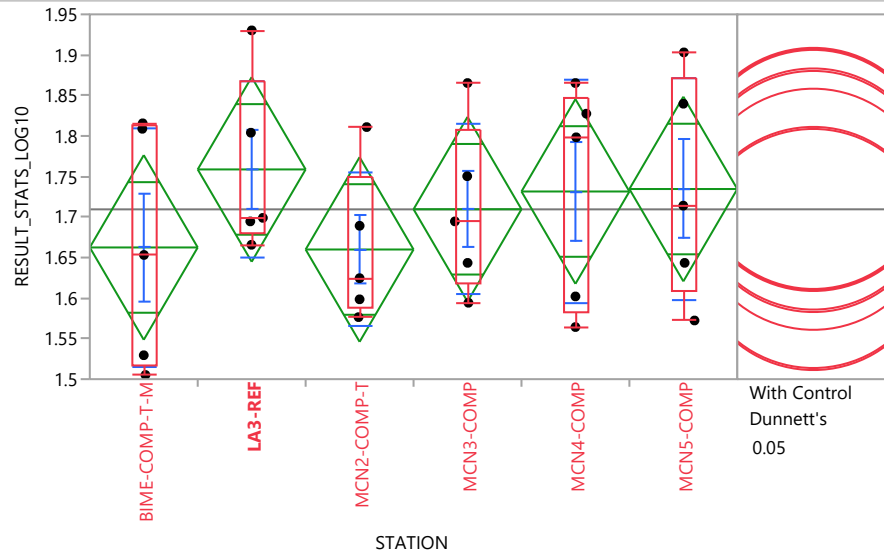


**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDE**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN5-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.497320	-0.75151	-0.256850

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDT**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.50515	1.50515	1.51733	1.65321	1.812215	1.81561	1.81561
LA3-REF	1.66573	1.66573	1.68017	1.69897	1.867135	1.93024	1.93024
MCN2-COMP-T	1.57651	1.57651	1.5875	1.62457	1.750075	1.81094	1.81094
MCN3-COMP	1.59423	1.59423	1.61884	1.69461	1.807825	1.8653	1.8653
MCN4-COMP	1.56427	1.56427	1.583165	1.79835	1.846405	1.8653	1.8653
MCN5-COMP	1.57239	1.57239	1.60792	1.71403	1.87142	1.90309	1.90309

**Oneway Anova**

**Summary of Fit**

Rsquare	0.100895
Adj Rsquare	-0.08642
Root Mean Square Error	0.123397
Mean of Response	1.709458
Observations (or Sum Wgts)	30

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDT**

**Oneway Anova**

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	5	0.04100892	0.008202	0.5386	0.7450
Error	24	0.36544131	0.015227		
C. Total	29	0.40645023			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.66246	0.05518	1.5486	1.7764
LA3-REF	5	1.75872	0.05518	1.6448	1.8726
MCN2-COMP-T	5	1.65994	0.05518	1.5460	1.7738
MCN3-COMP	5	1.70959	0.05518	1.5957	1.8235
MCN4-COMP	5	1.73150	0.05518	1.6176	1.8454
MCN5-COMP	5	1.73454	0.05518	1.6206	1.8484

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.66246	0.147804	0.06610	1.4789	1.8460
LA3-REF	5	1.75872	0.109315	0.04889	1.6230	1.8944
MCN2-COMP-T	5	1.65994	0.094400	0.04222	1.5427	1.7772
MCN3-COMP	5	1.70959	0.104659	0.04680	1.5796	1.8395
MCN4-COMP	5	1.73150	0.138121	0.06177	1.5600	1.9030
MCN5-COMP	5	1.73454	0.136463	0.06103	1.5651	1.9040

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.69532	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
LA3-REF	-0.21	1.0000
MCN5-COMP	-0.19	0.9979
MCN4-COMP	-0.18	0.9963
MCN3-COMP	-0.16	0.9532
BIME-COMP-T-M	-0.11	0.6167
MCN2-COMP-T	-0.11	0.5946

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDT**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

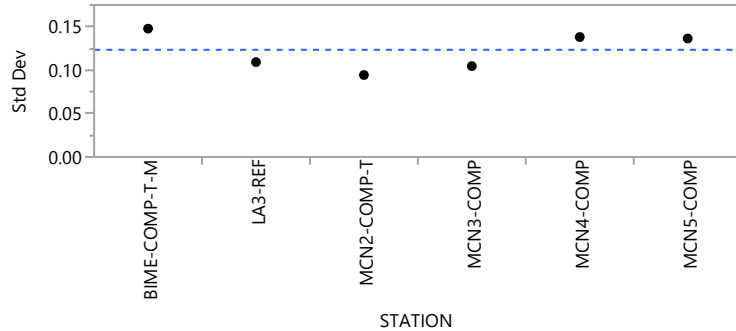
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	61.000	77.500	12.2000	-0.891
LA3-REF	5	96.500	77.500	19.3000	1.030
MCN2-COMP-T	5	58.000	77.500	11.6000	-1.058
MCN3-COMP	5	78.500	77.500	15.7000	0.028
MCN4-COMP	5	83.500	77.500	16.7000	0.306
MCN5-COMP	5	87.500	77.500	17.5000	0.529

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
2.9710	5	0.7045

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478038	0.1198040	0.1179540
LA3-REF	5	0.1093154	0.0867352	0.0747860
MCN2-COMP-T	5	0.0944000	0.0721048	0.0650300
MCN3-COMP	5	0.1046587	0.0785896	0.0755940
MCN4-COMP	5	0.1381212	0.1186664	0.1052960
MCN5-COMP	5	0.1364633	0.1095024	0.1054000

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.6127	5	24	0.6912
Brown-Forsythe	0.3528	5	24	0.8754
Levene	0.7700	5	24	0.5806
Bartlett	0.2331	5	.	0.9481

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

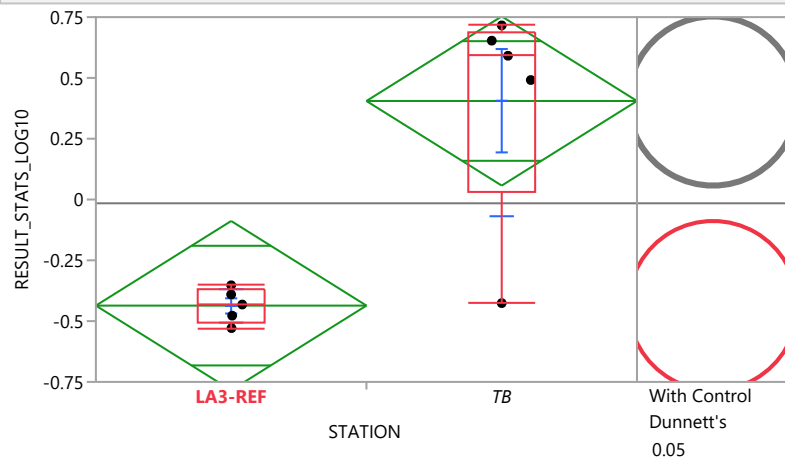
q*	Alpha
1.95996	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=4,4'-DDT**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean		Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
		Difference	Std Err Dif						
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.121420	-0.143090	0.4007300	
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054360	-0.167490	0.2668100	
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.056480	-0.244550	0.3357900	
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067240	-0.236430	0.3735800	
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066940	-0.167490	0.3046000	
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054360	-0.208880	0.2668100	
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.056480	-0.214590	0.3357900	
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012240	-0.255120	0.3010300	
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007830	-0.263240	0.2332800	
MCN5-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.019420	-0.221850	0.2596400	
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.002120	-0.232310	0.2814300	
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063670	-0.328180	0.1706900	
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.027150	-0.286790	0.2084800	
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053680	-0.286790	0.1706900	
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096120	-0.331750	0.1163300	

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Dibutyltin**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	-0.52871	-0.52871	-0.50313	-0.4318	-0.37151	-0.35262	-0.35262
TB	-0.42597	-0.42597	0.032697	0.591065	0.684608	0.716003	0.716003

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Dibutyltin**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.660336
Adj Rsquare	0.617878
Root Mean Square Error	0.337322
Mean of Response	-0.01554
Observations (or Sum Wgts)	10

**t Test**

TB-LA3-REF

Assuming equal variances

Difference	0.84135	t Ratio	3.943687	
Std Err Dif	0.21334	DF	8	
Upper CL Dif	1.33332	Prob >  t	0.0043*	
Lower CL Dif	0.34939	Prob > t	0.0021*	
Confidence	0.95	Prob < t	0.9979	

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	1	1.7696813	1.76968	15.5527	0.0043*
Error	8	0.9102907	0.11379		
C. Total	9	2.6799720			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
LA3-REF	5	-0.43622	0.15086	-0.7841	-0.0883
TB	5	0.40513	0.15086	0.0573	0.7530

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
LA3-REF	5	-0.43622	0.069589	0.03112	-0.5226	-0.3498
TB	5	0.40513	0.471943	0.21106	-0.1809	0.9911

**t Test**

TB-LA3-REF

Assuming unequal variances

Difference	0.84135	t Ratio	3.943687	
Std Err Dif	0.21334	DF	4.173856	
Upper CL Dif	1.42408	Prob >  t	0.0156*	
Lower CL Dif	0.25863	Prob > t	0.0078*	
Confidence	0.95	Prob < t	0.9922	

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Dibutyltin**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**Confidence Quantile**

d	Alpha
2.30600	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.349	0.0043*
LA3-REF	-0.49	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
LA3-REF	5	17.000	27.500	3.40000	-2.089
TB	5	38.000	27.500	7.60000	2.089

**2-Sample Test, Normal Approximation**

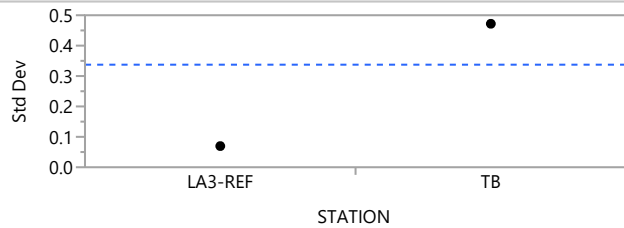
S	Z	Prob> Z
38	2.08893	0.0367*

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
4.8109	1	0.0283*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
LA3-REF	5	0.0695892	0.0535320	0.0526482
TB	5	0.4719428	0.3324414	0.2607644

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Dibutyltin**

**Tests that the Variances are Equal**

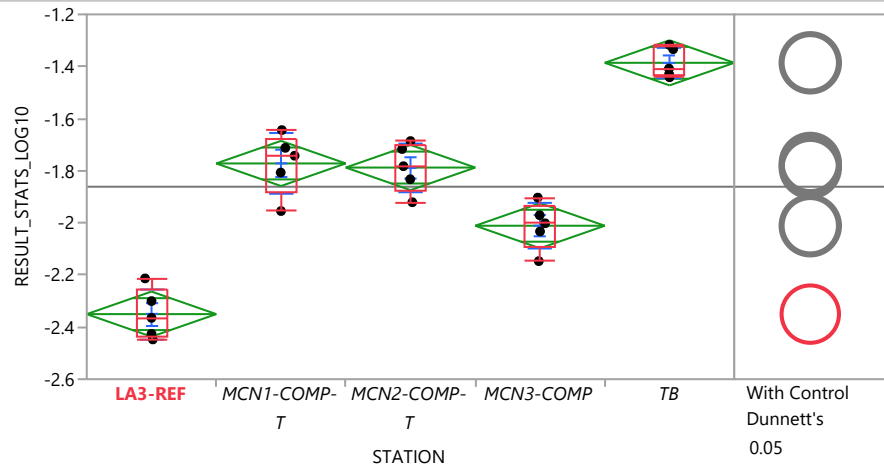
Test	F Ratio	DFNum	DFDen	p-Value
O'Brien[.5]	1.3415	1	8	0.2802
Brown-Forsythe	1.1876	1	8	0.3075
Levene	4.5309	1	8	0.0659
Bartlett	8.8363	1	.	0.0030*
F Test 2-sided	45.9933	4	4	0.0027*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha							
1.95996		0.05							
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
TB	LA3-REF	4.000000	1.914854	2.088932	0.0367*	1.020070	-0.035563	1.193559	

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Mercury**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	-2.44733	-2.44733	-2.43665	-2.36452	-2.25671	-2.21325	-2.21325
MCN1-COMP-T	-1.95468	-1.95468	-1.88078	-1.74232	-1.67809	-1.64397	-1.64397
MCN2-COMP-T	-1.92082	-1.92082	-1.87675	-1.78252	-1.70142	-1.68613	-1.68613
MCN3-COMP	-2.14691	-2.14691	-2.08992	-2.00174	-1.93686	-1.90309	-1.90309
TB	-1.44129	-1.44129	-1.43538	-1.40782	-1.32522	-1.31695	-1.31695



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Mercury**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.935583
Adj Rsquare	0.9227
Root Mean Square Error	0.092862
Mean of Response	-1.86138
Observations (or Sum Wgts)	25

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	4	2.5048732	0.626218	72.6193	<.0001*
Error	20	0.1724661	0.008623		
C. Total	24	2.6773393			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
LA3-REF	5	-2.3502	0.04153	-2.437	-2.264
MCN1-COMP-T	5	-1.7720	0.04153	-1.859	-1.685
MCN2-COMP-T	5	-1.7878	0.04153	-1.874	-1.701
MCN3-COMP	5	-2.0111	0.04153	-2.098	-1.924
TB	5	-1.3858	0.04153	-1.472	-1.299

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
LA3-REF	5	-2.3502	0.095707	0.04280	-2.469	-2.231
MCN1-COMP-T	5	-1.7720	0.117726	0.05265	-1.918	-1.626
MCN2-COMP-T	5	-1.7878	0.093713	0.04191	-1.904	-1.671
MCN3-COMP	5	-2.0111	0.089879	0.04020	-2.123	-1.899
TB	5	-1.3858	0.056894	0.02544	-1.456	-1.315

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.65103	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Mercury**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.809	<.0001*
MCN1-COMP-T	0.423	<.0001*
MCN2-COMP-T	0.407	<.0001*
MCN3-COMP	0.183	<.0001*
LA3-REF	-0.16	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

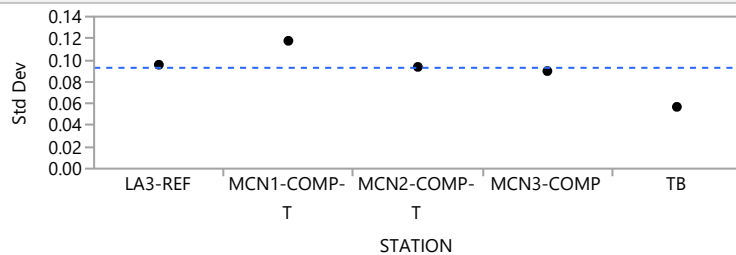
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
LA3-REF	5	15.000	65.000	3.0000	-3.363
MCN1-COMP-T	5	78.000	65.000	15.6000	0.849
MCN2-COMP-T	5	75.000	65.000	15.0000	0.645
MCN3-COMP	5	42.000	65.000	8.4000	-1.529
TB	5	115.000	65.000	23.0000	3.363

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
21.4080	4	0.0003*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
LA3-REF	5	0.0957075	0.0748328	0.0719780
MCN1-COMP-T	5	0.1177255	0.0870160	0.0810780
MCN2-COMP-T	5	0.0937129	0.0711840	0.0701340
MCN3-COMP	5	0.0898789	0.0630872	0.0612240
TB	5	0.0568945	0.0484680	0.0440640

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Mercury**

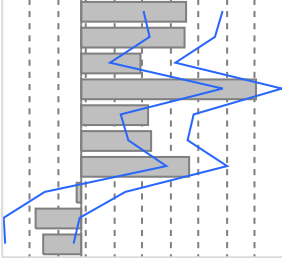
**Tests that the Variances are Equal**

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.4538	4	20	0.7685
Brown-Forsythe	0.2837	4	20	0.8851
Levene	0.4130	4	20	0.7972
Bartlett	0.4473	4	.	0.7745

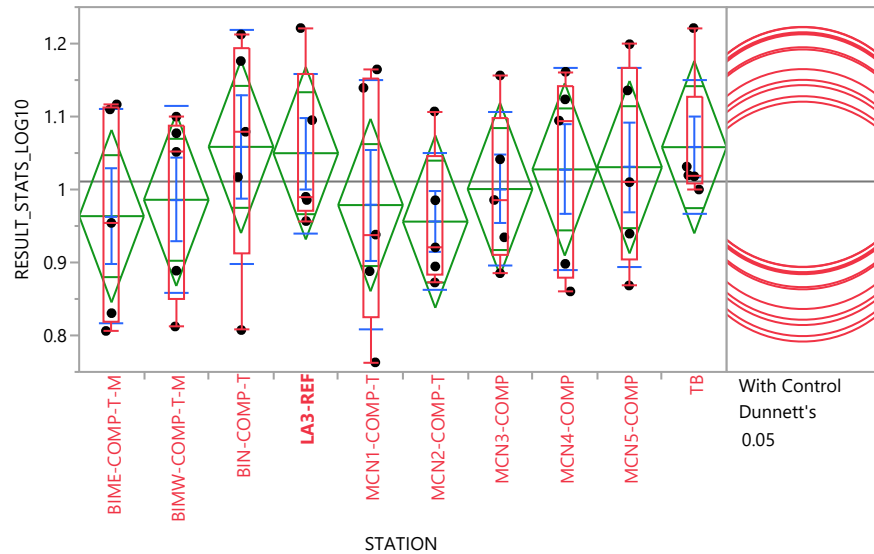
Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.587960	0.345480	0.78200
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.582000	0.379340	0.73984
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.331600	0.153250	0.52288
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.983210	0.783790	1.11385
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.377420	0.214510	0.62120
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.391390	0.256670	0.58734
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.603460	0.473630	0.81343
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.025800	-0.208620	0.23798
MCN3-COMP	MCN1-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-0.258420	-0.434710	-0.01594
MCN3-COMP	MCN2-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-0.219220	-0.430210	-0.04980



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB003**



With Control  
Dunnett's  
0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB003**

**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.80618	0.80618	0.81836	0.954243	1.113245	1.11664	1.11664
BIMW-COMP-T-M	0.812283	0.812283	0.850512	1.05161	1.08852	1.09987	1.09987
BIN-COMP-T	0.807402	0.807402	0.912261	1.07918	1.194305	1.21252	1.21252
LA3-REF	0.956775	0.956775	0.971213	0.990016	1.158185	1.22129	1.22129
MCN1-COMP-T	0.763088	0.763088	0.825557	0.938193	1.152	1.16463	1.16463
MCN2-COMP-T	0.872572	0.872572	0.883562	0.920634	1.046144	1.10701	1.10701
MCN3-COMP	0.88528	0.88528	0.909889	0.985651	1.09887	1.15635	1.15635
MCN4-COMP	0.860338	0.860338	0.879233	1.09442	1.142475	1.16137	1.16137
MCN5-COMP	0.868456	0.868456	0.903988	1.0101	1.167485	1.19916	1.19916
TB	1	1	1.00902	1.01951	1.12635	1.22129	1.22129

**Oneway Anova**

**Summary of Fit**

Rsquare	0.090978
Adj Rsquare	-0.11355
Root Mean Square Error	0.130763
Mean of Response	1.010918
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	9	0.06845248	0.007606	0.4448	0.9020
Error	40	0.68395568	0.017099		
C. Total	49	0.75240816			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.96349	0.05848	0.84530	1.0817
BIMW-COMP-T-M	5	0.98593	0.05848	0.86774	1.1041
BIN-COMP-T	5	1.05846	0.05848	0.94027	1.1767
LA3-REF	5	1.04976	0.05848	0.93157	1.1680
MCN1-COMP-T	5	0.97866	0.05848	0.86047	1.0969
MCN2-COMP-T	5	0.95601	0.05848	0.83782	1.0742
MCN3-COMP	5	1.00063	0.05848	0.88244	1.1188
MCN4-COMP	5	1.02757	0.05848	0.90938	1.1458
MCN5-COMP	5	1.03061	0.05848	0.91242	1.1488
TB	5	1.05805	0.05848	0.93986	1.1762

Std Error uses a pooled estimate of error variance

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB003**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.96349	0.147804	0.06610	0.77997	1.1470
BIMW-COMP-T-M	5	0.98593	0.127691	0.05711	0.82739	1.1445
BIN-COMP-T	5	1.05846	0.160265	0.07167	0.85947	1.2575
LA3-REF	5	1.04976	0.109318	0.04889	0.91403	1.1855
MCN1-COMP-T	5	0.97866	0.170833	0.07640	0.76654	1.1908
MCN2-COMP-T	5	0.95601	0.094403	0.04222	0.83879	1.0732
MCN3-COMP	5	1.00063	0.104658	0.04680	0.87068	1.1306
MCN4-COMP	5	1.02757	0.138123	0.06177	0.85607	1.1991
MCN5-COMP	5	1.03061	0.136463	0.06103	0.86117	1.2000
TB	5	1.05805	0.091941	0.04112	0.94389	1.1722

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.22	1.0000
TB	-0.22	1.0000
LA3-REF	-0.23	1.0000
MCN5-COMP	-0.21	1.0000
MCN4-COMP	-0.21	1.0000
MCN3-COMP	-0.18	0.9957
BIMW-COMP-T-M	-0.17	0.9762
MCN1-COMP-T	-0.16	0.9557
BIME-COMP-T-M	-0.15	0.8830
MCN2-COMP-T	-0.14	0.8330

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	102.000	127.500	20.4000	-0.808
BIMW-COMP-T-M	5	114.000	127.500	22.8000	-0.420
BIN-COMP-T	5	156.000	127.500	31.2000	0.906
LA3-REF	5	148.000	127.500	29.6000	0.647
MCN1-COMP-T	5	114.000	127.500	22.8000	-0.420
MCN2-COMP-T	5	91.000	127.500	18.2000	-1.164
MCN3-COMP	5	118.500	127.500	23.7000	-0.275
MCN4-COMP	5	137.000	127.500	27.4000	0.291
MCN5-COMP	5	137.000	127.500	27.4000	0.291

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB003**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

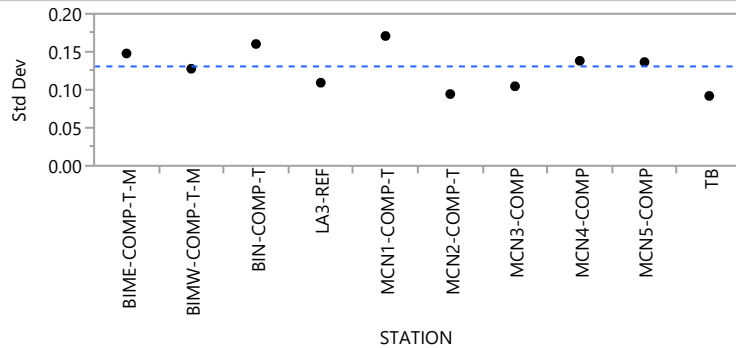
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
TB	5	157.500	127.500	31.5000	0.954

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
4.4625	9	0.8784

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478040	0.1198037	0.1179542
BIMW-COMP-T-M	5	0.1276909	0.1083382	0.0952032
BIN-COMP-T	5	0.1602652	0.1169611	0.1128176
LA3-REF	5	0.1093183	0.0867381	0.0747888
MCN1-COMP-T	5	0.1708332	0.1386709	0.1305772
MCN2-COMP-T	5	0.0944034	0.0721076	0.0650326
MCN3-COMP	5	0.1046584	0.0785890	0.0755924
MCN4-COMP	5	0.1381225	0.1186676	0.1052970
MCN5-COMP	5	0.1364627	0.1095008	0.1053990
TB	5	0.0919415	0.0652960	0.0469320

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[5]	0.6384	9	40	0.7575
Brown-Forsythe	0.4500	9	40	0.8988
Levene	0.8216	9	40	0.6000
Bartlett	0.3362	9	.	0.9633

Warning: Small sample sizes. Use Caution.

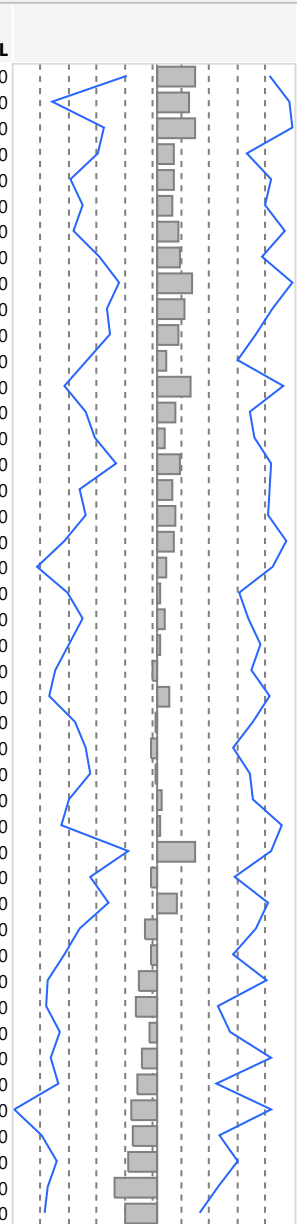
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*	Alpha
1.95996	0.05

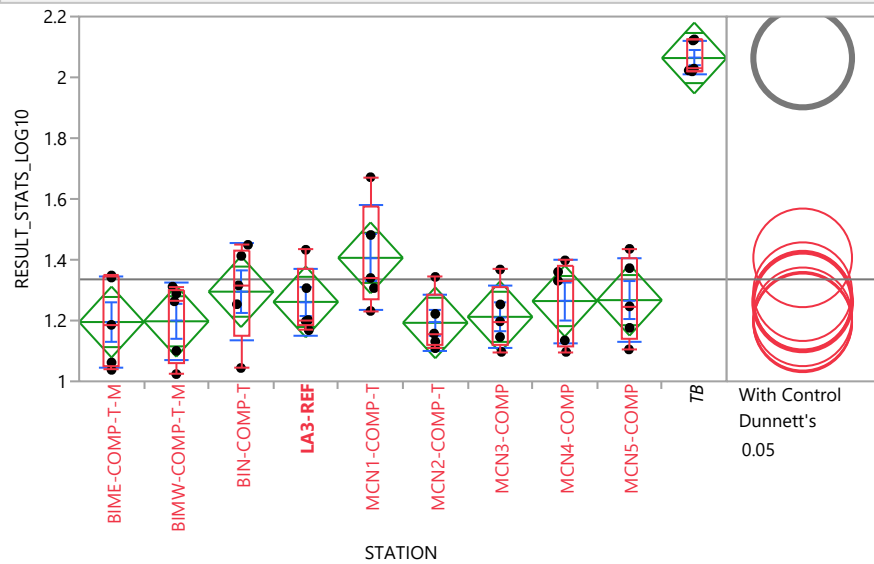
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB003**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
TB	MCN2-COMP-T	3.20000	1.914854	1.67115	0.0947	0.110776	-0.088970	0.3267380	
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.095880	-0.302448	0.3819810	
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.111440	-0.153075	0.3907510	
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.049340	-0.172512	0.2617980	
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.051520	-0.249512	0.3308310	
MCN4-COMP	BIMW-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.046410	-0.216832	0.3112970	
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.062276	-0.241394	0.3686210	
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066947	-0.167491	0.3046080	
TB	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.104650	-0.109850	0.3907510	
TB	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	0.081920	-0.146590	0.3332640	
TB	MCN3-COMP	1.60000	1.914854	0.83557	0.4034	0.064940	-0.138310	0.2867920	
TB	LA3-REF	1.40000	1.909043	0.73335	0.4633	0.029494	-0.203250	0.2356390	
BIN-COMP-T	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.098920	-0.269768	0.3638070	
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054360	-0.208883	0.2668180	
TB	MCN5-COMP	1.20000	1.914854	0.62668	0.5309	0.022130	-0.181120	0.2817710	
LA3-REF	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.068034	-0.120395	0.3325490	
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.046500	-0.224570	0.3258110	
MCN5-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.056173	-0.208714	0.3235270	
MCN5-COMP	MCN1-COMP-T	0.80000	1.914854	0.41779	0.6761	0.051493	-0.270914	0.3727220	
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.029520	-0.346762	0.3340910	
MCN4-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.012847	-0.258223	0.2383000	
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.024449	-0.216831	0.2646620	
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012230	-0.255124	0.3010330	
BIMW-COMP-T-M	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.009980	-0.297567	0.2709900	
MCN1-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.039500	-0.314082	0.3270870	
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.002840	-0.237278	0.2764710	
MCN2-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.016169	-0.205318	0.2182690	
MCN3-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.003461	-0.191890	0.2676090	
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.016980	-0.254090	0.2783020	
MCN4-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.010101	-0.279032	0.3604920	
TB	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.111259	-0.081830	0.3325490	
TB	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.017120	-0.194480	0.2240080	
TB	MCN4-COMP	0.00000	1.914854	0.00000	1.0000	0.059920	-0.143330	0.3231630	
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.031469	-0.226869	0.2876780	
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.017559	-0.270078	0.2221890	
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051150	-0.315752	0.3161780	
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.058648	-0.323163	0.1757190	
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.022130	-0.281771	0.2135090	
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040280	-0.307634	0.3284080	
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053690	-0.286792	0.1706990	
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.073150	-0.413002	0.3319680	
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.068749	-0.333264	0.1825950	
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.082622	-0.290810	0.2339880	
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.122568	-0.317968	0.1778750	
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.091099	-0.326738	0.1213590	



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB005/008**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.03779	1.03779	1.04997	1.18585	1.344855	1.34825	1.34825
BIMW-COMP-T-M	1.02391	1.02391	1.06214	1.26324	1.30015	1.3115	1.3115
BIN-COMP-T	1.04397	1.04397	1.148835	1.31575	1.430875	1.44909	1.44909
LA3-REF	1.1684	1.1684	1.18284	1.20165	1.369815	1.43292	1.43292
MCN1-COMP-T	1.23161	1.23161	1.269235	1.33995	1.57651	1.67153	1.67153
MCN2-COMP-T	1.10914	1.10914	1.12013	1.15721	1.282715	1.34358	1.34358
MCN3-COMP	1.09691	1.09691	1.12152	1.19728	1.3105	1.36798	1.36798
MCN4-COMP	1.09691	1.09691	1.115805	1.33099	1.379045	1.39794	1.39794
MCN5-COMP	1.10503	1.10503	1.14056	1.24667	1.40406	1.43573	1.43573
TB	2.01974	2.01974	2.0213	2.02865	2.12318	2.12494	2.12494

**Oneway Anova**

**Summary of Fit**

Rsquare	0.824587
Adj Rsquare	0.785119
Root Mean Square Error	0.129047
Mean of Response	1.335506
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	3.1313404	0.347927	20.8925	<.0001*
Error	40	0.6661263	0.016653		
C. Total	49	3.7974667			



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB005/008**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.19510	0.05771	1.0785	1.3117
BIMW-COMP-T-M	5	1.19756	0.05771	1.0809	1.3142
BIN-COMP-T	5	1.29503	0.05771	1.1784	1.4117
LA3-REF	5	1.26139	0.05771	1.1448	1.3780
MCN1-COMP-T	5	1.40629	0.05771	1.2896	1.5229
MCN2-COMP-T	5	1.19258	0.05771	1.0759	1.3092
MCN3-COMP	5	1.21226	0.05771	1.0956	1.3289
MCN4-COMP	5	1.26414	0.05771	1.1475	1.3808
MCN5-COMP	5	1.26718	0.05771	1.1505	1.3838
TB	5	2.06352	0.05771	1.9469	2.1802

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.19510	0.147804	0.06610	1.0116	1.3786
BIMW-COMP-T-M	5	1.19756	0.127692	0.05711	1.0390	1.3561
BIN-COMP-T	5	1.29503	0.160265	0.07167	1.0960	1.4940
LA3-REF	5	1.26139	0.109319	0.04889	1.1257	1.3971
MCN1-COMP-T	5	1.40629	0.173787	0.07772	1.1905	1.6221
MCN2-COMP-T	5	1.19258	0.094404	0.04222	1.0754	1.3098
MCN3-COMP	5	1.21226	0.104658	0.04680	1.0823	1.3422
MCN4-COMP	5	1.26414	0.138121	0.06177	1.0926	1.4356
MCN5-COMP	5	1.26718	0.136463	0.06103	1.0977	1.4366
TB	5	2.06352	0.054568	0.02440	1.9958	2.1313

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB005/008**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.573	<.0001*
MCN1-COMP-T	-0.08	0.3936
BIN-COMP-T	-0.2	0.9997
MCN5-COMP	-0.22	1.0000
MCN4-COMP	-0.23	1.0000
LA3-REF	-0.23	1.0000
MCN3-COMP	-0.18	0.9953
BIMW-COMP-T-M	-0.17	0.9742
BIME-COMP-T-M	-0.16	0.9678
MCN2-COMP-T	-0.16	0.9602

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	90.000	127.500	18.0000	-1.197
BIMW-COMP-T-M	5	88.000	127.500	17.6000	-1.261
BIN-COMP-T	5	140.000	127.500	28.0000	0.388
LA3-REF	5	118.500	127.500	23.7000	-0.275
MCN1-COMP-T	5	170.000	127.500	34.0000	1.358
MCN2-COMP-T	5	86.000	127.500	17.2000	-1.326
MCN3-COMP	5	95.000	127.500	19.0000	-1.035
MCN4-COMP	5	122.500	127.500	24.5000	-0.146
MCN5-COMP	5	125.000	127.500	25.0000	-0.065
TB	5	240.000	127.500	48.0000	3.622

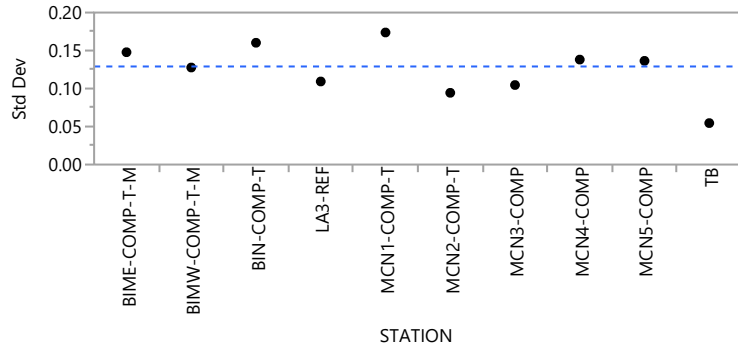
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
19.2734	9	0.0230*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB005/008**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478038	0.1198040	0.1179540
BIMW-COMP-T-M	5	0.1276922	0.1083392	0.0952040
BIN-COMP-T	5	0.1602653	0.1169592	0.1128160
LA3-REF	5	0.1093190	0.0867384	0.0747900
MCN1-COMP-T	5	0.1737870	0.1361776	0.1229100
MCN2-COMP-T	5	0.0944038	0.0721080	0.0650340
MCN3-COMP	5	0.1046581	0.0785888	0.0755920
MCN4-COMP	5	0.1381212	0.1186664	0.1052960
MCN5-COMP	5	0.1364633	0.1095024	0.1054000
TB	5	0.0545680	0.0477264	0.0407520

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.7247	9	40	0.6835
Brown-Forsythe	0.4449	9	40	0.9019
Levene	1.0667	9	40	0.4076
Bartlett	0.6395	9	.	0.7641

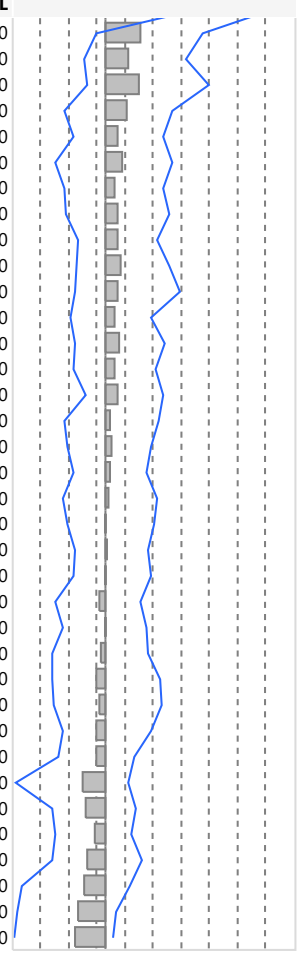
Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

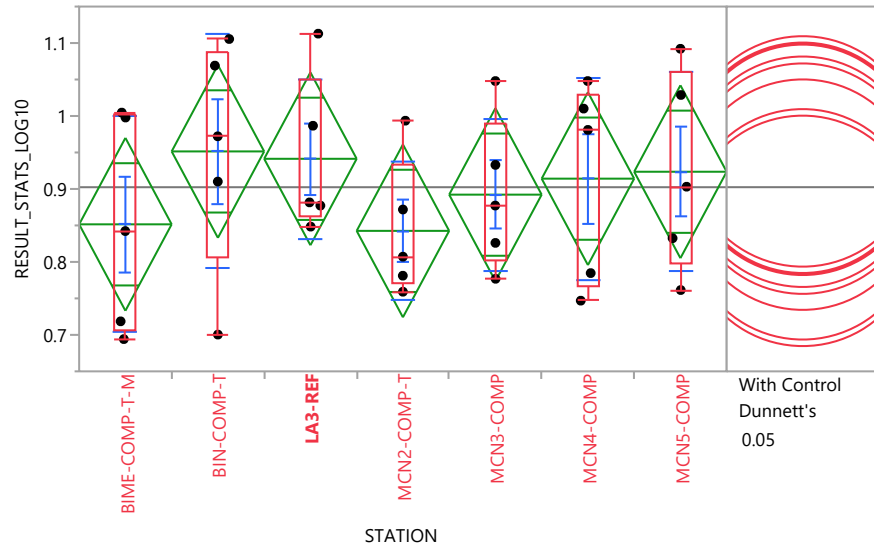
q\* Alpha  
1.95996 0.05

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.842800	0.674610	1.083630
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.836140	0.711360	1.097510
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.712900	0.573770	1.077450
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.822460	0.589940	0.953020
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.688700	0.351330	0.889810
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.891740	0.679280	1.012280
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.871920	0.654880	1.024510
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.764790	0.624920	1.024510
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.781980	0.587130	1.016390

Oneway Analysis of RESULT_STATS_LOG10 By STATION CHEM_OUT=PCB005/008								
Nonparametric Comparisons For Each Pair Using Wilcoxon Method								
Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIMW-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.206490	-0.057190	0.571160
MCN1-COMP-T	LA3-REF	3.20000	1.914854	1.67115	0.0947	0.138300	-0.126060	0.474250
MCN1-COMP-T	BIME-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.193820	-0.109850	0.609380
BIN-COMP-T	BIMW-COMP-T-M	2.00000	1.914854	1.04447	0.2963	0.123860	-0.244830	0.388750
MCN4-COMP	BIMW-COMP-T-M	2.00000	1.914854	1.04447	0.2963	0.071350	-0.191890	0.336240
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297490	0.386940
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.056480	-0.244550	0.335790
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067240	-0.236430	0.373580
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066950	-0.167490	0.304610
LA3-REF	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.091460	-0.173060	0.370770
MCN1-COMP-T	BIN-COMP-T	1.20000	1.914854	0.62668	0.5309	0.068830	-0.181050	0.437520
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054360	-0.208880	0.266820
MCN5-COMP	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.081120	-0.183770	0.348480
MCN5-COMP	MCN3-COMP	1.20000	1.914854	0.62668	0.5309	0.049390	-0.191890	0.289600
LA3-REF	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.068030	-0.120400	0.332550
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.026520	-0.244550	0.305830
MCN4-COMP	MCN3-COMP	0.60000	1.909043	0.31429	0.7533	0.037790	-0.233280	0.263240
MCN3-COMP	MCN2-COMP-T	0.40000	1.914854	0.20889	0.8345	0.024400	-0.197450	0.236860
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012240	-0.255120	0.301030
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.002120	-0.232320	0.281430
MCN2-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.008770	-0.180380	0.243210
MCN3-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.003460	-0.191890	0.267610
MCN4-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	-0.033700	-0.298220	0.200660
MCN5-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	0.002810	-0.256830	0.238450
BIMW-COMP-T-M	BIME-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.029960	-0.317550	0.251010
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051150	-0.315750	0.316180
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040270	-0.307630	0.328420
LA3-REF	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.056420	-0.251810	0.262740
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053690	-0.286790	0.170700
MCN4-COMP	MCN1-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.134700	-0.536830	0.128540
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.122580	-0.317970	0.177880
MCN2-COMP-T	LA3-REF	-2.00000	1.914854	-1.04447	0.2963	-0.066160	-0.301800	0.146300
MCN3-COMP	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.107570	-0.315750	0.209050
MCN5-COMP	MCN1-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.126580	-0.495440	0.140780
MCN3-COMP	MCN1-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-0.160730	-0.525400	0.061120
MCN2-COMP-T	MCN1-COMP-T	-3.60000	1.914854	-1.88004	0.0601	-0.182740	-0.540410	0.036720



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB015**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.694206	0.694206	0.706386	0.842269	1.001273	1.00467	1.00467
BIN-COMP-T	0.700392	0.700392	0.805253	0.972171	1.087295	1.10551	1.10551
LA3-REF	0.848351	0.848351	0.862789	0.881592	1.049757	1.11286	1.11286
MCN2-COMP-T	0.759128	0.759128	0.770118	0.807189	0.932699	0.993566	0.993566
MCN3-COMP	0.776857	0.776857	0.801466	0.877227	0.990445	1.04792	1.04792
MCN4-COMP	0.746894	0.746894	0.765788	0.980977	1.02903	1.04792	1.04792
MCN5-COMP	0.761446	0.761446	0.796978	0.90309	1.060475	1.09215	1.09215

**Oneway Anova**

**Summary of Fit**

Rsquare	0.10326
Adj Rsquare	-0.0889
Root Mean Square Error	0.129309
Mean of Response	0.9024
Observations (or Sum Wgts)	35

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	6	0.05391143	0.008985	0.5374	0.7752
Error	28	0.46818293	0.016721		
C. Total	34	0.52209436			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB015**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.851517	0.05783	0.73306	0.9700
BIN-COMP-T	5	0.951453	0.05783	0.83300	1.0699
LA3-REF	5	0.941337	0.05783	0.82288	1.0598
MCN2-COMP-T	5	0.842565	0.05783	0.72411	0.9610
MCN3-COMP	5	0.892210	0.05783	0.77375	1.0107
MCN4-COMP	5	0.914123	0.05783	0.79567	1.0326
MCN5-COMP	5	0.923599	0.05783	0.80514	1.0421

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.851517	0.147805	0.06610	0.66799	1.0350
BIN-COMP-T	5	0.951453	0.160265	0.07167	0.75246	1.1504
LA3-REF	5	0.941337	0.109316	0.04889	0.80560	1.0771
MCN2-COMP-T	5	0.842565	0.094403	0.04222	0.72535	0.9598
MCN3-COMP	5	0.892210	0.104656	0.04680	0.76226	1.0222
MCN4-COMP	5	0.914123	0.138122	0.06177	0.74262	1.0856
MCN5-COMP	5	0.923599	0.136463	0.06103	0.75416	1.0930

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.73128	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.21	1.0000
LA3-REF	-0.22	1.0000
MCN5-COMP	-0.21	0.9999
MCN4-COMP	-0.2	0.9990
MCN3-COMP	-0.17	0.9774
BIME-COMP-T-M	-0.13	0.7575
MCN2-COMP-T	-0.12	0.6830

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB015**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

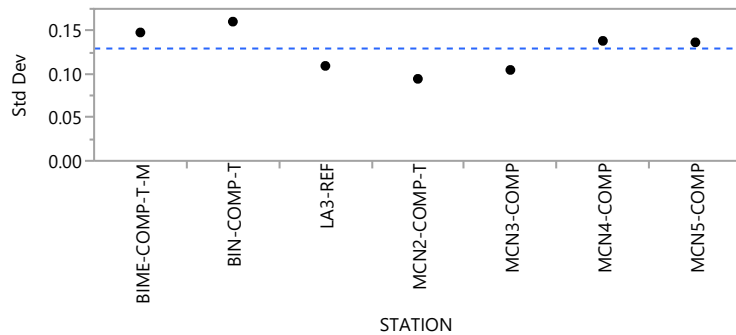
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	70.000	90.000	14.0000	-0.919
BIN-COMP-T	5	110.000	90.000	22.0000	0.919
LA3-REF	5	107.500	90.000	21.5000	0.801
MCN2-COMP-T	5	63.000	90.000	12.6000	-1.249
MCN3-COMP	5	86.000	90.000	17.2000	-0.165
MCN4-COMP	5	94.500	90.000	18.9000	0.189
MCN5-COMP	5	99.000	90.000	19.8000	0.401

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
3.7201	6	0.7145

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478048	0.1198045	0.1179548
BIN-COMP-T	5	0.1602650	0.1169603	0.1128168
LA3-REF	5	0.1093157	0.0867362	0.0747872
MCN2-COMP-T	5	0.0944034	0.0721075	0.0650324
MCN3-COMP	5	0.1046560	0.0785879	0.0755914
MCN4-COMP	5	0.1381221	0.1186677	0.1052968
MCN5-COMP	5	0.1364627	0.1095008	0.1053990

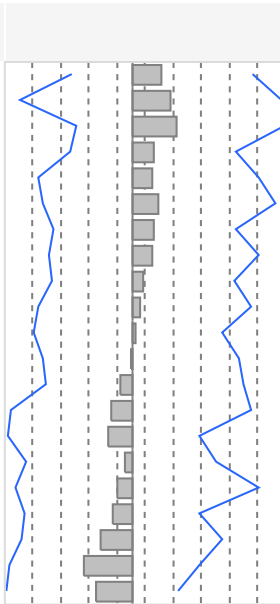
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.4930	6	28	0.8080
Brown-Forsythe	0.3211	6	28	0.9204
Levene	0.5723	6	28	0.7489
Bartlett	0.2752	6	.	0.9488

Warning: Small sample sizes. Use Caution.

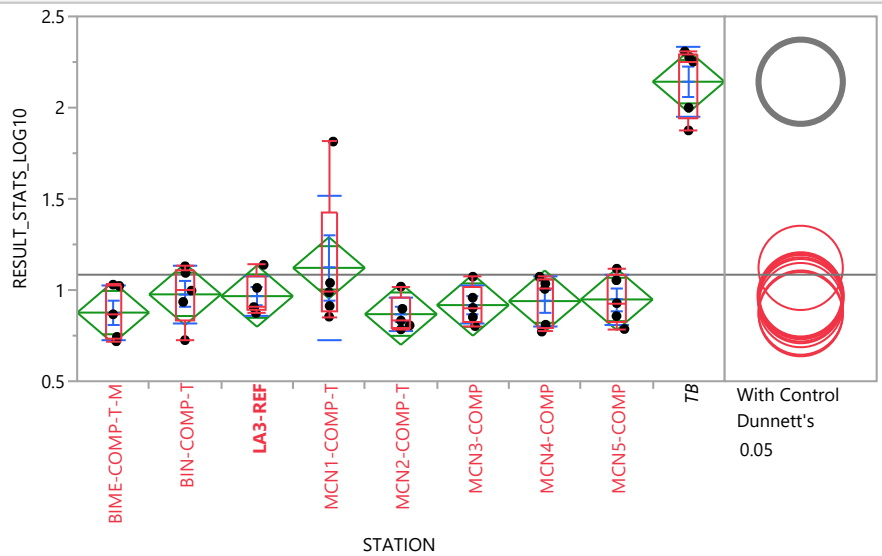
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB015**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha									
1.95996		0.05									
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL			
MCN5-COMP	MCN2-COMP-T	2.00000	1.914854	1.04447	0.2963	0.073381	-0.161057	0.3110420			
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297484	0.3869440			
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.114984	-0.149525	0.3942940			
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054354	-0.167491	0.2668120			
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.050044	-0.250982	0.3293540			
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067240	-0.236430	0.3735840			
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054354	-0.208884	0.2668120			
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.050044	-0.221019	0.3293540			
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.025863	-0.215411	0.2660750			
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.018660	-0.248694	0.3074680			
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007825	-0.263238	0.2332830			
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.004310	-0.238748	0.2750000			
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.032887	-0.228283	0.2862620			
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.057590	-0.322186	0.3097480			
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063669	-0.328178	0.1706930			
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.020710	-0.280351	0.2149230			
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040280	-0.307634	0.3284080			
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053685	-0.286785	0.1706930			
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.084039	-0.292223	0.2325770			
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.129006	-0.324402	0.1714400			
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096119	-0.331752	0.1163390			



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB018**





**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB018**

Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.71903	0.71903	0.73121	0.867092	1.026095	1.02949	1.02949
BIN-COMP-T	0.725215	0.725215	0.830076	0.996994	1.112115	1.13033	1.13033
LA3-REF	0.873535	0.873535	0.887973	0.906776	1.074945	1.13805	1.13805
MCN1-COMP-T	0.853872	0.853872	0.883361	0.988101	1.42642	1.81392	1.81392
MCN2-COMP-T	0.784312	0.784312	0.795302	0.832373	0.957883	1.01875	1.01875
MCN3-COMP	0.80204	0.80204	0.826649	0.902411	1.015632	1.07311	1.07311
MCN4-COMP	0.772077	0.772077	0.790972	1.00616	1.054215	1.07311	1.07311
MCN5-COMP	0.786269	0.786269	0.821801	0.927914	1.0853	1.11697	1.11697
TB	1.87506	1.87506	1.93753	2.25234	2.2915	2.30798	2.30798

**Oneway Anova**

**Summary of Fit**

Rsquare	0.840542
Adj Rsquare	0.805107
Root Mean Square Error	0.185311
Mean of Response	1.083958
Observations (or Sum Wgts)	45

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	8	6.5165483	0.814569	23.7206	<.0001*
Error	36	1.2362457	0.034340		
C. Total	44	7.7527940			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.87634	0.08287	0.7083	1.0444
BIN-COMP-T	5	0.97628	0.08287	0.8082	1.1444
LA3-REF	5	0.96652	0.08287	0.7984	1.1346
MCN1-COMP-T	5	1.12153	0.08287	0.9535	1.2896
MCN2-COMP-T	5	0.86775	0.08287	0.6997	1.0358
MCN3-COMP	5	0.91739	0.08287	0.7493	1.0855
MCN4-COMP	5	0.93931	0.08287	0.7712	1.1074
MCN5-COMP	5	0.94842	0.08287	0.7803	1.1165
TB	5	2.14208	0.08287	1.9740	2.3102

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.87634	0.147804	0.06610	0.6928	1.0599
BIN-COMP-T	5	0.97628	0.160264	0.07167	0.7773	1.1753
LA3-REF	5	0.96652	0.109318	0.04889	0.8308	1.1023
MCN1-COMP-T	5	1.12153	0.393453	0.17596	0.6330	1.6101
MCN2-COMP-T	5	0.86775	0.094404	0.04222	0.7505	0.9850
MCN3-COMP	5	0.91739	0.104659	0.04680	0.7874	1.0473

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB018**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
MCN4-COMP	5	0.93931	0.138123	0.06177	0.7678	1.1108
MCN5-COMP	5	0.94842	0.136463	0.06103	0.7790	1.1179
TB	5	2.14208	0.192899	0.08627	1.9026	2.3816

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.78823	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.849	<.0001*
MCN1-COMP-T	-0.17	0.6773
BIN-COMP-T	-0.32	1.0000
LA3-REF	-0.33	1.0000
MCN5-COMP	-0.31	1.0000
MCN4-COMP	-0.3	1.0000
MCN3-COMP	-0.28	0.9993
BIME-COMP-T-M	-0.24	0.9669
MCN2-COMP-T	-0.23	0.9467

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	77.000	115.000	15.4000	-1.354
BIN-COMP-T	5	123.000	115.000	24.6000	0.271
LA3-REF	5	117.500	115.000	23.5000	0.072
MCN1-COMP-T	5	128.000	115.000	25.6000	0.451
MCN2-COMP-T	5	67.000	115.000	13.4000	-1.716
MCN3-COMP	5	93.000	115.000	18.6000	-0.777
MCN4-COMP	5	104.500	115.000	20.9000	-0.361
MCN5-COMP	5	110.000	115.000	22.0000	-0.163
TB	5	215.000	115.000	43.0000	3.594

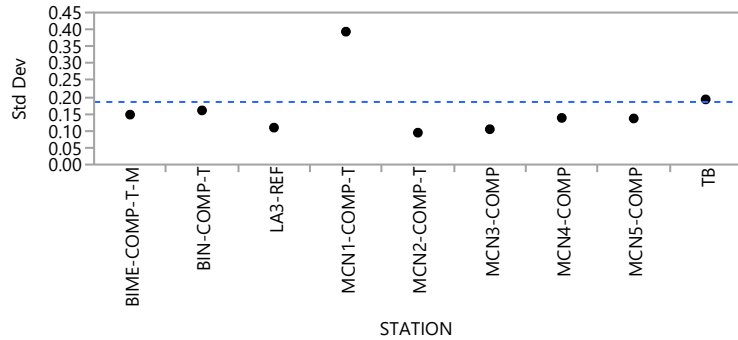
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
16.9373	8	0.0308*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB018**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478040	0.1198038	0.1179542
BIN-COMP-T	5	0.1602637	0.1169594	0.1128156
LA3-REF	5	0.1093183	0.0867381	0.0747888
MCN1-COMP-T	5	0.3934526	0.2769550	0.2172236
MCN2-COMP-T	5	0.0944036	0.0721077	0.0650326
MCN3-COMP	5	0.1046587	0.0785897	0.0755930
MCN4-COMP	5	0.1381231	0.1186681	0.1052974
MCN5-COMP	5	0.1364631	0.1095016	0.1053998
TB	5	0.1928986	0.1636400	0.1415880

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.0659	8	36	0.4079
Brown-Forsythe	0.4897	8	36	0.8554
Levene	1.9927	8	36	0.0757
Bartlett	1.7863	8	.	0.0745

Warning: Small sample sizes. Use Caution.

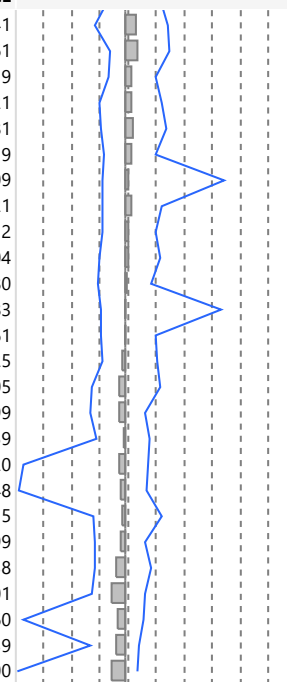
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

		q*	Alpha						
		1.95996	0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	1.25661	0.85236	1.564591	
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	1.17765	0.78116	1.549805	
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.16993	0.86195	1.405569	
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	1.14613	0.18608	1.421148	
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	1.28923	0.97804	1.501689	
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	1.23487	0.91691	1.472980	
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	1.22792	0.83974	1.502943	
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	1.19871	0.82143	1.488751	
MCN1-COMP-T	BIME-COMP-T-M	2.00000	1.914854	1.04447	0.2963	0.13484	-0.16883	1.070531	
MCN5-COMP	MCN2-COMP-T	2.00000	1.914854	1.04447	0.2963	0.07302	-0.16142	0.310679	

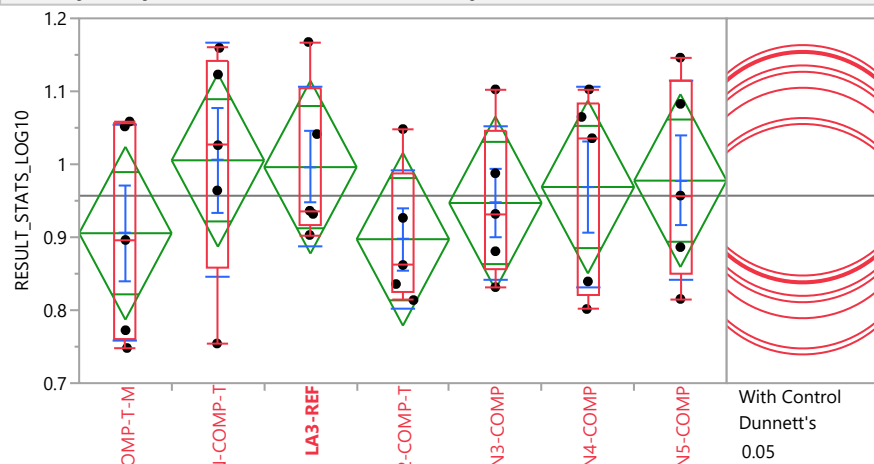
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB018**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.10084	-0.29748	0.386941
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.11535	-0.14917	0.394661
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.05436	-0.16749	0.266819
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.05041	-0.25062	0.329721
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.06724	-0.23643	0.373581
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.05436	-0.20888	0.266819
MCN1-COMP-T	LA3-REF	0.80000	1.914854	0.41779	0.6761	0.02708	-0.22520	0.911509
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.05041	-0.22066	0.329721
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.02550	-0.21578	0.265712
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.01831	-0.24905	0.307104
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.00783	-0.26324	0.233280
MCN1-COMP-T	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.00889	-0.24003	0.878983
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.00395	-0.23839	0.275361
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.03253	-0.22792	0.286625
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.05722	-0.32182	0.310105
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.06367	-0.32818	0.170699
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.02108	-0.28072	0.214559
MCN5-COMP	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.06019	-0.95659	0.204120
MCN4-COMP	MCN1-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.04401	-1.00405	0.181448
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.04027	-0.30763	0.328415
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.05369	-0.28679	0.170699
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.08368	-0.29186	0.232938
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.12865	-0.32404	0.171801
MCN3-COMP	MCN1-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.08077	-0.96266	0.160260
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.09612	-0.33176	0.116339
MCN2-COMP-T	MCN1-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-0.12854	-1.00763	0.105900



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB027**



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB027**

BIME-C  
BIN  
MCN2  
MCI  
MCI  
MCI

STATION

**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.748188	0.748188	0.760368	0.896251	1.055255	1.05865	1.05865
BIN-COMP-T	0.754373	0.754373	0.859235	1.02615	1.141275	1.15949	1.15949
LA3-REF	0.90309	0.90309	0.917528	0.936331	1.104495	1.1676	1.1676
MCN2-COMP-T	0.813867	0.813867	0.824857	0.861928	0.987436	1.0483	1.0483
MCN3-COMP	0.831596	0.831596	0.856205	0.931966	1.045184	1.10266	1.10266
MCN4-COMP	0.801632	0.801632	0.820527	1.03572	1.083765	1.10266	1.10266
MCN5-COMP	0.815427	0.815427	0.850959	0.957072	1.11446	1.14613	1.14613

**Oneway Anova**

**Summary of Fit**

Rsquare	0.103017
Adj Rsquare	-0.08919
Root Mean Square Error	0.129309
Mean of Response	0.956815
Observations (or Sum Wgts)	35

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	6	0.05376967	0.008962	0.5360	0.7763
Error	28	0.46818220	0.016721		
C. Total	34	0.52195187			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.90550	0.05783	0.78704	1.0240
BIN-COMP-T	5	1.00543	0.05783	0.88698	1.1239
LA3-REF	5	0.99608	0.05783	0.87762	1.1145
MCN2-COMP-T	5	0.89730	0.05783	0.77885	1.0158
MCN3-COMP	5	0.94695	0.05783	0.82849	1.0654
MCN4-COMP	5	0.96886	0.05783	0.85040	1.0873
MCN5-COMP	5	0.97758	0.05783	0.85913	1.0960

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.90550	0.147805	0.06610	0.72198	1.0890
BIN-COMP-T	5	1.00543	0.160264	0.07167	0.80644	1.2044
LA3-REF	5	0.99608	0.109316	0.04889	0.86034	1.1318
MCN2-COMP-T	5	0.89730	0.094402	0.04222	0.78009	1.0145
MCN3-COMP	5	0.94695	0.104656	0.04680	0.81700	1.0769
MCN4-COMP	5	0.96886	0.138122	0.06177	0.79736	1.1404

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB027**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
MCN5-COMP	5	0.97758	0.136464	0.06103	0.80814	1.1470

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.73128	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.21	1.0000
LA3-REF	-0.22	1.0000
MCN5-COMP	-0.2	0.9999
MCN4-COMP	-0.2	0.9990
MCN3-COMP	-0.17	0.9774
BIME-COMP-T-M	-0.13	0.7514
MCN2-COMP-T	-0.12	0.6830

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	70.000	90.000	14.0000	-0.919
BIN-COMP-T	5	110.000	90.000	22.0000	0.919
LA3-REF	5	107.500	90.000	21.5000	0.801
MCN2-COMP-T	5	63.000	90.000	12.6000	-1.249
MCN3-COMP	5	86.000	90.000	17.2000	-0.165
MCN4-COMP	5	94.500	90.000	18.9000	0.189
MCN5-COMP	5	99.000	90.000	19.8000	0.401

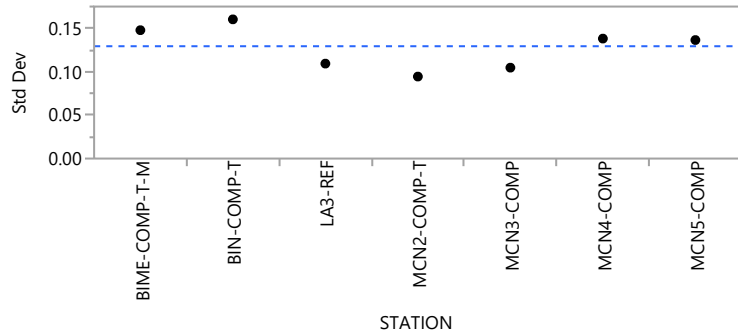
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
3.7201	6	0.7145

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB027**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478050	0.1198046	0.1179550
BIN-COMP-T	5	0.1602644	0.1169594	0.1128162
LA3-REF	5	0.1093158	0.0867357	0.0747868
MCN2-COMP-T	5	0.0944016	0.0721065	0.0650316
MCN3-COMP	5	0.1046564	0.0785882	0.0755916
MCN4-COMP	5	0.1381216	0.1186673	0.1052954
MCN5-COMP	5	0.1364639	0.1095024	0.1054004

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.4930	6	28	0.8080
Brown-Forsythe	0.3211	6	28	0.9204
Levene	0.5723	6	28	0.7489
Bartlett	0.2752	6	.	0.9488

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

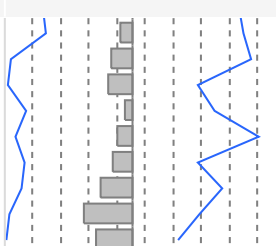
q\* 1.95996  
Alpha 0.05

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN5-COMP	MCN2-COMP-T	2.00000	1.914854	1.04447	0.2963	0.072624	-0.161809	0.3102840
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297487	0.3869430
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.115740	-0.148770	0.3950530
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054360	-0.167486	0.2668140
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.050800	-0.250228	0.3301130
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067239	-0.236433	0.3735830
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054360	-0.208879	0.2668140
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.050800	-0.220264	0.3301130
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.025106	-0.216169	0.2653160
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.017920	-0.249443	0.3067090
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007825	-0.263239	0.2332740
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.003560	-0.237993	0.2757530

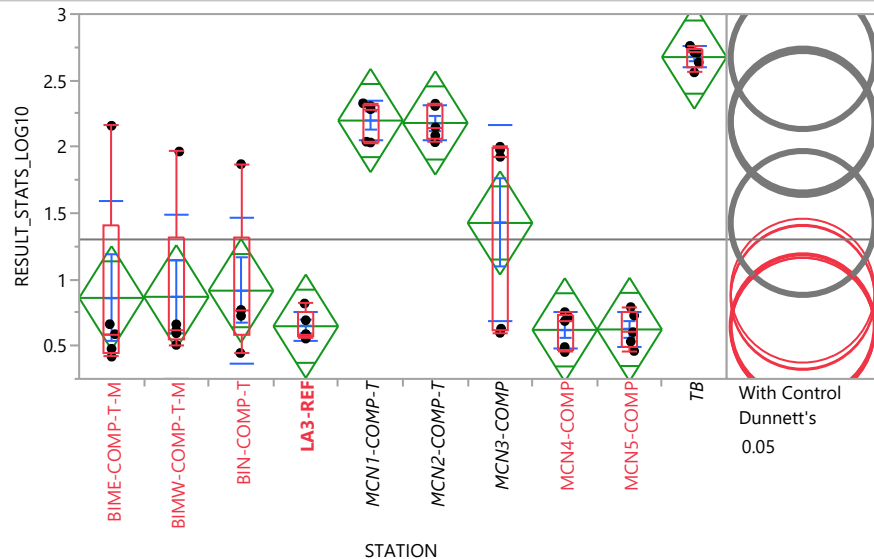
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB027**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.032130	-0.227524	0.2870170
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.056830	-0.321428	0.3104970
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063669	-0.328179	0.1706940
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.021470	-0.281109	0.2141640
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040270	-0.307633	0.3284170
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053682	-0.286786	0.1706940
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.083282	-0.291464	0.2333350
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.128250	-0.323644	0.1721980
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096120	-0.331754	0.1163340



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB028**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.417536	0.417536	0.447329	0.586996	1.410159	2.15807	2.15807
BIMW-COMP-T-M	0.506173	0.506173	0.550204	0.617665	1.312486	1.96379	1.96379
BIN-COMP-T	0.445119	0.445119	0.585209	0.768051	1.318386	1.86872	1.86872
LA3-REF	0.553755	0.553755	0.568193	0.586996	0.755163	0.818268	0.818268
MCN1-COMP-T	2.03171	2.03171	2.03475	2.28293	2.31711	2.32736	2.32736
MCN2-COMP-T	2.03421	2.03421	2.058995	2.14613	2.31594	2.32451	2.32451
MCN3-COMP	0.59698	0.59698	0.612685	1.92391	1.98886	2	2
MCN4-COMP	0.452298	0.452298	0.471192	0.686381	0.734434	0.753328	0.753328
MCN5-COMP	0.460416	0.460416	0.495948	0.60206	0.759445	0.791116	0.791116
TB	2.56067	2.56067	2.598295	2.70895	2.7365	2.76024	2.76024



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB028**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.782597
Adj Rsquare	0.733681
Root Mean Square Error	0.431531
Mean of Response	1.301053
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	26.813619	2.97929	15.9989	<.0001*
Error	40	7.448759	0.18622		
C. Total	49	34.262377			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.86039	0.19299	0.4704	1.2504
BIMW-COMP-T-M	5	0.86861	0.19299	0.4786	1.2586
BIN-COMP-T	5	0.91505	0.19299	0.5250	1.3051
LA3-REF	5	0.64674	0.19299	0.2567	1.0368
MCN1-COMP-T	5	2.19733	0.19299	1.8073	2.5874
MCN2-COMP-T	5	2.17920	0.19299	1.7892	2.5692
MCN3-COMP	5	1.42540	0.19299	1.0354	1.8154
MCN4-COMP	5	0.61953	0.19299	0.2295	1.0096
MCN5-COMP	5	0.62257	0.19299	0.2325	1.0126
TB	5	2.67571	0.19299	2.2857	3.0657

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.86039	0.731607	0.32718	-0.048	1.7688
BIMW-COMP-T-M	5	0.86861	0.614830	0.27496	0.105	1.6320
BIN-COMP-T	5	0.91505	0.549896	0.24592	0.232	1.5978
LA3-REF	5	0.64674	0.109317	0.04889	0.511	0.7825
MCN1-COMP-T	5	2.19733	0.149261	0.06675	2.012	2.3827
MCN2-COMP-T	5	2.17920	0.131114	0.05864	2.016	2.3420
MCN3-COMP	5	1.42540	0.742503	0.33206	0.503	2.3473
MCN4-COMP	5	0.61953	0.138122	0.06177	0.448	0.7910
MCN5-COMP	5	0.62257	0.136462	0.06103	0.453	0.7920
TB	5	2.67571	0.078167	0.03496	2.579	2.7728

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB028**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	1.262	<.0001*
MCN1-COMP-T	0.783	<.0001*
MCN2-COMP-T	0.765	<.0001*
MCN3-COMP	0.011	0.0453*
BIN-COMP-T	-0.5	0.9113
BIMW-COMP-T-M	-0.55	0.9677
BIME-COMP-T-M	-0.55	0.9741
LA3-REF	-0.77	1.0000
MCN5-COMP	-0.74	1.0000
MCN4-COMP	-0.74	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	76.500	127.500	15.3000	-1.633
BIMW-COMP-T-M	5	86.000	127.500	17.2000	-1.326
BIN-COMP-T	5	108.000	127.500	21.6000	-0.614
LA3-REF	5	80.500	127.500	16.1000	-1.504
MCN1-COMP-T	5	200.000	127.500	40.0000	2.328
MCN2-COMP-T	5	200.000	127.500	40.0000	2.328
MCN3-COMP	5	129.000	127.500	25.8000	0.032
MCN4-COMP	5	76.000	127.500	15.2000	-1.649
MCN5-COMP	5	79.000	127.500	15.8000	-1.552
TB	5	240.000	127.500	48.0000	3.622

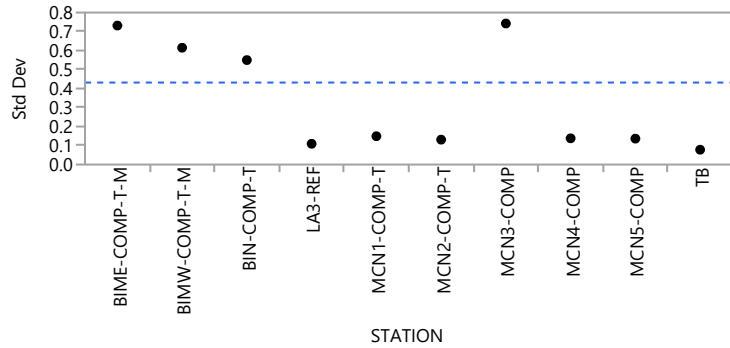
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
33.0272	9	0.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB028**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.7316066	0.5190704	0.3851320
BIMW-COMP-T-M	5	0.6148296	0.4380725	0.3049126
BIN-COMP-T	5	0.5498965	0.3814688	0.2932706
LA3-REF	5	0.1093173	0.0867371	0.0747880
MCN1-COMP-T	5	0.1492607	0.1300640	0.1129440
MCN2-COMP-T	5	0.1311137	0.1093920	0.1027780
MCN3-COMP	5	0.7425027	0.6501722	0.5504702
MCN4-COMP	5	0.1381222	0.1186675	0.1052966
MCN5-COMP	5	0.1364623	0.1095008	0.1053990
TB	5	0.0781671	0.0619304	0.0552820

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.3367	9	40	0.2494
Brown-Forsythe	0.8938	9	40	0.5395
Levene	4.7085	9	40	0.0003*
Bartlett	4.8513	9	.	<.0001*

Warning: Small sample sizes. Use Caution.

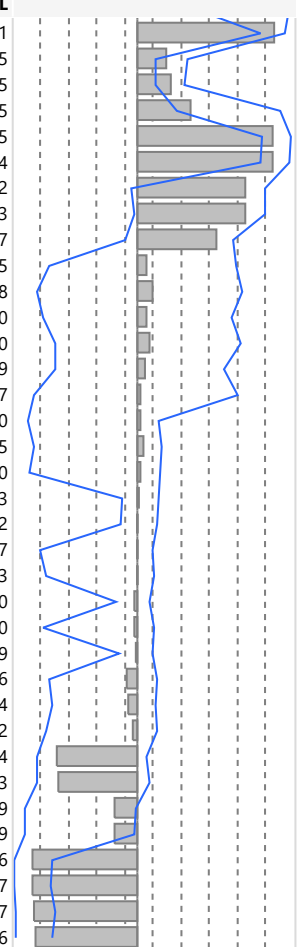
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha							
1.95996		0.05							
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
MCN1-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	1.53162	0.07400	1.80069	
MCN1-COMP-T	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	1.51488	0.16907	1.86174	
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.50909	1.21952	1.75311	
MCN2-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	1.52804	0.11999	1.80120	
MCN2-COMP-T	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	1.37808	0.21506	1.86225	
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.50624	1.26551	1.75362	
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	2.09799	0.47785	2.29522	
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	2.05158	0.67213	2.20659	
TB	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	1.94090	0.76720	2.26764	

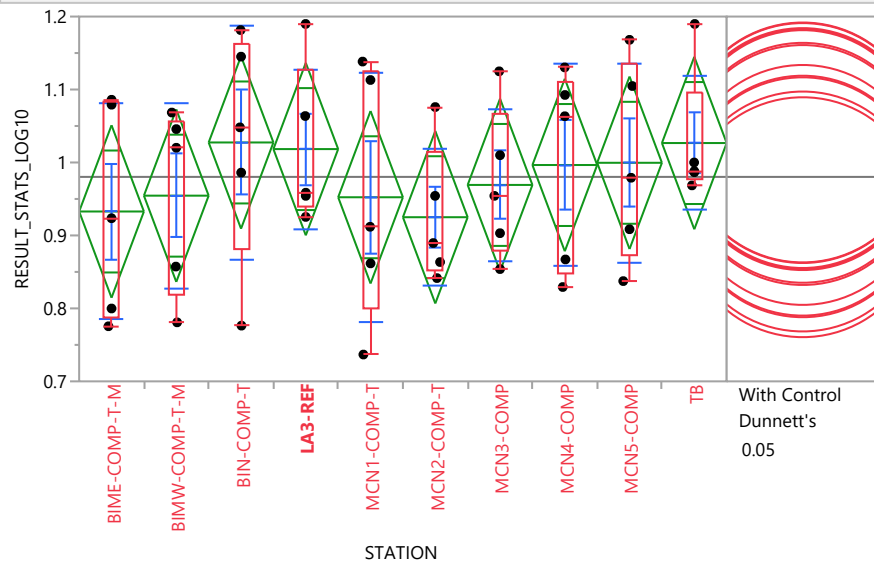
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB028**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	2.04892	1.81765	2.17761
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.43288	0.25381	0.72245
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.48979	0.25330	0.67855
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.78504	0.58295	2.13185
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	2.02638	1.84513	2.27015
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	2.03386	1.83290	2.25234
MCN1-COMP-T	BIME-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	1.62025	-0.12028	1.88932
MCN2-COMP-T	BIME-COMP-T-M	3.60000	1.914854	1.88004	0.0601	1.60666	-0.07429	1.88983
MCN3-COMP	LA3-REF	3.20000	1.914854	1.67115	0.0947	1.18173	-0.18988	1.42397
MCN3-COMP	BIMW-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.12222	-1.33540	1.47155
MCN3-COMP	BIME-COMP-T-M	2.00000	1.914854	1.04447	0.2963	0.21085	-1.52968	1.56018
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.909043	0.83812	0.4020	0.13830	-1.43277	1.39160
MCN3-COMP	BIN-COMP-T	1.60000	1.909043	0.83812	0.4020	0.18327	-1.24033	1.53260
BIN-COMP-T	BIMW-COMP-T-M	1.20000	1.909043	0.62859	0.5296	0.10763	-1.23849	1.27449
BIMW-COMP-T-M	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.03067	-1.56384	1.48667
MCN4-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.03476	-1.66798	0.29800
LA3-REF	BIME-COMP-T-M	0.60000	1.909043	0.31429	0.7533	0.07663	-1.57544	0.34115
MCN5-COMP	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.04288	-1.62659	0.31400
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.01223	-0.25512	0.30103
MCN2-COMP-T	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.00051	-0.27265	0.28672
MCN4-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.01609	-1.47370	0.20937
LA3-REF	BIMW-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.01160	-1.38116	0.22403
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.06367	-0.32818	0.17070
MCN5-COMP	BIMW-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.04576	-1.43231	0.22160
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.02715	-0.28679	0.20849
MCN5-COMP	BIN-COMP-T	-1.20000	1.909043	-0.62859	0.5296	-0.16599	-1.33724	0.28266
LA3-REF	BIN-COMP-T	-1.60000	1.909043	-0.83812	0.4020	-0.14267	-1.28609	0.24694
MCN4-COMP	BIN-COMP-T	-2.40000	1.909043	-1.25717	0.2087	-0.08167	-1.37863	0.27042
MCN4-COMP	MCN3-COMP	-2.40000	1.914854	-1.25336	0.2101	-1.22439	-1.52542	0.12494
MCN5-COMP	MCN3-COMP	-2.80000	1.914854	-1.46225	0.1437	-1.19614	-1.51730	0.16273
MCN3-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.35902	-1.70988	-0.03779
MCN3-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.34679	-1.71039	-0.05649
MCN4-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.57941	-1.85456	-1.28446
MCN4-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.58191	-1.85507	-1.31867
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.57129	-1.84644	-1.24667
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.55230	-1.84695	-1.29266



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB029**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.775511	0.775511	0.787691	0.923574	1.082575	1.08597	1.08597
BIMW-COMP-T-M	0.780874	0.780874	0.819103	1.0202	1.05711	1.06846	1.06846
BIN-COMP-T	0.776368	0.776368	0.881229	1.04815	1.163275	1.18149	1.18149
LA3-REF	0.925366	0.925366	0.939805	0.958607	1.126775	1.18988	1.18988
MCN1-COMP-T	0.736759	0.736759	0.799228	0.911864	1.12567	1.1383	1.1383
MCN2-COMP-T	0.841538	0.841538	0.852528	0.8896	1.015112	1.07598	1.07598
MCN3-COMP	0.853872	0.853872	0.878481	0.954243	1.06746	1.12494	1.12494
MCN4-COMP	0.829304	0.829304	0.848198	1.06339	1.11144	1.13033	1.13033
MCN5-COMP	0.837422	0.837422	0.872954	0.979066	1.13645	1.16812	1.16812
TB	0.968592	0.968592	0.977614	0.988101	1.09494	1.18988	1.18988

**Oneway Anova**

**Summary of Fit**

Rsquare	0.088833
Adj Rsquare	-0.11618
Root Mean Square Error	0.130763
Mean of Response	0.980241
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	0.06668108	0.007409	0.4333	0.9089
Error	40	0.68395370	0.017099		
C. Total	49	0.75063478			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB029**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.93282	0.05848	0.81463	1.0510
BIMW-COMP-T-M	5	0.95453	0.05848	0.83634	1.0727
BIN-COMP-T	5	1.02743	0.05848	0.90924	1.1456
LA3-REF	5	1.01835	0.05848	0.90016	1.1365
MCN1-COMP-T	5	0.95233	0.05848	0.83414	1.0705
MCN2-COMP-T	5	0.92498	0.05848	0.80679	1.0432
MCN3-COMP	5	0.96923	0.05848	0.85103	1.0874
MCN4-COMP	5	0.99653	0.05848	0.87834	1.1147
MCN5-COMP	5	0.99957	0.05848	0.88138	1.1178
TB	5	1.02664	0.05848	0.90845	1.1448

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.93282	0.147803	0.06610	0.74930	1.1163
BIMW-COMP-T-M	5	0.95453	0.127690	0.05710	0.79598	1.1131
BIN-COMP-T	5	1.02743	0.160267	0.07167	0.82843	1.2264
LA3-REF	5	1.01835	0.109318	0.04889	0.88262	1.1541
MCN1-COMP-T	5	0.95233	0.170833	0.07640	0.74022	1.1644
MCN2-COMP-T	5	0.92498	0.094405	0.04222	0.80776	1.0422
MCN3-COMP	5	0.96923	0.104657	0.04680	0.83928	1.0992
MCN4-COMP	5	0.99653	0.138122	0.06177	0.82503	1.1680
MCN5-COMP	5	0.99957	0.136462	0.06103	0.83014	1.1690
TB	5	1.02664	0.091940	0.04112	0.91248	1.1408

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB029**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.22	1.0000
TB	-0.22	1.0000
LA3-REF	-0.23	1.0000
MCN5-COMP	-0.21	1.0000
MCN4-COMP	-0.21	1.0000
MCN3-COMP	-0.18	0.9957
BIMW-COMP-T-M	-0.17	0.9762
MCN1-COMP-T	-0.17	0.9709
BIME-COMP-T-M	-0.15	0.8875
MCN2-COMP-T	-0.14	0.8357

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	102.000	127.500	20.4000	-0.809
BIMW-COMP-T-M	5	113.000	127.500	22.6000	-0.453
BIN-COMP-T	5	156.000	127.500	31.2000	0.906
LA3-REF	5	147.500	127.500	29.5000	0.631
MCN1-COMP-T	5	116.000	127.500	23.2000	-0.356
MCN2-COMP-T	5	92.000	127.500	18.4000	-1.132
MCN3-COMP	5	118.000	127.500	23.6000	-0.291
MCN4-COMP	5	137.000	127.500	27.4000	0.291
MCN5-COMP	5	136.000	127.500	27.2000	0.259
TB	5	157.500	127.500	31.5000	0.954

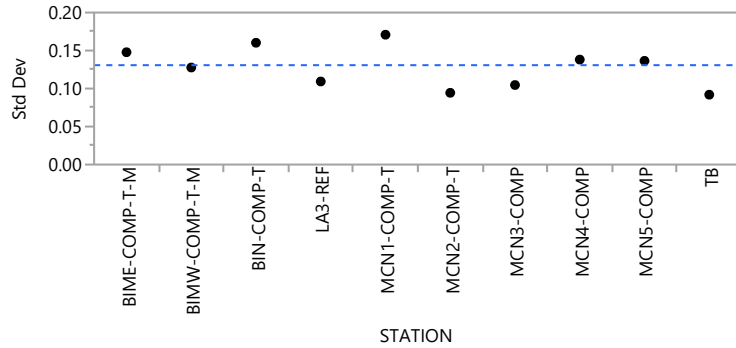
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
4.3474	9	0.8871

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB029**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478035	0.1198032	0.1179538
BIMW-COMP-T-M	5	0.1276904	0.1083378	0.0952028
BIN-COMP-T	5	0.1602668	0.1169621	0.1128184
LA3-REF	5	0.1093177	0.0867374	0.0747882
MCN1-COMP-T	5	0.1708327	0.1386704	0.1305768
MCN2-COMP-T	5	0.0944050	0.0721086	0.0650334
MCN3-COMP	5	0.1046575	0.0785880	0.0755916
MCN4-COMP	5	0.1381225	0.1186682	0.1052968
MCN5-COMP	5	0.1364616	0.1095003	0.1053986
TB	5	0.0919404	0.0652953	0.0469304

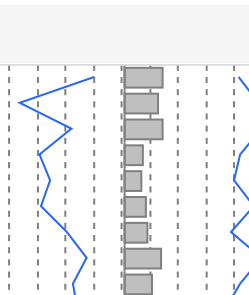
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.6384	9	40	0.7575
Brown-Forsythe	0.4500	9	40	0.8988
Levene	0.8216	9	40	0.5999
Bartlett	0.3362	9	.	0.9632

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN2-COMP-T	3.20000	1.914854	1.67115	0.0947	0.110400	-0.089344	0.3263620
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.095520	-0.302812	0.3816200
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.110700	-0.153814	0.3900100
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.051150	-0.249876	0.3304600
MCN4-COMP	BIMW-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.046790	-0.216456	0.3116760
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.061911	-0.241758	0.3682500
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066947	-0.167495	0.3046020
TB	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.103910	-0.110588	0.3900100
TB	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	0.076840	-0.151664	0.3281830

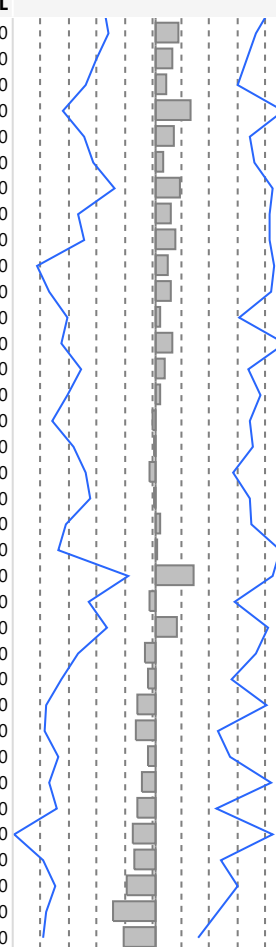




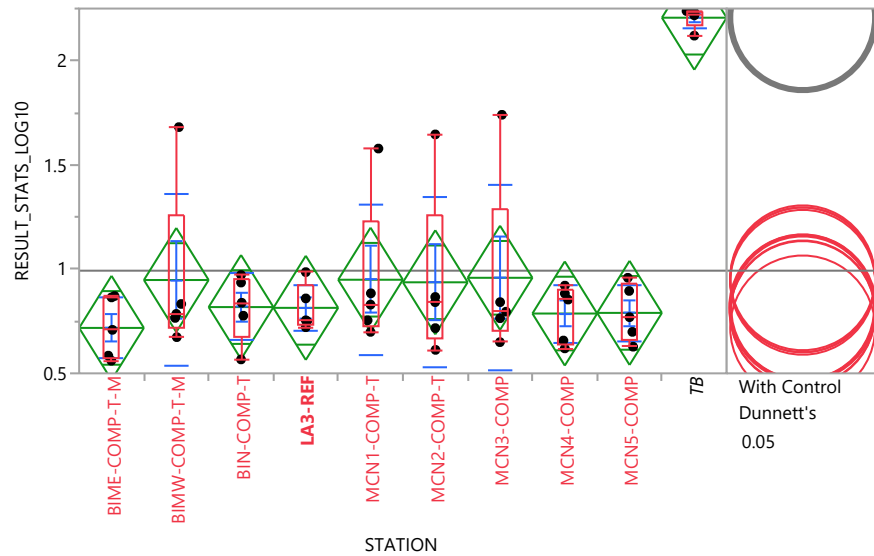
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB029**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN3-COMP	1.60000	1.914854	0.83557	0.4034	0.064940	-0.138304	0.2867900
MCN3-COMP	MCN2-COMP-T	1.40000	1.909043	0.73335	0.4633	0.048960	-0.172890	0.2614220
TB	LA3-REF	1.40000	1.909043	0.73335	0.4633	0.029494	-0.203244	0.2356370
BIN-COMP-T	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.099300	-0.269392	0.3641860
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054350	-0.208888	0.2668120
TB	MCN5-COMP	1.20000	1.914854	0.62668	0.5309	0.021760	-0.181484	0.2813950
LA3-REF	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.068034	-0.120394	0.3325480
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.045760	-0.225308	0.3250700
MCN5-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.056548	-0.208338	0.3239060
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.033860	-0.342421	0.3384300
MCN1-COMP-T	BIMW-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.044580	-0.309001	0.3321660
MCN4-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.013220	-0.257848	0.2386780
MCN5-COMP	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.046788	-0.275618	0.3680210
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.024823	-0.216455	0.2650300
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012230	-0.255128	0.3010280
BIMW-COMP-T-M	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.010720	-0.298306	0.2702490
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.003200	-0.237642	0.2761100
MCN2-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.015794	-0.204942	0.2186480
MCN3-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.003460	-0.191888	0.2676080
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.011900	-0.259168	0.2732210
MCN4-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.005395	-0.283736	0.3557910
TB	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.111260	-0.081824	0.3325480
TB	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.017498	-0.194854	0.2236320
TB	MCN4-COMP	0.00000	1.914854	0.00000	1.0000	0.059550	-0.143694	0.3227880
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.031847	-0.227247	0.2873020
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.022264	-0.274782	0.2174840
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051160	-0.315756	0.3161820
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.058274	-0.322788	0.1760870
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.021760	-0.281395	0.2138770
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040280	-0.307638	0.3284120
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053690	-0.286790	0.1706970
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.068450	-0.408301	0.3366720
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.063669	-0.328183	0.1876740
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.083000	-0.291188	0.2336120
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.122572	-0.317972	0.1778750
MCN2-COMP-T	LA3-REF	-2.60000	1.909043	-1.36194	0.1732	-0.090725	-0.326362	0.1217370



Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB031



Quantiles

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.560667	0.560667	0.572847	0.70873	0.867734	0.871131	0.871131
BIMW-COMP-T-M	0.673664	0.673664	0.719791	0.785156	1.257052	1.68124	1.68124
BIN-COMP-T	0.566853	0.566853	0.671714	0.838632	0.953757	0.971971	0.971971
LA3-REF	0.721246	0.721246	0.735685	0.754487	0.922655	0.98576	0.98576
MCN1-COMP-T	0.69897	0.69897	0.726729	0.829738	1.231208	1.5784	1.5784
MCN2-COMP-T	0.61261	0.61261	0.664839	0.841637	1.256361	1.64626	1.64626
MCN3-COMP	0.649752	0.649752	0.707112	0.79588	1.290999	1.74036	1.74036
MCN4-COMP	0.619789	0.619789	0.638683	0.853872	0.901925	0.920819	0.920819
MCN5-COMP	0.627907	0.627907	0.663439	0.769551	0.926936	0.958607	0.958607
TB	2.11998	2.11998	2.168885	2.22185	2.235445	2.23798	2.23798

Oneway Anova

Summary of Fit

Rsquare	0.735874
Adj Rsquare	0.676445
Root Mean Square Error	0.276321
Mean of Response	0.992542
Observations (or Sum Wgts)	50

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	8.509009	0.945445	12.3825	<.0001*
Error	40	3.054130	0.076353		
C. Total	49	11.563139			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB031**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.71798	0.12357	0.4682	0.9677
BIMW-COMP-T-M	5	0.94777	0.12357	0.6980	1.1975
BIN-COMP-T	5	0.81791	0.12357	0.5682	1.0677
LA3-REF	5	0.81423	0.12357	0.5645	1.0640
MCN1-COMP-T	5	0.94912	0.12357	0.6994	1.1989
MCN2-COMP-T	5	0.93681	0.12357	0.6871	1.1866
MCN3-COMP	5	0.95842	0.12357	0.7087	1.2082
MCN4-COMP	5	0.78702	0.12357	0.5373	1.0368
MCN5-COMP	5	0.79006	0.12357	0.5403	1.0398
TB	5	2.20610	0.12357	1.9563	2.4559

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.71798	0.147805	0.06610	0.5345	0.9015
BIMW-COMP-T-M	5	0.94777	0.414074	0.18518	0.4336	1.4619
BIN-COMP-T	5	0.81791	0.160265	0.07167	0.6189	1.0169
LA3-REF	5	0.81423	0.109318	0.04889	0.6785	0.9500
MCN1-COMP-T	5	0.94912	0.358797	0.16046	0.5036	1.3946
MCN2-COMP-T	5	0.93681	0.409487	0.18313	0.4284	1.4453
MCN3-COMP	5	0.95842	0.442826	0.19804	0.4086	1.5083
MCN4-COMP	5	0.78702	0.138122	0.06177	0.6155	0.9585
MCN5-COMP	5	0.79006	0.136462	0.06103	0.6206	0.9595
TB	5	2.20610	0.048827	0.02184	2.1455	2.2667

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB031**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.9	<.0001*
MCN3-COMP	-0.35	0.9648
MCN1-COMP-T	-0.36	0.9762
BIMW-COMP-T-M	-0.36	0.9776
MCN2-COMP-T	-0.37	0.9869
BIN-COMP-T	-0.49	1.0000
LA3-REF	-0.49	1.0000
MCN5-COMP	-0.47	1.0000
MCN4-COMP	-0.46	1.0000
BIME-COMP-T-M	-0.4	0.9975

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	80.000	127.500	16.0000	-1.520
BIMW-COMP-T-M	5	119.000	127.500	23.8000	-0.259
BIN-COMP-T	5	127.000	127.500	25.4000	-0.000
LA3-REF	5	116.500	127.500	23.3000	-0.340
MCN1-COMP-T	5	128.000	127.500	25.6000	0.000
MCN2-COMP-T	5	119.500	127.500	23.9000	-0.243
MCN3-COMP	5	120.500	127.500	24.1000	-0.210
MCN4-COMP	5	113.000	127.500	22.6000	-0.453
MCN5-COMP	5	111.500	127.500	22.3000	-0.501
TB	5	240.000	127.500	48.0000	3.622

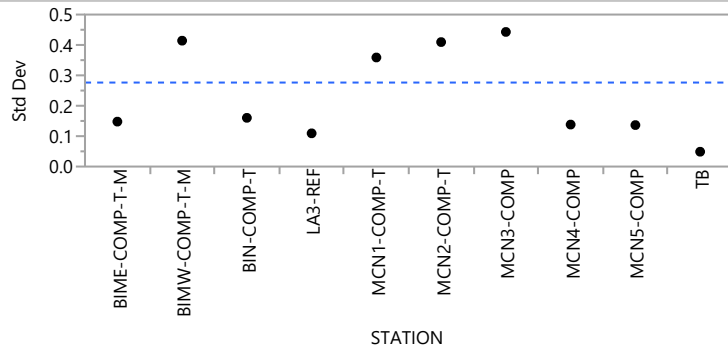
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
14.7650	9	0.0976

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB031**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478048	0.1198045	0.1179548
BIMW-COMP-T-M	5	0.4140741	0.2933887	0.2149046
BIN-COMP-T	5	0.1602652	0.1169605	0.1128170
LA3-REF	5	0.1093176	0.0867372	0.0747880
MCN1-COMP-T	5	0.3587969	0.2517111	0.2017918
MCN2-COMP-T	5	0.4094870	0.2837811	0.2366086
MCN3-COMP	5	0.4428260	0.3127759	0.2335546
MCN4-COMP	5	0.1381222	0.1186675	0.1052966
MCN5-COMP	5	0.1364623	0.1095008	0.1053990
TB	5	0.0488275	0.0344488	0.0266240

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.7775	9	40	0.6378
Brown-Forsythe	0.4825	9	40	0.8777
Levene	1.8586	9	40	0.0873
Bartlett	3.0121	9	.	0.0013*

Warning: Small sample sizes. Use Caution.

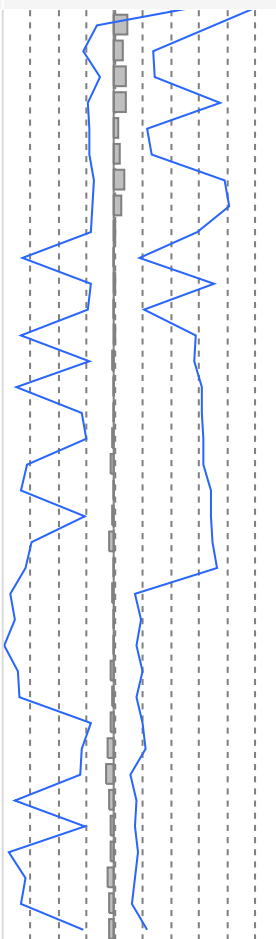
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	1.51312	1.25564	1.672243
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	1.43263	0.53655	1.559246
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	1.37916	1.18444	1.666057
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.39873	1.23203	1.511664
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	1.38805	0.63939	1.533940
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	1.38021	0.57153	1.620300
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	1.42191	0.47743	1.583158
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	1.36798	1.23695	1.613121
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	1.44824	1.22472	1.605003

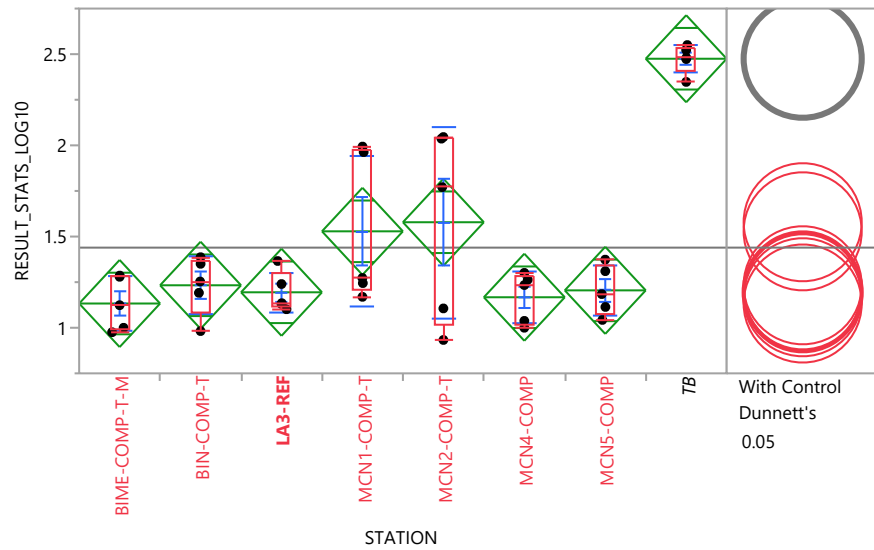
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB031**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIME-COMP-T-M	2.00000	1.914854	1.04447	0.2963	0.13830	-0.16537	0.993373
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.10084	-0.29748	0.386944
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.12142	-0.14309	0.400733
MCN2-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.13204	-0.25173	1.061233
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.05648	-0.24455	0.335792
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.06724	-0.23643	0.373580
BIMW-COMP-T-M	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.11300	-0.19067	1.096213
MCN3-COMP	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.08908	-0.21459	1.155333
MCN1-COMP-T	LA3-REF	0.60000	1.909043	0.31429	0.7533	0.02447	-0.23127	0.828277
BIN-COMP-T	BIMW-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.01066	-0.90467	0.261878
MCN3-COMP	LA3-REF	0.40000	1.914854	0.20889	0.8345	0.01435	-0.22129	0.990237
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.01223	-0.25512	0.301030
MCN1-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.02531	-0.92675	0.812483
MCN1-COMP-T	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.00889	-0.23657	0.801825
MCN2-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.00877	-0.96417	0.880343
MCN2-COMP-T	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	0.00300	-0.32293	0.869685
MCN2-COMP-T	LA3-REF	0.00000	1.914854	0.00000	1.0000	-0.00418	-0.26869	0.896137
MCN2-COMP-T	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.01755	-0.86133	0.891773
MCN3-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.00877	-0.91677	0.974443
MCN3-COMP	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.01210	-0.28579	0.963785
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.03386	-0.81393	0.985873
MCN3-COMP	MCN2-COMP-T	0.00000	1.909043	0.00000	1.0000	0.00000	-0.88179	1.023292
MCN4-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.01609	-1.02366	0.209366
MCN4-COMP	MCN2-COMP-T	0.00000	1.914854	0.00000	1.0000	0.00718	-0.98868	0.270420
MCN4-COMP	MCN3-COMP	0.00000	1.914854	0.00000	1.0000	0.00782	-1.08278	0.233278
MCN5-COMP	MCN2-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.01810	-0.94729	0.282655
LA3-REF	BIMW-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.01579	-0.93112	0.219843
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.02645	-0.22185	0.292696
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.05115	-0.31575	0.316177
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.06367	-0.32818	0.170696
MCN5-COMP	BIMW-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.04576	-0.98227	0.221601
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.02715	-0.28679	0.208484
MCN5-COMP	MCN3-COMP	-0.40000	1.914854	-0.20889	0.8345	-0.02633	-1.04139	0.245513
MCN5-COMP	MCN1-COMP-T	-0.60000	1.909043	-0.31429	0.7533	-0.06019	-0.87943	0.204120
MCN4-COMP	MCN1-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.04139	-0.92082	0.184060
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.04028	-0.30764	0.328412



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB033**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.975641	0.975641	0.987821	1.1237	1.282705	1.2861	1.2861
BIN-COMP-T	0.981826	0.981826	1.086688	1.25361	1.36873	1.38694	1.38694
LA3-REF	1.10146	1.10146	1.115895	1.1347	1.302865	1.36597	1.36597
MCN1-COMP-T	1.16946	1.16946	1.207085	1.273	1.978195	1.99337	1.99337
MCN2-COMP-T	0.933053	0.933053	1.019552	1.77097	2.04124	2.04576	2.04576
MCN4-COMP	1	1	1.018895	1.23408	1.282135	1.30103	1.30103
MCN5-COMP	1.04288	1.04288	1.07841	1.18452	1.34191	1.37358	1.37358
TB	2.34777	2.34777	2.41048	2.48047	2.536455	2.55003	2.55003

**Oneway Anova**

**Summary of Fit**

Rsquare	0.764279
Adj Rsquare	0.712714
Root Mean Square Error	0.262063
Mean of Response	1.439329
Observations (or Sum Wgts)	40

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	7	7.1254496	1.01792	14.8219	<.0001*
Error	32	2.1976565	0.06868		
C. Total	39	9.3231061			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB033**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.13295	0.11720	0.8942	1.3717
BIN-COMP-T	5	1.23289	0.11720	0.9942	1.4716
LA3-REF	5	1.19444	0.11720	0.9557	1.4332
MCN1-COMP-T	5	1.52871	0.11720	1.2900	1.7674
MCN2-COMP-T	5	1.57851	0.11720	1.3398	1.8172
MCN4-COMP	5	1.16723	0.11720	0.9285	1.4060
MCN5-COMP	5	1.20503	0.11720	0.9663	1.4438
TB	5	2.47487	0.11720	2.2361	2.7136

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.13295	0.147804	0.06610	0.9494	1.3165
BIN-COMP-T	5	1.23289	0.160265	0.07167	1.0339	1.4319
LA3-REF	5	1.19444	0.109317	0.04889	1.0587	1.3302
MCN1-COMP-T	5	1.52871	0.412201	0.18434	1.0169	2.0405
MCN2-COMP-T	5	1.57851	0.525631	0.23507	0.9259	2.2312
MCN4-COMP	5	1.16723	0.138121	0.06177	0.9957	1.3387
MCN5-COMP	5	1.20503	0.136463	0.06103	1.0356	1.3745
TB	5	2.47487	0.077689	0.03474	2.3784	2.5713

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.76173	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.823	<.0001*
MCN2-COMP-T	-0.07	0.1300
MCN1-COMP-T	-0.12	0.2304
BIN-COMP-T	-0.42	1.0000
MCN5-COMP	-0.45	1.0000
LA3-REF	-0.46	1.0000
MCN4-COMP	-0.43	1.0000
BIME-COMP-T-M	-0.4	0.9993

Positive values show pairs of means that are significantly different.



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB033**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

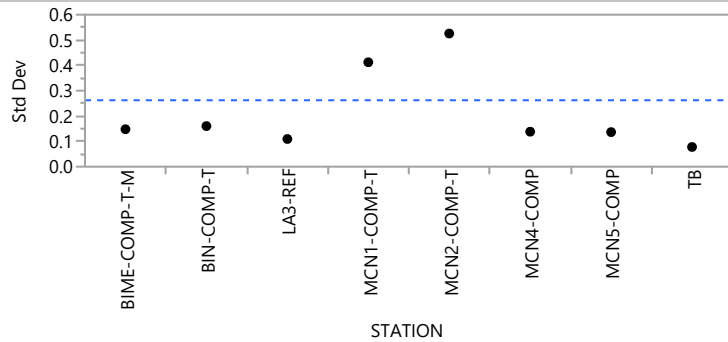
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	64.500	102.500	12.9000	-1.534
BIN-COMP-T	5	96.000	102.500	19.2000	-0.245
LA3-REF	5	79.000	102.500	15.8000	-0.941
MCN1-COMP-T	5	120.000	102.500	24.0000	0.695
MCN2-COMP-T	5	110.000	102.500	22.0000	0.286
MCN4-COMP	5	73.500	102.500	14.7000	-1.166
MCN5-COMP	5	87.000	102.500	17.4000	-0.613
TB	5	190.000	102.500	38.0000	3.558

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
16.3018	7	0.0225*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478036	0.1198038	0.1179538
BIN-COMP-T	5	0.1602651	0.1169610	0.1128168
LA3-REF	5	0.1093168	0.0867368	0.0747880
MCN1-COMP-T	5	0.4122009	0.3595864	0.3084440
MCN2-COMP-T	5	0.5256313	0.4471673	0.4086754
MCN4-COMP	5	0.1381212	0.1186664	0.1052960
MCN5-COMP	5	0.1364633	0.1095024	0.1054000
TB	5	0.0776894	0.0515104	0.0503900

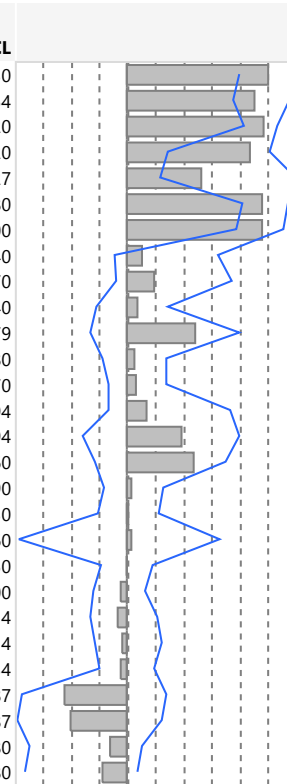
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	7.9360	7	32	<.0001*
Brown-Forsythe	2.2304	7	32	0.0577
Levene	14.4189	7	32	<.0001*
Bartlett	3.4468	7	.	0.0011*

Warning: Small sample sizes. Use Caution.

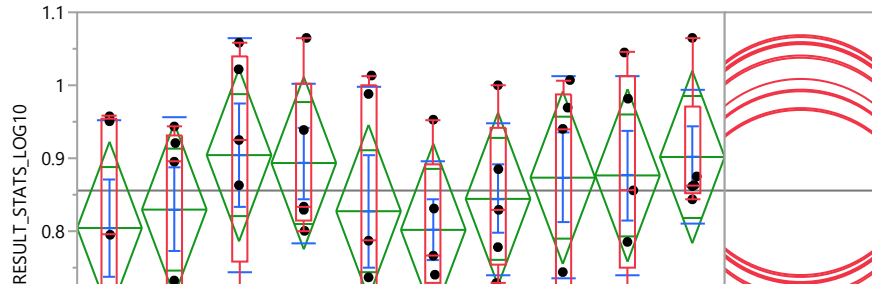
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB033**

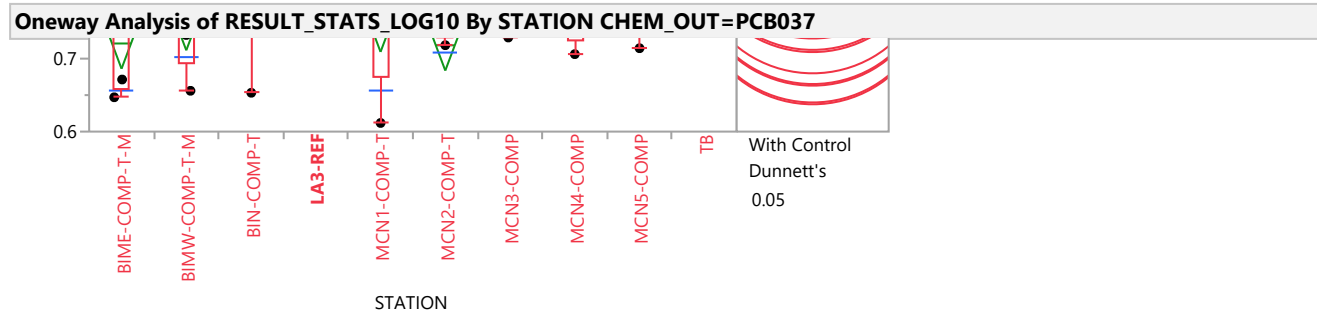
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	1.34949	1.06846	1.550030
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	1.21958	0.99725	1.541054
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.31027	1.10722	1.421420
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	1.17831	0.38475	1.353420
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.70950	0.31105	1.589827
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	1.28679	1.08453	1.522880
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	1.28867	1.03753	1.480000
MCN1-COMP-T	LA3-REF	3.20000	1.914854	1.67115	0.0947	0.14267	-0.12126	0.863040
MCN1-COMP-T	BIME-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.26907	-0.10985	0.993370
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.10084	-0.29748	0.386940
MCN2-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.64727	-0.34626	1.061079
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.06724	-0.23643	0.373580
LA3-REF	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.08666	-0.17785	0.365970
MCN1-COMP-T	BIN-COMP-T	1.20000	1.914854	0.62668	0.5309	0.18763	-0.18106	0.981194
MCN2-COMP-T	BIN-COMP-T	1.20000	1.914854	0.62668	0.5309	0.51736	-0.41747	1.054894
MCN2-COMP-T	LA3-REF	1.20000	1.914854	0.62668	0.5309	0.63627	-0.30671	0.935260
MCN5-COMP	MCN4-COMP	1.20000	1.914854	0.62668	0.5309	0.04700	-0.22036	0.335790
MCN4-COMP	BIME-COMP-T-M	0.60000	1.909043	0.31429	0.7533	0.02172	-0.27931	0.301030
MCN2-COMP-T	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.04335	-1.02997	0.867260
MCN5-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	0.00761	-0.25203	0.243250
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.06367	-0.32818	0.170700
MCN4-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.08591	-0.35052	0.281414
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.04028	-0.30764	0.328414
LA3-REF	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.06122	-0.25661	0.257934
MCN5-COMP	MCN2-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.58645	-0.99384	0.377187
MCN4-COMP	MCN2-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.53689	-1.03672	0.330187
MCN5-COMP	MCN1-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.15906	-0.92014	0.140780
MCN4-COMP	MCN1-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.23521	-0.96302	0.093780



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB037**





Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.647027	0.647027	0.659207	0.79509	0.954094	0.957491	0.957491
BIMW-COMP-T-M	0.655935	0.655935	0.694165	0.895265	0.932169	0.943519	0.943519
BIN-COMP-T	0.653212	0.653212	0.758074	0.924992	1.040115	1.05833	1.05833
LA3-REF	0.800428	0.800428	0.814866	0.833669	1.001835	1.06494	1.06494
MCN1-COMP-T	0.61182	0.61182	0.67429	0.786925	1.000731	1.01336	1.01336
MCN2-COMP-T	0.718383	0.718383	0.729373	0.766445	0.891954	0.952821	0.952821
MCN3-COMP	0.728933	0.728933	0.753542	0.829304	0.942523	1	1
MCN4-COMP	0.706149	0.706149	0.725043	0.940232	0.988285	1.00718	1.00718
MCN5-COMP	0.714266	0.714266	0.749798	0.855911	1.013297	1.04497	1.04497
TB	0.843653	0.843653	0.852675	0.863162	0.970001	1.06494	1.06494

**Oneway Anova**

**Summary of Fit**

Rsquare	0.091606
Adj Rsquare	-0.11278
Root Mean Square Error	0.130762
Mean of Response	0.855661
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	9	0.06897201	0.007664	0.4482	0.8999
Error	40	0.68395168	0.017099		
C. Total	49	0.75292369			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.804338	0.05848	0.68615	0.9225
BIMW-COMP-T-M	5	0.829586	0.05848	0.71140	0.9478
BIN-COMP-T	5	0.904274	0.05848	0.78608	1.0225
LA3-REF	5	0.893414	0.05848	0.77522	1.0116
MCN1-COMP-T	5	0.827393	0.05848	0.70920	0.9456
MCN2-COMP-T	5	0.801820	0.05848	0.68363	0.9200
MCN3-COMP	5	0.844287	0.05848	0.72610	0.9625
MCN4-COMP	5	0.873378	0.05848	0.75519	0.9916

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB037**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
MCN5-COMP	5	0.876420	0.05848	0.75823	0.9946
TB	5	0.901703	0.05848	0.78351	1.0199

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.804338	0.147805	0.06610	0.62081	0.9879
BIMW-COMP-T-M	5	0.829586	0.127690	0.05710	0.67104	0.9881
BIN-COMP-T	5	0.904274	0.160265	0.07167	0.70528	1.1033
LA3-REF	5	0.893414	0.109317	0.04889	0.75768	1.0291
MCN1-COMP-T	5	0.827393	0.170832	0.07640	0.61528	1.0395
MCN2-COMP-T	5	0.801820	0.094403	0.04222	0.68460	0.9190
MCN3-COMP	5	0.844287	0.104658	0.04680	0.71434	0.9742
MCN4-COMP	5	0.873378	0.138122	0.06177	0.70188	1.0449
MCN5-COMP	5	0.876420	0.136463	0.06103	0.70698	1.0459
TB	5	0.901703	0.091940	0.04112	0.78754	1.0159

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.22	1.0000
TB	-0.22	1.0000
LA3-REF	-0.23	1.0000
MCN5-COMP	-0.22	1.0000
MCN4-COMP	-0.21	1.0000
MCN3-COMP	-0.18	0.9957
BIMW-COMP-T-M	-0.17	0.9762
MCN1-COMP-T	-0.17	0.9709
BIME-COMP-T-M	-0.14	0.8653
MCN2-COMP-T	-0.14	0.8483

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB037**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

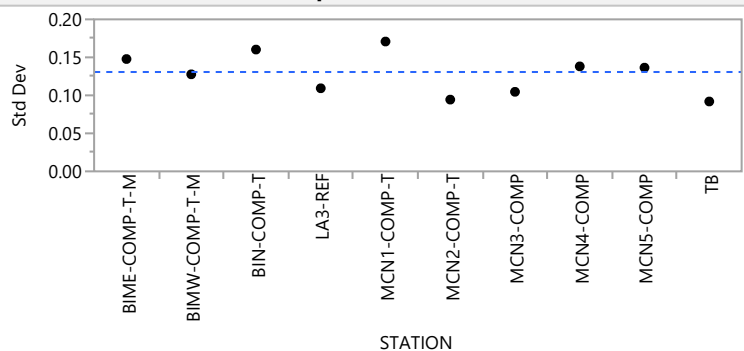
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	101.000	127.500	20.2000	-0.841
BIMW-COMP-T-M	5	113.000	127.500	22.6000	-0.453
BIN-COMP-T	5	157.000	127.500	31.4000	0.938
LA3-REF	5	146.000	127.500	29.2000	0.582
MCN1-COMP-T	5	116.000	127.500	23.2000	-0.356
MCN2-COMP-T	5	94.000	127.500	18.8000	-1.067
MCN3-COMP	5	117.500	127.500	23.5000	-0.307
MCN4-COMP	5	138.000	127.500	27.6000	0.323
MCN5-COMP	5	136.000	127.500	27.2000	0.259
TB	5	156.500	127.500	31.3000	0.922

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
4.2385	9	0.8950

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478050	0.1198046	0.1179550
BIMW-COMP-T-M	5	0.1276899	0.1083375	0.0952018
BIN-COMP-T	5	0.1602649	0.1169602	0.1128166
LA3-REF	5	0.1093168	0.0867366	0.0747876
MCN1-COMP-T	5	0.1708323	0.1386700	0.1305764
MCN2-COMP-T	5	0.0944033	0.0721074	0.0650324
MCN3-COMP	5	0.1046576	0.0785890	0.0755924
MCN4-COMP	5	0.1381225	0.1186677	0.1052968
MCN5-COMP	5	0.1364633	0.1095014	0.1053996
TB	5	0.0919399	0.0652950	0.0469302

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB037**

**Tests that the Variances are Equal**

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.6384	9	40	0.7575
Brown-Forsythe	0.4500	9	40	0.8988
Levene	0.8216	9	40	0.5999
Bartlett	0.3362	9	.	0.9632

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

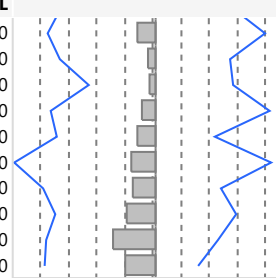
q\* Alpha  
1.95996 0.05

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
TB	MCN2-COMP-T	3.20000	1.914854	1.67115	0.0947	0.108616	-0.091124	0.3245770	
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100839	-0.297485	0.3869440	
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.114243	-0.150269	0.3935540	
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.056483	-0.244548	0.3357940	
MCN4-COMP	BIMW-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.048571	-0.214670	0.3134550	
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067239	-0.236431	0.3735840	
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066947	-0.167491	0.3046070	
TB	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.107449	-0.107044	0.3935540	
TB	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	0.076839	-0.151663	0.3281810	
TB	MCN3-COMP	1.60000	1.914854	0.83557	0.4034	0.064940	-0.138303	0.2867890	
TB	LA3-REF	1.40000	1.909043	0.73335	0.4633	0.029493	-0.203243	0.2356360	
BIN-COMP-T	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.101081	-0.267607	0.3659650	
MCN3-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.047179	-0.174670	0.2596370	
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054359	-0.208884	0.2668170	
TB	MCN5-COMP	1.20000	1.914854	0.62668	0.5309	0.019970	-0.183273	0.2796100	
LA3-REF	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.068034	-0.120391	0.3325460	
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.049303	-0.221764	0.3286140	
MCN5-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.058331	-0.206553	0.3256890	
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.037404	-0.338877	0.3419740	
MCN1-COMP-T	BIMW-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.044582	-0.308999	0.3321660	
MCN4-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.015004	-0.256063	0.2404570	
MCN5-COMP	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.048571	-0.273835	0.3698040	
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.026607	-0.214670	0.2668190	
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012234	-0.255124	0.3010330	
BIMW-COMP-T-M	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.007178	-0.294762	0.2737920	
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.002124	-0.232314	0.2814350	
MCN2-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.014011	-0.203156	0.2204270	
MCN3-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.003461	-0.191886	0.2676060	
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.011899	-0.259168	0.2732260	
MCN4-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	-0.056491	-0.321003	0.1778760	
MCN4-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.007178	-0.281952	0.3575700	
TB	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.111259	-0.081822	0.3325460	
TB	MCN4-COMP	0.00000	1.914854	0.00000	1.0000	0.057760	-0.145483	0.3210030	
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.033631	-0.229026	0.2855180	
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.020480	-0.272997	0.2192670	

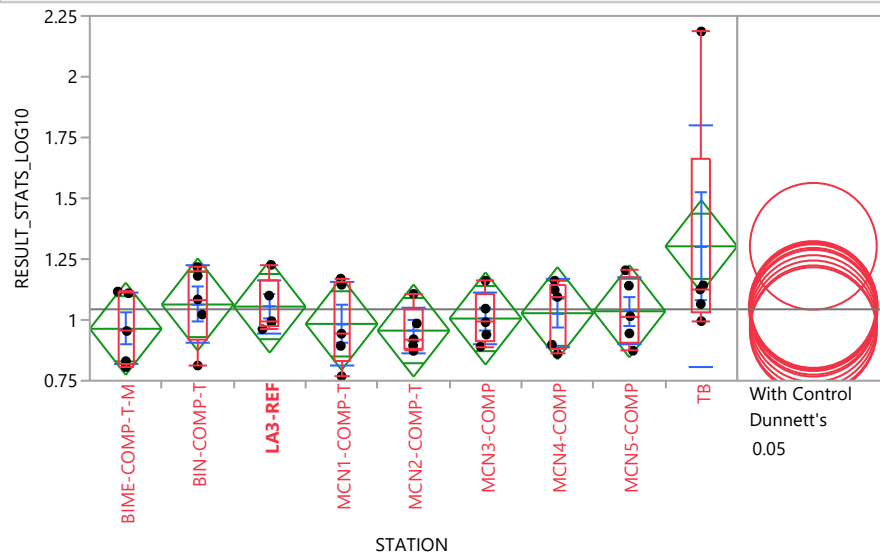
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB037**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051150	-0.315751	0.3161780
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.019970	-0.279610	0.2156660
TB	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.019282	-0.196633	0.2218490
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040276	-0.307634	0.3284120
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053684	-0.286789	0.1706960
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.070229	-0.410080	0.3348890
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.063669	-0.328181	0.1876730
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.084784	-0.292967	0.2318340
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.122572	-0.317967	0.1778750
MCN2-COMP-T	LA3-REF	-2.40000	1.914854	-1.25336	0.2101	-0.088941	-0.324577	0.1235170



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB044**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.80618	0.80618	0.81836	0.954243	1.113245	1.11664	1.11664
BIN-COMP-T	0.812365	0.812365	0.917228	1.08414	1.199265	1.21748	1.21748
LA3-REF	0.961796	0.961796	0.976234	0.995037	1.163205	1.22631	1.22631
MCN1-COMP-T	0.768167	0.768167	0.830637	0.943272	1.15708	1.16971	1.16971
MCN2-COMP-T	0.872572	0.872572	0.883562	0.920634	1.046144	1.10701	1.10701
MCN3-COMP	0.890301	0.890301	0.91491	0.990672	1.10389	1.16137	1.16137
MCN4-COMP	0.860338	0.860338	0.879233	1.09442	1.142475	1.16137	1.16137
MCN5-COMP	0.873419	0.873419	0.908951	1.01506	1.17245	1.20412	1.20412
TB	0.995037	0.995037	1.030154	1.12494	1.664095	2.18608	2.18608

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB044**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.216711
Adj Rsquare	0.042647
Root Mean Square Error	0.209079
Mean of Response	1.043659
Observations (or Sum Wgts)	45

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	8	0.4353927	0.054424	1.2450	0.3022
Error	36	1.5736981	0.043714		
C. Total	44	2.0090908			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.96349	0.09350	0.7739	1.1531
BIN-COMP-T	5	1.06343	0.09350	0.8738	1.2531
LA3-REF	5	1.05478	0.09350	0.8652	1.2444
MCN1-COMP-T	5	0.98374	0.09350	0.7941	1.1734
MCN2-COMP-T	5	0.95601	0.09350	0.7664	1.1456
MCN3-COMP	5	1.00565	0.09350	0.8160	1.1953
MCN4-COMP	5	1.02757	0.09350	0.8379	1.2172
MCN5-COMP	5	1.03557	0.09350	0.8459	1.2252
TB	5	1.30269	0.09350	1.1131	1.4923

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.96349	0.147804	0.06610	0.77997	1.1470
BIN-COMP-T	5	1.06343	0.160263	0.07167	0.86443	1.2624
LA3-REF	5	1.05478	0.109318	0.04889	0.91905	1.1905
MCN1-COMP-T	5	0.98374	0.170834	0.07640	0.77162	1.1959
MCN2-COMP-T	5	0.95601	0.094403	0.04222	0.83879	1.0732
MCN3-COMP	5	1.00565	0.104658	0.04680	0.87570	1.1356
MCN4-COMP	5	1.02757	0.138123	0.06177	0.85607	1.1991
MCN5-COMP	5	1.03557	0.136463	0.06103	0.86613	1.2050
TB	5	1.30269	0.497186	0.22235	0.68535	1.9200

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.78823	0.05



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB044**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	-0.12	0.3160
BIN-COMP-T	-0.36	1.0000
LA3-REF	-0.37	1.0000
MCN5-COMP	-0.35	1.0000
MCN4-COMP	-0.34	1.0000
MCN3-COMP	-0.32	0.9997
MCN1-COMP-T	-0.3	0.9962
BIME-COMP-T-M	-0.28	0.9819
MCN2-COMP-T	-0.27	0.9718

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	85.000	115.000	17.0000	-1.066
BIN-COMP-T	5	138.000	115.000	27.6000	0.813
LA3-REF	5	131.000	115.000	26.2000	0.560
MCN1-COMP-T	5	101.000	115.000	20.2000	-0.488
MCN2-COMP-T	5	76.000	115.000	15.2000	-1.391
MCN3-COMP	5	104.000	115.000	20.8000	-0.379
MCN4-COMP	5	115.500	115.000	23.1000	0.000
MCN5-COMP	5	122.000	115.000	24.4000	0.235
TB	5	162.500	115.000	32.5000	1.698

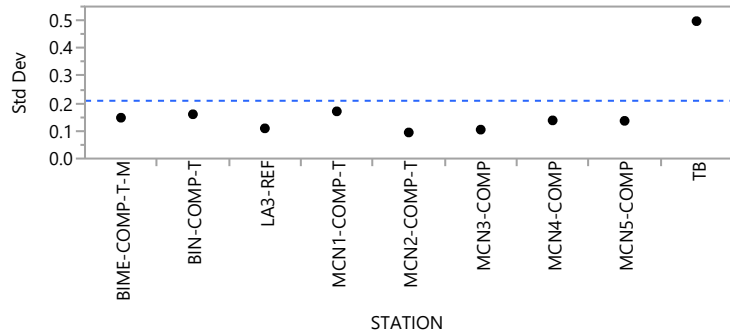
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
6.7590	8	0.5628

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB044**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478040	0.1198037	0.1179542
BIN-COMP-T	5	0.1602634	0.1169580	0.1128150
LA3-REF	5	0.1093178	0.0867376	0.0747884
MCN1-COMP-T	5	0.1708336	0.1386712	0.1305774
MCN2-COMP-T	5	0.0944034	0.0721076	0.0650326
MCN3-COMP	5	0.1046579	0.0785885	0.0755920
MCN4-COMP	5	0.1381225	0.1186676	0.1052970
MCN5-COMP	5	0.1364631	0.1095021	0.1053996
TB	5	0.4971865	0.3533570	0.2535766

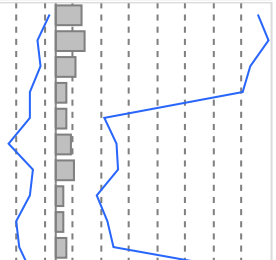
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.1450	8	36	0.3583
Brown-Forsythe	0.5355	8	36	0.8219
Levene	2.7000	8	36	0.0195*
Bartlett	2.6774	8	.	0.0061*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

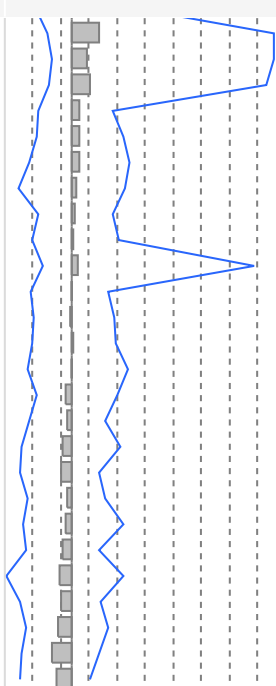
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN2-COMP-T	4.00000	1.914854	2.08893	0.0367*	0.170718	-0.041740	1.291528
TB	BIME-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.187867	-0.114813	1.355541
TB	MCN3-COMP	2.80000	1.914854	1.46225	0.1437	0.125751	-0.096100	1.246561
TB	LA3-REF	2.20000	1.909043	1.15241	0.2492	0.074598	-0.161040	1.195408
MCN5-COMP	MCN2-COMP-T	2.00000	1.914854	1.04447	0.2963	0.071911	-0.162527	0.309568
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297485	0.386941
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.116460	-0.148054	0.395771
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054360	-0.167491	0.266818
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.051520	-0.249512	0.330831
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067239	-0.236431	0.373581



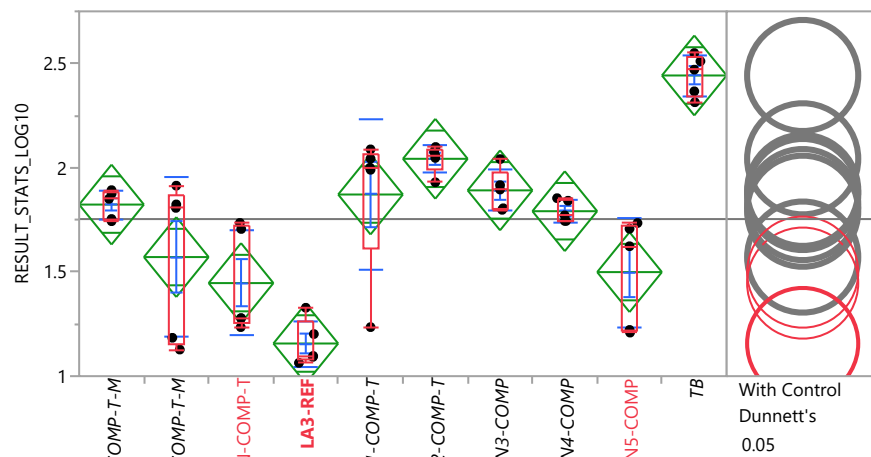
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB044**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean		Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
		Difference	Std Err Dif					
TB	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	0.181668	-0.149413	1.292974
TB	MCN4-COMP	1.60000	1.914854	0.83557	0.4034	0.096910	-0.128543	1.287953
TB	MCN5-COMP	1.60000	1.914854	0.83557	0.4034	0.120787	-0.145743	1.241597
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054360	-0.208883	0.266818
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.051520	-0.219549	0.330831
MCN5-COMP	MCN1-COMP-T	0.80000	1.914854	0.41779	0.6761	0.051377	-0.271031	0.372613
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.034600	-0.341683	0.339171
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.024388	-0.216887	0.264601
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.017200	-0.250161	0.305993
TB	BIN-COMP-T	0.40000	1.914854	0.20889	0.8345	0.043180	-0.186013	1.163990
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007826	-0.263243	0.233279
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.002840	-0.237278	0.276471
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.016920	-0.254149	0.278243
MCN4-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.005021	-0.284112	0.355413
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.031418	-0.226808	0.287735
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.022638	-0.275158	0.217110
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.056110	-0.320712	0.311215
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063669	-0.328183	0.170698
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.022190	-0.281827	0.213448
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040270	-0.307631	0.328415
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053690	-0.286791	0.170698
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.073030	-0.412883	0.332085
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.068690	-0.333204	0.182654
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.082571	-0.290749	0.234045
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.127538	-0.322928	0.172912
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096120	-0.331758	0.116338



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB049**



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB049**

BIME-C  
BIMW-C  
BIN  
MCN1  
MCN2  
MCI  
MCI  
MCI

STATION

**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.74339	1.74339	1.748705	1.8507	1.883715	1.89237	1.89237
BIMW-COMP-T-M	1.12758	1.12758	1.15582	1.8072	1.86886	1.91381	1.91381
BIN-COMP-T	1.23521	1.23521	1.256585	1.27796	1.720605	1.73518	1.73518
LA3-REF	1.06367	1.06367	1.07811	1.09691	1.265075	1.32818	1.32818
MCN1-COMP-T	1.23521	1.23521	1.612615	2	2.06587	2.08796	2.08796
MCN2-COMP-T	1.92996	1.92996	1.98857	2.05959	2.088275	2.09938	2.09938
MCN3-COMP	1.7979	1.7979	1.801665	1.89526	1.97892	2.04139	2.04139
MCN4-COMP	1.74473	1.74473	1.74473	1.77152	1.847755	1.85387	1.85387
MCN5-COMP	1.20888	1.20888	1.215365	1.62325	1.72089	1.73469	1.73469
TB	2.31399	2.31399	2.34026	2.47049	2.530505	2.55003	2.55003

**Oneway Anova**

**Summary of Fit**

Rsquare	0.76118
Adj Rsquare	0.707446
Root Mean Square Error	0.211977
Mean of Response	1.753573
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	5.7286729	0.636519	14.1656	<.0001*
Error	40	1.7973670	0.044934		
C. Total	49	7.5260399			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.82311	0.09480	1.6315	2.0147
BIMW-COMP-T-M	5	1.57131	0.09480	1.3797	1.7629
BIN-COMP-T	5	1.44647	0.09480	1.2549	1.6381
LA3-REF	5	1.15666	0.09480	0.9651	1.3483
MCN1-COMP-T	5	1.87139	0.09480	1.6798	2.0630
MCN2-COMP-T	5	2.04266	0.09480	1.8511	2.2343
MCN3-COMP	5	1.89129	0.09480	1.6997	2.0829
MCN4-COMP	5	1.79130	0.09480	1.5997	1.9829
MCN5-COMP	5	1.49915	0.09480	1.3076	1.6907
TB	5	2.44240	0.09480	2.2508	2.6340

Std Error uses a pooled estimate of error variance

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB049**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.82311	0.069616	0.03113	1.7367	1.9095
BIMW-COMP-T-M	5	1.57131	0.381974	0.17082	1.0970	2.0456
BIN-COMP-T	5	1.44647	0.251071	0.11228	1.1347	1.7582
LA3-REF	5	1.15666	0.109315	0.04889	1.0209	1.2924
MCN1-COMP-T	5	1.87139	0.357757	0.15999	1.4272	2.3156
MCN2-COMP-T	5	2.04266	0.065986	0.02951	1.9607	2.1246
MCN3-COMP	5	1.89129	0.099086	0.04431	1.7683	2.0143
MCN4-COMP	5	1.79130	0.052863	0.02364	1.7257	1.8569
MCN5-COMP	5	1.49915	0.262331	0.11732	1.1734	1.8249
TB	5	2.44240	0.099149	0.04434	2.3193	2.5655

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.909	<.0001*
MCN2-COMP-T	0.509	<.0001*
MCN3-COMP	0.358	<.0001*
MCN1-COMP-T	0.338	<.0001*
BIME-COMP-T-M	0.289	0.0001*
MCN4-COMP	0.258	0.0002*
BIMW-COMP-T-M	0.038	0.0251*
MCN5-COMP	-0.03	0.0899
BIN-COMP-T	-0.09	0.2015
LA3-REF	-0.38	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	133.000	127.500	26.6000	0.162
BIMW-COMP-T-M	5	96.000	127.500	19.2000	-1.003
BIN-COMP-T	5	65.500	127.500	13.1000	-1.989
LA3-REF	5	25.000	127.500	5.0000	-3.299
MCN1-COMP-T	5	168.500	127.500	33.7000	1.310
MCN2-COMP-T	5	207.000	127.500	41.4000	2.555
MCN3-COMP	5	156.000	127.500	31.2000	0.906
MCN4-COMP	5	122.000	127.500	24.4000	-0.162
MCN5-COMP	5	62.000	127.500	12.4000	-2.102

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB049**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

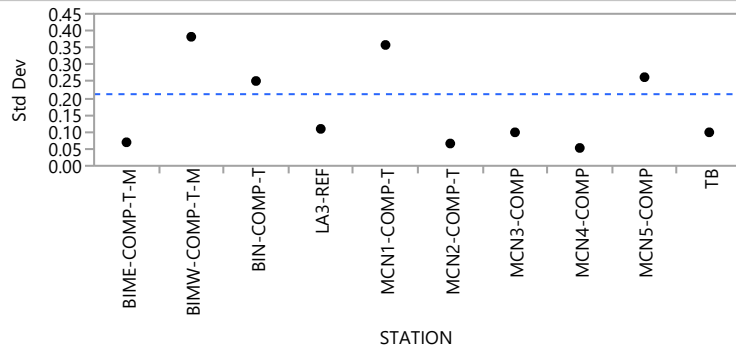
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
TB	5	240.000	127.500	48.0000	3.622

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
38.7472	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0696162	0.0595224	0.0540040
BIMW-COMP-T-M	5	0.3819738	0.3323936	0.2852160
BIN-COMP-T	5	0.2510711	0.2193096	0.1856080
LA3-REF	5	0.1093154	0.0867352	0.0747860
MCN1-COMP-T	5	0.3577567	0.2544736	0.1813020
MCN2-COMP-T	5	0.0659857	0.0450784	0.0398820
MCN3-COMP	5	0.0990864	0.0716968	0.0709020
MCN4-COMP	5	0.0528628	0.0451656	0.0412100
MCN5-COMP	5	0.2623313	0.2270296	0.2022100
TB	5	0.0991487	0.0817152	0.0760980

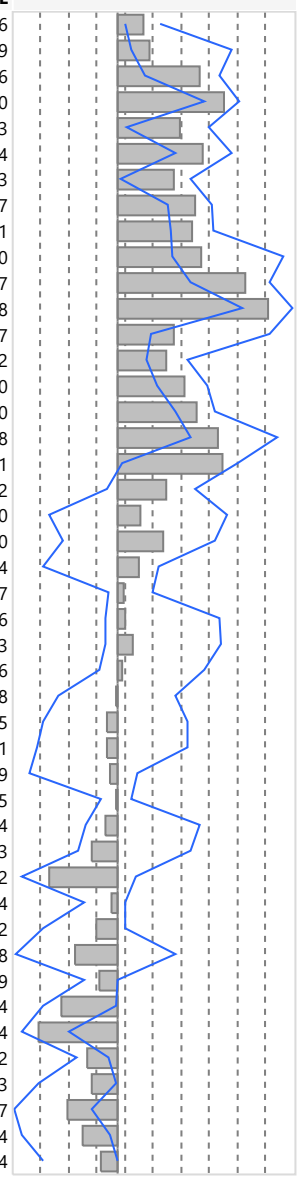
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[5]	2.0483	9	40	0.0586
Brown-Forsythe	1.0813	9	40	0.3974
Levene	7.6580	9	40	<.0001*
Bartlett	3.5479	9	.	0.0002*

Warning: Small sample sizes. Use Caution.

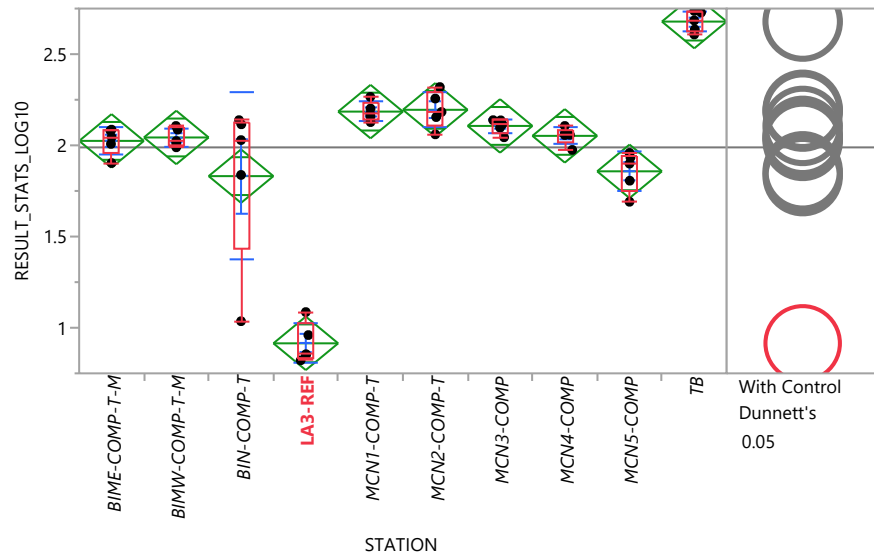
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*	Alpha
1.95996	0.05

Oneway Analysis of RESULT_STATS_LOG10 By STATION CHEM_OUT=PCB049								
Nonparametric Comparisons For Each Pair Using Wilcoxon Method								
Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN2-COMP-T	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.20701	0.05490	0.34536
MCN2-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.26997	0.10605	0.94959
MCN2-COMP-T	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	0.69475	0.22393	0.84196
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.89741	0.71900	1.01350
MCN3-COMP	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	0.52747	0.07025	0.76343
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.71448	0.47725	0.94884
MCN4-COMP	BIN-COMP-T	4.80000	1.903214	2.52205	0.0117*	0.46677	0.00955	0.60643
MCN4-COMP	LA3-REF	4.80000	1.909043	2.51435	0.0119*	0.65218	0.41655	0.77797
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.61979	0.43893	0.79601
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.70378	0.45272	1.38340
TB	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	1.07878	0.60796	1.27577
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.27398	1.03835	1.45748
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.46720	0.27021	1.27577
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.41160	0.23682	0.58102
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.56110	0.32514	0.74460
TB	MCN4-COMP	4.80000	1.909043	2.51435	0.0119*	0.65711	0.47235	0.80530
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.84724	0.60690	1.32818
MCN1-COMP-T	LA3-REF	4.40000	1.914854	2.29783	0.0216*	0.88599	0.03324	0.99541
MCN5-COMP	LA3-REF	4.00000	1.914854	2.08893	0.0367*	0.40651	-0.10633	0.64342
MCN1-COMP-T	BIMW-COMP-T-M	3.60000	1.914854	1.88004	0.0601	0.19280	-0.58870	0.91620
MCN1-COMP-T	BIN-COMP-T	3.00000	1.903214	1.57628	0.1150	0.38193	-0.47082	0.81000
MCN1-COMP-T	BIME-COMP-T-M	2.80000	1.914854	1.46225	0.1437	0.16872	-0.63985	0.33394
MCN3-COMP	BIME-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.05141	-0.08694	0.28737
MCN2-COMP-T	MCN1-COMP-T	2.00000	1.914854	1.04447	0.2963	0.05560	-0.11382	0.84196
MCN3-COMP	BIMW-COMP-T-M	2.00000	1.914854	1.04447	0.2963	0.12758	-0.10838	0.85733
MCN4-COMP	BIMW-COMP-T-M	0.40000	1.909043	0.20953	0.8340	0.02996	-0.16908	0.71406
MCN5-COMP	BIN-COMP-T	-0.40000	1.909043	-0.20953	0.8340	-0.01336	-0.51333	0.47188
BIN-COMP-T	BIMW-COMP-T-M	-0.80000	1.909043	-0.41906	0.6752	-0.10117	-0.63585	0.57845
MCN5-COMP	BIMW-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.10011	-0.69196	0.57951
BIMW-COMP-T-M	BIME-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.06786	-0.74748	0.15979
MCN4-COMP	BIME-COMP-T-M	-1.20000	1.909043	-0.62859	0.5296	-0.02119	-0.14764	0.09985
MCN3-COMP	MCN1-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.10474	-0.28253	0.68124
MCN4-COMP	MCN1-COMP-T	-2.80000	1.909043	-1.46670	0.1425	-0.22848	-0.34323	0.60643
LA3-REF	BIMW-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.58563	-0.82126	0.14412
MCN4-COMP	MCN3-COMP	-3.20000	1.909043	-1.67623	0.0937	-0.06258	-0.29666	0.04844
LA3-REF	BIN-COMP-T	-3.60000	1.909043	-1.88576	0.0593	-0.18541	-0.64263	0.05022
MCN5-COMP	MCN1-COMP-T	-3.60000	1.914854	-1.88004	0.0601	-0.36677	-0.86611	0.47188
MCN3-COMP	MCN2-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-0.16072	-0.29395	-0.00579
BIN-COMP-T	BIME-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-0.47606	-0.63985	-0.01884
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.67309	-0.81139	-0.42584
MCN4-COMP	MCN2-COMP-T	-4.80000	1.909043	-2.51435	0.0119*	-0.25774	-0.35465	-0.08832
MCN5-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.22745	-0.67052	-0.01933
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.43634	-0.87753	-0.22287
MCN5-COMP	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.30670	-0.81954	-0.07074
MCN5-COMP	MCN4-COMP	-4.80000	1.909043	-2.51435	0.0119*	-0.14827	-0.63276	-0.01004



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB052**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.90309	1.90309	1.95546	2.04458	2.083505	2.08619	2.08619
BIMW-COMP-T-M	1.98928	1.98928	1.99975	2.02391	2.09641	2.10646	2.10646
BIN-COMP-T	1.03591	1.03591	1.436915	2.02896	2.126845	2.1383	2.1383
LA3-REF	0.821617	0.821617	0.836055	0.854858	1.023025	1.08613	1.08613
MCN1-COMP-T	2.1274	2.1274	2.14279	2.17216	2.2338	2.2657	2.2657
MCN2-COMP-T	2.0603	2.0603	2.1076	2.18315	2.288195	2.31978	2.31978
MCN3-COMP	2.0442	2.0442	2.070555	2.1158	2.13784	2.1383	2.1383
MCN4-COMP	1.97518	1.97518	2.01583	2.05799	2.08529	2.10646	2.10646
MCN5-COMP	1.6907	1.6907	1.74844	1.89988	1.94583	1.95861	1.95861
TB	2.60789	2.60789	2.621595	2.68473	2.73251	2.73676	2.73676

**Oneway Anova**

**Summary of Fit**

Rsquare	0.893887
Adj Rsquare	0.870011
Root Mean Square Error	0.162284
Mean of Response	1.98885
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	8.8740950	0.986011	37.4395	<.0001*
Error	40	1.0534436	0.026336		
C. Total	49	9.9275385			



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB052**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.02450	0.07258	1.8778	2.1712
BIMW-COMP-T-M	5	2.04325	0.07258	1.8966	2.1899
BIN-COMP-T	5	1.83130	0.07258	1.6846	1.9780
LA3-REF	5	0.91460	0.07258	0.7679	1.0613
MCN1-COMP-T	5	2.18507	0.07258	2.0384	2.3317
MCN2-COMP-T	5	2.19495	0.07258	2.0483	2.3416
MCN3-COMP	5	2.10652	0.07258	1.9598	2.2532
MCN4-COMP	5	2.05205	0.07258	1.9054	2.1987
MCN5-COMP	5	1.85768	0.07258	1.7110	2.0044
TB	5	2.67859	0.07258	2.5319	2.8253

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.02450	0.074832	0.03347	1.9316	2.1174
BIMW-COMP-T-M	5	2.04325	0.050576	0.02262	1.9804	2.1060
BIN-COMP-T	5	1.83130	0.460086	0.20576	1.2600	2.4026
LA3-REF	5	0.91460	0.109317	0.04889	0.7789	1.0503
MCN1-COMP-T	5	2.18507	0.052440	0.02345	2.1200	2.2502
MCN2-COMP-T	5	2.19495	0.099069	0.04430	2.0719	2.3180
MCN3-COMP	5	2.10652	0.038809	0.01736	2.0583	2.1547
MCN4-COMP	5	2.05205	0.047618	0.02130	1.9929	2.1112
MCN5-COMP	5	1.85768	0.109753	0.04908	1.7214	1.9940
TB	5	2.67859	0.056482	0.02526	2.6085	2.7487

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB052**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	1.475	<.0001*
MCN2-COMP-T	0.992	<.0001*
MCN1-COMP-T	0.982	<.0001*
MCN3-COMP	0.903	<.0001*
MCN4-COMP	0.849	<.0001*
BIMW-COMP-T-M	0.84	<.0001*
BIME-COMP-T-M	0.821	<.0001*
MCN5-COMP	0.654	<.0001*
BIN-COMP-T	0.628	<.0001*
LA3-REF	-0.29	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	101.000	127.500	20.2000	-0.841
BIMW-COMP-T-M	5	108.500	127.500	21.7000	-0.598
BIN-COMP-T	5	101.500	127.500	20.3000	-0.825
LA3-REF	5	16.000	127.500	3.2000	-3.590
MCN1-COMP-T	5	199.000	127.500	39.8000	2.296
MCN2-COMP-T	5	191.000	127.500	38.2000	2.037
MCN3-COMP	5	153.500	127.500	30.7000	0.825
MCN4-COMP	5	114.500	127.500	22.9000	-0.404
MCN5-COMP	5	50.000	127.500	10.0000	-2.490
TB	5	240.000	127.500	48.0000	3.622

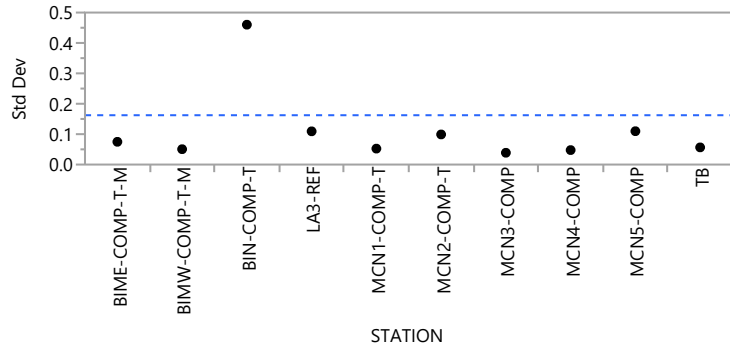
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
40.3083	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB052**

**Tests that the Variances are Equal**



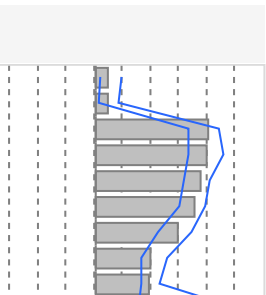
Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0748316	0.0552336	0.0512180
BIMW-COMP-T-M	5	0.0505761	0.0425312	0.0386640
BIN-COMP-T	5	0.4600855	0.3181544	0.2759720
LA3-REF	5	0.1093173	0.0867371	0.0747880
MCN1-COMP-T	5	0.0524405	0.0389856	0.0364040
MCN2-COMP-T	5	0.0990686	0.0745976	0.0722380
MCN3-COMP	5	0.0388090	0.0287704	0.0269140
MCN4-COMP	5	0.0476184	0.0307464	0.0277840
MCN5-COMP	5	0.1097530	0.0873952	0.0789560
TB	5	0.0564825	0.0455944	0.0443660

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.4546	9	40	0.1984
Brown-Forsythe	1.4182	9	40	0.2131
Levene	3.7800	9	40	0.0016*
Bartlett	5.7157	9	.	<.0001*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

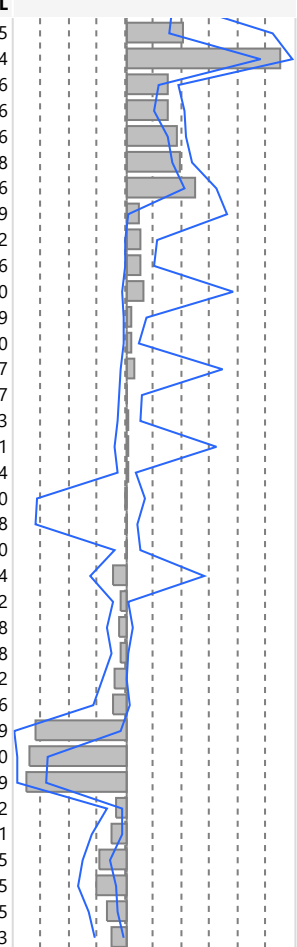
q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.15035	0.04658	0.29881
MCN1-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.14796	0.04104	0.25548
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.30578	1.07205	1.41521
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.30004	1.06877	1.46929
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.22258	1.01078	1.31576
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.15356	0.97035	1.25597
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.95569	0.72005	1.11143
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.64744	0.52707	0.82517
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.63030	0.52153	0.73898



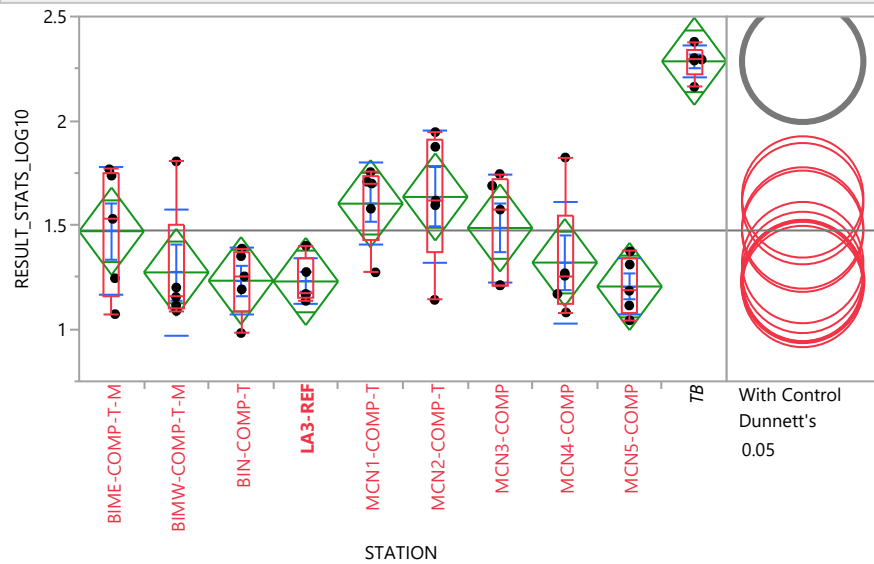
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB052**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.65577	0.49250	1.69235
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.78044	1.54917	1.90664
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.48283	0.36960	0.60086
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.48015	0.31552	0.66796
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.58782	0.47051	0.68406
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.62825	0.52884	0.75308
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.80171	0.67484	1.03756
MCN1-COMP-T	BIN-COMP-T	4.40000	1.914854	2.29783	0.0216*	0.15031	0.01201	1.16599
MCN2-COMP-T	BIME-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	0.17042	-0.02052	0.35352
MCN2-COMP-T	BIMW-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	0.15924	-0.02606	0.30956
MCN2-COMP-T	BIN-COMP-T	4.00000	1.914854	2.08893	0.0367*	0.20439	-0.05509	1.22070
MCN3-COMP	BIME-COMP-T-M	3.60000	1.914854	1.88004	0.0601	0.05748	-0.03662	0.23429
MCN3-COMP	BIMW-COMP-T-M	3.60000	1.914854	1.88004	0.0601	0.05492	-0.04216	0.14810
MCN3-COMP	BIN-COMP-T	2.20000	1.909043	1.15241	0.2492	0.08684	-0.07119	1.10147
BIMW-COMP-T-M	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.00554	-0.09154	0.18327
MCN4-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.01954	-0.10564	0.16103
MCN4-COMP	BIN-COMP-T	0.40000	1.914854	0.20889	0.8345	0.02903	-0.14021	1.02821
MCN4-COMP	BIMW-COMP-T-M	0.20000	1.909043	0.10476	0.9166	0.02010	-0.11118	0.09624
BIN-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.01562	-1.04491	0.21230
BIN-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.00505	-1.05045	0.12808
MCN2-COMP-T	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.01099	-0.14160	0.16160
MCN5-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.14722	-0.42469	0.89714
MCN4-COMP	MCN3-COMP	-2.80000	1.914854	-1.46225	0.1437	-0.05781	-0.16220	0.01992
MCN3-COMP	MCN2-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-0.08624	-0.22287	0.07708
MCN3-COMP	MCN1-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.06452	-0.16879	0.00998
MCN4-COMP	MCN2-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.12667	-0.28143	0.00382
MCN5-COMP	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.14777	-0.39012	0.02996
LA3-REF	BIN-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-1.05217	-1.29377	-0.07599
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.12627	-1.25920	-0.92170
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.15536	-1.26474	-0.92409
MCN4-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.11568	-0.22672	-0.05172
MCN5-COMP	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.17341	-0.39566	-0.05161
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.30709	-0.51120	-0.19435
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.34872	-0.56591	-0.12725
MCN5-COMP	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.21592	-0.44668	-0.11115
MCN5-COMP	MCN4-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.16424	-0.37342	-0.04213



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB056**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.07255	1.07255	1.15863	1.52951	1.752095	1.76743	1.76743
BIMW-COMP-T-M	1.08864	1.08864	1.10129	1.1549	1.50278	1.80543	1.80543
BIN-COMP-T	0.981826	0.981826	1.086688	1.25361	1.36873	1.38694	1.38694
LA3-REF	1.13622	1.13622	1.15066	1.16946	1.337625	1.40073	1.40073
MCN1-COMP-T	1.273	1.273	1.4257	1.69897	1.73088	1.75402	1.75402
MCN2-COMP-T	1.14082	1.14082	1.36785	1.6173	1.91035	1.94564	1.94564
MCN3-COMP	1.21085	1.21085	1.21085	1.57403	1.71674	1.74473	1.74473
MCN4-COMP	1.08052	1.08052	1.12499	1.25661	1.54638	1.82391	1.82391
MCN5-COMP	1.04288	1.04288	1.07841	1.18452	1.34191	1.37358	1.37358
TB	2.16273	2.16273	2.22593	2.29397	2.34007	2.37911	2.37911

**Oneway Anova**

**Summary of Fit**

Rsquare	0.690217
Adj Rsquare	0.620516
Root Mean Square Error	0.231498
Mean of Response	1.4738
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	4.7761886	0.530688	9.9025	<.0001*
Error	40	2.1436445	0.053591		
C. Total	49	6.9198331			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB056**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.47019	0.10353	1.2610	1.6794
BIMW-COMP-T-M	5	1.27261	0.10353	1.0634	1.4818
BIN-COMP-T	5	1.23289	0.10353	1.0236	1.4421
LA3-REF	5	1.22921	0.10353	1.0200	1.4384
MCN1-COMP-T	5	1.60243	0.10353	1.3932	1.8117
MCN2-COMP-T	5	1.63474	0.10353	1.4255	1.8440
MCN3-COMP	5	1.48584	0.10353	1.2766	1.6951
MCN4-COMP	5	1.31987	0.10353	1.1106	1.5291
MCN5-COMP	5	1.20503	0.10353	0.9958	1.4143
TB	5	2.28519	0.10353	2.0760	2.4944

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.47019	0.304913	0.13636	1.0916	1.8488
BIMW-COMP-T-M	5	1.27261	0.300844	0.13454	0.8991	1.6462
BIN-COMP-T	5	1.23289	0.160265	0.07167	1.0339	1.4319
LA3-REF	5	1.22921	0.109315	0.04889	1.0935	1.3649
MCN1-COMP-T	5	1.60243	0.195251	0.08732	1.3600	1.8449
MCN2-COMP-T	5	1.63474	0.316331	0.14147	1.2420	2.0275
MCN3-COMP	5	1.48584	0.258463	0.11559	1.1649	1.8068
MCN4-COMP	5	1.31987	0.291793	0.13049	0.9576	1.6822
MCN5-COMP	5	1.20503	0.136463	0.06103	1.0356	1.3745
TB	5	2.28519	0.077719	0.03476	2.1887	2.3817

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB056**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.644	<.0001*
MCN2-COMP-T	-0.01	0.0552
MCN1-COMP-T	-0.04	0.0911
MCN3-COMP	-0.16	0.4075
BIME-COMP-T-M	-0.17	0.4769
MCN4-COMP	-0.32	0.9943
BIMW-COMP-T-M	-0.37	1.0000
BIN-COMP-T	-0.41	1.0000
LA3-REF	-0.41	1.0000
MCN5-COMP	-0.39	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	131.000	127.500	26.2000	0.097
BIMW-COMP-T-M	5	79.500	127.500	15.9000	-1.536
BIN-COMP-T	5	90.000	127.500	18.0000	-1.197
LA3-REF	5	84.500	127.500	16.9000	-1.374
MCN1-COMP-T	5	168.000	127.500	33.6000	1.294
MCN2-COMP-T	5	165.000	127.500	33.0000	1.197
MCN3-COMP	5	140.000	127.500	28.0000	0.388
MCN4-COMP	5	102.500	127.500	20.5000	-0.792
MCN5-COMP	5	74.500	127.500	14.9000	-1.698
TB	5	240.000	127.500	48.0000	3.622

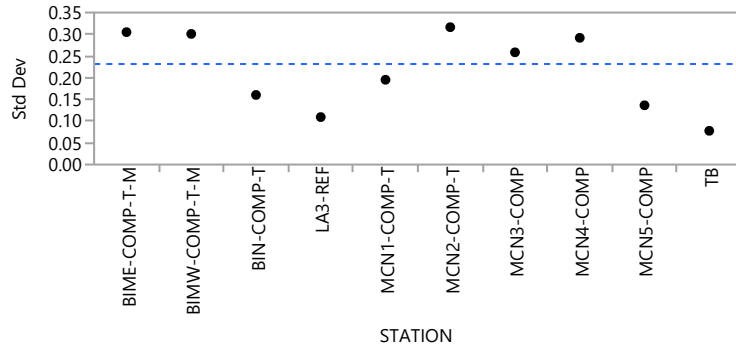
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
23.4053	9	0.0053*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB056**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.3049134	0.2492496	0.2373860
BIMW-COMP-T-M	5	0.3008435	0.2131288	0.1605960
BIN-COMP-T	5	0.1602651	0.1169610	0.1128168
LA3-REF	5	0.1093154	0.0867352	0.0747860
MCN1-COMP-T	5	0.1952506	0.1413808	0.1220720
MCN2-COMP-T	5	0.3163315	0.2204880	0.2170000
MCN3-COMP	5	0.2584632	0.2199936	0.2023560
MCN4-COMP	5	0.2917931	0.2016160	0.1685560
MCN5-COMP	5	0.1364633	0.1095024	0.1054000
TB	5	0.0777189	0.0489856	0.0456560

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.7686	9	40	0.6455
Brown-Forsythe	0.6997	9	40	0.7052
Levene	1.4664	9	40	0.1938
Bartlett	1.3980	9	.	0.1824

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha							
1.95996		0.05							
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.76446	0.425970	1.228480	
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	1.13423	0.483700	1.265170	
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	1.03552	0.812210	1.319204	
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.10459	0.888210	1.214010	
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.60206	0.454990	1.028030	
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.67183	0.287670	1.160210	
TB	MCN3-COMP	4.80000	1.909043	2.51435	0.0119*	0.71994	0.473980	1.168260	
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	1.03736	0.465220	1.220510	
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	1.10461	0.852490	1.265170	

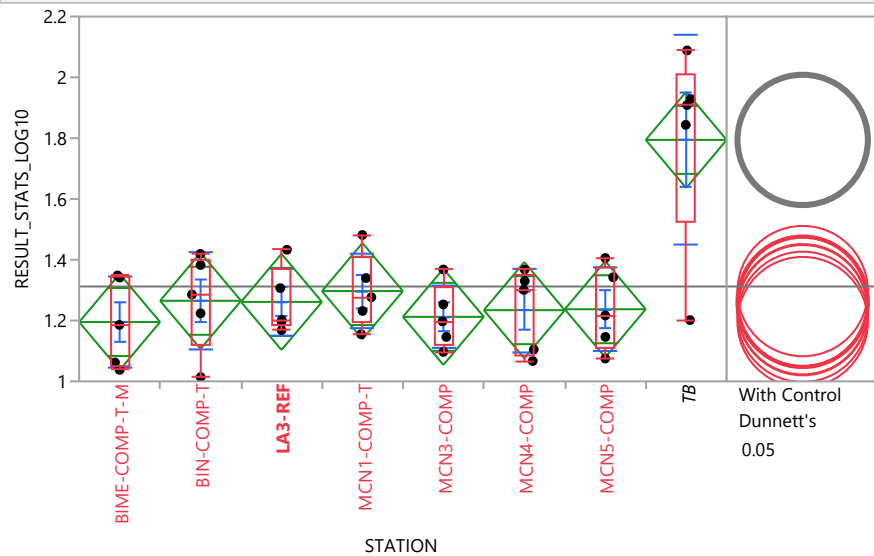


**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB056**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
MCN1-COMP-T	BIN-COMP-T	4.00000	1.914854	2.08893	0.0367*	0.36708	-0.077520	0.725914	
MCN1-COMP-T	LA3-REF	4.00000	1.914854	2.08893	0.0367*	0.42445	-0.001520	0.588920	
MCN2-COMP-T	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	0.42575	-0.209700	0.893234	
MCN2-COMP-T	LA3-REF	3.20000	1.914854	1.67115	0.0947	0.45220	-0.133700	0.780540	
MCN3-COMP	LA3-REF	3.20000	1.909043	1.67623	0.0937	0.29951	-0.189880	0.579630	
MCN1-COMP-T	BIMW-COMP-T-M	2.80000	1.914854	1.46225	0.1437	0.48976	-0.227030	0.640080	
MCN2-COMP-T	BIMW-COMP-T-M	2.80000	1.914854	1.46225	0.1437	0.46240	-0.210550	0.831700	
MCN3-COMP	BIMW-COMP-T-M	2.80000	1.909043	1.46670	0.1425	0.12221	-0.594580	0.630790	
MCN3-COMP	BIN-COMP-T	2.40000	1.909043	1.25717	0.2087	0.30181	-0.176090	0.706924	
MCN2-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.13830	-0.595940	0.802510	
LA3-REF	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.04758	-0.640330	0.286790	
MCN4-COMP	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.05648	-0.635970	0.709970	
BIN-COMP-T	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.07761	-0.613880	0.273000	
MCN1-COMP-T	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.04889	-0.463760	0.635190	
MCN2-COMP-T	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.03890	-0.566920	0.602060	
MCN4-COMP	LA3-REF	0.20000	1.909043	0.10476	0.9166	0.00436	-0.231270	0.658810	
MCN3-COMP	BIME-COMP-T-M	0.00000	1.909043	0.00000	1.0000	-0.02270	-0.556580	0.616200	
MCN4-COMP	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	0.00300	-0.270000	0.632360	
MCN5-COMP	BIMW-COMP-T-M	0.00000	1.909043	0.00000	1.0000	0.00000	-0.691490	0.259640	
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.02645	-0.221840	0.292694	
MCN4-COMP	BIME-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.16419	-0.656240	0.579200	
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.02715	-0.286790	0.208480	
MCN5-COMP	MCN4-COMP	-0.40000	1.914854	-0.20889	0.8345	-0.05552	-0.709970	0.229720	
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.04028	-0.307640	0.328414	
BIMW-COMP-T-M	BIME-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.15607	-0.653490	0.560720	
MCN3-COMP	MCN2-COMP-T	-1.20000	1.909043	-0.62859	0.5296	-0.18631	-0.734790	0.547930	
MCN4-COMP	MCN3-COMP	-1.20000	1.909043	-0.62859	0.5296	-0.13033	-0.608230	0.613060	
BIN-COMP-T	BIME-COMP-T-M	-2.00000	1.914854	-1.04447	0.2963	-0.27590	-0.754934	0.277970	
LA3-REF	BIME-COMP-T-M	-2.00000	1.914854	-1.04447	0.2963	-0.33603	-0.602330	0.201970	
MCN3-COMP	MCN1-COMP-T	-2.00000	1.909043	-1.04765	0.2948	-0.06215	-0.543170	0.415750	
MCN4-COMP	MCN2-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.36069	-0.794540	0.229030	
MCN5-COMP	BIME-COMP-T-M	-2.40000	1.914854	-1.25336	0.2101	-0.34499	-0.693880	0.237690	
MCN4-COMP	MCN1-COMP-T	-2.80000	1.914854	-1.46225	0.1437	-0.43012	-0.627220	0.245510	
MCN5-COMP	MCN3-COMP	-3.20000	1.909043	-1.67623	0.0937	-0.31517	-0.645870	0.162730	
MCN5-COMP	MCN2-COMP-T	-3.60000	1.914854	-1.88004	0.0601	-0.50148	-0.832180	0.169420	
MCN5-COMP	MCN1-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.39750	-0.664860	0.037240	

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB060**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.03779	1.03779	1.04997	1.18585	1.344855	1.34825	1.34825
BIN-COMP-T	1.01401	1.01401	1.11887	1.28579	1.400915	1.41913	1.41913
LA3-REF	1.1684	1.1684	1.18284	1.20165	1.369815	1.43292	1.43292
MCN1-COMP-T	1.1549	1.1549	1.193255	1.2769	1.41072	1.48149	1.48149
MCN3-COMP	1.09691	1.09691	1.12152	1.19728	1.3105	1.36798	1.36798
MCN4-COMP	1.06695	1.06695	1.085845	1.30103	1.349085	1.36798	1.36798
MCN5-COMP	1.07506	1.07506	1.110595	1.21671	1.374095	1.40577	1.40577
TB	1.20165	1.20165	1.52265	1.90892	2.00853	2.08842	2.08842

**Oneway Anova**

**Summary of Fit**

Rsquare	0.585765
Adj Rsquare	0.495151
Root Mean Square Error	0.173624
Mean of Response	1.312056
Observations (or Sum Wgts)	40

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	7	1.3641081	0.194873	6.4644	<.0001*
Error	32	0.9646549	0.030145		
C. Total	39	2.3287630			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB060**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.19510	0.07765	1.0369	1.3533
BIN-COMP-T	5	1.26507	0.07765	1.1069	1.4232
LA3-REF	5	1.26139	0.07765	1.1032	1.4196
MCN1-COMP-T	5	1.29697	0.07765	1.1388	1.4551
MCN3-COMP	5	1.21226	0.07765	1.0541	1.3704
MCN4-COMP	5	1.23418	0.07765	1.0760	1.3923
MCN5-COMP	5	1.23722	0.07765	1.0791	1.3954
TB	5	1.79426	0.07765	1.6361	1.9524

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.19510	0.147804	0.06610	1.0116	1.3786
BIN-COMP-T	5	1.26507	0.160266	0.07167	1.0661	1.4641
LA3-REF	5	1.26139	0.109319	0.04889	1.1257	1.3971
MCN1-COMP-T	5	1.29697	0.123241	0.05512	1.1439	1.4500
MCN3-COMP	5	1.21226	0.104658	0.04680	1.0823	1.3422
MCN4-COMP	5	1.23418	0.138121	0.06177	1.0627	1.4057
MCN5-COMP	5	1.23722	0.136464	0.06103	1.0678	1.4067
TB	5	1.79426	0.343279	0.15352	1.3680	2.2205

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.76173	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.23	0.0002*
MCN1-COMP-T	-0.27	0.9997
BIN-COMP-T	-0.3	1.0000
LA3-REF	-0.3	1.0000
MCN5-COMP	-0.28	1.0000
MCN4-COMP	-0.28	0.9999
MCN3-COMP	-0.25	0.9976
BIME-COMP-T-M	-0.24	0.9864

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB060**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

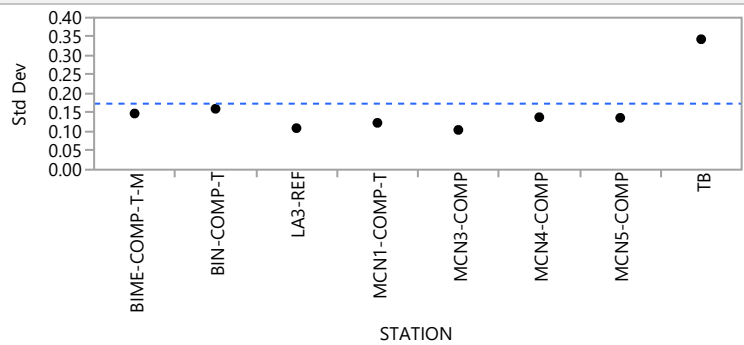
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	73.000	102.500	14.6000	-1.186
BIN-COMP-T	5	107.000	102.500	21.4000	0.164
LA3-REF	5	99.000	102.500	19.8000	-0.123
MCN1-COMP-T	5	112.000	102.500	22.4000	0.368
MCN3-COMP	5	78.500	102.500	15.7000	-0.961
MCN4-COMP	5	89.500	102.500	17.9000	-0.511
MCN5-COMP	5	91.500	102.500	18.3000	-0.429
TB	5	169.500	102.500	33.9000	2.720

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
9.2932	7	0.2323

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478038	0.1198040	0.1179540
BIN-COMP-T	5	0.1602660	0.1169616	0.1128180
LA3-REF	5	0.1093190	0.0867384	0.0747900
MCN1-COMP-T	5	0.1232412	0.0910000	0.0869860
MCN3-COMP	5	0.1046581	0.0785888	0.0755920
MCN4-COMP	5	0.1381212	0.1186664	0.1052960
MCN5-COMP	5	0.1364643	0.1095016	0.1054000
TB	5	0.3432787	0.2370424	0.1943520

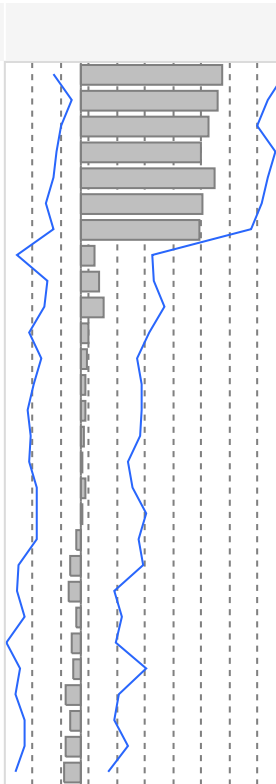
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.0398	7	32	0.4236
Brown-Forsythe	0.4222	7	32	0.8812
Levene	1.3176	7	32	0.2741
Bartlett	1.4008	7	.	0.1999

Warning: Small sample sizes. Use Caution.

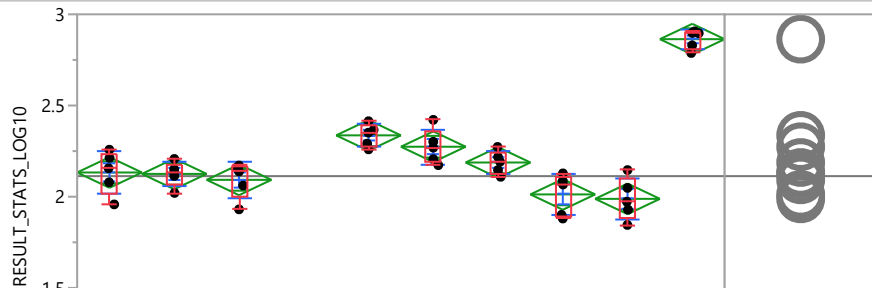
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB060**

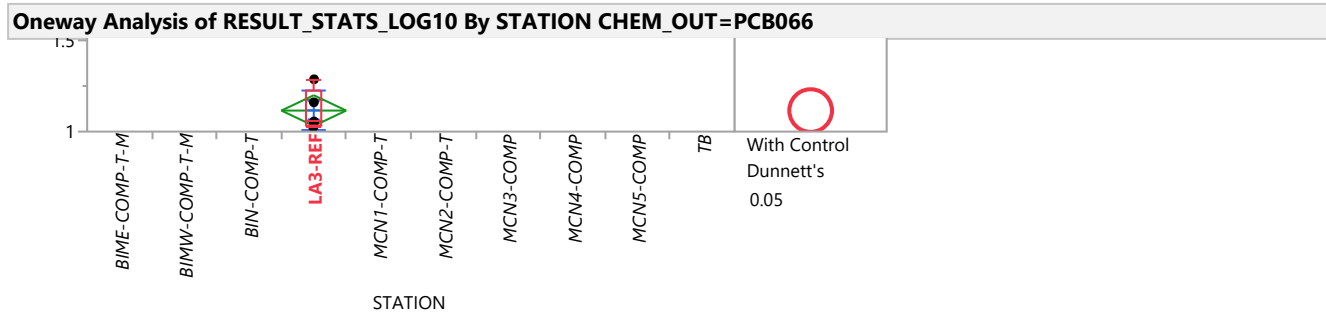
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha								
1.95996		0.05								
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL		
TB	BIME-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	0.723070	-0.139810	1.026270		
TB	MCN3-COMP	4.00000	1.914854	2.08893	0.0367*	0.697520	-0.051370	0.942290		
TB	LA3-REF	3.80000	1.909043	1.99053	0.0465*	0.646370	-0.105060	0.891140		
TB	MCN4-COMP	3.60000	1.914854	1.88004	0.0601	0.607890	-0.128540	0.983680		
TB	MCN5-COMP	3.60000	1.914854	1.88004	0.0601	0.682650	-0.140770	0.942290		
TB	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	0.619920	-0.181050	0.914630		
TB	MCN1-COMP-T	3.20000	1.914854	1.67115	0.0947	0.606930	-0.138300	0.856810		
BIN-COMP-T	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.070880	-0.327450	0.356980		
LA3-REF	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.091460	-0.173060	0.370770		
MCN1-COMP-T	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.117110	-0.186560	0.419340		
MCN5-COMP	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.037270	-0.266400	0.343620		
MCN1-COMP-T	LA3-REF	0.80000	1.914854	0.41779	0.6761	0.034330	-0.201310	0.284210		
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.026520	-0.244550	0.305830		
MCN4-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.026520	-0.274510	0.305830		
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012230	-0.255130	0.301030		
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007830	-0.263240	0.233280		
MCN5-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.019430	-0.221850	0.259640		
MCN1-COMP-T	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	0.007880	-0.227800	0.325940		
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.026450	-0.221850	0.292700		
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051150	-0.315750	0.316180		
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063660	-0.328180	0.170700		
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.027150	-0.286790	0.208490		
MCN4-COMP	MCN1-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.050160	-0.376750	0.175290		
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040280	-0.307640	0.328410		
MCN5-COMP	MCN1-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.075720	-0.335360	0.187520		
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053690	-0.286790	0.170700		
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.077600	-0.285790	0.239010		
MCN3-COMP	MCN1-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.085480	-0.335360	0.136370		



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB066**





**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.95794	1.95794	2.01856	2.15589	2.23558	2.25787	2.25787
BIMW-COMP-T-M	2.02068	2.02068	2.06731	2.13263	2.17896	2.20713	2.20713
BIN-COMP-T	1.93067	1.93067	1.996095	2.1383	2.16596	2.17107	2.17107
LA3-REF	1.02228	1.02228	1.036715	1.05552	1.223685	1.28679	1.28679
MCN1-COMP-T	2.25964	2.25964	2.275345	2.3512	2.390115	2.41393	2.41393
MCN2-COMP-T	2.173	2.173	2.18945	2.26885	2.361225	2.42142	2.42142
MCN3-COMP	2.10914	2.10914	2.127635	2.19189	2.245395	2.273	2.273
MCN4-COMP	1.88039	1.88039	1.890505	2.06695	2.10759	2.12803	2.12803
MCN5-COMP	1.8451	1.8451	1.88702	1.97285	2.097215	2.14613	2.14613
TB	2.78791	2.78791	2.808825	2.89646	2.902295	2.90658	2.90658

**Oneway Anova**

**Summary of Fit**

Rsquare	0.96008
Adj Rsquare	0.951098
Root Mean Square Error	0.093085
Mean of Response	2.11283
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	8.3354801	0.926164	106.8885	<.0001*
Error	40	0.3465909	0.008665		
C. Total	49	8.6820710			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.13283	0.04163	2.0487	2.2170
BIMW-COMP-T-M	5	2.12503	0.04163	2.0409	2.2092
BIN-COMP-T	5	2.09248	0.04163	2.0083	2.1766
LA3-REF	5	1.11526	0.04163	1.0311	1.1994
MCN1-COMP-T	5	2.33642	0.04163	2.2523	2.4206
MCN2-COMP-T	5	2.27404	0.04163	2.1899	2.3582
MCN3-COMP	5	2.18759	0.04163	2.1035	2.2717
MCN4-COMP	5	2.01263	0.04163	1.9285	2.0968

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB066**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
MCN5-COMP	5	1.98826	0.04163	1.9041	2.0724
TB	5	2.86374	0.04163	2.7796	2.9479

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.13283	0.118433	0.05296	1.9858	2.2799
BIMW-COMP-T-M	5	2.12503	0.067959	0.03039	2.0407	2.2094
BIN-COMP-T	5	2.09248	0.100114	0.04477	1.9682	2.2168
LA3-REF	5	1.11526	0.109317	0.04889	0.9795	1.2510
MCN1-COMP-T	5	2.33642	0.061385	0.02745	2.2602	2.4126
MCN2-COMP-T	5	2.27404	0.096603	0.04320	2.1541	2.3940
MCN3-COMP	5	2.18759	0.063440	0.02837	2.1088	2.2664
MCN4-COMP	5	2.01263	0.113858	0.05092	1.8713	2.1540
MCN5-COMP	5	1.98826	0.114868	0.05137	1.8456	2.1309
TB	5	2.86374	0.052408	0.02344	2.7987	2.9288

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	1.583	<.0001*
MCN1-COMP-T	1.056	<.0001*
MCN2-COMP-T	0.993	<.0001*
MCN3-COMP	0.907	<.0001*
BIME-COMP-T-M	0.852	<.0001*
BIMW-COMP-T-M	0.844	<.0001*
BIN-COMP-T	0.812	<.0001*
MCN4-COMP	0.732	<.0001*
MCN5-COMP	0.707	<.0001*
LA3-REF	-0.17	1.0000

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB066**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

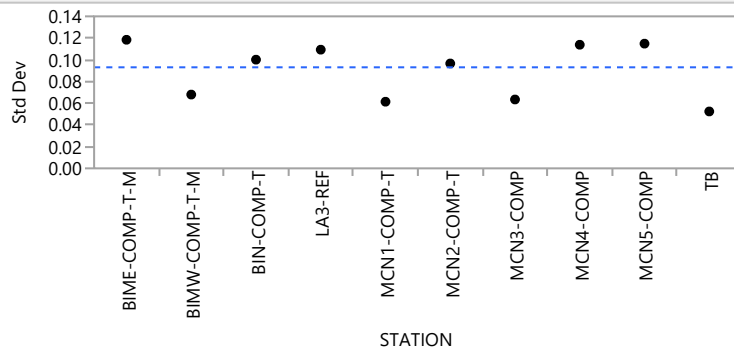
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	125.000	127.500	25.0000	-0.065
BIMW-COMP-T-M	5	114.000	127.500	22.8000	-0.420
BIN-COMP-T	5	105.000	127.500	21.0000	-0.711
LA3-REF	5	15.000	127.500	3.0000	-3.622
MCN1-COMP-T	5	206.000	127.500	41.2000	2.522
MCN2-COMP-T	5	186.000	127.500	37.2000	1.876
MCN3-COMP	5	148.500	127.500	29.7000	0.663
MCN4-COMP	5	70.000	127.500	14.0000	-1.843
MCN5-COMP	5	65.500	127.500	13.1000	-1.989
TB	5	240.000	127.500	48.0000	3.622

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
40.6448	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1184329	0.0914192	0.0868080
BIMW-COMP-T-M	5	0.0679589	0.0461792	0.0446600
BIN-COMP-T	5	0.1001141	0.0771096	0.0679460
LA3-REF	5	0.1093168	0.0867368	0.0747880
MCN1-COMP-T	5	0.0613854	0.0488632	0.0459080
MCN2-COMP-T	5	0.0966028	0.0697480	0.0687100
MCN3-COMP	5	0.0634404	0.0479640	0.0471040
MCN4-COMP	5	0.1138581	0.0976984	0.0868340
MCN5-COMP	5	0.1148682	0.0871608	0.0840780
TB	5	0.0524082	0.0439320	0.0373880



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB066**

**Tests that the Variances are Equal**

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.6866	9	40	0.7164
Brown-Forsythe	0.4144	9	40	0.9198
Levene	1.0702	9	40	0.4051
Bartlett	0.6234	9	.	0.7782

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

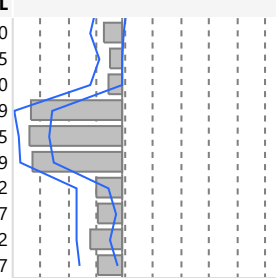
q\* Alpha  
1.95996 0.05

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
MCN1-COMP-T	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.19531	0.03318	0.40836	
MCN1-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.21551	0.08392	0.34562	
MCN1-COMP-T	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.22800	0.09879	0.43563	
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.23736	1.00426	1.36278	
MCN2-COMP-T	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.14438	0.01215	0.37036	
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.15072	0.91911	1.37027	
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.09061	0.85934	1.22185	
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.87834	0.61383	1.07688	
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.87779	0.64215	1.09498	
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.70873	0.57187	0.94007	
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.74722	0.62261	0.87733	
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.74573	0.62706	0.96734	
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.76563	1.54295	1.87573	
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.53171	0.41581	0.63837	
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.60555	0.40832	0.72501	
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.68022	0.55674	0.78887	
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.82951	0.70076	1.01762	
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.85897	0.68361	1.05291	
MCN2-COMP-T	BIMW-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	0.15024	-0.00123	0.30748	
MCN2-COMP-T	BIME-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.12672	-0.05197	0.34309	
MCN3-COMP	BIN-COMP-T	2.80000	1.914854	1.46225	0.1437	0.07949	-0.05171	0.28712	
MCN3-COMP	BIMW-COMP-T-M	2.00000	1.914854	1.04447	0.2963	0.06587	-0.06100	0.19711	
MCN3-COMP	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.03600	-0.11174	0.25985	
BIN-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.01249	-0.22012	0.14017	
MCN5-COMP	MCN4-COMP	-0.40000	1.914854	-0.20889	0.8345	-0.03529	-0.24205	0.24551	
BIMW-COMP-T-M	BIME-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.02326	-0.19261	0.19285	
BIN-COMP-T	BIME-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.04222	-0.28262	0.20291	
MCN2-COMP-T	MCN1-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.08235	-0.20803	0.13037	
MCN3-COMP	MCN2-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.07696	-0.27529	0.06710	
MCN4-COMP	BIN-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.07135	-0.28046	0.15648	
MCN4-COMP	BIME-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-0.12614	-0.35725	0.12921	
MCN5-COMP	BIN-COMP-T	-2.80000	1.914854	-1.46225	0.1437	-0.11255	-0.31575	0.11763	
MCN4-COMP	BIMW-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.08384	-0.30651	0.06647	
MCN5-COMP	BIME-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.15024	-0.36819	0.09036	
MCN5-COMP	BIMW-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.15883	-0.30569	0.03219	

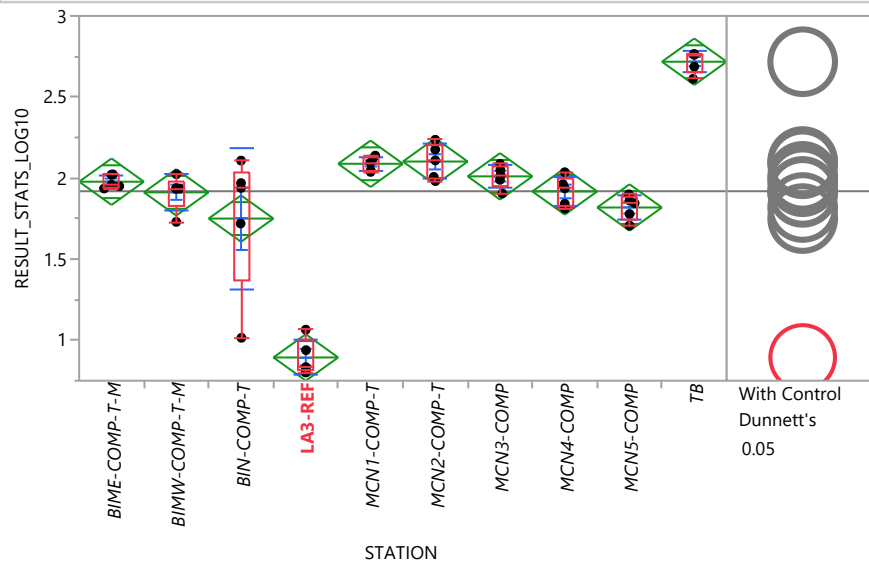
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB066**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN5-COMP	MCN3-COMP	-4.20000	1.909043	-2.20006	0.0278*	-0.21719	-0.37269	0.00000
MCN3-COMP	MCN1-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-0.14851	-0.26780	-0.01805
MCN4-COMP	MCN3-COMP	-4.40000	1.914854	-2.29783	0.0216*	-0.15084	-0.37238	-0.01810
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.02803	-1.20672	-0.79239
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.04655	-1.15598	-0.82715
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.00600	-1.13857	-0.77009
MCN4-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.29935	-0.51331	-0.16302
MCN4-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.27238	-0.52080	-0.07787
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.36211	-0.52120	-0.14492
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.27696	-0.49248	-0.05977



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB070**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.93527	1.93527	1.94255	1.95861	2.02177	2.02286	2.02286
BIMW-COMP-T-M	1.72964	1.72964	1.831345	1.9345	1.98098	2.02348	2.02348
BIN-COMP-T	1.01472	1.01472	1.36727	1.9393	2.0383	2.10763	2.10763
LA3-REF	0.800428	0.800428	0.814866	0.833669	1.001835	1.06494	1.06494
MCN1-COMP-T	2.03779	2.03779	2.042265	2.09456	2.13051	2.1383	2.1383
MCN2-COMP-T	1.98111	1.98111	1.994085	2.10914	2.20609	2.23609	2.23609
MCN3-COMP	1.90502	1.90502	1.94701	2.01974	2.06915	2.08715	2.08715
MCN4-COMP	1.81167	1.81167	1.826655	1.93633	1.998965	2.03572	2.03572
MCN5-COMP	1.70709	1.70709	1.74262	1.8451	1.88079	1.89988	1.89988
TB	2.61182	2.61182	2.649445	2.76024	2.76419	2.76447	2.76447

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB070**

**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
-------	---------	-----	-----	--------	-----	-----	---------

**Oneway Anova**

**Summary of Fit**

Rsquare	0.899706
Adj Rsquare	0.87714
Root Mean Square Error	0.158457
Mean of Response	1.918651
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	9.009658	1.00107	39.8697	<.0001*
Error	40	1.004345	0.02511		
C. Total	49	10.014003			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.97745	0.07086	1.8342	2.1207
BIMW-COMP-T-M	5	1.91183	0.07086	1.7686	2.0551
BIN-COMP-T	5	1.75009	0.07086	1.6069	1.8933
LA3-REF	5	0.89341	0.07086	0.7502	1.0366
MCN1-COMP-T	5	2.08802	0.07086	1.9448	2.2312
MCN2-COMP-T	5	2.10190	0.07086	1.9587	2.2451
MCN3-COMP	5	2.01041	0.07086	1.8672	2.1536
MCN4-COMP	5	1.91751	0.07086	1.7743	2.0607
MCN5-COMP	5	1.81838	0.07086	1.6752	1.9616
TB	5	2.71750	0.07086	2.5743	2.8607

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.97745	0.041315	0.01848	1.9262	2.0287
BIMW-COMP-T-M	5	1.91183	0.108781	0.04865	1.7768	2.0469
BIN-COMP-T	5	1.75009	0.433944	0.19407	1.2113	2.2889
LA3-REF	5	0.89341	0.109317	0.04889	0.7577	1.0291
MCN1-COMP-T	5	2.08802	0.044727	0.02000	2.0325	2.1436
MCN2-COMP-T	5	2.10190	0.108568	0.04855	1.9671	2.2367
MCN3-COMP	5	2.01041	0.069284	0.03098	1.9244	2.0964
MCN4-COMP	5	1.91751	0.091220	0.04079	1.8042	2.0308
MCN5-COMP	5	1.81838	0.076218	0.03409	1.7237	1.9130
TB	5	2.71750	0.067604	0.03023	2.6336	2.8014

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB070**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	1.542	<.0001*
MCN2-COMP-T	0.927	<.0001*
MCN1-COMP-T	0.913	<.0001*
MCN3-COMP	0.835	<.0001*
BIME-COMP-T-M	0.802	<.0001*
MCN4-COMP	0.742	<.0001*
BIMW-COMP-T-M	0.737	<.0001*
MCN5-COMP	0.643	<.0001*
BIN-COMP-T	0.575	<.0001*
LA3-REF	-0.28	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	129.000	127.500	25.8000	0.032
BIMW-COMP-T-M	5	98.000	127.500	19.6000	-0.938
BIN-COMP-T	5	101.000	127.500	20.2000	-0.841
LA3-REF	5	16.000	127.500	3.2000	-3.590
MCN1-COMP-T	5	195.000	127.500	39.0000	2.167
MCN2-COMP-T	5	186.000	127.500	37.2000	1.876
MCN3-COMP	5	149.000	127.500	29.8000	0.679
MCN4-COMP	5	102.000	127.500	20.4000	-0.808
MCN5-COMP	5	59.000	127.500	11.8000	-2.199
TB	5	240.000	127.500	48.0000	3.622

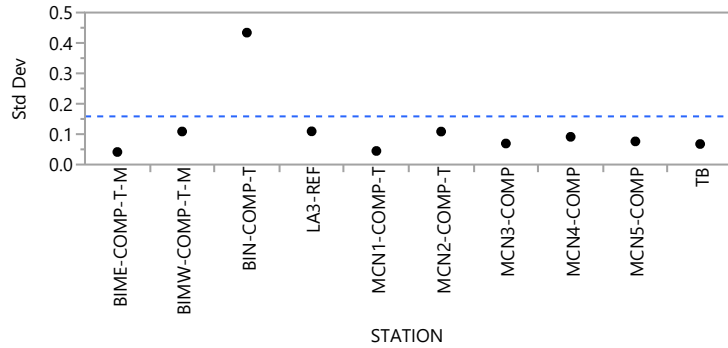
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
38.0673	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB070**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0413154	0.0354560	0.0316880
BIMW-COMP-T-M	5	0.1087812	0.0728760	0.0598540
BIN-COMP-T	5	0.4339438	0.3062544	0.2684120
LA3-REF	5	0.1093168	0.0867366	0.0747876
MCN1-COMP-T	5	0.0447270	0.0366056	0.0352980
MCN2-COMP-T	5	0.1085684	0.0862504	0.0848020
MCN3-COMP	5	0.0692843	0.0507216	0.0488560
MCN4-COMP	5	0.0912199	0.0726872	0.0689240
MCN5-COMP	5	0.0762180	0.0606112	0.0552680
TB	5	0.0676037	0.0544456	0.0458980

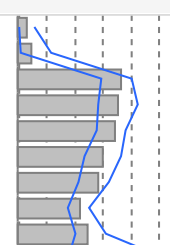
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.5470	9	40	0.1651
Brown-Forsythe	1.3560	9	40	0.2403
Levene	3.6174	9	40	0.0022*
Bartlett	4.6334	9	.	<.0001*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

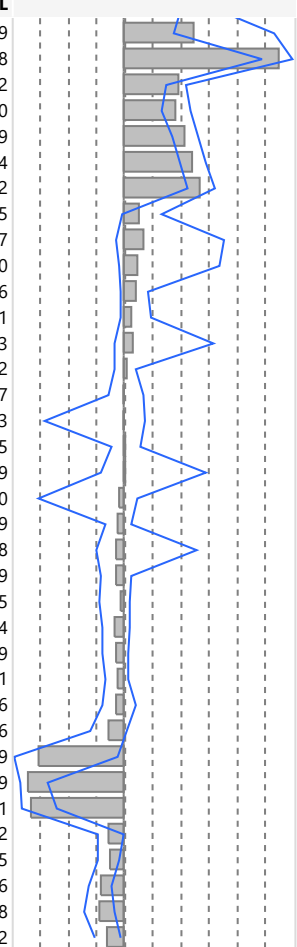
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.10252	0.01711	0.18847
MCN1-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.16006	0.02326	0.39308
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.21307	0.98180	1.32229
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.18068	0.94212	1.40679
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.14842	0.92406	1.25785
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.01234	0.77670	1.20642
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.94448	0.71321	1.07058
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.74161	0.59114	0.82864
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.82543	0.66359	1.03427



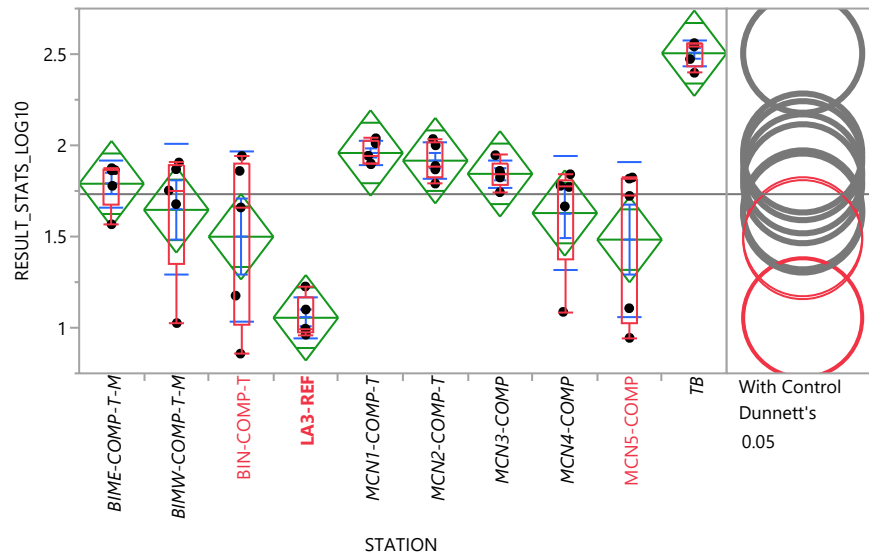
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB070**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.82094	0.57944	1.74919
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.82574	1.62213	1.96348
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.64033	0.48910	0.72612
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.60476	0.43573	0.78280
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.70909	0.56067	0.85889
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.80170	0.64961	0.95224
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.90277	0.75012	1.05682
MCN2-COMP-T	BIMW-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	0.17609	-0.01642	0.44645
MCN2-COMP-T	BIN-COMP-T	4.00000	1.914854	2.08893	0.0367*	0.23679	-0.10057	1.16137
MCN1-COMP-T	BIN-COMP-T	3.60000	1.914854	1.88004	0.0601	0.16933	-0.06089	1.10800
MCN2-COMP-T	BIME-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.15053	-0.03957	0.28626
MCN3-COMP	BIMW-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.08524	-0.03448	0.32151
MCN3-COMP	BIN-COMP-T	2.00000	1.914854	1.04447	0.2963	0.11185	-0.11863	1.03643
MCN3-COMP	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.03917	-0.11566	0.13732
MCN4-COMP	BIMW-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.00328	-0.18184	0.23257
BIN-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.00082	-0.92376	0.23933
MCN2-COMP-T	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.01458	-0.14161	0.18935
MCN4-COMP	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	0.02291	-0.26599	0.94749
BIN-COMP-T	BIME-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.05389	-1.00596	0.15780
MCN4-COMP	BIME-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.06065	-0.20901	0.08589
MCN5-COMP	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.07760	-0.32948	0.84698
MCN3-COMP	MCN2-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.08940	-0.27107	0.08009
BIMW-COMP-T-M	BIME-COMP-T-M	-2.40000	1.914854	-1.25336	0.2101	-0.02411	-0.29104	0.07365
MCN5-COMP	MCN4-COMP	-2.40000	1.914854	-1.25336	0.2101	-0.10051	-0.25757	0.05824
MCN4-COMP	MCN3-COMP	-2.80000	1.914854	-1.46225	0.1437	-0.08894	-0.24551	0.05719
MCN3-COMP	MCN1-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-0.07157	-0.21770	0.04041
MCN5-COMP	BIMW-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.08940	-0.24533	0.13206
MCN4-COMP	MCN2-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.17281	-0.39445	0.02866
LA3-REF	BIN-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-1.00057	-1.27833	-0.07599
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.11616	-1.22025	-0.88489
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.08475	-1.19418	-0.79091
MCN4-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.17609	-0.31105	-0.01102
MCN5-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.15898	-0.31359	-0.04995
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.26102	-0.41563	-0.14686
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.27621	-0.46900	-0.10718
MCN5-COMP	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.18945	-0.34406	-0.04332



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB074**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.5673	1.5673	1.672725	1.86316	1.8697	1.87506	1.87506
BIMW-COMP-T-M	1.02571	1.02571	1.351745	1.75285	1.887665	1.9061	1.9061
BIN-COMP-T	0.858123	0.858123	1.017107	1.65946	1.900915	1.94201	1.94201
LA3-REF	0.961796	0.961796	0.976234	0.995037	1.163205	1.22631	1.22631
MCN1-COMP-T	1.89646	1.89646	1.89854	1.94327	2.02525	2.03892	2.03892
MCN2-COMP-T	1.7903	1.7903	1.82909	1.8873	2.01738	2.03476	2.03476
MCN3-COMP	1.74317	1.74317	1.78354	1.8451	1.90333	1.94632	1.94632
MCN4-COMP	1.08715	1.08715	1.37635	1.77152	1.809895	1.84164	1.84164
MCN5-COMP	0.944483	0.944483	1.025747	1.72288	1.820785	1.82391	1.82391
TB	2.39794	2.39794	2.435565	2.54262	2.55535	2.56067	2.56067

**Oneway Anova**

**Summary of Fit**

Rsquare	0.705497
Adj Rsquare	0.639233
Root Mean Square Error	0.259542
Mean of Response	1.732469
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	6.4547698	0.717197	10.6469	<.0001*
Error	40	2.6944878	0.067362		
C. Total	49	9.1492576			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB074**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.78960	0.11607	1.5550	2.0242
BIMW-COMP-T-M	5	1.64633	0.11607	1.4117	1.8809
BIN-COMP-T	5	1.49910	0.11607	1.2645	1.7337
LA3-REF	5	1.05478	0.11607	0.8202	1.2894
MCN1-COMP-T	5	1.95817	0.11607	1.7236	2.1928
MCN2-COMP-T	5	1.91605	0.11607	1.6815	2.1506
MCN3-COMP	5	1.84377	0.11607	1.6092	2.0784
MCN4-COMP	5	1.62880	0.11607	1.3942	1.8634
MCN5-COMP	5	1.48319	0.11607	1.2486	1.7178
TB	5	2.50489	0.11607	2.2703	2.7395

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.78960	0.130239	0.05824	1.6279	1.9513
BIMW-COMP-T-M	5	1.64633	0.358702	0.16042	1.2009	2.0917
BIN-COMP-T	5	1.49910	0.465615	0.20823	0.9210	2.0772
LA3-REF	5	1.05478	0.109318	0.04889	0.9190	1.1905
MCN1-COMP-T	5	1.95817	0.064644	0.02891	1.8779	2.0384
MCN2-COMP-T	5	1.91605	0.100124	0.04478	1.7917	2.0404
MCN3-COMP	5	1.84377	0.072986	0.03264	1.7531	1.9344
MCN4-COMP	5	1.62880	0.309318	0.13833	1.2447	2.0129
MCN5-COMP	5	1.48319	0.423417	0.18936	0.9574	2.0089
TB	5	2.50489	0.068949	0.03083	2.4193	2.5905

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB074**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.989	<.0001*
MCN1-COMP-T	0.442	<.0001*
MCN2-COMP-T	0.4	<.0001*
MCN3-COMP	0.327	0.0002*
BIME-COMP-T-M	0.273	0.0005*
BIMW-COMP-T-M	0.13	0.0065*
MCN4-COMP	0.112	0.0087*
BIN-COMP-T	-0.02	0.0639
MCN5-COMP	-0.03	0.0796
LA3-REF	-0.46	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	127.500	127.500	25.5000	0.000
BIMW-COMP-T-M	5	110.000	127.500	22.0000	-0.550
BIN-COMP-T	5	91.000	127.500	18.2000	-1.164
LA3-REF	5	31.000	127.500	6.2000	-3.105
MCN1-COMP-T	5	201.000	127.500	40.2000	2.361
MCN2-COMP-T	5	175.000	127.500	35.0000	1.520
MCN3-COMP	5	138.500	127.500	27.7000	0.340
MCN4-COMP	5	86.500	127.500	17.3000	-1.310
MCN5-COMP	5	74.500	127.500	14.9000	-1.698
TB	5	240.000	127.500	48.0000	3.622

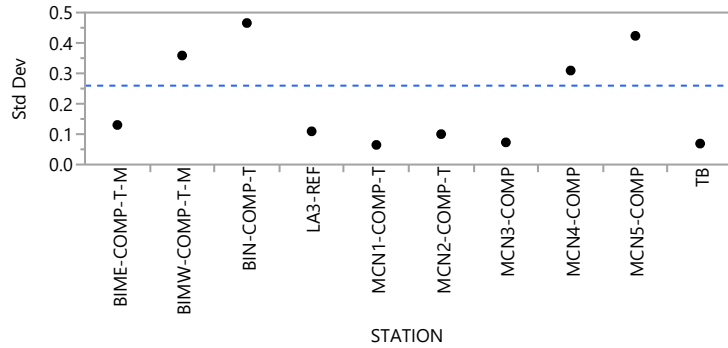
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
33.7694	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB074**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1302392	0.0935016	0.0787900
BIMW-COMP-T-M	5	0.3587024	0.2482496	0.2143680
BIN-COMP-T	5	0.4656153	0.3855953	0.3535234
LA3-REF	5	0.1093178	0.0867376	0.0747884
MCN1-COMP-T	5	0.0646439	0.0536640	0.0506840
MCN2-COMP-T	5	0.1001245	0.0810656	0.0753160
MCN3-COMP	5	0.0729856	0.0481824	0.0479160
MCN4-COMP	5	0.3093180	0.2166608	0.1734180
MCN5-COMP	5	0.4234171	0.3659537	0.3180154
TB	5	0.0689488	0.0554600	0.0479140

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	2.2349	9	40	0.0396*
Brown-Forsythe	1.5880	9	40	0.1521
Levene	5.9057	9	40	<.0001*
Bartlett	4.0045	9	.	<.0001*

Warning: Small sample sizes. Use Caution.

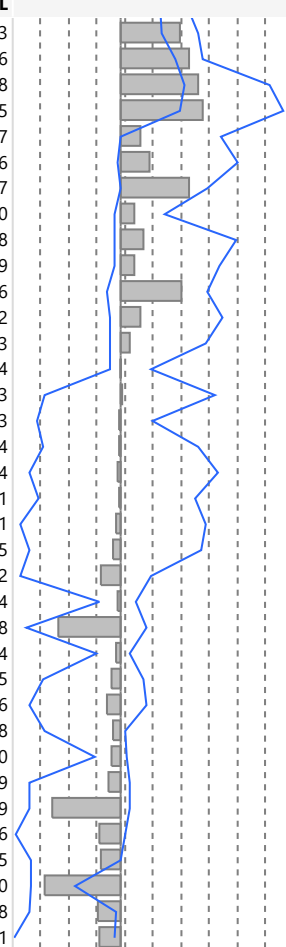
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.14724	0.02556	0.44428
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.91148	0.67431	1.04978
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.87721	0.64157	1.04409
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.82887	0.59760	0.95565
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.68569	0.53360	0.98273
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.72034	0.52871	1.52432
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.88316	0.53118	1.69191
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.46057	1.24688	1.58823
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.53845	0.38636	0.66005

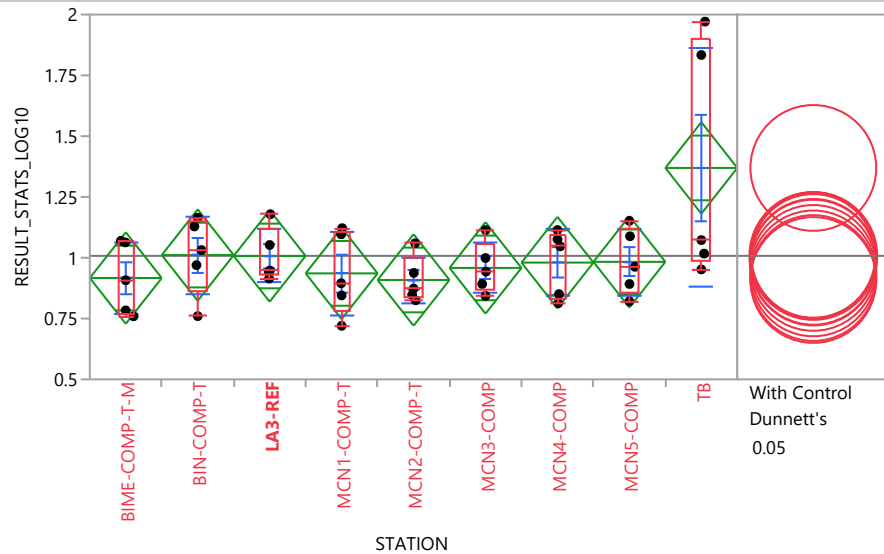
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB074**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.58589	0.39794	0.75973
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.68228	0.52687	0.80686
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.77188	0.61979	1.46288
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.81974	0.58028	1.60555
MCN1-COMP-T	BIMW-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	0.19042	-0.00548	0.98587
MCN1-COMP-T	BIN-COMP-T	4.00000	1.914854	2.08893	0.0367*	0.28381	-0.04139	1.15346
MCN4-COMP	LA3-REF	4.00000	1.914854	2.08893	0.0367*	0.67488	-0.01295	0.85097
MCN2-COMP-T	BIME-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.12494	-0.07404	0.43270
MCN2-COMP-T	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	0.22784	-0.07413	1.14188
MCN2-COMP-T	BIMW-COMP-T-M	2.80000	1.914854	1.46225	0.1437	0.13445	-0.07893	0.97429
MCN5-COMP	LA3-REF	2.40000	1.914854	1.25336	0.2101	0.59760	-0.15562	0.85586
MCN3-COMP	BIN-COMP-T	2.00000	1.914854	1.04447	0.2963	0.18564	-0.11810	1.00222
MCN3-COMP	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.07709	-0.12606	0.83463
MCN3-COMP	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.00282	-0.12117	0.29304
MCN4-COMP	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	0.00609	-0.77267	0.92003
BIMW-COMP-T-M	BIME-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.02530	-0.83863	0.30193
MCN4-COMP	BIMW-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.02759	-0.78208	0.75244
MCN5-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.04216	-0.91534	0.95954
MCN5-COMP	MCN4-COMP	-0.40000	1.914854	-0.20889	0.8345	-0.02398	-0.83367	0.73051
BIN-COMP-T	BIMW-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.04628	-1.01111	0.83411
MCN5-COMP	BIMW-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.08123	-0.92475	0.79195
BIN-COMP-T	BIME-COMP-T-M	-1.60000	1.914854	-0.83557	0.4034	-0.20370	-1.00622	0.29252
MCN2-COMP-T	MCN1-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.03274	-0.22128	0.13414
LA3-REF	BIN-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.63351	-0.95134	0.24198
MCN3-COMP	MCN2-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.05368	-0.25683	0.07844
MCN4-COMP	BIME-COMP-T-M	-2.60000	1.909043	-1.36194	0.1732	-0.09164	-0.77719	0.21085
MCN5-COMP	BIME-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-0.14028	-0.91986	0.25036
MCN4-COMP	MCN3-COMP	-3.20000	1.914854	-1.67115	0.0947	-0.08882	-0.77319	0.03498
MCN3-COMP	MCN1-COMP-T	-3.60000	1.914854	-1.88004	0.0601	-0.09817	-0.26841	0.04570
MCN5-COMP	MCN3-COMP	-3.80000	1.909043	-1.99053	0.0465*	-0.12866	-0.91586	0.07449
LA3-REF	BIMW-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.68711	-0.91543	0.07439
MCN5-COMP	MCN2-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.21710	-1.05552	0.02736
MCN4-COMP	MCN2-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-0.20233	-0.91285	-0.01215
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.77496	-0.90254	-0.46720
MCN4-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.23343	-0.92443	-0.05898
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.22126	-1.06710	-0.07671



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB077**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.759324	0.759324	0.771504	0.907387	1.06639	1.06979	1.06979
BIN-COMP-T	0.759977	0.759977	0.864838	1.03176	1.146885	1.1651	1.1651
LA3-REF	0.914371	0.914371	0.928809	0.947612	1.115775	1.17888	1.17888
MCN1-COMP-T	0.720159	0.720159	0.782629	0.895265	1.10907	1.1217	1.1217
MCN2-COMP-T	0.825148	0.825148	0.836138	0.873209	0.998721	1.05959	1.05959
MCN3-COMP	0.842877	0.842877	0.867486	0.943247	1.056465	1.11394	1.11394
MCN4-COMP	0.812913	0.812913	0.831808	1.047	1.095045	1.11394	1.11394
MCN5-COMP	0.821031	0.821031	0.856563	0.962676	1.12006	1.15173	1.15173
TB	0.951992	0.951992	0.984626	1.07255	1.902355	1.97104	1.97104

**Oneway Anova**

**Summary of Fit**

Rsquare	0.337599
Adj Rsquare	0.190399
Root Mean Square Error	0.207417
Mean of Response	1.007801
Observations (or Sum Wgts)	45

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	8	0.7893562	0.098670	2.2935	0.0425*
Error	36	1.5487884	0.043022		
C. Total	44	2.3381445			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB077**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.91664	0.09276	0.7285	1.1048
BIN-COMP-T	5	1.01104	0.09276	0.8229	1.1992
LA3-REF	5	1.00736	0.09276	0.8192	1.1955
MCN1-COMP-T	5	0.93573	0.09276	0.7476	1.1239
MCN2-COMP-T	5	0.90859	0.09276	0.7205	1.0967
MCN3-COMP	5	0.95823	0.09276	0.7701	1.1464
MCN4-COMP	5	0.98014	0.09276	0.7920	1.1683
MCN5-COMP	5	0.98318	0.09276	0.7951	1.1713
TB	5	1.36930	0.09276	1.1812	1.5574

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.91664	0.147804	0.06610	0.73311	1.1002
BIN-COMP-T	5	1.01104	0.160267	0.07167	0.81204	1.2100
LA3-REF	5	1.00736	0.109315	0.04889	0.87162	1.1431
MCN1-COMP-T	5	0.93573	0.170833	0.07640	0.72362	1.1478
MCN2-COMP-T	5	0.90859	0.094405	0.04222	0.79137	1.0258
MCN3-COMP	5	0.95823	0.104656	0.04680	0.82828	1.0882
MCN4-COMP	5	0.98014	0.138121	0.06177	0.80864	1.1516
MCN5-COMP	5	0.98318	0.136462	0.06103	0.81374	1.1526
TB	5	1.36930	0.490884	0.21953	0.75979	1.9788

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.78823	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	-4e-3	0.0535
BIN-COMP-T	-0.36	1.0000
LA3-REF	-0.37	1.0000
MCN5-COMP	-0.34	1.0000
MCN4-COMP	-0.34	1.0000
MCN3-COMP	-0.32	0.9997
MCN1-COMP-T	-0.29	0.9958
BIME-COMP-T-M	-0.28	0.9818
MCN2-COMP-T	-0.27	0.9706

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB077**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

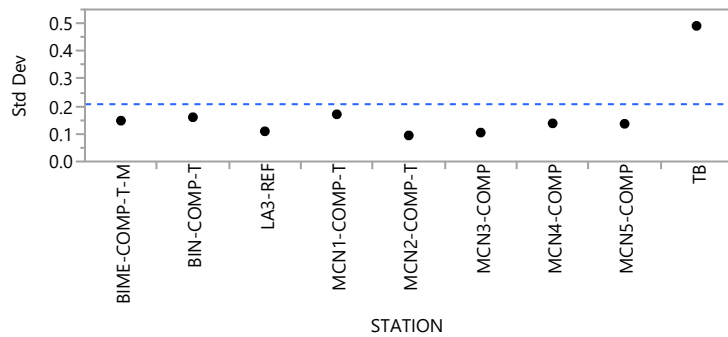
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	85.000	115.000	17.0000	-1.066
BIN-COMP-T	5	136.000	115.000	27.2000	0.740
LA3-REF	5	129.500	115.000	25.9000	0.506
MCN1-COMP-T	5	100.000	115.000	20.0000	-0.524
MCN2-COMP-T	5	77.000	115.000	15.4000	-1.354
MCN3-COMP	5	103.500	115.000	20.7000	-0.397
MCN4-COMP	5	115.500	115.000	23.1000	0.000
MCN5-COMP	5	118.500	115.000	23.7000	0.108
TB	5	170.000	115.000	34.0000	1.969

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
7.4102	8	0.4931

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478043	0.1198040	0.1179544
BIN-COMP-T	5	0.1602672	0.1169626	0.1128188
LA3-REF	5	0.1093153	0.0867352	0.0747864
MCN1-COMP-T	5	0.1708325	0.1386701	0.1305766
MCN2-COMP-T	5	0.0944052	0.0721086	0.0650334
MCN3-COMP	5	0.1046560	0.0785879	0.0755914
MCN4-COMP	5	0.1381210	0.1186668	0.1052950
MCN5-COMP	5	0.1364619	0.1095005	0.1053988
TB	5	0.4908842	0.4264421	0.3670916

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB077**

**Tests that the Variances are Equal**

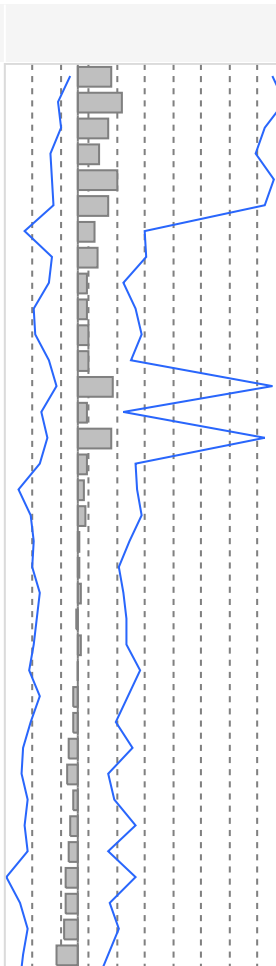
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	9.0801	8	36	<.0001*
Brown-Forsythe	1.5812	8	36	0.1650
Levene	12.0584	8	36	<.0001*
Bartlett	2.6234	8	.	0.0072*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN2-COMP-T	4.00000	1.914854	2.08893	0.0367*	0.199341	-0.042330	1.123913
TB	BIME-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.257936	-0.110998	1.187356
TB	MCN3-COMP	3.20000	1.914854	1.67115	0.0947	0.174383	-0.096680	1.078945
TB	LA3-REF	2.80000	1.914854	1.46225	0.1437	0.124938	-0.161620	1.027793
TB	MCN1-COMP-T	2.40000	1.914854	1.25336	0.2101	0.231833	-0.144448	1.125942
TB	MCN5-COMP	2.00000	1.914854	1.04447	0.2963	0.180455	-0.136398	1.078945
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.095310	-0.303013	0.381416
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.115890	-0.148619	0.395196
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054350	-0.167495	0.266813
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.050950	-0.250077	0.330256
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.061707	-0.241959	0.368046
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066947	-0.167495	0.304603
TB	MCN4-COMP	1.60000	1.914854	0.83557	0.4034	0.204347	-0.124158	1.120338
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054350	-0.208888	0.266813
TB	BIN-COMP-T	1.20000	1.914854	0.62668	0.5309	0.192015	-0.176678	1.073693
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.050950	-0.220113	0.330256
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.033450	-0.342831	0.338016
MCN5-COMP	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.046997	-0.275409	0.368231
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012240	-0.255119	0.301028
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007825	-0.263238	0.233273
MCN5-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.019429	-0.221845	0.259635
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.003400	-0.237842	0.275906
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.017500	-0.253563	0.278830
MCN4-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.005604	-0.283527	0.355991
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.026452	-0.221853	0.292693
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.022056	-0.274573	0.217693
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051160	-0.315757	0.316173
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063669	-0.328178	0.170693
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.027150	-0.286785	0.208483
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040280	-0.307639	0.328413
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053681	-0.286785	0.170693
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.068660	-0.408511	0.336463
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.069273	-0.333782	0.182069
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.077604	-0.285793	0.239012
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.122572	-0.317973	0.177875

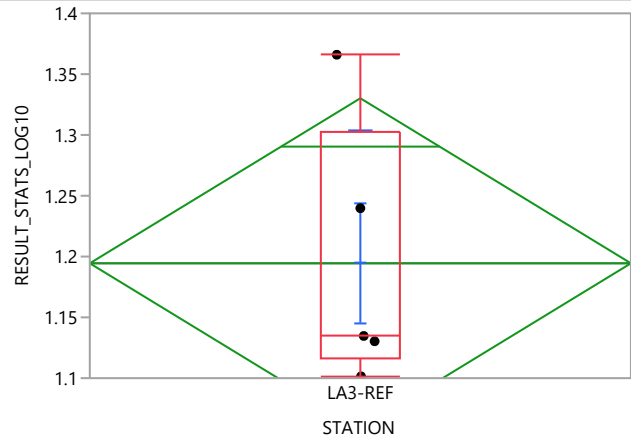


**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB077**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096120	-0.331753	0.116343

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB081**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	1.10146	1.10146	1.115895	1.1347	1.302865	1.36597	1.36597

**Oneway Anova**

**Summary of Fit**

Rsquare	0
Adj Rsquare	0
Root Mean Square Error	0.109317
Mean of Response	1.194444
Observations (or Sum Wgts)	5

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	0	0.00000000	.	.	.
Error	4	0.04780068	0.011950		
C. Total	4	0.04780068			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
LA3-REF	5	1.19444	0.04889	1.0587	1.3302

Std Error uses a pooled estimate of error variance



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB081**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
LA3-REF	5	1.19444	0.109317	0.04889	1.0587	1.3302

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
LA3-REF	5	15.000	15.000	3.00000	

**1-Way Test, ChiSquare Approximation**

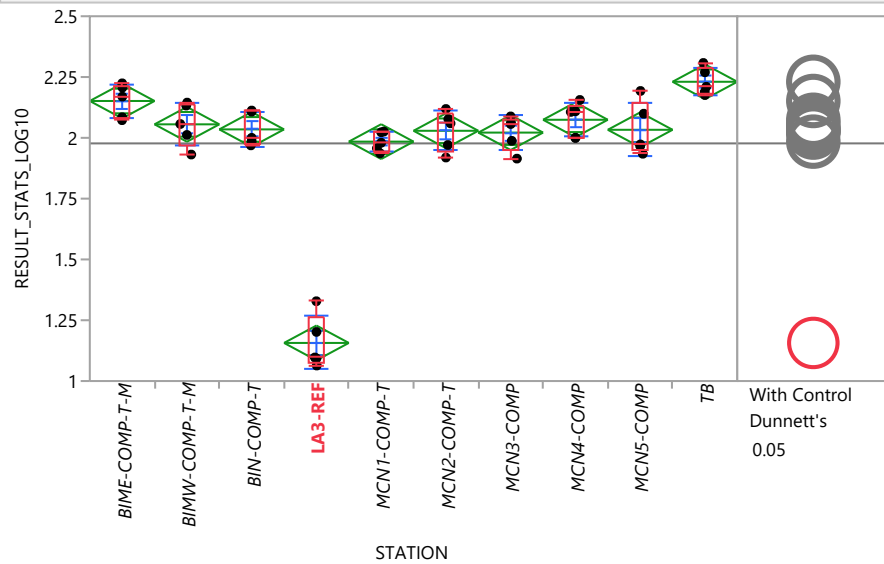
ChiSquare	DF	Prob>ChiSq
0.0000	0	

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB087**



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB087**

**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	2.07255	2.07255	2.07863	2.16946	2.215475	2.22419	2.22419
BIMW-COMP-T-M	1.93128	1.93128	1.97159	2.0569	2.138795	2.14496	2.14496
BIN-COMP-T	1.96897	1.96897	1.976865	2	2.109965	2.1123	2.1123
LA3-REF	1.06367	1.06367	1.07811	1.09691	1.265075	1.32818	1.32818
MCN1-COMP-T	1.93633	1.93633	1.94679	1.9798	2.024335	2.02581	2.02581
MCN2-COMP-T	1.91897	1.91897	1.94476	2.05959	2.09793	2.11869	2.11869
MCN3-COMP	1.91457	1.91457	1.95117	2.05673	2.07442	2.08814	2.08814
MCN4-COMP	2	2	2	2.10646	2.132515	2.15589	2.15589
MCN5-COMP	1.9345	1.9345	1.95021	1.97285	2.14609	2.1928	2.1928
TB	2.17609	2.17609	2.182575	2.20995	2.2888	2.30798	2.30798

**Oneway Anova**

**Summary of Fit**

Rsquare	0.940572
Adj Rsquare	0.9272
Root Mean Square Error	0.079218
Mean of Response	1.977137
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	9	3.9728407	0.441427	70.3422	<.0001*
Error	40	0.2510168	0.006275		
C. Total	49	4.2238575			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.15153	0.03543	2.0799	2.2231
BIMW-COMP-T-M	5	2.05553	0.03543	1.9839	2.1271
BIN-COMP-T	5	2.03473	0.03543	1.9631	2.1063
LA3-REF	5	1.15666	0.03543	1.0851	1.2283
MCN1-COMP-T	5	1.98441	0.03543	1.9128	2.0560
MCN2-COMP-T	5	2.02899	0.03543	1.9574	2.1006
MCN3-COMP	5	2.02158	0.03543	1.9500	2.0932
MCN4-COMP	5	2.07430	0.03543	2.0027	2.1459
MCN5-COMP	5	2.03309	0.03543	1.9615	2.1047
TB	5	2.23054	0.03543	2.1589	2.3021

Std Error uses a pooled estimate of error variance

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB087**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.15153	0.069559	0.03111	2.0652	2.2379
BIMW-COMP-T-M	5	2.05553	0.088439	0.03955	1.9457	2.1653
BIN-COMP-T	5	2.03473	0.069568	0.03111	1.9484	2.1211
LA3-REF	5	1.15666	0.109315	0.04889	1.0209	1.2924
MCN1-COMP-T	5	1.98441	0.039569	0.01770	1.9353	2.0335
MCN2-COMP-T	5	2.02899	0.081889	0.03662	1.9273	2.1307
MCN3-COMP	5	2.02158	0.070339	0.03146	1.9342	2.1089
MCN4-COMP	5	2.07430	0.070615	0.03158	1.9866	2.1620
MCN5-COMP	5	2.03309	0.109273	0.04887	1.8974	2.1688
TB	5	2.23054	0.056200	0.02513	2.1608	2.3003

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.933	<.0001*
BIME-COMP-T-M	0.854	<.0001*
MCN4-COMP	0.777	<.0001*
BIMW-COMP-T-M	0.758	<.0001*
BIN-COMP-T	0.737	<.0001*
MCN5-COMP	0.736	<.0001*
MCN2-COMP-T	0.731	<.0001*
MCN3-COMP	0.724	<.0001*
MCN1-COMP-T	0.687	<.0001*
LA3-REF	-0.14	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	196.000	127.500	39.2000	2.199
BIMW-COMP-T-M	5	135.000	127.500	27.0000	0.226
BIN-COMP-T	5	122.000	127.500	24.4000	-0.162
LA3-REF	5	15.000	127.500	3.0000	-3.622
MCN1-COMP-T	5	84.000	127.500	16.8000	-1.391
MCN2-COMP-T	5	116.000	127.500	23.2000	-0.356
MCN3-COMP	5	109.000	127.500	21.8000	-0.582
MCN4-COMP	5	151.000	127.500	30.2000	0.744
MCN5-COMP	5	114.000	127.500	22.8000	-0.420

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB087**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

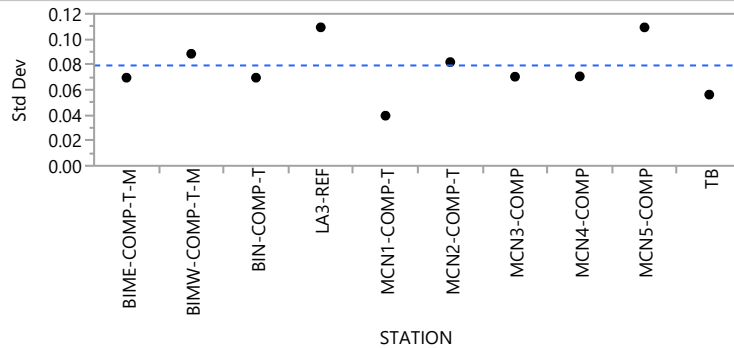
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
TB	5	233.000	127.500	46.6000	3.396

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
29.8095	9	0.0005*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0695594	0.0583232	0.0547380
BIMW-COMP-T-M	5	0.0884388	0.0671552	0.0668820
BIN-COMP-T	5	0.0695684	0.0601864	0.0532400
LA3-REF	5	0.1093154	0.0867352	0.0747860
MCN1-COMP-T	5	0.0395695	0.0319400	0.0310180
MCN2-COMP-T	5	0.0818892	0.0673872	0.0612680
MCN3-COMP	5	0.0703392	0.0563296	0.0493000
MCN4-COMP	5	0.0706152	0.0594384	0.0530060
MCN5-COMP	5	0.1092729	0.0904000	0.0783520
TB	5	0.0561995	0.0466080	0.0424900

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[5]	0.8858	9	40	0.5460
Brown-Forsythe	0.2881	9	40	0.9742
Levene	1.3893	9	40	0.2254
Bartlett	0.6060	9	.	0.7931

Warning: Small sample sizes. Use Caution.

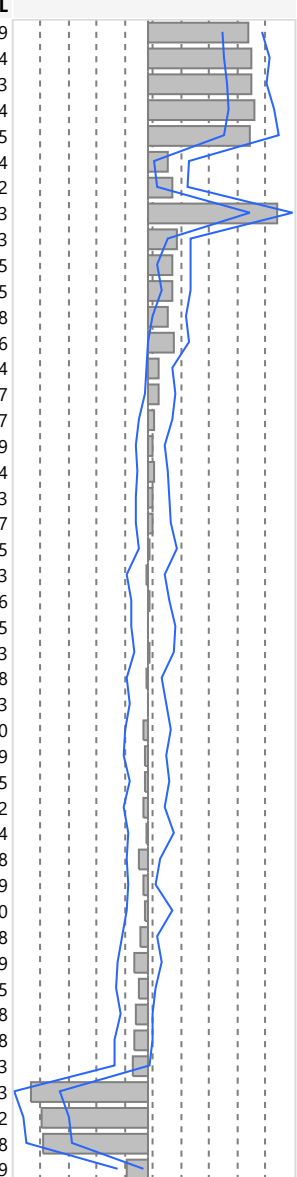
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*	Alpha
1.95996	0.05

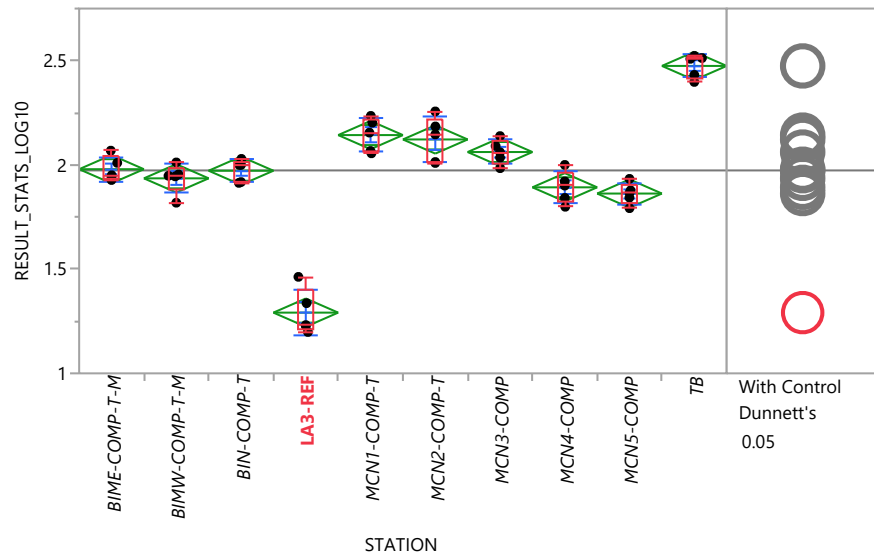
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB087**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.86034	0.62907	0.95919
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.87520	0.64237	1.02614
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.88617	0.65959	0.99703
MCN4-COMP	LA3-REF	4.80000	1.909043	2.51435	0.0119*	0.90745	0.67182	1.06334
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.87337	0.63774	1.10025
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.16419	0.04346	0.33834
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.20035	0.06846	0.32322
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.09651	0.86088	1.21543
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.24381	0.15323	0.35073
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.20554	0.07037	0.35065
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.20892	0.10092	0.35505
TB	MCN4-COMP	4.80000	1.909043	2.51435	0.0119*	0.16316	0.03317	0.30798
TB	MCN5-COMP	4.00000	1.914854	2.08893	0.0367*	0.21621	-0.00374	0.34206
MCN4-COMP	MCN1-COMP-T	3.20000	1.909043	1.67623	0.0937	0.08360	-0.02581	0.19864
TB	BIME-COMP-T-M	2.80000	1.914854	1.46225	0.1437	0.09138	-0.03513	0.22327
MCN4-COMP	MCN3-COMP	2.40000	1.909043	1.25717	0.2087	0.04973	-0.08814	0.19457
MCN3-COMP	MCN1-COMP-T	2.00000	1.914854	1.04447	0.2963	0.03784	-0.10829	0.13089
MCN2-COMP-T	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	0.05136	-0.10389	0.16144
MCN4-COMP	BIN-COMP-T	1.60000	1.891501	0.84589	0.3976	0.03103	-0.11230	0.17113
MCN4-COMP	MCN2-COMP-T	1.60000	1.909043	0.83812	0.4020	0.03720	-0.11869	0.19017
MCN5-COMP	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.01560	-0.08836	0.23555
MCN2-COMP-T	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.01421	-0.18866	0.13393
MCN4-COMP	BIMW-COMP-T-M	0.00000	1.909043	0.00000	1.0000	0.01093	-0.14496	0.17786
MCN5-COMP	MCN2-COMP-T	0.00000	1.914854	0.00000	1.0000	0.00230	-0.15277	0.22225
MCN5-COMP	MCN3-COMP	0.00000	1.914854	0.00000	1.0000	0.01124	-0.12620	0.20503
MCN3-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.01949	-0.19306	0.10338
MCN3-COMP	MCN2-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.00440	-0.16260	0.14173
MCN5-COMP	BIMW-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.03905	-0.19813	0.18090
MCN2-COMP-T	BIMW-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.02627	-0.21366	0.14589
BIN-COMP-T	BIMW-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.02714	-0.16366	0.17635
MCN3-COMP	BIMW-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.04449	-0.21806	0.12942
MCN5-COMP	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.01292	-0.17313	0.20804
MCN1-COMP-T	BIMW-COMP-T-M	-2.00000	1.914854	-1.04447	0.2963	-0.07710	-0.19630	0.09158
MCN1-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.04275	-0.17130	0.05389
MCN5-COMP	MCN4-COMP	-2.00000	1.909043	-1.04765	0.2948	-0.03408	-0.18997	0.19280
MCN4-COMP	BIME-COMP-T-M	-2.40000	1.909043	-1.25717	0.2087	-0.07255	-0.22419	0.07118
MCN5-COMP	BIME-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-0.11879	-0.27226	0.10809
BIMW-COMP-T-M	BIME-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.07923	-0.27548	0.06025
BIN-COMP-T	BIME-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.10358	-0.23943	0.03508
MCN2-COMP-T	BIME-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-0.11416	-0.28779	0.03398
MCN3-COMP	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.13605	-0.29219	0.00343
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.00479	-1.14309	-0.75653
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.91935	-1.06896	-0.68372
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.90309	-1.04396	-0.65658
MCN1-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.18095	-0.27043	-0.04969



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB095**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.92745	1.92745	1.934165	1.95031	2.03911	2.06846	2.06846
BIMW-COMP-T-M	1.81858	1.81858	1.881765	1.94782	1.98307	2.0119	2.0119
BIN-COMP-T	1.91364	1.91364	1.915725	2	2.01448	2.02896	2.02896
LA3-REF	1.19837	1.19837	1.212805	1.23161	1.399775	1.46288	1.46288
MCN1-COMP-T	2.05552	2.05552	2.061235	2.1549	2.21893	2.23521	2.23521
MCN2-COMP-T	2.00914	2.00914	2.011575	2.14613	2.220565	2.25661	2.25661
MCN3-COMP	1.98421	1.98421	2.009485	2.0607	2.114555	2.1383	2.1383
MCN4-COMP	1.79909	1.79909	1.820365	1.90062	1.96041	2	2
MCN5-COMP	1.79239	1.79239	1.8178	1.86646	1.905415	1.93305	1.93305
TB	2.39794	2.39794	2.41487	2.50864	2.51777	2.52288	2.52288

**Oneway Anova**

**Summary of Fit**

Rsquare	0.946256
Adj Rsquare	0.934164
Root Mean Square Error	0.075155
Mean of Response	1.973499
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	3.9778821	0.441987	78.2522	<.0001*
Error	40	0.2259295	0.005648		
C. Total	49	4.2038116			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB095**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.97937	0.03361	1.9114	2.0473
BIMW-COMP-T-M	5	1.93550	0.03361	1.8676	2.0034
BIN-COMP-T	5	1.97208	0.03361	1.9042	2.0400
LA3-REF	5	1.29135	0.03361	1.2234	1.3593
MCN1-COMP-T	5	2.14305	0.03361	2.0751	2.2110
MCN2-COMP-T	5	2.12208	0.03361	2.0542	2.1900
MCN3-COMP	5	2.06176	0.03361	1.9938	2.1297
MCN4-COMP	5	1.89243	0.03361	1.8245	1.9604
MCN5-COMP	5	1.86258	0.03361	1.7946	1.9305
TB	5	2.47478	0.03361	2.4069	2.5427

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.97937	0.058911	0.02635	1.9062	2.0525
BIMW-COMP-T-M	5	1.93550	0.070886	0.03170	1.8475	2.0235
BIN-COMP-T	5	1.97208	0.052808	0.02362	1.9065	2.0377
LA3-REF	5	1.29135	0.109317	0.04889	1.1556	1.4271
MCN1-COMP-T	5	2.14305	0.080061	0.03580	2.0436	2.2425
MCN2-COMP-T	5	2.12208	0.108409	0.04848	1.9875	2.2567
MCN3-COMP	5	2.06176	0.057979	0.02593	1.9898	2.1337
MCN4-COMP	5	1.89243	0.077033	0.03445	1.7968	1.9881
MCN5-COMP	5	1.86258	0.051269	0.02293	1.7989	1.9262
TB	5	2.47478	0.056229	0.02515	2.4050	2.5446

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB095**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	1.05	<.0001*
MCN1-COMP-T	0.718	<.0001*
MCN2-COMP-T	0.697	<.0001*
MCN3-COMP	0.637	<.0001*
BIME-COMP-T-M	0.554	<.0001*
BIN-COMP-T	0.547	<.0001*
BIMW-COMP-T-M	0.51	<.0001*
MCN4-COMP	0.467	<.0001*
MCN5-COMP	0.438	<.0001*
LA3-REF	-0.13	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	124.000	127.500	24.8000	-0.097
BIMW-COMP-T-M	5	102.000	127.500	20.4000	-0.809
BIN-COMP-T	5	113.000	127.500	22.6000	-0.453
LA3-REF	5	15.000	127.500	3.0000	-3.622
MCN1-COMP-T	5	198.000	127.500	39.6000	2.264
MCN2-COMP-T	5	186.000	127.500	37.2000	1.876
MCN3-COMP	5	169.000	127.500	33.8000	1.326
MCN4-COMP	5	71.000	127.500	14.2000	-1.811
MCN5-COMP	5	57.000	127.500	11.4000	-2.264
TB	5	240.000	127.500	48.0000	3.622

**1-Way Test, ChiSquare Approximation**

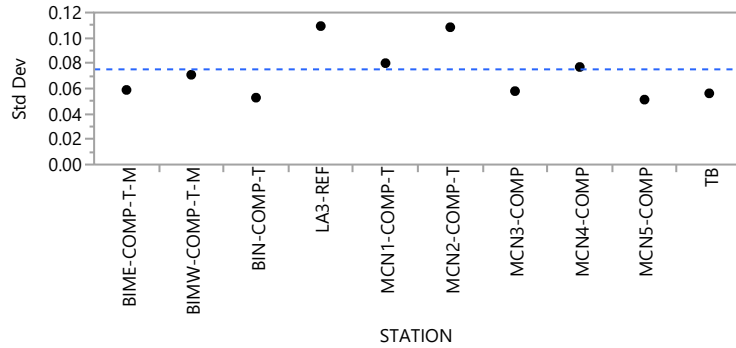
ChiSquare	DF	Prob>ChiSq
41.8551	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB095**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0589114	0.0477904	0.0419780
BIMW-COMP-T-M	5	0.0708864	0.0467672	0.0405220
BIN-COMP-T	5	0.0528083	0.0450856	0.0395020
LA3-REF	5	0.1093168	0.0867368	0.0747880
MCN1-COMP-T	5	0.0800605	0.0654488	0.0630780
MCN2-COMP-T	5	0.1084090	0.0884056	0.0835960
MCN3-COMP	5	0.0579793	0.0422392	0.0420280
MCN4-COMP	5	0.0770330	0.0576552	0.0560180
MCN5-COMP	5	0.0512688	0.0358224	0.0350460
TB	5	0.0562287	0.0479312	0.0411600

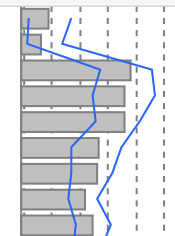
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.0327	9	40	0.4317
Brown-Forsythe	0.4898	9	40	0.8727
Levene	1.2937	9	40	0.2706
Bartlett	0.6172	9	.	0.7836

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

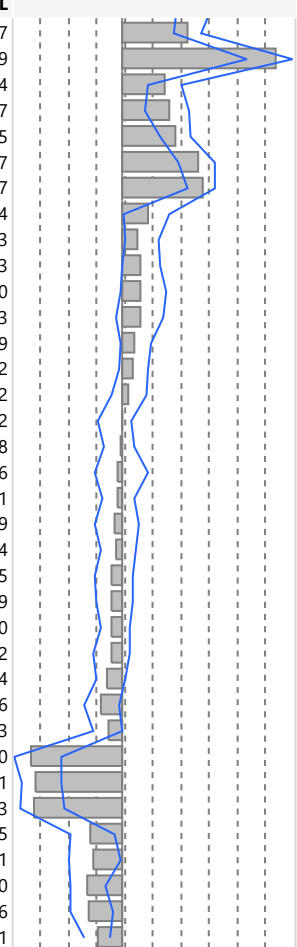
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.20995	0.055050	0.38407
MCN1-COMP-T	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	0.15490	0.037990	0.31740
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.85715	0.604070	1.00797
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.81077	0.551130	1.02937
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.80163	0.571880	0.91106
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.61003	0.378760	0.77276
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.59638	0.380330	0.70581
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.49888	0.363340	0.58521
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.55842	0.419900	0.69408



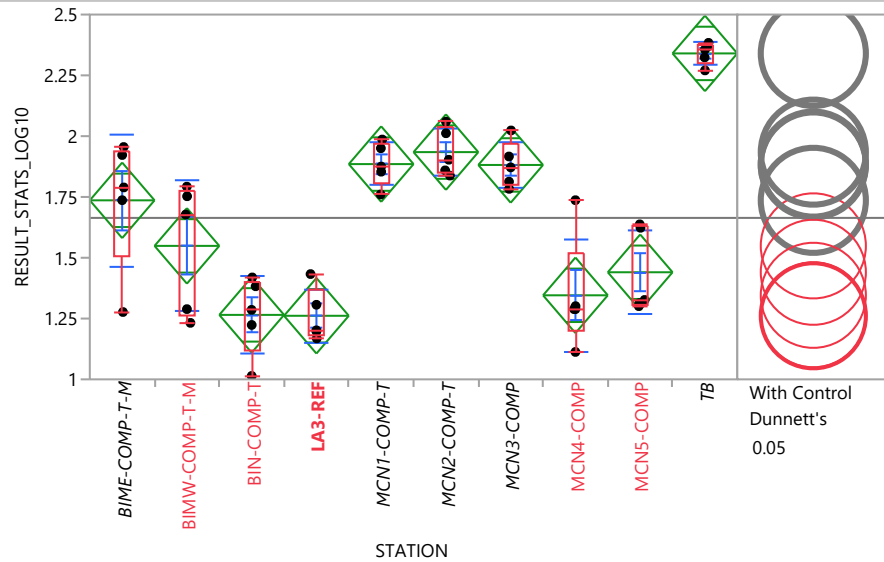
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB095**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	0.50864	0.397940	0.60507
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.19957	0.968920	1.31429
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.33099	0.195290	0.45714
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.36251	0.175190	0.50887
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.41783	0.293500	0.52845
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.59184	0.431800	0.71357
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.63086	0.498750	0.72027
MCN2-COMP-T	BIMW-COMP-T-M	4.40000	1.914854	2.29783	0.0216*	0.19543	0.002110	0.36594
MCN3-COMP	BIMW-COMP-T-M	4.40000	1.914854	2.29783	0.0216*	0.11575	0.022860	0.27223
MCN1-COMP-T	BIME-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	0.14514	-0.001510	0.29433
MCN2-COMP-T	BIN-COMP-T	4.00000	1.909043	2.09529	0.0361*	0.14613	-0.014950	0.33880
MCN2-COMP-T	BIME-COMP-T-M	3.60000	1.914854	1.88004	0.0601	0.13637	-0.054450	0.31573
MCN3-COMP	BIN-COMP-T	3.60000	1.909043	1.88576	0.0593	0.09081	-0.015790	0.22049
MCN3-COMP	BIME-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.08445	-0.033700	0.19742
BIN-COMP-T	BIMW-COMP-T-M	0.80000	1.909043	0.41906	0.6752	0.04576	-0.094090	0.18142
BIMW-COMP-T-M	BIME-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.00536	-0.191180	0.07102
BIN-COMP-T	BIME-COMP-T-M	-0.80000	1.909043	-0.41906	0.6752	-0.00976	-0.150650	0.08808
MCN2-COMP-T	MCN1-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.04151	-0.221200	0.18966
MCN5-COMP	MCN4-COMP	-0.80000	1.914854	-0.41779	0.6761	-0.03416	-0.156790	0.09141
MCN3-COMP	MCN2-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.05532	-0.221850	0.12429
MCN4-COMP	BIMW-COMP-T-M	-2.00000	1.914854	-1.04447	0.2963	-0.04433	-0.170260	0.10224
MCN3-COMP	MCN1-COMP-T	-2.80000	1.914854	-1.46225	0.1437	-0.08274	-0.218440	0.07135
MCN4-COMP	BIN-COMP-T	-2.80000	1.891501	-1.48031	0.1388	-0.07918	-0.200910	0.08219
MCN5-COMP	BIMW-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.07885	-0.168690	0.05920
MCN4-COMP	BIME-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-0.08894	-0.226820	0.05912
MCN5-COMP	BIN-COMP-T	-4.00000	1.909043	-2.09529	0.0361*	-0.12222	-0.207610	0.01524
MCN4-COMP	MCN3-COMP	-4.40000	1.914854	-2.29783	0.0216*	-0.16999	-0.296660	-0.03476
MCN5-COMP	BIME-COMP-T-M	-4.40000	1.914854	-2.29783	0.0216*	-0.10710	-0.225250	-0.00783
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.71364	-0.841220	-0.47800
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.67523	-0.784660	-0.48191
LA3-REF	BIN-COMP-T	-4.80000	1.909043	-2.51435	0.0119*	-0.69057	-0.801720	-0.45493
MCN4-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.25428	-0.403560	-0.06695
MCN4-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.22531	-0.414970	-0.01401
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.27712	-0.410260	-0.13390
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.26835	-0.413400	-0.08096
MCN5-COMP	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.19424	-0.298420	-0.10171



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB097**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.2769	1.2769	1.50683	1.78915	1.93891	1.95542	1.95542
BIMW-COMP-T-M	1.23231	1.23231	1.260555	1.67778	1.77262	1.79239	1.79239
BIN-COMP-T	1.01401	1.01401	1.11887	1.28579	1.400915	1.41913	1.41913
LA3-REF	1.1684	1.1684	1.18284	1.20165	1.369815	1.43292	1.43292
MCN1-COMP-T	1.76024	1.76024	1.807055	1.87506	1.96826	1.98621	1.98621
MCN2-COMP-T	1.83792	1.83792	1.84865	1.90309	2.035745	2.05959	2.05959
MCN3-COMP	1.78329	1.78329	1.7981	1.87168	1.969965	2.02348	2.02348
MCN4-COMP	1.1127	1.1127	1.20075	1.2888	1.518895	1.73676	1.73676
MCN5-COMP	1.30103	1.30103	1.307325	1.32658	1.63035	1.63745	1.63745
TB	2.27036	2.27036	2.297125	2.35655	2.375115	2.3837	2.3837

**Oneway Anova**

**Summary of Fit**

Rsquare	0.825492
Adj Rsquare	0.786228
Root Mean Square Error	0.171855
Mean of Response	1.66387
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	5.5883354	0.620926	21.0240	<.0001*
Error	40	1.1813681	0.029534		
C. Total	49	6.7697035			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB097**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.73613	0.07686	1.5808	1.8915
BIMW-COMP-T-M	5	1.54883	0.07686	1.3935	1.7042
BIN-COMP-T	5	1.26507	0.07686	1.1097	1.4204
LA3-REF	5	1.26139	0.07686	1.1061	1.4167
MCN1-COMP-T	5	1.88514	0.07686	1.7298	2.0405
MCN2-COMP-T	5	1.93438	0.07686	1.7790	2.0897
MCN3-COMP	5	1.88156	0.07686	1.7262	2.0369
MCN4-COMP	5	1.34562	0.07686	1.1903	1.5009
MCN5-COMP	5	1.44039	0.07686	1.2851	1.5957
TB	5	2.34021	0.07686	2.1849	2.4955

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.73613	0.272254	0.12176	1.3981	2.0742
BIMW-COMP-T-M	5	1.54883	0.267102	0.11945	1.2172	1.8805
BIN-COMP-T	5	1.26507	0.160266	0.07167	1.0661	1.4641
LA3-REF	5	1.26139	0.109319	0.04889	1.1257	1.3971
MCN1-COMP-T	5	1.88514	0.088235	0.03946	1.7756	1.9947
MCN2-COMP-T	5	1.93438	0.096948	0.04336	1.8140	2.0548
MCN3-COMP	5	1.88156	0.094639	0.04232	1.7641	1.9991
MCN4-COMP	5	1.34562	0.232211	0.10385	1.0573	1.6339
MCN5-COMP	5	1.44039	0.173720	0.07769	1.2247	1.6561
TB	5	2.34021	0.044712	0.02000	2.2847	2.3957

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB097**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.773	<.0001*
MCN2-COMP-T	0.367	<.0001*
MCN1-COMP-T	0.318	<.0001*
MCN3-COMP	0.315	<.0001*
BIME-COMP-T-M	0.169	0.0007*
BIMW-COMP-T-M	-0.02	0.0736
MCN5-COMP	-0.13	0.4763
MCN4-COMP	-0.22	0.9756
BIN-COMP-T	-0.3	1.0000
LA3-REF	-0.31	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	141.500	127.500	28.3000	0.437
BIMW-COMP-T-M	5	97.000	127.500	19.4000	-0.970
BIN-COMP-T	5	53.000	127.500	10.6000	-2.393
LA3-REF	5	47.000	127.500	9.4000	-2.587
MCN1-COMP-T	5	178.000	127.500	35.6000	1.617
MCN2-COMP-T	5	191.000	127.500	38.2000	2.038
MCN3-COMP	5	176.000	127.500	35.2000	1.552
MCN4-COMP	5	62.000	127.500	12.4000	-2.102
MCN5-COMP	5	89.500	127.500	17.9000	-1.213
TB	5	240.000	127.500	48.0000	3.622

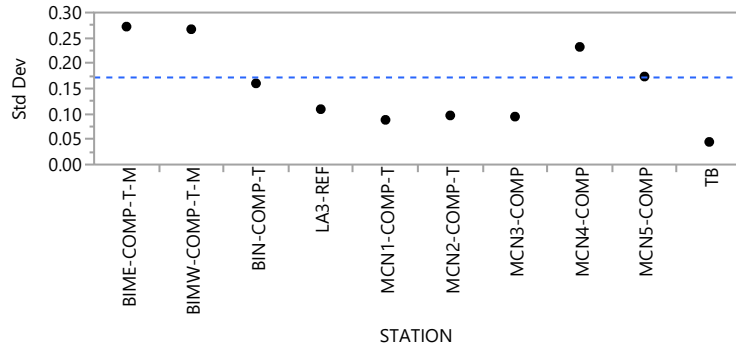
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
38.1117	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB097**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.2722537	0.1836904	0.1728320
BIMW-COMP-T-M	5	0.2671022	0.2306168	0.2048260
BIN-COMP-T	5	0.1602660	0.1169616	0.1128180
LA3-REF	5	0.1093190	0.0867384	0.0747900
MCN1-COMP-T	5	0.0882351	0.0664976	0.0644820
MCN2-COMP-T	5	0.0969478	0.0810952	0.0748380
MCN3-COMP	5	0.0946388	0.0707224	0.0687460
MCN4-COMP	5	0.2322109	0.1564568	0.1272580
MCN5-COMP	5	0.1737203	0.1519712	0.1292100
TB	5	0.0447115	0.0344648	0.0311960

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.2629	9	40	0.2866
Brown-Forsythe	0.8298	9	40	0.5930
Levene	2.3727	9	40	0.0296*
Bartlett	2.0287	9	.	0.0323*

Warning: Small sample sizes. Use Caution.

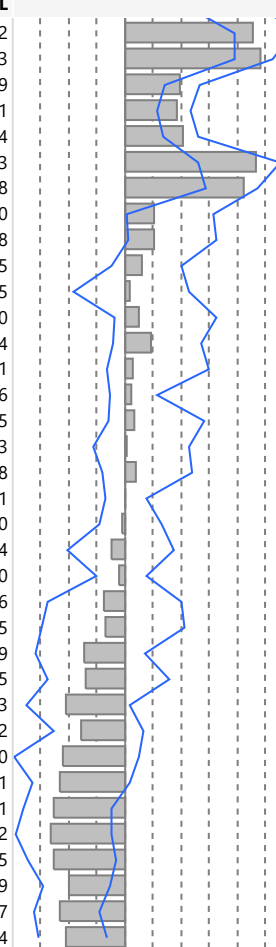
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.58927	0.377540	0.93630
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.65222	0.420950	0.78893
MCN2-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.30674	0.066990	0.77959
MCN2-COMP-T	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.63565	0.440250	0.99789
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.66952	0.426460	0.86231
MCN3-COMP	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.58918	0.393780	0.90244
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.61489	0.379990	0.82620
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.53474	0.347960	1.08963
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.67877	0.517510	1.13422

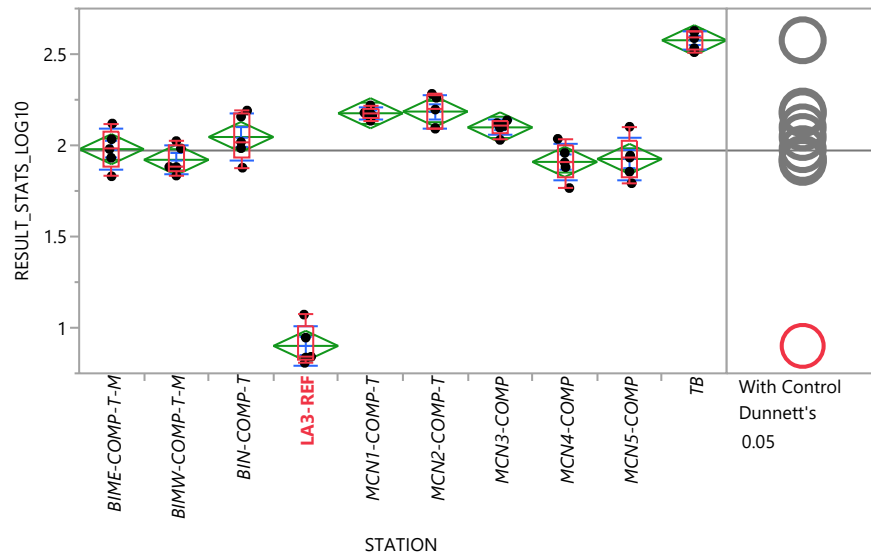
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB097**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	1.04663	0.887660	1.35252
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.10196	0.890970	1.19813
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.44883	0.320050	0.60629
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.42080	0.258460	0.52861
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.46725	0.300410	0.58324
TB	MCN4-COMP	4.80000	1.909043	2.51435	0.0119*	1.06550	0.587130	1.25383
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.96933	0.647110	1.07008
MCN1-COMP-T	BIMW-COMP-T-M	4.40000	1.914854	2.29783	0.0216*	0.23336	0.007390	0.71800
MCN3-COMP	BIMW-COMP-T-M	4.40000	1.914854	2.29783	0.0216*	0.23867	0.020520	0.73468
MCN5-COMP	LA3-REF	3.20000	1.914854	1.67115	0.0947	0.13263	-0.119300	0.45485
MCN5-COMP	MCN4-COMP	2.60000	1.903214	1.36611	0.1719	0.03778	-0.423140	0.51055
MCN2-COMP-T	BIME-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.11394	-0.096040	0.73500
MCN5-COMP	BIN-COMP-T	2.40000	1.914854	1.25336	0.2101	0.20412	-0.105510	0.60924
MCN1-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.06472	-0.162160	0.67341
MCN2-COMP-T	MCN1-COMP-T	1.20000	1.914854	0.62668	0.5309	0.04922	-0.126830	0.25166
MCN3-COMP	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.07615	-0.142510	0.63955
MCN4-COMP	BIN-COMP-T	0.80000	1.909043	0.41906	0.6752	0.01524	-0.270000	0.51303
MCN4-COMP	LA3-REF	0.40000	1.909043	0.20953	0.8340	0.08715	-0.194010	0.53948
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.00338	-0.173300	0.16961
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.02645	-0.221850	0.29270
MCN5-COMP	BIMW-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.11540	-0.478770	0.39094
MCN3-COMP	MCN2-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.04647	-0.246680	0.16410
MCN4-COMP	BIMW-COMP-T-M	-1.60000	1.891501	-0.84589	0.3976	-0.17610	-0.640150	0.44796
BIMW-COMP-T-M	BIME-COMP-T-M	-2.00000	1.914854	-1.04447	0.2963	-0.16303	-0.690090	0.47595
BIN-COMP-T	BIMW-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-0.33372	-0.738840	0.15039
MCN5-COMP	BIME-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-0.33217	-0.641800	0.34635
MCN4-COMP	BIME-COMP-T-M	-3.00000	1.903214	-1.57628	0.1150	-0.48812	-0.809700	0.02413
LA3-REF	BIMW-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.35947	-0.595110	0.14412
BIN-COMP-T	BIME-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-0.51303	-0.908390	0.10580
LA3-REF	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.53948	-0.758140	0.02981
MCN4-COMP	MCN1-COMP-T	-4.80000	1.909043	-2.51435	0.0119*	-0.58626	-0.837610	-0.11711
MCN4-COMP	MCN2-COMP-T	-4.80000	1.909043	-2.51435	0.0119*	-0.61429	-0.899200	-0.12262
MCN4-COMP	MCN3-COMP	-4.80000	1.909043	-2.51435	0.0119*	-0.58288	-0.803750	-0.07615
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.45921	-0.672590	-0.13699
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.53280	-0.745970	-0.21467
MCN5-COMP	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.48226	-0.709860	-0.16004



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB099**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.83054	1.83054	1.88114	1.9798	2.076735	2.11961	2.11961
BIMW-COMP-T-M	1.83437	1.83437	1.85759	1.8819	2.003385	2.02348	2.02348
BIN-COMP-T	1.87743	1.87743	1.931095	2.01848	2.17421	2.19081	2.19081
LA3-REF	0.807606	0.807606	0.822044	0.840847	1.009015	1.07212	1.07212
MCN1-COMP-T	2.1347	2.1347	2.149445	2.17904	2.200875	2.21913	2.21913
MCN2-COMP-T	2.09133	2.09133	2.093405	2.19629	2.27173	2.28255	2.28255
MCN3-COMP	2.02996	2.02996	2.063435	2.10646	2.1298	2.13738	2.13738
MCN4-COMP	1.76592	1.76592	1.823155	1.9061	1.997165	2.03572	2.03572
MCN5-COMP	1.79239	1.79239	1.82395	1.93305	2.022935	2.10199	2.10199
TB	2.51098	2.51098	2.52181	2.58782	2.624705	2.62761	2.62761

**Oneway Anova**

**Summary of Fit**

Rsquare	0.960637
Adj Rsquare	0.95178
Root Mean Square Error	0.09138
Mean of Response	1.971701
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	8.1513707	0.905708	108.4637	<.0001*
Error	40	0.3340132	0.008350		
C. Total	49	8.4853839			



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB099**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.97911	0.04087	1.8965	2.0617
BIMW-COMP-T-M	5	1.92077	0.04087	1.8382	2.0034
BIN-COMP-T	5	2.04582	0.04087	1.9632	2.1284
LA3-REF	5	0.90059	0.04087	0.8180	0.9832
MCN1-COMP-T	5	2.17594	0.04087	2.0933	2.2585
MCN2-COMP-T	5	2.18531	0.04087	2.1027	2.2679
MCN3-COMP	5	2.09859	0.04087	2.0160	2.1812
MCN4-COMP	5	1.90935	0.04087	1.8268	1.9919
MCN5-COMP	5	1.92536	0.04087	1.8428	2.0080
TB	5	2.57617	0.04087	2.4936	2.6588

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.97911	0.108461	0.04851	1.8444	2.1138
BIMW-COMP-T-M	5	1.92077	0.079106	0.03538	1.8225	2.0190
BIN-COMP-T	5	2.04582	0.128793	0.05760	1.8859	2.2057
LA3-REF	5	0.90059	0.109318	0.04889	0.7649	1.0363
MCN1-COMP-T	5	2.17594	0.030653	0.01371	2.1379	2.2140
MCN2-COMP-T	5	2.18531	0.089712	0.04012	2.0739	2.2967
MCN3-COMP	5	2.09859	0.041346	0.01849	2.0472	2.1499
MCN4-COMP	5	1.90935	0.099771	0.04462	1.7855	2.0332
MCN5-COMP	5	1.92536	0.116362	0.05204	1.7809	2.0698
TB	5	2.57617	0.052461	0.02346	2.5110	2.6413

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB099**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	1.513	<.0001*
MCN2-COMP-T	1.122	<.0001*
MCN1-COMP-T	1.113	<.0001*
MCN3-COMP	1.035	<.0001*
BIN-COMP-T	0.983	<.0001*
BIME-COMP-T-M	0.916	<.0001*
MCN5-COMP	0.862	<.0001*
BIMW-COMP-T-M	0.858	<.0001*
MCN4-COMP	0.846	<.0001*
LA3-REF	-0.16	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	103.000	127.500	20.6000	-0.776
BIMW-COMP-T-M	5	81.000	127.500	16.2000	-1.488
BIN-COMP-T	5	134.000	127.500	26.8000	0.194
LA3-REF	5	15.000	127.500	3.0000	-3.622
MCN1-COMP-T	5	195.000	127.500	39.0000	2.167
MCN2-COMP-T	5	188.000	127.500	37.6000	1.940
MCN3-COMP	5	157.000	127.500	31.4000	0.938
MCN4-COMP	5	79.000	127.500	15.8000	-1.552
MCN5-COMP	5	83.000	127.500	16.6000	-1.423
TB	5	240.000	127.500	48.0000	3.622

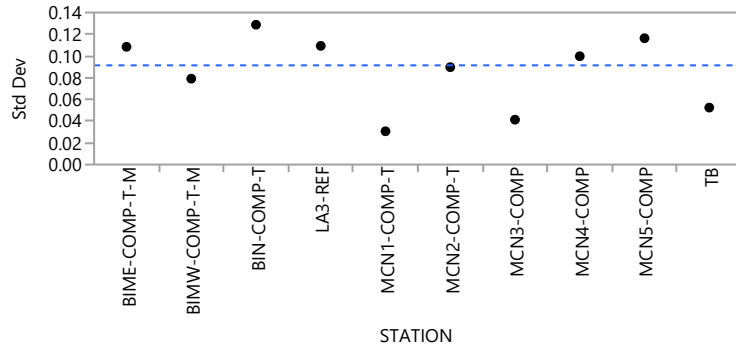
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
39.0932	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB099**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1084611	0.0783760	0.0782380
BIMW-COMP-T-M	5	0.0791055	0.0660920	0.0583180
BIN-COMP-T	5	0.1287926	0.1027136	0.0972460
LA3-REF	5	0.1093177	0.0867374	0.0747882
MCN1-COMP-T	5	0.0306529	0.0211928	0.0205720
MCN2-COMP-T	5	0.0897123	0.0735256	0.0713300
MCN3-COMP	5	0.0413457	0.0281208	0.0265460
MCN4-COMP	5	0.0997714	0.0702536	0.0696040
MCN5-COMP	5	0.1163619	0.0811312	0.0795940
TB	5	0.0524607	0.0434880	0.0411580

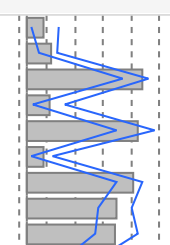
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.9794	9	40	0.4715
Brown-Forsythe	0.8391	9	40	0.5850
Levene	1.5115	9	40	0.1773
Bartlett	1.2863	9	.	0.2383

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

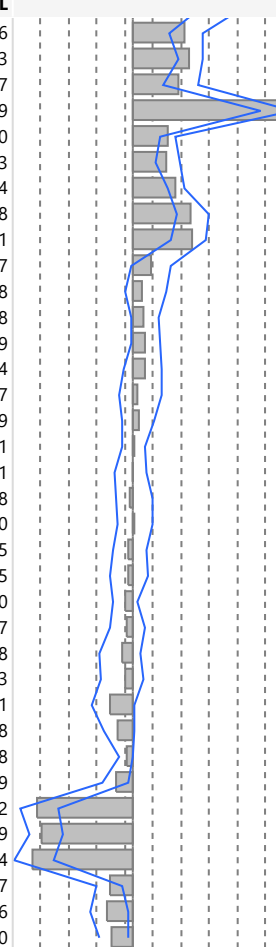
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.19924	0.04458	0.35208
MCN1-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.28229	0.14071	0.34825
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.32334	1.09207	1.38265
MCN2-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.25907	0.07200	0.42654
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.28372	1.02336	1.45330
MCN3-COMP	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.19559	0.04667	0.28785
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.22235	1.02479	1.31461
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.03954	0.80827	1.19924
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.01903	0.78339	1.26551



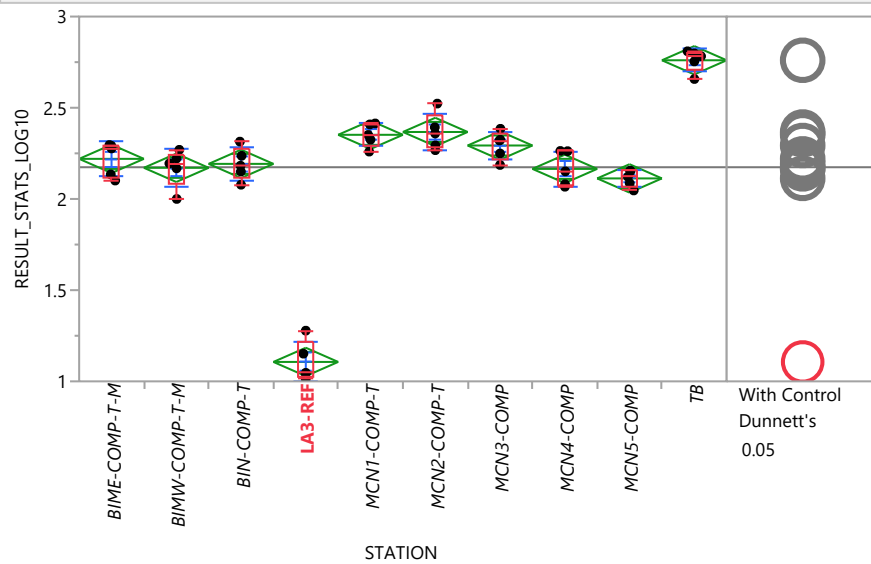
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB099**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.59375	0.41303	0.79126
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.65074	0.50916	0.78743
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.52622	0.34183	0.74437
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.69179	1.46052	1.81419
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.40520	0.31351	0.48710
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.39153	0.25007	0.53213
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.48442	0.38876	0.59184
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.66319	0.49692	0.85588
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.67713	0.43065	0.82941
MCN2-COMP-T	BIME-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	0.21649	-0.02413	0.43037
MCN2-COMP-T	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	0.11072	-0.09533	0.38348
MCN3-COMP	BIME-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.11711	-0.02270	0.29168
MCN1-COMP-T	BIN-COMP-T	2.80000	1.914854	1.46225	0.1437	0.14994	-0.02662	0.30519
BIN-COMP-T	BIMW-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.13658	-0.10586	0.32324
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.05302	-0.15643	0.32707
MCN3-COMP	BIN-COMP-T	0.80000	1.914854	0.41779	0.6761	0.07843	-0.12765	0.24479
MCN2-COMP-T	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.01725	-0.12365	0.12621
MCN4-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.00042	-0.21737	0.15491
MCN5-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.02530	-0.19090	0.22118
MCN5-COMP	MCN4-COMP	0.00000	1.914854	0.00000	1.0000	0.02647	-0.18021	0.22160
BIMW-COMP-T-M	BIME-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.05093	-0.23880	0.15275
MCN5-COMP	BIME-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.04675	-0.26410	0.17025
MCN3-COMP	MCN2-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.08983	-0.23095	0.04190
MCN4-COMP	BIME-COMP-T-M	-1.60000	1.914854	-0.83557	0.4034	-0.07370	-0.26794	0.12807
MCN4-COMP	BIN-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.12189	-0.39169	0.08118
MCN5-COMP	BIN-COMP-T	-2.80000	1.914854	-1.46225	0.1437	-0.08882	-0.36522	0.11723
MCN5-COMP	MCN2-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.26324	-0.46852	0.00651
MCN5-COMP	MCN3-COMP	-4.00000	1.914854	-2.08893	0.0367*	-0.17834	-0.32983	0.00508
MCN3-COMP	MCN1-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-0.07258	-0.15266	-0.01248
MCN4-COMP	MCN3-COMP	-4.40000	1.914854	-2.29783	0.0216*	-0.19081	-0.35630	-0.06119
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.09089	-1.28313	-0.85962
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.03996	-1.18700	-0.80869
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.14828	-1.35433	-0.91264
MCN4-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.26052	-0.41670	-0.12847
MCN4-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.29019	-0.49499	-0.05976
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.24957	-0.39023	-0.06220



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB101**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	2.1009	2.1009	2.1178	2.2769	2.293375	2.2957	2.2957
BIMW-COMP-T-M	2	2	2.083985	2.1948	2.24568	2.26951	2.26951
BIN-COMP-T	2.07799	2.07799	2.11419	2.18234	2.27548	2.31439	2.31439
LA3-REF	1.0135	1.0135	1.02794	1.04674	1.214915	1.27802	1.27802
MCN1-COMP-T	2.25964	2.25964	2.292335	2.3512	2.411365	2.41407	2.41407
MCN2-COMP-T	2.26742	2.26742	2.280635	2.35902	2.45784	2.52288	2.52288
MCN3-COMP	2.18631	2.18631	2.217755	2.32077	2.35461	2.38471	2.38471
MCN4-COMP	2.06695	2.06695	2.073885	2.15127	2.262675	2.26324	2.26324
MCN5-COMP	2.04658	2.04658	2.06647	2.12173	2.15424	2.1549	2.1549
TB	2.65758	2.65758	2.7058	2.78252	2.803785	2.80967	2.80967

**Oneway Anova**

**Summary of Fit**

Rsquare	0.963633
Adj Rsquare	0.955451
Root Mean Square Error	0.086135
Mean of Response	2.173936
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	7.8638047	0.873756	117.7680	<.0001*
Error	40	0.2967720	0.007419		
C. Total	49	8.1605767			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB101**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.21985	0.03852	2.1420	2.2977
BIMW-COMP-T-M	5	2.17083	0.03852	2.0930	2.2487
BIN-COMP-T	5	2.19234	0.03852	2.1145	2.2702
LA3-REF	5	1.10649	0.03852	1.0286	1.1843
MCN1-COMP-T	5	2.35172	0.03852	2.2739	2.4296
MCN2-COMP-T	5	2.36719	0.03852	2.2893	2.4450
MCN3-COMP	5	2.29310	0.03852	2.2152	2.3710
MCN4-COMP	5	2.16488	0.03852	2.0870	2.2427
MCN5-COMP	5	2.11263	0.03852	2.0348	2.1905
TB	5	2.76034	0.03852	2.6825	2.8382

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.21985	0.094177	0.04212	2.1029	2.3368
BIMW-COMP-T-M	5	2.17083	0.102599	0.04588	2.0434	2.2982
BIN-COMP-T	5	2.19234	0.089146	0.03987	2.0816	2.3030
LA3-REF	5	1.10649	0.109320	0.04889	0.9708	1.2422
MCN1-COMP-T	5	2.35172	0.063877	0.02857	2.2724	2.4310
MCN2-COMP-T	5	2.36719	0.100368	0.04489	2.2426	2.4918
MCN3-COMP	5	2.29310	0.076609	0.03426	2.1980	2.3882
MCN4-COMP	5	2.16488	0.094829	0.04241	2.0471	2.2826
MCN5-COMP	5	2.11263	0.046366	0.02074	2.0551	2.1702
TB	5	2.76034	0.061106	0.02733	2.6845	2.8362

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB101**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	1.501	<.0001*
MCN2-COMP-T	1.108	<.0001*
MCN1-COMP-T	1.092	<.0001*
MCN3-COMP	1.033	<.0001*
BIME-COMP-T-M	0.96	<.0001*
BIN-COMP-T	0.933	<.0001*
BIMW-COMP-T-M	0.911	<.0001*
MCN4-COMP	0.905	<.0001*
MCN5-COMP	0.853	<.0001*
LA3-REF	-0.15	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	123.000	127.500	24.6000	-0.129
BIMW-COMP-T-M	5	100.000	127.500	20.0000	-0.873
BIN-COMP-T	5	103.000	127.500	20.6000	-0.776
LA3-REF	5	15.000	127.500	3.0000	-3.622
MCN1-COMP-T	5	190.000	127.500	38.0000	2.005
MCN2-COMP-T	5	189.000	127.500	37.8000	1.973
MCN3-COMP	5	160.000	127.500	32.0000	1.035
MCN4-COMP	5	89.000	127.500	17.8000	-1.229
MCN5-COMP	5	66.000	127.500	13.2000	-1.973
TB	5	240.000	127.500	48.0000	3.622

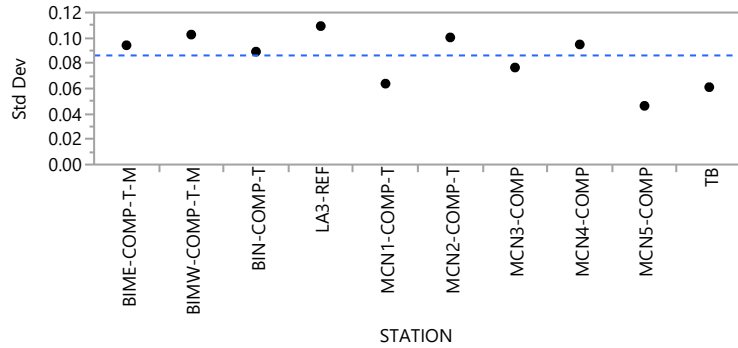
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
38.3045	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB101**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0941767	0.0816400	0.0702300
BIMW-COMP-T-M	5	0.1025992	0.0694728	0.0646780
BIN-COMP-T	5	0.0891463	0.0665152	0.0645160
LA3-REF	5	0.1093203	0.0867400	0.0747900
MCN1-COMP-T	5	0.0638769	0.0477160	0.0476120
MCN2-COMP-T	5	0.1003678	0.0725168	0.0708820
MCN3-COMP	5	0.0766093	0.0602760	0.0547420
MCN4-COMP	5	0.0948287	0.0782376	0.0755160
MCN5-COMP	5	0.0463659	0.0369280	0.0351080
TB	5	0.0611059	0.0436304	0.0391940

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.4901	9	40	0.8724
Brown-Forsythe	0.2824	9	40	0.9758
Levene	0.7424	9	40	0.6682
Bartlett	0.4827	9	.	0.8873

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

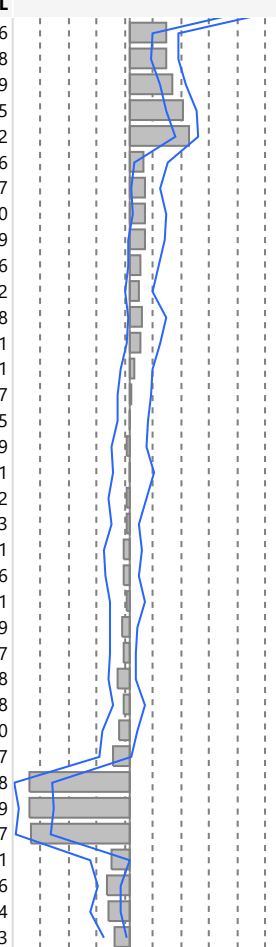
q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.26226	1.04701	1.39516
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.25147	1.01583	1.48050
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.20246	0.97118	1.34233
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.05345	0.80280	1.24861
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.03308	0.80834	1.14008
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.51862	0.36653	0.69700
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.58605	0.43573	0.79790
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.57310	0.42101	0.71991
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.65786	1.47600	1.78440



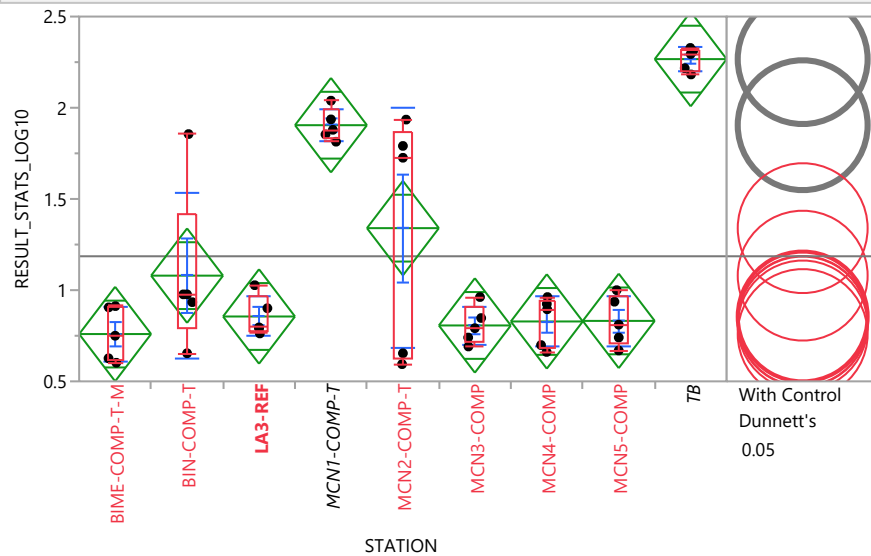
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB101**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.40101	0.24892	0.53826
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.40510	0.23114	0.53048
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.47127	0.33307	0.61159
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.59063	0.39547	0.73095
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.65477	0.50400	0.75132
MCN1-COMP-T	BIMW-COMP-T-M	4.40000	1.914854	2.29783	0.0216*	0.15706	0.03779	0.40866
MCN1-COMP-T	BIN-COMP-T	4.40000	1.914854	2.29783	0.0216*	0.17209	0.01064	0.33067
MCN2-COMP-T	BIMW-COMP-T-M	4.40000	1.914854	2.29783	0.0216*	0.17095	0.02434	0.39280
MCN2-COMP-T	BIN-COMP-T	4.00000	1.914854	2.08893	0.0367*	0.17668	-0.02054	0.37249
MCN1-COMP-T	BIME-COMP-T-M	3.60000	1.914854	1.88004	0.0601	0.12302	-0.03141	0.30776
MCN3-COMP	BIN-COMP-T	3.60000	1.914854	1.88004	0.0601	0.09881	-0.06519	0.24652
MCN2-COMP-T	BIME-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.13272	-0.02363	0.38818
MCN3-COMP	BIMW-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.11520	-0.03554	0.32451
MCN3-COMP	BIME-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.05161	-0.10474	0.25001
BIN-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.01437	-0.14386	0.23657
MCN2-COMP-T	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.00778	-0.14124	0.19785
BIN-COMP-T	BIME-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.04033	-0.21306	0.17969
MCN4-COMP	BIMW-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.00740	-0.18869	0.26211
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.03107	-0.23357	0.18412
MCN5-COMP	MCN4-COMP	-0.80000	1.914854	-0.41779	0.6761	-0.03424	-0.21553	0.08663
BIMW-COMP-T-M	BIME-COMP-T-M	-1.60000	1.914854	-0.83557	0.4034	-0.06920	-0.29105	0.13481
MCN3-COMP	MCN2-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.06829	-0.27368	0.09086
MCN4-COMP	BIME-COMP-T-M	-2.40000	1.914854	-1.25336	0.2101	-0.03359	-0.22410	0.16121
MCN5-COMP	BIN-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.08167	-0.22803	0.07559
MCN3-COMP	MCN1-COMP-T	-2.80000	1.914854	-1.46225	0.1437	-0.07333	-0.22235	0.06487
MCN5-COMP	BIME-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-0.13615	-0.24447	0.05268
MCN5-COMP	BIMW-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-0.07307	-0.18315	0.15358
MCN4-COMP	MCN3-COMP	-3.20000	1.914854	-1.67115	0.0947	-0.12147	-0.30389	0.07580
MCN4-COMP	MCN1-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.17882	-0.34171	0.00247
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.12120	-1.27755	-0.85668
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.11770	-1.22713	-0.84819
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.10365	-1.27201	-0.87237
MCN4-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.20775	-0.44206	-0.00531
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.25376	-0.36208	-0.10606
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.23790	-0.43652	-0.11384
MCN5-COMP	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.17093	-0.29835	-0.03273



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB105**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.60206	0.60206	0.61424	0.750123	0.909127	0.912524	0.912524
BIN-COMP-T	0.654003	0.654003	0.794093	0.976935	1.416348	1.85576	1.85576
LA3-REF	0.762639	0.762639	0.777077	0.79588	0.964046	1.02715	1.02715
MCN1-COMP-T	1.81392	1.81392	1.833895	1.87896	1.987625	2.03892	2.03892
MCN2-COMP-T	0.594235	0.594235	0.624119	1.72584	1.8629	1.93506	1.93506
MCN3-COMP	0.691145	0.691145	0.715754	0.791515	0.904734	0.962211	0.962211
MCN4-COMP	0.661181	0.661181	0.680076	0.895265	0.943317	0.962211	0.962211
MCN5-COMP	0.669299	0.669299	0.704831	0.810944	0.968329	1	1
TB	2.18262	2.18262	2.199875	2.2944	2.319595	2.32818	2.32818

**Oneway Anova**

**Summary of Fit**

Rsquare	0.803989
Adj Rsquare	0.760431
Root Mean Square Error	0.285531
Mean of Response	1.185774
Observations (or Sum Wgts)	45

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	8	12.038672	1.50483	18.4579	<.0001*
Error	36	2.935013	0.08153		
C. Total	44	14.973685			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB105**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.75937	0.12769	0.5004	1.0183
BIN-COMP-T	5	1.07956	0.12769	0.8206	1.3385
LA3-REF	5	0.85563	0.12769	0.5967	1.1146
MCN1-COMP-T	5	1.90440	0.12769	1.6454	2.1634
MCN2-COMP-T	5	1.33998	0.12769	1.0810	1.5989
MCN3-COMP	5	0.80650	0.12769	0.5475	1.0655
MCN4-COMP	5	0.82841	0.12769	0.5694	1.0874
MCN5-COMP	5	0.83145	0.12769	0.5725	1.0904
TB	5	2.26667	0.12769	2.0077	2.5256

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err	
				Mean	Upper 95%
BIME-COMP-T-M	5	0.75937	0.147805	0.06610	0.9429
BIN-COMP-T	5	1.07956	0.454363	0.20320	1.6437
LA3-REF	5	0.85563	0.109317	0.04889	0.9914
MCN1-COMP-T	5	1.90440	0.087324	0.03905	2.0128
MCN2-COMP-T	5	1.33998	0.658197	0.29435	2.1572
MCN3-COMP	5	0.80650	0.104657	0.04680	0.9364
MCN4-COMP	5	0.82841	0.138122	0.06177	0.9999
MCN5-COMP	5	0.83145	0.136462	0.06103	1.0009
TB	5	2.26667	0.063319	0.02832	2.3453

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.78823	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.908	<.0001*
MCN1-COMP-T	0.545	<.0001*
MCN2-COMP-T	-0.02	0.0638
BIN-COMP-T	-0.28	0.7354
LA3-REF	-0.5	1.0000
MCN5-COMP	-0.48	1.0000
MCN4-COMP	-0.48	1.0000
MCN3-COMP	-0.45	1.0000
BIME-COMP-T-M	-0.41	0.9964

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB105**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

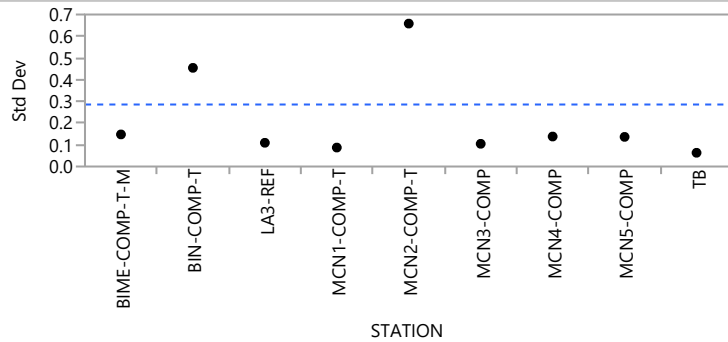
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	60.000	115.000	12.0000	-1.969
BIN-COMP-T	5	121.500	115.000	24.3000	0.217
LA3-REF	5	94.500	115.000	18.9000	-0.722
MCN1-COMP-T	5	185.000	115.000	37.0000	2.510
MCN2-COMP-T	5	108.500	115.000	21.7000	-0.217
MCN3-COMP	5	77.500	115.000	15.5000	-1.337
MCN4-COMP	5	83.500	115.000	16.7000	-1.120
MCN5-COMP	5	89.500	115.000	17.9000	-0.903
TB	5	215.000	115.000	43.0000	3.594

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
24.9108	8	0.0016*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478050	0.1198046	0.1179550
BIN-COMP-T	5	0.4543631	0.3104787	0.2489018
LA3-REF	5	0.1093165	0.0867366	0.0747876
MCN1-COMP-T	5	0.0873245	0.0665800	0.0614920
MCN2-COMP-T	5	0.6581969	0.5726853	0.4955124
MCN3-COMP	5	0.1046572	0.0785886	0.0755920
MCN4-COMP	5	0.1381223	0.1186676	0.1052966
MCN5-COMP	5	0.1364624	0.1095007	0.1053990
TB	5	0.0633188	0.0534344	0.0478880

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB105**

**Tests that the Variances are Equal**

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	4.7698	8	36	0.0005*
Brown-Forsythe	1.8608	8	36	0.0974
Levene	10.2362	8	36	<.0001*
Bartlett	5.0137	8	.	<.0001*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

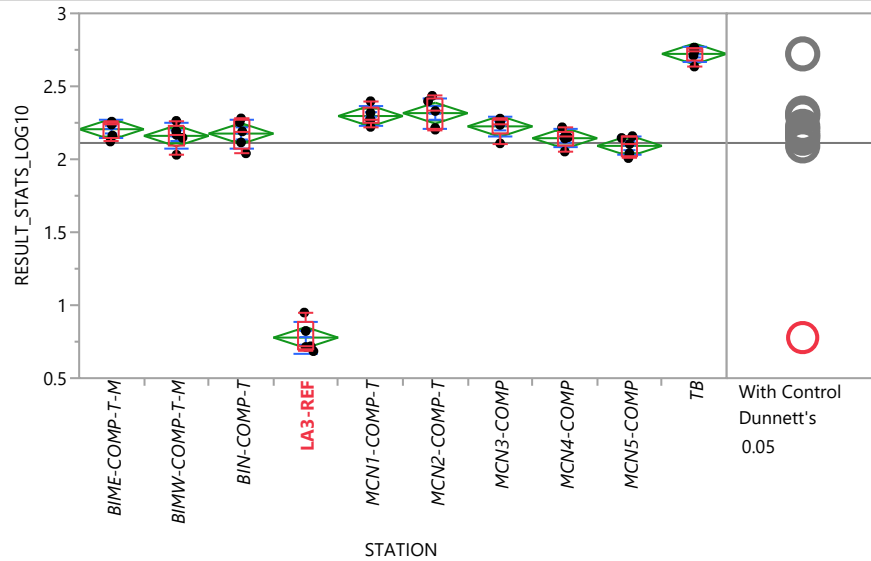
q*		Alpha		Score Mean		Hodges-Lehmann		Lower CL		Upper CL	
1.95996		0.05		Difference	Std Err Dif	Z	p-Value	Lower CL	Upper CL		
Level	- Level										
MCN1-COMP-T	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	1.13319	0.90819	0.90819	1.41250		
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.05799	0.82672	0.82672	1.24741		
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	1.54428	1.27689	1.27689	1.70895		
TB	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	1.31747	0.36137	0.36137	1.65701		
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.42125	1.18998	1.18998	1.54837		
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.36870	0.17821	0.17821	0.49709		
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.56856	0.28207	0.28207	1.71678		
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	1.47677	1.25492	1.25492	1.61987		
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	1.40376	1.25492	1.25492	1.64983		
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	1.44226	1.21713	1.21713	1.64171		
MCN1-COMP-T	BIN-COMP-T	4.00000	1.909043	2.09529	0.0361*	0.91969	-0.00189	-0.00189	1.28233		
BIN-COMP-T	BIME-COMP-T-M	3.60000	1.909043	1.88576	0.0593	0.22681	-0.25173	-0.25173	1.22934		
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.12142	-0.14309	-0.14309	0.40073		
MCN2-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.87822	-0.31150	-0.31150	1.30864		
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.05648	-0.24455	-0.24455	0.33579		
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.06724	-0.23643	-0.23643	0.37358		
MCN2-COMP-T	LA3-REF	0.80000	1.914854	0.41779	0.6761	0.82490	-0.37315	-0.37315	1.14355		
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.05648	-0.21459	-0.21459	0.33579		
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.01223	-0.25512	-0.25512	0.30103		
MCN2-COMP-T	BIN-COMP-T	0.20000	1.903214	0.10509	0.9163	0.07930	-1.20176	-1.20176	1.13674		
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.00782	-0.26324	-0.26324	0.23328		
MCN5-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.01943	-0.22185	-0.22185	0.25964		
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.06367	-0.32818	-0.32818	0.17070		
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.02715	-0.28679	-0.28679	0.20849		
MCN3-COMP	MCN2-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.87858	-1.19470	-1.19470	0.30821		
MCN4-COMP	MCN2-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.82853	-1.23609	-1.23609	0.33019		
MCN5-COMP	MCN2-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.79074	-1.19470	-1.19470	0.34600		
MCN5-COMP	BIN-COMP-T	-1.20000	1.909043	-0.62859	0.5296	-0.16599	-1.11540	-1.11540	0.28265		
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.05368	-0.28679	-0.28679	0.17070		
LA3-REF	BIN-COMP-T	-1.60000	1.909043	-0.83812	0.4020	-0.14267	-1.06425	-1.06425	0.24694		
MCN3-COMP	BIN-COMP-T	-2.40000	1.909043	-1.25717	0.2087	-0.18542	-1.11540	-1.11540	0.19325		
MCN4-COMP	BIN-COMP-T	-2.40000	1.909043	-1.25717	0.2087	-0.08167	-1.15679	-1.15679	0.27042		
MCN2-COMP-T	MCN1-COMP-T	-3.60000	1.914854	-1.88004	0.0601	-0.21049	-1.38492	-1.38492	0.08119		
MCN3-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.08907	-1.29856	-1.29856	-0.89166		
MCN4-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.07671	-1.33995	-1.33995	-0.88950		

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB105**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.07356	-1.29856	-0.85387

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB110**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	2.12159	2.12159	2.14216	2.23736	2.254205	2.25787	2.25787
BIMW-COMP-T-M	2.03067	2.03067	2.089135	2.16782	2.22818	2.26324	2.26324
BIN-COMP-T	2.04075	2.04075	2.07807	2.19081	2.266895	2.28018	2.28018
LA3-REF	0.685034	0.685034	0.699472	0.718275	0.886442	0.949547	0.949547
MCN1-COMP-T	2.22185	2.22185	2.246105	2.27359	2.358115	2.39794	2.39794
MCN2-COMP-T	2.20296	2.20296	2.208815	2.33099	2.41643	2.43492	2.43492
MCN3-COMP	2.10914	2.10914	2.17245	2.24304	2.270005	2.27875	2.27875
MCN4-COMP	2.05294	2.05294	2.097805	2.15127	2.187625	2.21936	2.21936
MCN5-COMP	2.00812	2.00812	2.024755	2.10474	2.152425	2.15872	2.15872
TB	2.6353	2.6353	2.672925	2.73676	2.76419	2.76447	2.76447

**Oneway Anova**

**Summary of Fit**

Rsquare	0.978102
Adj Rsquare	0.973174
Root Mean Square Error	0.07948
Mean of Response	2.111741
Observations (or Sum Wgts)	50

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB110**

**Oneway Anova**

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	11.286257	1.25403	198.5123	<.0001*
Error	40	0.252685	0.00632		
C. Total	49	11.538942			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.20602	0.03554	2.1342	2.2779
BIMW-COMP-T-M	5	2.16049	0.03554	2.0887	2.2323
BIN-COMP-T	5	2.17615	0.03554	2.1043	2.2480
LA3-REF	5	0.77802	0.03554	0.7062	0.8499
MCN1-COMP-T	5	2.29641	0.03554	2.2246	2.3682
MCN2-COMP-T	5	2.31630	0.03554	2.2445	2.3881
MCN3-COMP	5	2.22559	0.03554	2.1538	2.2974
MCN4-COMP	5	2.14443	0.03554	2.0726	2.2163
MCN5-COMP	5	2.09182	0.03554	2.0200	2.1637
TB	5	2.72220	0.03554	2.6504	2.7940

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.20602	0.060529	0.02707	2.1309	2.2812
BIMW-COMP-T-M	5	2.16049	0.084699	0.03788	2.0553	2.2657
BIN-COMP-T	5	2.17615	0.098821	0.04419	2.0534	2.2989
LA3-REF	5	0.77802	0.109317	0.04889	0.6423	0.9138
MCN1-COMP-T	5	2.29641	0.066230	0.02962	2.2142	2.3786
MCN2-COMP-T	5	2.31630	0.105031	0.04697	2.1859	2.4467
MCN3-COMP	5	2.22559	0.067207	0.03006	2.1421	2.3090
MCN4-COMP	5	2.14443	0.059511	0.02661	2.0705	2.2183
MCN5-COMP	5	2.09182	0.065462	0.02928	2.0105	2.1731
TB	5	2.72220	0.053446	0.02390	2.6558	2.7886

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB110**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	1.803	<.0001*
MCN2-COMP-T	1.397	<.0001*
MCN1-COMP-T	1.377	<.0001*
MCN3-COMP	1.306	<.0001*
BIME-COMP-T-M	1.287	<.0001*
BIN-COMP-T	1.257	<.0001*
BIMW-COMP-T-M	1.241	<.0001*
MCN4-COMP	1.225	<.0001*
MCN5-COMP	1.172	<.0001*
LA3-REF	-0.14	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	131.000	127.500	26.2000	0.097
BIMW-COMP-T-M	5	106.000	127.500	21.2000	-0.679
BIN-COMP-T	5	117.000	127.500	23.4000	-0.323
LA3-REF	5	15.000	127.500	3.0000	-3.622
MCN1-COMP-T	5	187.500	127.500	37.5000	1.924
MCN2-COMP-T	5	181.500	127.500	36.3000	1.730
MCN3-COMP	5	146.000	127.500	29.2000	0.582
MCN4-COMP	5	89.000	127.500	17.8000	-1.229
MCN5-COMP	5	62.000	127.500	12.4000	-2.102
TB	5	240.000	127.500	48.0000	3.622

**1-Way Test, ChiSquare Approximation**

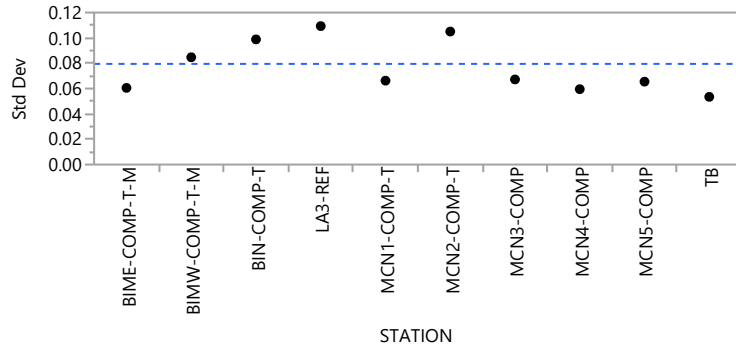
ChiSquare	DF	Prob>ChiSq
36.2634	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB110**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0605291	0.0510864	0.0448180
BIMW-COMP-T-M	5	0.0846986	0.0570840	0.0556180
BIN-COMP-T	5	0.0988207	0.0784624	0.0755300
LA3-REF	5	0.1093173	0.0867371	0.0747880
MCN1-COMP-T	5	0.0662299	0.0493672	0.0448040
MCN2-COMP-T	5	0.1050312	0.0859848	0.0830460
MCN3-COMP	5	0.0672065	0.0465800	0.0390220
MCN4-COMP	5	0.0595108	0.0372968	0.0359280
MCN5-COMP	5	0.0654618	0.0536520	0.0510680
TB	5	0.0534458	0.0394184	0.0365060

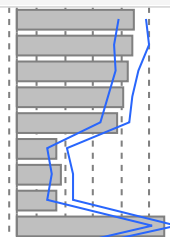
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.7659	9	40	0.6478
Brown-Forsythe	0.4982	9	40	0.8668
Levene	1.0367	9	40	0.4289
Bartlett	0.5080	9	.	0.8699

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

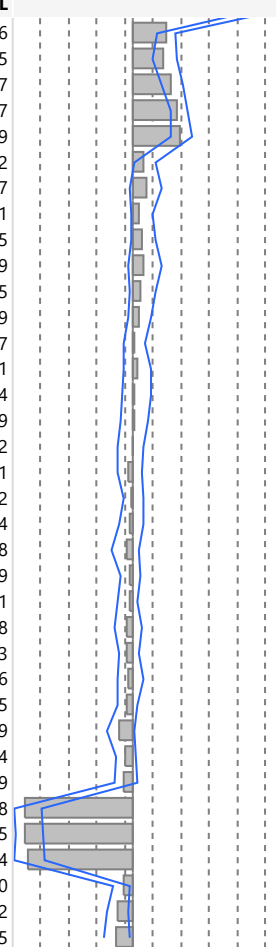
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.55209	1.32081	1.68403
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.51793	1.26512	1.72101
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.45541	1.28580	1.57623
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.39602	1.19312	1.50545
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.32312	1.09184	1.46110
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.51337	0.38476	0.64232
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.56894	0.44218	0.73324
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.51991	0.38169	0.72316
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.95027	1.76100	2.07888



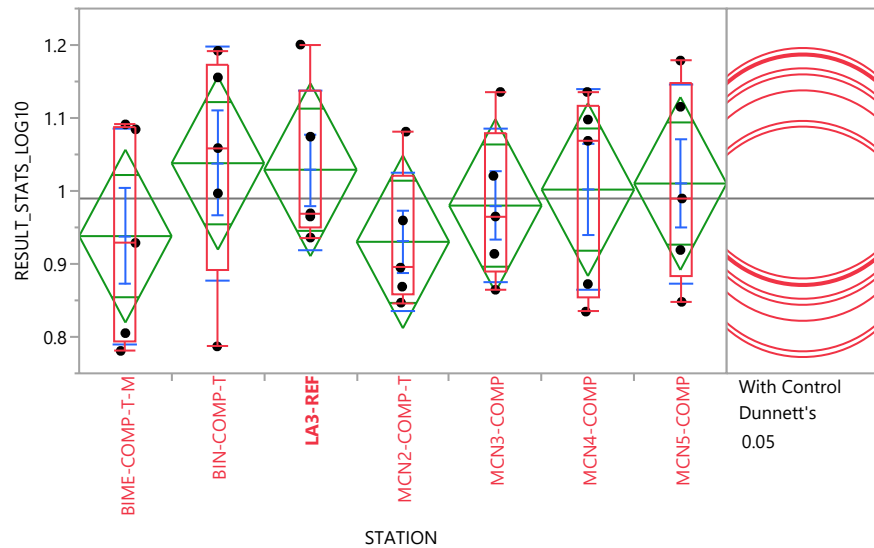
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB110**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.44019	0.31261	0.54206
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.40577	0.23736	0.56095
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.49372	0.37404	0.65477
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.58236	0.47941	0.71097
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.61834	0.48917	0.75579
MCN1-COMP-T	BIMW-COMP-T-M	4.40000	1.914854	2.29783	0.0216*	0.12517	0.00712	0.28762
MCN2-COMP-T	BIMW-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	0.17168	-0.04857	0.36727
MCN1-COMP-T	BIME-COMP-T-M	3.60000	1.914854	1.88004	0.0601	0.08093	-0.02869	0.23521
MCN1-COMP-T	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	0.11776	-0.03176	0.28255
MCN2-COMP-T	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	0.14433	-0.06551	0.35719
MCN2-COMP-T	BIME-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.09363	-0.04758	0.27635
MCN3-COMP	BIMW-COMP-T-M	2.00000	1.914854	1.04447	0.2963	0.07522	-0.08398	0.23059
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.01072	-0.14140	0.13967
MCN3-COMP	BIN-COMP-T	0.80000	1.914854	0.41779	0.6761	0.04495	-0.14447	0.22051
BIN-COMP-T	BIMW-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.01694	-0.15237	0.22294
MCN2-COMP-T	MCN1-COMP-T	0.20000	1.909043	0.10476	0.9166	0.01270	-0.18327	0.17609
BIN-COMP-T	BIME-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.00620	-0.20979	0.13202
BIMW-COMP-T-M	BIME-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.05742	-0.21987	0.10051
MCN4-COMP	BIMW-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.01655	-0.14018	0.12522
MCN4-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.03954	-0.20067	0.11514
MCN3-COMP	MCN2-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.09523	-0.28880	0.06408
MCN5-COMP	MCN4-COMP	-2.00000	1.914854	-1.04447	0.2963	-0.04653	-0.17797	0.09319
MCN3-COMP	MCN1-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.03954	-0.20915	0.03941
MCN5-COMP	BIN-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.09489	-0.24549	0.10538
MCN4-COMP	BIME-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-0.08147	-0.19760	0.05663
MCN5-COMP	BIMW-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-0.06308	-0.22185	0.11546
MCN4-COMP	MCN3-COMP	-3.20000	1.914854	-1.67115	0.0947	-0.09177	-0.20832	0.04675
MCN4-COMP	MCN2-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.17858	-0.34500	0.00469
MCN5-COMP	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.11174	-0.24242	0.02454
MCN5-COMP	MCN3-COMP	-4.00000	1.914854	-2.08893	0.0367*	-0.13102	-0.25314	0.03699
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.43656	-1.56551	-1.21318
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.42933	-1.54933	-1.19805
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.40148	-1.56858	-1.16584
MCN4-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.13092	-0.26535	-0.05100
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.21355	-0.35655	-0.07572
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.22625	-0.39353	-0.05595



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB114**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.780775	0.780775	0.792955	0.928838	1.087845	1.09124	1.09124
BIN-COMP-T	0.786961	0.786961	0.891822	1.05874	1.173865	1.19208	1.19208
LA3-REF	0.93609	0.93609	0.950528	0.969331	1.137495	1.2006	1.2006
MCN2-COMP-T	0.846867	0.846867	0.857857	0.894929	1.020436	1.0813	1.0813
MCN3-COMP	0.864596	0.864596	0.889205	0.964966	1.078185	1.13566	1.13566
MCN4-COMP	0.834633	0.834633	0.853527	1.06872	1.116765	1.13566	1.13566
MCN5-COMP	0.848015	0.848015	0.883547	0.989659	1.147045	1.17872	1.17872

**Oneway Anova**

**Summary of Fit**

Rsquare	0.10289
Adj Rsquare	-0.08935
Root Mean Square Error	0.129309
Mean of Response	0.989638
Observations (or Sum Wgts)	35

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	6	0.05369637	0.008949	0.5352	0.7768
Error	28	0.46818383	0.016721		
C. Total	34	0.52188020			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB114**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.93809	0.05783	0.81963	1.0565
BIN-COMP-T	5	1.03802	0.05783	0.91957	1.1565
LA3-REF	5	1.02908	0.05783	0.91062	1.1475
MCN2-COMP-T	5	0.93030	0.05783	0.81185	1.0488
MCN3-COMP	5	0.97995	0.05783	0.86149	1.0984
MCN4-COMP	5	1.00186	0.05783	0.88340	1.1203
MCN5-COMP	5	1.01017	0.05783	0.89171	1.1286

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.93809	0.147806	0.06610	0.75456	1.1216
BIN-COMP-T	5	1.03802	0.160265	0.07167	0.83903	1.2370
LA3-REF	5	1.02908	0.109316	0.04889	0.89334	1.1648
MCN2-COMP-T	5	0.93030	0.094401	0.04222	0.81309	1.0475
MCN3-COMP	5	0.97995	0.104657	0.04680	0.85000	1.1099
MCN4-COMP	5	1.00186	0.138121	0.06177	0.83036	1.1734
MCN5-COMP	5	1.01017	0.136463	0.06103	0.84073	1.1796

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.73128	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.21	1.0000
LA3-REF	-0.22	1.0000
MCN5-COMP	-0.2	0.9999
MCN4-COMP	-0.2	0.9990
MCN3-COMP	-0.17	0.9774
BIME-COMP-T-M	-0.13	0.7480
MCN2-COMP-T	-0.12	0.6830

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB114**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

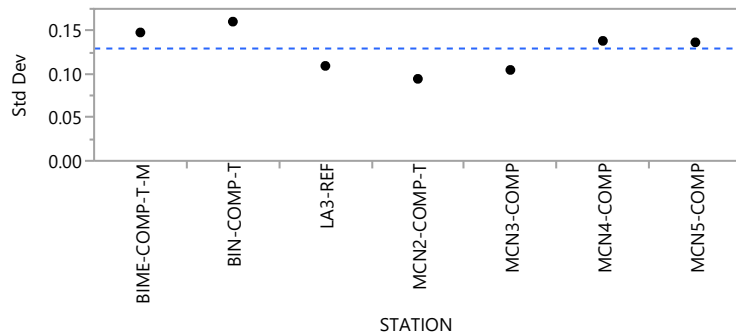
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	70.000	90.000	14.0000	-0.919
BIN-COMP-T	5	110.000	90.000	22.0000	0.919
LA3-REF	5	107.500	90.000	21.5000	0.801
MCN2-COMP-T	5	63.000	90.000	12.6000	-1.249
MCN3-COMP	5	86.000	90.000	17.2000	-0.165
MCN4-COMP	5	94.500	90.000	18.9000	0.189
MCN5-COMP	5	99.000	90.000	19.8000	0.401

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
3.7201	6	0.7145

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478063	0.1198059	0.1179560
BIN-COMP-T	5	0.1602654	0.1169606	0.1128172
LA3-REF	5	0.1093158	0.0867357	0.0747868
MCN2-COMP-T	5	0.0944013	0.0721062	0.0650314
MCN3-COMP	5	0.1046566	0.0785886	0.0755920
MCN4-COMP	5	0.1381213	0.1186670	0.1052952
MCN5-COMP	5	0.1364632	0.1095013	0.1053994

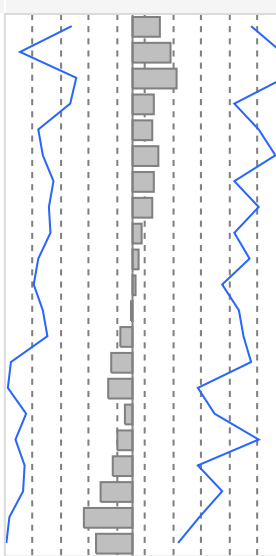
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.4930	6	28	0.8080
Brown-Forsythe	0.3211	6	28	0.9204
Levene	0.5723	6	28	0.7489
Bartlett	0.2752	6	.	0.9488

Warning: Small sample sizes. Use Caution.

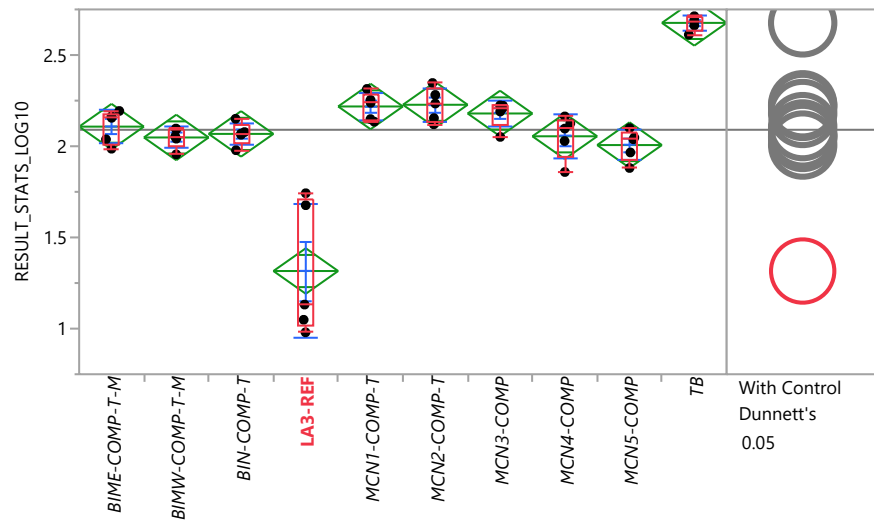
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB114**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha								
1.95996		0.05								
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL		
MCN5-COMP	MCN2-COMP-T	2.00000	1.914854	1.04447	0.2963	0.072211	-0.162222	0.3098730		
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297489	0.3869450		
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.116150	-0.148360	0.3954650		
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054360	-0.167486	0.2668130		
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.051210	-0.249817	0.3305250		
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067240	-0.236435	0.3735850		
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054360	-0.208879	0.2668130		
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.051210	-0.219854	0.3305250		
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.024693	-0.216582	0.2649060		
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.017500	-0.249855	0.3062990		
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007825	-0.263239	0.2332740		
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.003150	-0.237583	0.2761650		
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.031717	-0.227114	0.2874290		
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.056420	-0.321017	0.3109090		
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063669	-0.328179	0.1706940		
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.021880	-0.281522	0.2137540		
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040280	-0.307635	0.3284090		
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053680	-0.286786	0.1706940		
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.082869	-0.291054	0.2337490		
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.127836	-0.323233	0.1726100		
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096119	-0.331753	0.1163340		



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB118**



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB118**

STATION

Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.98643	1.98643	2.01211	2.15589	2.178795	2.1934	2.1934
BIMW-COMP-T-M	1.95542	1.95542	1.998405	2.05388	2.09483	2.09691	2.09691
BIN-COMP-T	1.9781	1.9781	2.020575	2.06908	2.113995	2.15039	2.15039
LA3-REF	0.979797	0.979797	1.014204	1.13189	1.709565	1.74244	1.74244
MCN1-COMP-T	2.1347	2.1347	2.14182	2.23798	2.28434	2.31439	2.31439
MCN2-COMP-T	2.12029	2.12029	2.13724	2.23408	2.31411	2.34679	2.34679
MCN3-COMP	2.05115	2.05115	2.12074	2.21085	2.222855	2.22386	2.22386
MCN4-COMP	1.85867	1.85867	1.94366	2.09691	2.14422	2.1635	2.1635
MCN5-COMP	1.88081	1.88081	1.923365	2.03779	2.07384	2.09938	2.09938
TB	2.61182	2.61182	2.637035	2.68561	2.710855	2.71276	2.71276

**Oneway Anova**

**Summary of Fit**

Rsquare	0.86738
Adj Rsquare	0.83754
Root Mean Square Error	0.138045
Mean of Response	2.090142
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	4.9853821	0.553931	29.0682	<.0001*
Error	40	0.7622519	0.019056		
C. Total	49	5.7476340			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.10754	0.06174	1.9828	2.2323
BIMW-COMP-T-M	5	2.04807	0.06174	1.9233	2.1728
BIN-COMP-T	5	2.06764	0.06174	1.9429	2.1924
LA3-REF	5	1.31589	0.06174	1.1911	1.4407
MCN1-COMP-T	5	2.21806	0.06174	2.0933	2.3428
MCN2-COMP-T	5	2.22736	0.06174	2.1026	2.3521
MCN3-COMP	5	2.17961	0.06174	2.0548	2.3044
MCN4-COMP	5	2.05453	0.06174	1.9298	2.1793
MCN5-COMP	5	2.00644	0.06174	1.8817	2.1312
TB	5	2.67628	0.06174	2.5515	2.8010

Std Error uses a pooled estimate of error variance

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB118**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.10754	0.090072	0.04028	1.9957	2.2194
BIMW-COMP-T-M	5	2.04807	0.057105	0.02554	1.9772	2.1190
BIN-COMP-T	5	2.06764	0.061211	0.02737	1.9916	2.1436
LA3-REF	5	1.31589	0.364134	0.16285	0.8638	1.7680
MCN1-COMP-T	5	2.21806	0.075358	0.03370	2.1245	2.3116
MCN2-COMP-T	5	2.22736	0.092263	0.04126	2.1128	2.3419
MCN3-COMP	5	2.17961	0.073033	0.03266	2.0889	2.2703
MCN4-COMP	5	2.05453	0.120061	0.05369	1.9055	2.2036
MCN5-COMP	5	2.00644	0.084849	0.03795	1.9011	2.1118
TB	5	2.67628	0.041343	0.01849	2.6249	2.7276

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	1.115	<.0001*
MCN2-COMP-T	0.666	<.0001*
MCN1-COMP-T	0.657	<.0001*
MCN3-COMP	0.618	<.0001*
BIME-COMP-T-M	0.546	<.0001*
BIN-COMP-T	0.506	<.0001*
MCN4-COMP	0.493	<.0001*
BIMW-COMP-T-M	0.487	<.0001*
MCN5-COMP	0.445	<.0001*
LA3-REF	-0.25	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	126.500	127.500	25.3000	-0.016
BIMW-COMP-T-M	5	86.500	127.500	17.3000	-1.310
BIN-COMP-T	5	100.000	127.500	20.0000	-0.873
LA3-REF	5	15.000	127.500	3.0000	-3.622
MCN1-COMP-T	5	184.000	127.500	36.8000	1.811
MCN2-COMP-T	5	185.000	127.500	37.0000	1.843
MCN3-COMP	5	166.000	127.500	33.2000	1.229
MCN4-COMP	5	101.500	127.500	20.3000	-0.825
MCN5-COMP	5	70.500	127.500	14.1000	-1.827



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB118**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

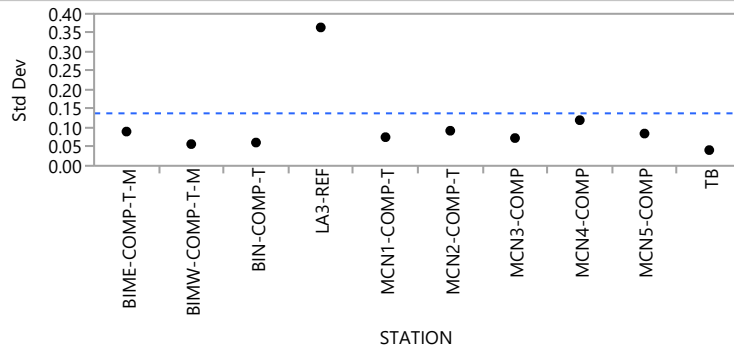
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
TB	5	240.000	127.500	48.0000	3.622

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
37.3273	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0900716	0.0763440	0.0666740
BIMW-COMP-T-M	5	0.0571053	0.0397320	0.0385700
BIN-COMP-T	5	0.0612113	0.0376552	0.0373680
LA3-REF	5	0.3641341	0.3149437	0.2781446
MCN1-COMP-T	5	0.0753581	0.0609920	0.0570080
MCN2-COMP-T	5	0.0922633	0.0720928	0.0707480
MCN3-COMP	5	0.0730327	0.0513832	0.0408460
MCN4-COMP	5	0.1200615	0.0886992	0.0802240
MCN5-COMP	5	0.0848494	0.0664600	0.0601900
TB	5	0.0413434	0.0313944	0.0295280

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[5]	10.3658	9	40	<.0001*
Brown-Forsythe	2.4351	9	40	0.0259*
Levene	14.1286	9	40	<.0001*
Bartlett	3.7698	9	.	<.0001*

Warning: Small sample sizes. Use Caution.

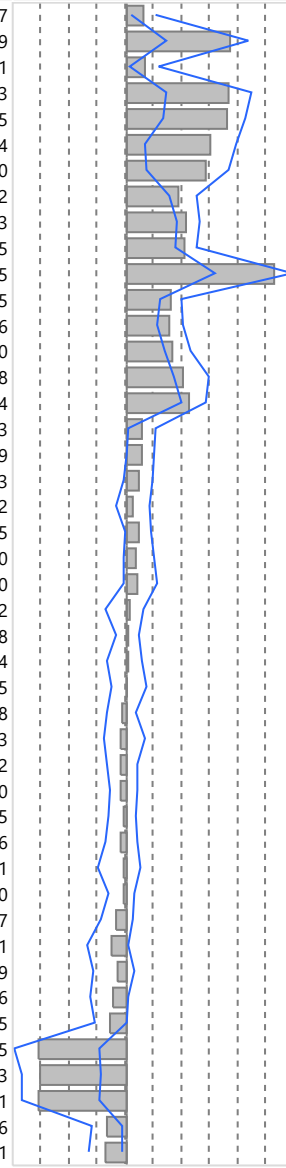
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*	Alpha
1.95996	0.05

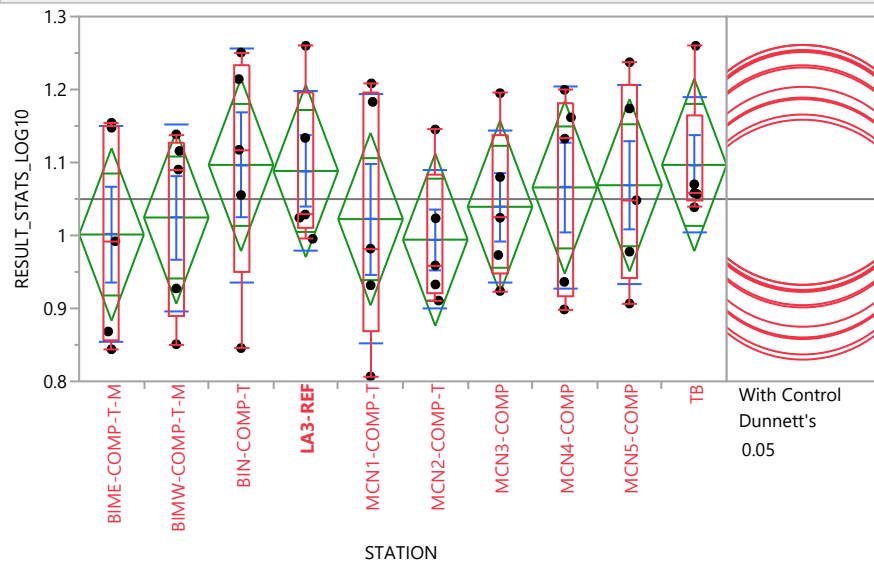
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB118**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.17928	0.04195	0.29887
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.08609	0.40650	1.27449
MCN2-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.18452	0.02754	0.32601
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.07168	0.41175	1.30163
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.05844	0.37446	1.24205
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.87887	0.18198	1.14514
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.83403	0.20412	1.06850
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.54857	0.44763	0.72252
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.62001	0.51907	0.75353
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.61653	0.51186	0.73085
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.55372	0.91981	1.72915
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.45847	0.34786	0.57425
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.45153	0.31546	0.58866
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.48710	0.38997	0.65780
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.58782	0.48688	0.85028
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.66065	0.56287	0.82814
MCN2-COMP-T	BIN-COMP-T	4.40000	1.914854	2.29783	0.0216*	0.16500	0.00380	0.30333
MCN1-COMP-T	BIN-COMP-T	4.00000	1.914854	2.08893	0.0367*	0.16400	-0.00145	0.27619
MCN3-COMP	BIMW-COMP-T-M	3.60000	1.914854	1.88004	0.0601	0.13111	-0.04160	0.26643
MCN3-COMP	BIME-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.05766	-0.11304	0.23542
MCN3-COMP	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	0.13325	-0.02645	0.24375
MCN1-COMP-T	BIME-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.09840	-0.04446	0.27660
MCN2-COMP-T	BIME-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.11724	-0.04390	0.30900
MCN4-COMP	BIMW-COMP-T-M	1.00000	1.909043	0.52382	0.6004	0.03219	-0.23408	0.16952
BIN-COMP-T	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.02166	-0.11465	0.12218
MCN4-COMP	BIN-COMP-T	0.40000	1.914854	0.20889	0.8345	0.01931	-0.21893	0.14684
MCN2-COMP-T	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.00525	-0.16020	0.19785
MCN5-COMP	BIMW-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.04445	-0.21194	0.09288
MCN5-COMP	MCN4-COMP	-1.20000	1.914854	-0.62668	0.5309	-0.06273	-0.24413	0.18963
BIMW-COMP-T-M	BIME-COMP-T-M	-1.60000	1.914854	-0.83557	0.4034	-0.07144	-0.20877	0.10632
BIN-COMP-T	BIME-COMP-T-M	-1.60000	1.914854	-0.83557	0.4034	-0.05969	-0.18609	0.11260
MCN3-COMP	MCN1-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.03244	-0.20314	0.08715
MCN3-COMP	MCN2-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.05757	-0.23028	0.10156
MCN4-COMP	BIME-COMP-T-M	-1.60000	1.914854	-0.83557	0.4034	-0.03925	-0.30552	0.13851
MCN5-COMP	BIN-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.03981	-0.19679	0.07020
MCN5-COMP	BIME-COMP-T-M	-2.60000	1.909043	-1.36194	0.1732	-0.10759	-0.28338	0.06187
MCN4-COMP	MCN2-COMP-T	-3.60000	1.914854	-1.88004	0.0601	-0.15649	-0.42276	0.00931
MCN4-COMP	MCN3-COMP	-3.60000	1.914854	-1.88004	0.0601	-0.09892	-0.36318	0.07379
MCN4-COMP	MCN1-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.14107	-0.39562	0.01456
MCN5-COMP	MCN3-COMP	-4.40000	1.914854	-2.29783	0.0216*	-0.17306	-0.34104	-0.00285
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.93782	-1.18439	-0.29535
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.90950	-1.11295	-0.27873
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.93116	-1.10178	-0.30141
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.20599	-0.37348	-0.04956
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.23313	-0.40062	-0.05481



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB119**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.843969	0.843969	0.856149	0.992031	1.151035	1.15443	1.15443
BIMW-COMP-T-M	0.850912	0.850912	0.889141	1.09024	1.12715	1.1385	1.1385
BIN-COMP-T	0.845606	0.845606	0.950468	1.11739	1.23251	1.25072	1.25072
LA3-REF	0.995404	0.995404	1.009842	1.02865	1.196815	1.25992	1.25992
MCN1-COMP-T	0.806796	0.806796	0.869266	0.981902	1.19571	1.20834	1.20834
MCN2-COMP-T	0.910777	0.910777	0.921767	0.958838	1.084345	1.14521	1.14521
MCN3-COMP	0.92391	0.92391	0.948519	1.02428	1.1375	1.19498	1.19498
MCN4-COMP	0.898542	0.898542	0.917437	1.13263	1.180675	1.19957	1.19957
MCN5-COMP	0.90666	0.90666	0.942192	1.0483	1.20569	1.23736	1.23736
TB	1.03863	1.03863	1.04765	1.05814	1.16498	1.25992	1.25992

**Oneway Anova**

**Summary of Fit**

Rsquare	0.089492
Adj Rsquare	-0.11537
Root Mean Square Error	0.130763
Mean of Response	1.049802
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	0.06722432	0.007469	0.4368	0.9068
Error	40	0.68395519	0.017099		
C. Total	49	0.75117950			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB119**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.00128	0.05848	0.88309	1.1195
BIMW-COMP-T-M	5	1.02456	0.05848	0.90637	1.1428
BIN-COMP-T	5	1.09667	0.05848	0.97848	1.2149
LA3-REF	5	1.08839	0.05848	0.97020	1.2066
MCN1-COMP-T	5	1.02237	0.05848	0.90418	1.1406
MCN2-COMP-T	5	0.99421	0.05848	0.87602	1.1124
MCN3-COMP	5	1.03926	0.05848	0.92107	1.1575
MCN4-COMP	5	1.06577	0.05848	0.94758	1.1840
MCN5-COMP	5	1.06881	0.05848	0.95062	1.1870
TB	5	1.09668	0.05848	0.97849	1.2149

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.00128	0.147805	0.06610	0.81776	1.1848
BIMW-COMP-T-M	5	1.02456	0.127691	0.05711	0.86601	1.1831
BIN-COMP-T	5	1.09667	0.160265	0.07167	0.89767	1.2957
LA3-REF	5	1.08839	0.109318	0.04889	0.95266	1.2241
MCN1-COMP-T	5	1.02237	0.170834	0.07640	0.81025	1.2345
MCN2-COMP-T	5	0.99421	0.094401	0.04222	0.87700	1.1114
MCN3-COMP	5	1.03926	0.104658	0.04680	0.90931	1.1692
MCN4-COMP	5	1.06577	0.138122	0.06177	0.89427	1.2373
MCN5-COMP	5	1.06881	0.136463	0.06103	0.89937	1.2383
TB	5	1.09668	0.091941	0.04112	0.98252	1.2108

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB119****Means Comparisons****Comparisons with a control using Dunnett's Method****LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	-0.22	1.0000
BIN-COMP-T	-0.22	1.0000
LA3-REF	-0.23	1.0000
MCN5-COMP	-0.21	1.0000
MCN4-COMP	-0.21	1.0000
MCN3-COMP	-0.18	0.9957
BIMW-COMP-T-M	-0.17	0.9762
MCN1-COMP-T	-0.17	0.9709
BIME-COMP-T-M	-0.15	0.8778
MCN2-COMP-T	-0.14	0.8299

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	102.000	127.500	20.4000	-0.808
BIMW-COMP-T-M	5	113.000	127.500	22.6000	-0.453
BIN-COMP-T	5	156.000	127.500	31.2000	0.906
LA3-REF	5	148.000	127.500	29.6000	0.647
MCN1-COMP-T	5	116.000	127.500	23.2000	-0.356
MCN2-COMP-T	5	91.000	127.500	18.2000	-1.164
MCN3-COMP	5	118.500	127.500	23.7000	-0.275
MCN4-COMP	5	137.000	127.500	27.4000	0.291
MCN5-COMP	5	136.000	127.500	27.2000	0.259
TB	5	157.500	127.500	31.5000	0.954

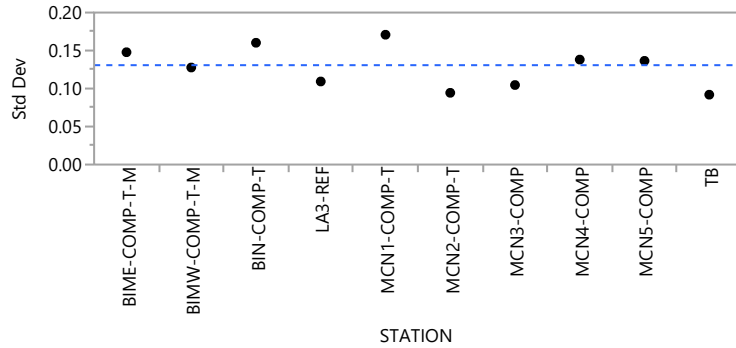
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
4.4249	9	0.8813

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB119**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478045	0.1198043	0.1179546
BIMW-COMP-T-M	5	0.1276915	0.1083387	0.0952036
BIN-COMP-T	5	0.1602651	0.1169610	0.1128168
LA3-REF	5	0.1093181	0.0867378	0.0747892
MCN1-COMP-T	5	0.1708340	0.1386715	0.1305778
MCN2-COMP-T	5	0.0944015	0.0721062	0.0650314
MCN3-COMP	5	0.1046584	0.0785891	0.0755924
MCN4-COMP	5	0.1381216	0.1186673	0.1052954
MCN5-COMP	5	0.1364626	0.1095018	0.1053992
TB	5	0.0919415	0.0652960	0.0469320

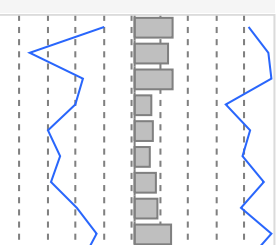
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.6384	9	40	0.7575
Brown-Forsythe	0.4500	9	40	0.8988
Levene	0.8216	9	40	0.5999
Bartlett	0.3362	9	.	0.9632

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN2-COMP-T	3.20000	1.914854	1.67115	0.0947	0.111202	-0.088540	0.3271640
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.096290	-0.302034	0.3823920
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.112280	-0.152236	0.3915920
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.049770	-0.172082	0.2622240
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.051930	-0.249098	0.3312420
MCN4-COMP	BIMW-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.045980	-0.217258	0.3108680
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.062691	-0.240980	0.3690320
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066947	-0.167486	0.3046040
TB	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.105490	-0.109010	0.3915920

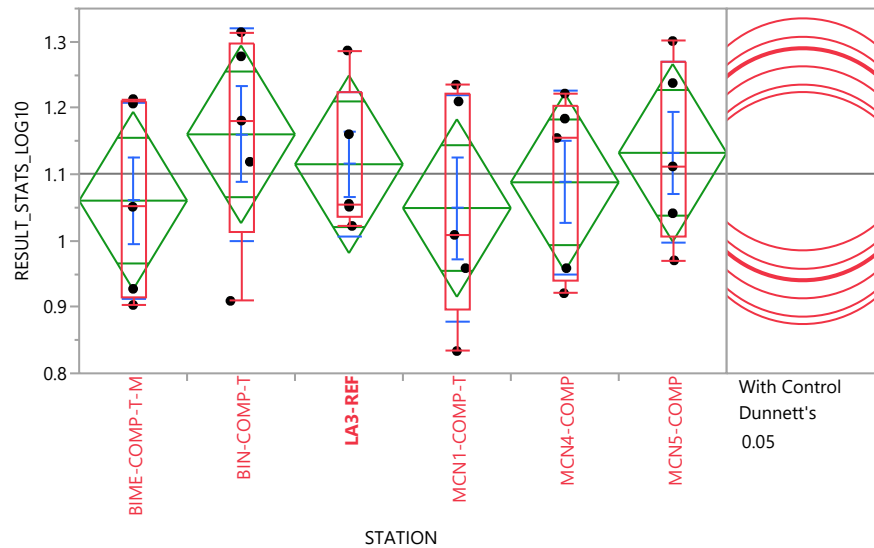


**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB119**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges- Lehmann	Lower CL	Upper CL	
TB	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	0.076840	-0.151670	0.3281850	
TB	MCN3-COMP	1.60000	1.914854	0.83557	0.4034	0.064940	-0.138310	0.2867920	
TB	LA3-REF	1.40000	1.909043	0.73335	0.4633	0.029490	-0.203250	0.2356400	
BIN-COMP-T	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.098500	-0.270194	0.3633880	
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054360	-0.208879	0.2668140	
TB	MCN5-COMP	1.20000	1.914854	0.62668	0.5309	0.022560	-0.180690	0.2821960	
LA3-REF	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.068034	-0.120396	0.3325500	
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.047340	-0.223730	0.3266520	
MCN5-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.055748	-0.209140	0.3231080	
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.035440	-0.340844	0.3400120	
MCN1-COMP-T	BIMW-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.044580	-0.309004	0.3321680	
MCN4-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.012421	-0.258649	0.2378700	
MCN5-COMP	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.045989	-0.276420	0.3672240	
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.024020	-0.217256	0.2642320	
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012240	-0.255120	0.3010290	
BIMW-COMP-T-M	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.009140	-0.296728	0.2718310	
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.002430	-0.236863	0.2768820	
MCN2-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.016593	-0.205744	0.2178400	
MCN3-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.003460	-0.191890	0.2676100	
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.011900	-0.259170	0.2732240	
MCN4-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.004596	-0.284538	0.3549840	
TB	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.111260	-0.081830	0.3325500	
TB	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.016700	-0.194050	0.2244340	
TB	MCN4-COMP	0.00000	1.914854	0.00000	1.0000	0.060350	-0.142900	0.3235890	
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.031050	-0.226440	0.2881040	
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.023064	-0.275584	0.2166840	
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051150	-0.315758	0.3161740	
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.059073	-0.323589	0.1752900	
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.022560	-0.282196	0.2130800	
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040280	-0.307640	0.3284140	
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053690	-0.286792	0.1707000	
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.067640	-0.407504	0.3374740	
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.063669	-0.328185	0.1876760	
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.082202	-0.290390	0.2344140	
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.122574	-0.317964	0.1778740	
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.091524	-0.327164	0.1209300	

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB123**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.90309	0.90309	0.91527	1.05115	1.210155	1.21355	1.21355
BIN-COMP-T	0.909275	0.909275	1.014138	1.18105	1.296175	1.31439	1.31439
LA3-REF	1.02228	1.02228	1.036715	1.05552	1.223685	1.28679	1.28679
MCN1-COMP-T	0.833669	0.833669	0.896138	1.00877	1.22258	1.23521	1.23521
MCN4-COMP	0.920819	0.920819	0.939713	1.1549	1.202955	1.22185	1.22185
MCN5-COMP	0.970329	0.970329	1.00586	1.11197	1.26936	1.30103	1.30103

**Oneway Anova**

**Summary of Fit**

Rsquare	0.083501
Adj Rsquare	-0.10744
Root Mean Square Error	0.145123
Mean of Response	1.100962
Observations (or Sum Wgts)	30

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	5	0.04605162	0.009210	0.4373	0.8180
Error	24	0.50545801	0.021061		
C. Total	29	0.55150962			



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB123**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.06040	0.06490	0.9265	1.1943
BIN-COMP-T	5	1.16034	0.06490	1.0264	1.2943
LA3-REF	5	1.11526	0.06490	0.9813	1.2492
MCN1-COMP-T	5	1.04924	0.06490	0.9153	1.1832
MCN4-COMP	5	1.08805	0.06490	0.9541	1.2220
MCN5-COMP	5	1.13248	0.06490	0.9985	1.2664

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.06040	0.147804	0.06610	0.87688	1.2439
BIN-COMP-T	5	1.16034	0.160263	0.07167	0.96134	1.3593
LA3-REF	5	1.11526	0.109317	0.04889	0.97953	1.2510
MCN1-COMP-T	5	1.04924	0.170833	0.07640	0.83712	1.2614
MCN4-COMP	5	1.08805	0.138122	0.06177	0.91655	1.2595
MCN5-COMP	5	1.13248	0.136464	0.06103	0.96304	1.3019

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.69532	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.2	0.9831
MCN5-COMP	-0.23	0.9998
LA3-REF	-0.25	1.0000
MCN4-COMP	-0.22	0.9983
BIME-COMP-T-M	-0.19	0.9619
MCN1-COMP-T	-0.18	0.9226

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	63.500	77.500	12.7000	-0.751
BIN-COMP-T	5	95.000	77.500	19.0000	0.946
LA3-REF	5	82.500	77.500	16.5000	0.250
MCN1-COMP-T	5	63.500	77.500	12.7000	-0.751
MCN4-COMP	5	71.500	77.500	14.3000	-0.306

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB123**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

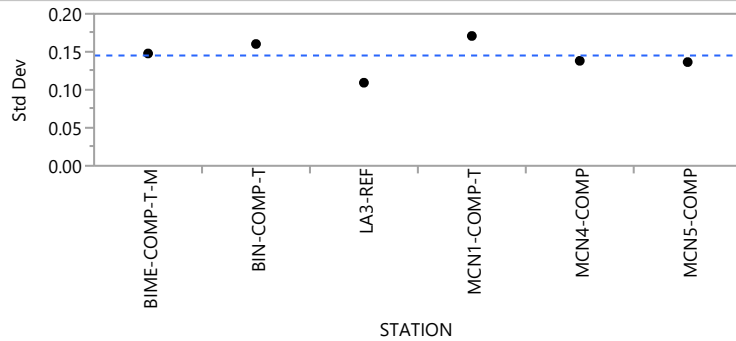
Level	Count	Score Sum	Expected Score	Score Mean	(Mean-Mean0)/Std0
MCN5-COMP	5	89.000	77.500	17.8000	0.612

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
2.3017	5	0.8060

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478040	0.1198042	0.1179542
BIN-COMP-T	5	0.1602634	0.1169580	0.1128150
LA3-REF	5	0.1093168	0.0867368	0.0747880
MCN1-COMP-T	5	0.1708329	0.1386710	0.1305768
MCN4-COMP	5	0.1381222	0.1186674	0.1052968
MCN5-COMP	5	0.1364636	0.1095026	0.1054002

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[5]	0.3510	5	24	0.8765
Brown-Forsythe	0.2087	5	24	0.9555
Levene	0.3392	5	24	0.8841
Bartlett	0.1657	5	.	0.9752

Warning: Small sample sizes. Use Caution.

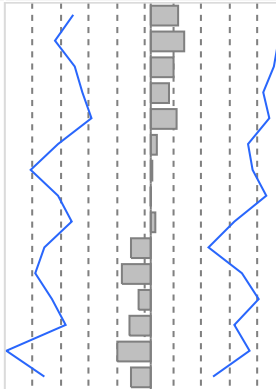
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*	Alpha
1.95996	0.05

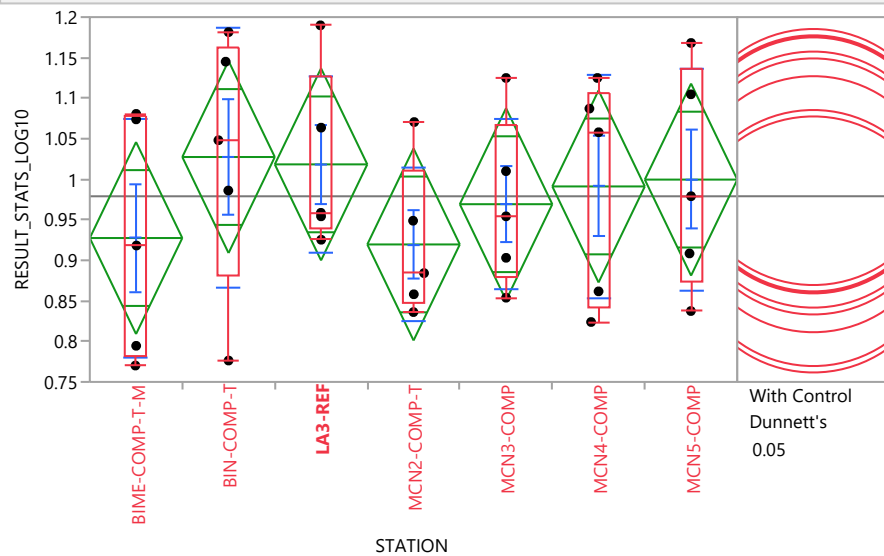
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB123**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN5-COMP	MCN1-COMP-T	2.00000	1.914854	1.04447	0.2963	0.082783	-0.239621	0.4040210
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297485	0.3869410
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067239	-0.236431	0.3735810
MCN5-COMP	MCN4-COMP	1.20000	1.914854	0.62668	0.5309	0.053630	-0.213731	0.3424230
LA3-REF	BIME-COMP-T-M	1.00000	1.909043	0.52382	0.6004	0.080030	-0.184480	0.3593410
MCN4-COMP	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.015090	-0.285941	0.2944010
MCN1-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.003190	-0.373091	0.3077610
MCN4-COMP	MCN1-COMP-T	0.00000	1.909043	0.00000	1.0000	0.000000	-0.289131	0.3503910
MCN5-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	0.014240	-0.245400	0.2498800
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063673	-0.328183	0.1707000
MCN4-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.092540	-0.357141	0.2747850
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040270	-0.307631	0.3284150
LA3-REF	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.067850	-0.263240	0.2513050
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.104440	-0.444291	0.3006750
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.063673	-0.328183	0.1876700



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB126**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.770182	0.770182	0.782362	0.918245	1.07725	1.08065	1.08065
BIN-COMP-T	0.776368	0.776368	0.881229	1.04815	1.163275	1.18149	1.18149
LA3-REF	0.925366	0.925366	0.939805	0.958607	1.126775	1.18988	1.18988
MCN2-COMP-T	0.836143	0.836143	0.847133	0.884205	1.009714	1.07058	1.07058
MCN3-COMP	0.853872	0.853872	0.878481	0.954243	1.06746	1.12494	1.12494

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB126**

Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
MCN4-COMP	0.823909	0.823909	0.842803	1.05799	1.106045	1.12494	1.12494
MCN5-COMP	0.837422	0.837422	0.872954	0.979066	1.13645	1.16812	1.16812

**Oneway Anova**

**Summary of Fit**

Rsquare	0.102931
Adj Rsquare	-0.0893
Root Mean Square Error	0.12931
Mean of Response	0.978971
Observations (or Sum Wgts)	35

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	6	0.05372069	0.008953	0.5355	0.7766
Error	28	0.46818731	0.016721		
C. Total	34	0.52190799			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.92749	0.05783	0.80904	1.0460
BIN-COMP-T	5	1.02743	0.05783	0.90897	1.1459
LA3-REF	5	1.01835	0.05783	0.89990	1.1368
MCN2-COMP-T	5	0.91958	0.05783	0.80112	1.0380
MCN3-COMP	5	0.96923	0.05783	0.85077	1.0877
MCN4-COMP	5	0.99114	0.05783	0.87268	1.1096
MCN5-COMP	5	0.99957	0.05783	0.88112	1.1180

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.92749	0.147805	0.06610	0.74397	1.1110
BIN-COMP-T	5	1.02743	0.160267	0.07167	0.82843	1.2264
LA3-REF	5	1.01835	0.109318	0.04889	0.88262	1.1541
MCN2-COMP-T	5	0.91958	0.094403	0.04222	0.80236	1.0368
MCN3-COMP	5	0.96923	0.104657	0.04680	0.83928	1.0992
MCN4-COMP	5	0.99114	0.138122	0.06177	0.81964	1.1626
MCN5-COMP	5	0.99957	0.136462	0.06103	0.83014	1.1690

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.73128	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB126**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.21	1.0000
LA3-REF	-0.22	1.0000
MCN5-COMP	-0.2	0.9999
MCN4-COMP	-0.2	0.9990
MCN3-COMP	-0.17	0.9774
BIME-COMP-T-M	-0.13	0.7491
MCN2-COMP-T	-0.12	0.6830

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

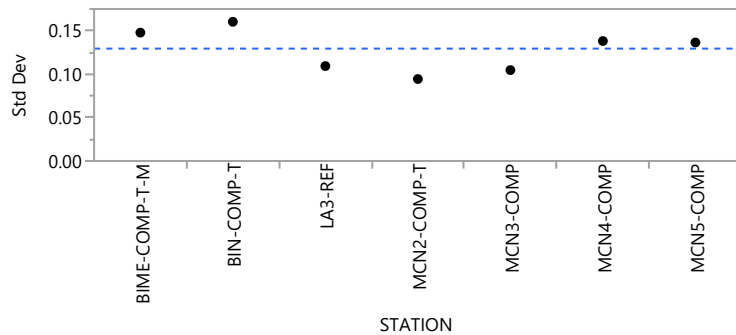
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	70.000	90.000	14.0000	-0.919
BIN-COMP-T	5	110.000	90.000	22.0000	0.919
LA3-REF	5	107.500	90.000	21.5000	0.801
MCN2-COMP-T	5	63.000	90.000	12.6000	-1.249
MCN3-COMP	5	86.000	90.000	17.2000	-0.165
MCN4-COMP	5	94.500	90.000	18.9000	0.189
MCN5-COMP	5	99.000	90.000	19.8000	0.401

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
3.7201	6	0.7145

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB126**

**Tests that the Variances are Equal**

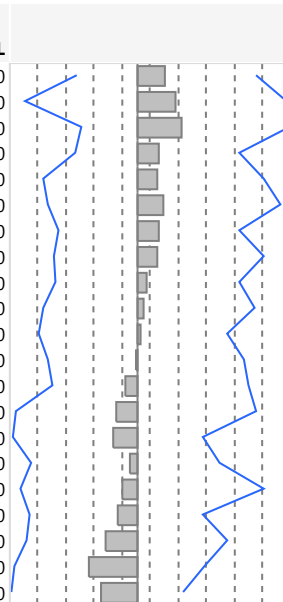
Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478053	0.1198050	0.1179552
BIN-COMP-T	5	0.1602668	0.1169621	0.1128184
LA3-REF	5	0.1093177	0.0867374	0.0747882
MCN2-COMP-T	5	0.0944029	0.0721071	0.0650322
MCN3-COMP	5	0.1046575	0.0785880	0.0755916
MCN4-COMP	5	0.1381222	0.1186674	0.1052968
MCN5-COMP	5	0.1364616	0.1095003	0.1053986

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[5]	0.4930	6	28	0.8080
Brown-Forsythe	0.3211	6	28	0.9204
Levene	0.5723	6	28	0.7489
Bartlett	0.2752	6	.	0.9488

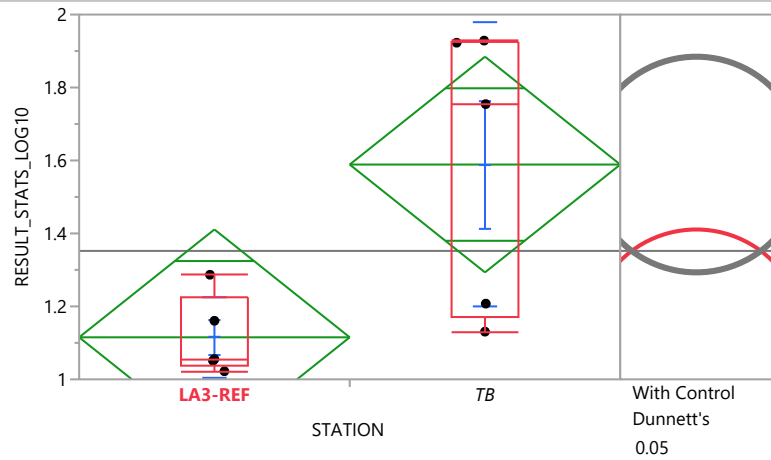
Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha										
1.95996		0.05										
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL				
MCN5-COMP	MCN2-COMP-T	2.00000	1.914854	1.04447	0.2963	0.072342	-0.162095	0.3099970				
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297482	0.3869480				
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.116030	-0.148484	0.3953380				
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054360	-0.167490	0.2668170				
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.051090	-0.249941	0.3303980				
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067240	-0.236428	0.3735780				
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054360	-0.208883	0.2668170				
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.051090	-0.219978	0.3303980				
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.024823	-0.216455	0.2650300				
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.017630	-0.249728	0.3064230				
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007825	-0.263243	0.2332780				
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.003270	-0.237707	0.2760380				
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.031847	-0.227247	0.2873020				
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.056550	-0.321151	0.3107820				
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063669	-0.328183	0.1706970				
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.021760	-0.281395	0.2138770				
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040280	-0.307638	0.3284120				
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053690	-0.286790	0.1706970				
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.083000	-0.291188	0.2336120				
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.127967	-0.323367	0.1724790				
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096120	-0.331757	0.1163370				



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB128**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	1.02228	1.02228	1.036715	1.05552	1.223685	1.28679	1.28679
TB	1.13077	1.13077	1.16919	1.75449	1.925735	1.92864	1.92864

**Oneway Anova**

**Summary of Fit**

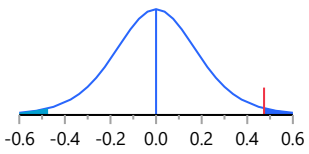
Rsquare	0.460323
Adj Rsquare	0.392863
Root Mean Square Error	0.286666
Mean of Response	1.352066
Observations (or Sum Wgts)	10

**t Test**

TB-LA3-REF

Assuming equal variances

Difference	0.473604	t Ratio	2.612218
Std Err Dif	0.181303	DF	8
Upper CL Dif	0.891690	Prob >  t	0.0310*
Lower CL Dif	0.055518	Prob > t	0.0155*
Confidence	0.95	Prob < t	0.9845



**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	1	0.5607519	0.560752	6.8237	0.0310*
Error	8	0.6574184	0.082177		
C. Total	9	1.2181703			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB128**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
LA3-REF	5	1.11526	0.12820	0.8196	1.4109
TB	5	1.58887	0.12820	1.2932	1.8845

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
LA3-REF	5	1.11526	0.109317	0.04889	0.9795	1.2510
TB	5	1.58887	0.390390	0.17459	1.1041	2.0736

**t Test**

TB-LA3-REF

Assuming unequal variances

Difference	0.47360	t Ratio	2.612218	
Std Err Dif	0.18130	DF	4.623454	
Upper CL Dif	0.95131	Prob >  t	0.0513	
Lower CL Dif	-0.00410	Prob > t	0.0257*	
Confidence	0.95	Prob < t	0.9743	

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.30600	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.056	0.0310*
LA3-REF	-0.42	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
LA3-REF	5	18.000	27.500	3.60000	-1.880
TB	5	37.000	27.500	7.40000	1.880

**2-Sample Test, Normal Approximation**

S	Z	Prob> Z
37	1.88004	0.0601



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB128**

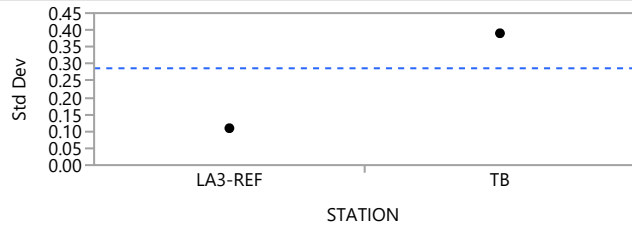
**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
3.9382	1	0.0472*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
LA3-REF	5	0.1093168	0.0867368	0.0747880
TB	5	0.3903901	0.3357424	0.3026180

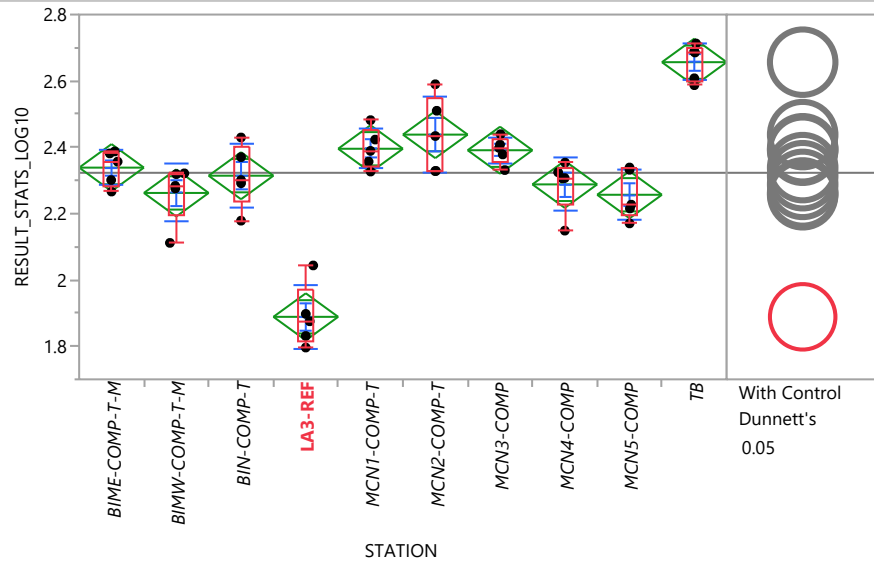
Test	F Ratio	DFNum	DFDen	p-Value
O'Brien[.5]	10.3775	1	8	0.0122*
Brown-Forsythe	3.1789	1	8	0.1124
Levene	22.0704	1	8	0.0015*
Bartlett	4.6595	1	.	0.0309*
F Test 2-sided	12.7533	4	4	0.0302*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	LA3-REF	3.600000	1.914854	1.880039	0.0601	0.6360400	-0.079180	0.9005500

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB132/153**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	2.26627	2.26627	2.28365	2.35655	2.384205	2.38722	2.38722
BIMW-COMP-T-M	2.11149	2.11149	2.193605	2.2833	2.319995	2.32123	2.32123
BIN-COMP-T	2.17846	2.17846	2.23497	2.30103	2.39973	2.42935	2.42935
LA3-REF	1.79588	1.79588	1.81337	1.87506	1.970405	2.04347	2.04347
MCN1-COMP-T	2.32658	2.32658	2.341565	2.38899	2.45232	2.48162	2.48162
MCN2-COMP-T	2.3279	2.3279	2.328255	2.43366	2.54987	2.58983	2.58983
MCN3-COMP	2.33099	2.33099	2.354595	2.39794	2.423625	2.43933	2.43933
MCN4-COMP	2.14842	2.14842	2.22718	2.30702	2.339035	2.35356	2.35356
MCN5-COMP	2.17026	2.17026	2.19275	2.22678	2.33533	2.33882	2.33882
TB	2.587	2.587	2.597445	2.68561	2.700755	2.71276	2.71276

**Oneway Anova**

**Summary of Fit**

Rsquare	0.870878
Adj Rsquare	0.841826
Root Mean Square Error	0.078519
Mean of Response	2.322825
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	1.6633042	0.184812	29.9762	<.0001*
Error	40	0.2466114	0.006165		
C. Total	49	1.9099156			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB132/153**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.33845	0.03511	2.2675	2.4094
BIMW-COMP-T-M	5	2.26210	0.03511	2.1911	2.3331
BIN-COMP-T	5	2.31409	0.03511	2.2431	2.3851
LA3-REF	5	1.88852	0.03511	1.8176	1.9595
MCN1-COMP-T	5	2.39535	0.03511	2.3244	2.4663
MCN2-COMP-T	5	2.43798	0.03511	2.3670	2.5090
MCN3-COMP	5	2.39088	0.03511	2.3199	2.4618
MCN4-COMP	5	2.28789	0.03511	2.2169	2.3589
MCN5-COMP	5	2.25659	0.03511	2.1856	2.3276
TB	5	2.65640	0.03511	2.5854	2.7274

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.33845	0.052780	0.02360	2.2729	2.4040
BIMW-COMP-T-M	5	2.26210	0.086639	0.03875	2.1545	2.3697
BIN-COMP-T	5	2.31409	0.094208	0.04213	2.1971	2.4311
LA3-REF	5	1.88852	0.095099	0.04253	1.7704	2.0066
MCN1-COMP-T	5	2.39535	0.060173	0.02691	2.3206	2.4701
MCN2-COMP-T	5	2.43798	0.114379	0.05115	2.2960	2.5800
MCN3-COMP	5	2.39088	0.040110	0.01794	2.3411	2.4407
MCN4-COMP	5	2.28789	0.080308	0.03591	2.1882	2.3876
MCN5-COMP	5	2.25659	0.074959	0.03352	2.1635	2.3497
TB	5	2.65640	0.055330	0.02474	2.5877	2.7251

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB132/153**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.628	<.0001*
MCN2-COMP-T	0.41	<.0001*
MCN1-COMP-T	0.367	<.0001*
MCN3-COMP	0.363	<.0001*
BIME-COMP-T-M	0.31	<.0001*
BIN-COMP-T	0.286	<.0001*
MCN4-COMP	0.26	<.0001*
BIMW-COMP-T-M	0.234	<.0001*
MCN5-COMP	0.228	<.0001*
LA3-REF	-0.14	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	128.000	127.500	25.6000	0.000
BIMW-COMP-T-M	5	74.000	127.500	14.8000	-1.714
BIN-COMP-T	5	112.500	127.500	22.5000	-0.469
LA3-REF	5	15.000	127.500	3.0000	-3.622
MCN1-COMP-T	5	171.500	127.500	34.3000	1.407
MCN2-COMP-T	5	180.000	127.500	36.0000	1.682
MCN3-COMP	5	176.000	127.500	35.2000	1.552
MCN4-COMP	5	95.000	127.500	19.0000	-1.035
MCN5-COMP	5	84.000	127.500	16.8000	-1.391
TB	5	239.000	127.500	47.8000	3.590

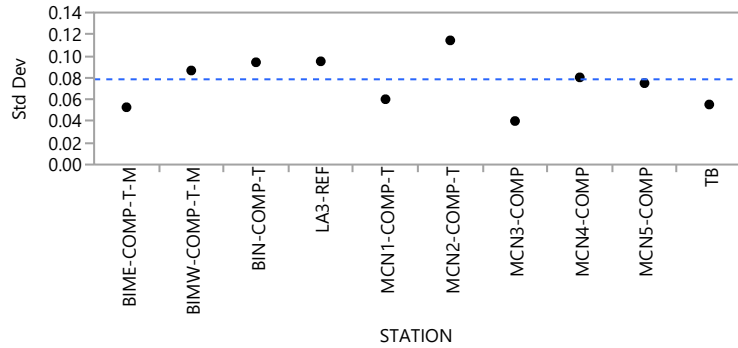
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
35.9272	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB132/153**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0527803	0.0438416	0.0402220
BIMW-COMP-T-M	5	0.0866387	0.0602440	0.0505560
BIN-COMP-T	5	0.0942077	0.0685152	0.0659040
LA3-REF	5	0.0950990	0.0655064	0.0628140
MCN1-COMP-T	5	0.0601734	0.0455744	0.0443020
MCN2-COMP-T	5	0.1143792	0.0895104	0.0886460
MCN3-COMP	5	0.0401099	0.0290248	0.0276120
MCN4-COMP	5	0.0803076	0.0557880	0.0447420
MCN5-COMP	5	0.0749594	0.0629936	0.0570320
TB	5	0.0553303	0.0471656	0.0413240

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.6984	9	40	0.7063
Brown-Forsythe	0.5176	9	40	0.8530
Levene	0.7614	9	40	0.6517
Bartlett	0.7008	9	.	0.7088

Warning: Small sample sizes. Use Caution.

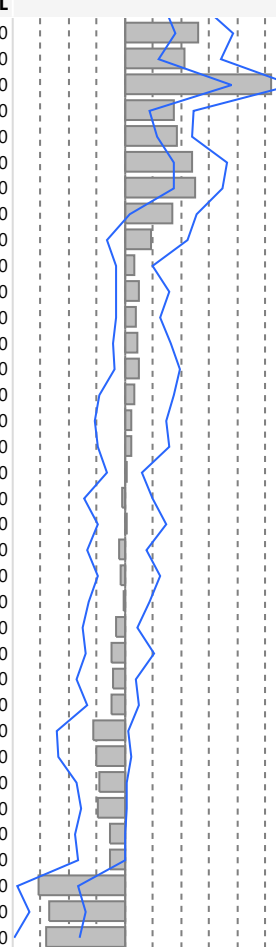
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.105690	0.007820	0.311530
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.525680	0.313080	0.650760
MCN2-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.188680	0.007380	0.398420
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.536320	0.285140	0.758970
MCN3-COMP	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.114640	0.012230	0.296430
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.522880	0.334730	0.612040
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.430880	0.251080	0.528630
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.374380	0.171770	0.535960
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.320730	0.205810	0.422480

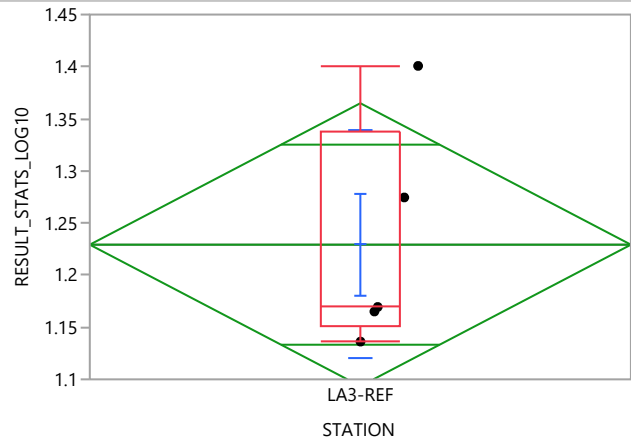
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB132/153**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.391530	0.268240	0.577260
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.318640	0.178540	0.510290
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.791120	0.564420	0.892870
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.262590	0.126270	0.362170
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.276900	0.168560	0.357760
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.364240	0.254330	0.540330
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.381110	0.255160	0.518490
TB	MCN2-COMP-T	4.40000	1.914854	2.29783	0.0216*	0.251950	0.018060	0.384150
MCN2-COMP-T	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	0.139800	-0.100740	0.331450
MCN3-COMP	BIME-COMP-T-M	2.80000	1.914854	1.46225	0.1437	0.051370	-0.050200	0.141650
MCN3-COMP	BIN-COMP-T	2.80000	1.914854	1.46225	0.1437	0.077170	-0.051150	0.229460
MCN1-COMP-T	BIME-COMP-T-M	2.60000	1.909043	1.36194	0.1732	0.055520	-0.054610	0.180590
MCN1-COMP-T	BIN-COMP-T	2.40000	1.914854	1.25336	0.2101	0.065070	-0.072800	0.244560
MCN2-COMP-T	BIME-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.077110	-0.058610	0.288800
BIN-COMP-T	BIMW-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.048880	-0.140300	0.258620
MCN4-COMP	BIMW-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.030220	-0.170340	0.213020
MCN2-COMP-T	MCN1-COMP-T	1.20000	1.914854	0.62668	0.5309	0.028290	-0.153010	0.233280
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.004410	-0.103420	0.082780
MCN4-COMP	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.016550	-0.221690	0.146050
MCN5-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.010610	-0.148500	0.220350
MCN3-COMP	MCN2-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.035720	-0.211630	0.110720
MCN5-COMP	MCN4-COMP	-0.40000	1.914854	-0.20889	0.8345	-0.021720	-0.154250	0.183420
BIN-COMP-T	BIME-COMP-T-M	-0.60000	1.909043	-0.31429	0.7533	-0.011080	-0.202730	0.128320
MCN4-COMP	BIME-COMP-T-M	-1.60000	1.914854	-0.83557	0.4034	-0.049530	-0.232770	0.058240
MCN5-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.074250	-0.214110	0.153380
BIMW-COMP-T-M	BIME-COMP-T-M	-2.40000	1.914854	-1.25336	0.2101	-0.065990	-0.269700	0.052490
MCN5-COMP	BIME-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-0.074250	-0.210930	0.065570
MCN5-COMP	MCN2-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-0.171090	-0.374590	0.010210
MCN4-COMP	MCN2-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.156350	-0.361490	0.024950
MCN5-COMP	MCN1-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.142800	-0.266380	0.005260
MCN5-COMP	MCN3-COMP	-4.00000	1.914854	-2.08893	0.0367*	-0.151420	-0.237660	0.000850
MCN4-COMP	MCN1-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-0.083050	-0.274600	-0.002070
MCN4-COMP	MCN3-COMP	-4.40000	1.914854	-2.29783	0.0216*	-0.085770	-0.259500	-0.006480
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.470390	-0.585310	-0.257560
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.408240	-0.522880	-0.214150
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.425970	-0.598490	-0.248010



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB137**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	1.13622	1.13622	1.15066	1.16946	1.337625	1.40073	1.40073

**Oneway Anova**

**Summary of Fit**

Rsquare	0
Adj Rsquare	0
Root Mean Square Error	0.109315
Mean of Response	1.229206
Observations (or Sum Wgts)	5

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	0	0.00000000			
Error	4	0.04779940	0.011950		
C. Total	4	0.04779940			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
LA3-REF	5	1.22921	0.04889	1.0935	1.3649

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
LA3-REF	5	1.22921	0.109315	0.04889	1.0935	1.3649

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB137**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected Score	Score Mean	(Mean-Mean0)/Std0
LA3-REF	5	15.000	15.000	3.00000	

**1-Way Test, ChiSquare Approximation**

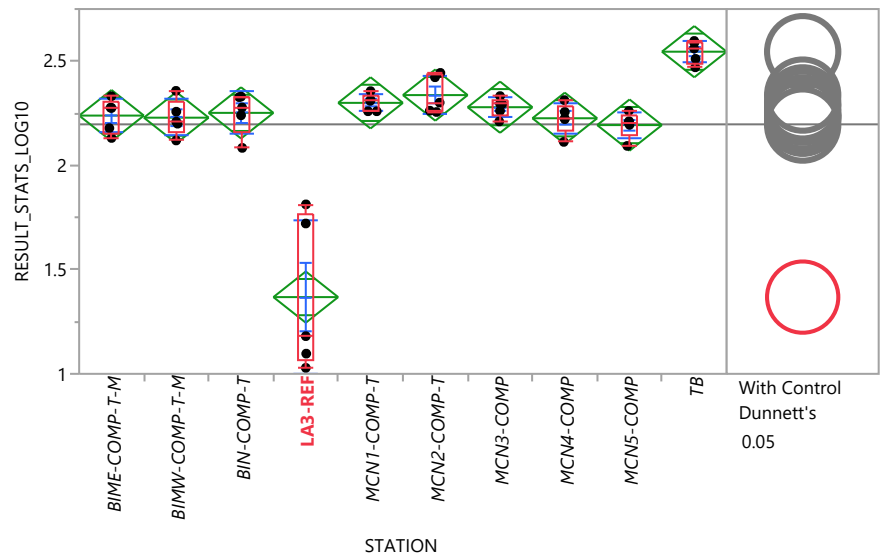
ChiSquare	DF	Prob>ChiSq
0.0000	0	

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB138/158**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	2.13157	2.13157	2.155145	2.27563	2.3043	2.3317	2.3317
BIMW-COMP-T-M	2.11961	2.11961	2.159805	2.20952	2.307535	2.35751	2.35751
BIN-COMP-T	2.0839	2.0839	2.162115	2.27796	2.328675	2.32999	2.32999
LA3-REF	1.02865	1.02865	1.06278	1.18074	1.76708	1.81291	1.81291
MCN1-COMP-T	2.25964	2.25964	2.25964	2.3098	2.335235	2.35608	2.35608
MCN2-COMP-T	2.25606	2.25606	2.25923	2.30103	2.43323	2.4437	2.4437



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB138/158**

Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
MCN3-COMP	2.21085	2.21085	2.236055	2.29496	2.314195	2.33244	2.33244
MCN4-COMP	2.1127	2.1127	2.167275	2.22578	2.284935	2.31326	2.31326
MCN5-COMP	2.09342	2.09342	2.14411	2.20576	2.23636	2.26091	2.26091
TB	2.47049	2.47049	2.490735	2.56067	2.5924	2.59698	2.59698

**Oneway Anova**

**Summary of Fit**

Rsquare	0.852099
Adj Rsquare	0.818822
Root Mean Square Error	0.135968
Mean of Response	2.19687
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	9	4.2604332	0.473381	25.6058	<.0001*
Error	40	0.7394922	0.018487		
C. Total	49	4.9999254			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.23890	0.06081	2.1160	2.3618
BIMW-COMP-T-M	5	2.22884	0.06081	2.1059	2.3517
BIN-COMP-T	5	2.25191	0.06081	2.1290	2.3748
LA3-REF	5	1.36809	0.06081	1.2452	1.4910
MCN1-COMP-T	5	2.29991	0.06081	2.1770	2.4228
MCN2-COMP-T	5	2.33719	0.06081	2.2143	2.4601
MCN3-COMP	5	2.27909	0.06081	2.1562	2.4020
MCN4-COMP	5	2.22604	0.06081	2.1031	2.3489
MCN5-COMP	5	2.19334	0.06081	2.0704	2.3162
TB	5	2.54539	0.06081	2.4225	2.6683

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.23890	0.081465	0.03643	2.1378	2.3401
BIMW-COMP-T-M	5	2.22884	0.087346	0.03906	2.1204	2.3373
BIN-COMP-T	5	2.25191	0.101031	0.04518	2.1265	2.3774
LA3-REF	5	1.36809	0.369610	0.16529	0.9092	1.8270
MCN1-COMP-T	5	2.29991	0.040945	0.01831	2.2491	2.3507
MCN2-COMP-T	5	2.33719	0.089652	0.04009	2.2259	2.4485
MCN3-COMP	5	2.27909	0.045708	0.02044	2.2223	2.3358
MCN4-COMP	5	2.22604	0.073153	0.03272	2.1352	2.3169
MCN5-COMP	5	2.19334	0.061334	0.02743	2.1172	2.2695
TB	5	2.54539	0.053594	0.02397	2.4788	2.6119

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB138/158**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.936	<.0001*
MCN2-COMP-T	0.727	<.0001*
MCN1-COMP-T	0.69	<.0001*
MCN3-COMP	0.669	<.0001*
BIN-COMP-T	0.642	<.0001*
BIME-COMP-T-M	0.629	<.0001*
BIMW-COMP-T-M	0.619	<.0001*
MCN4-COMP	0.616	<.0001*
MCN5-COMP	0.583	<.0001*
LA3-REF	-0.24	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	120.000	127.500	24.0000	-0.226
BIMW-COMP-T-M	5	103.000	127.500	20.6000	-0.776
BIN-COMP-T	5	134.000	127.500	26.8000	0.194
LA3-REF	5	15.000	127.500	3.0000	-3.622
MCN1-COMP-T	5	163.000	127.500	32.6000	1.132
MCN2-COMP-T	5	172.000	127.500	34.4000	1.423
MCN3-COMP	5	149.000	127.500	29.8000	0.679
MCN4-COMP	5	103.000	127.500	20.6000	-0.776
MCN5-COMP	5	76.000	127.500	15.2000	-1.649
TB	5	240.000	127.500	48.0000	3.622

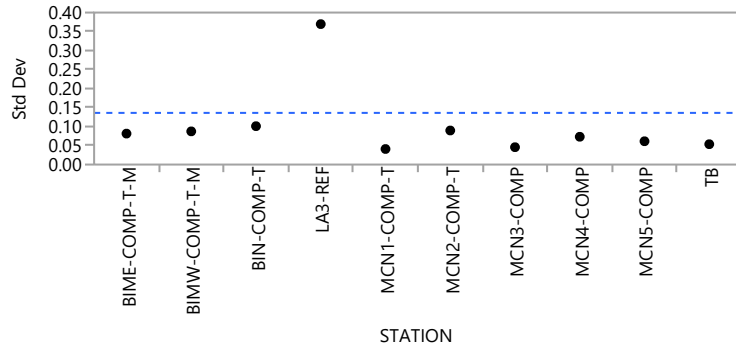
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
31.0288	9	0.0003*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB138/158**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0814652	0.0670072	0.0596620
BIMW-COMP-T-M	5	0.0873456	0.0629560	0.0590920
BIN-COMP-T	5	0.1010312	0.0718344	0.0666240
LA3-REF	5	0.3696096	0.3191904	0.2817200
MCN1-COMP-T	5	0.0409448	0.0322160	0.0302380
MCN2-COMP-T	5	0.0896518	0.0768320	0.0696000
MCN3-COMP	5	0.0457082	0.0344296	0.0312560
MCN4-COMP	5	0.0731530	0.0471160	0.0470640
MCN5-COMP	5	0.0613336	0.0399680	0.0369000
TB	5	0.0535942	0.0437224	0.0406660

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	10.1409	9	40	<.0001*
Brown-Forsythe	2.6562	9	40	0.0162*
Levene	15.8411	9	40	<.0001*
Bartlett	4.3200	9	.	<.0001*

Warning: Small sample sizes. Use Caution.

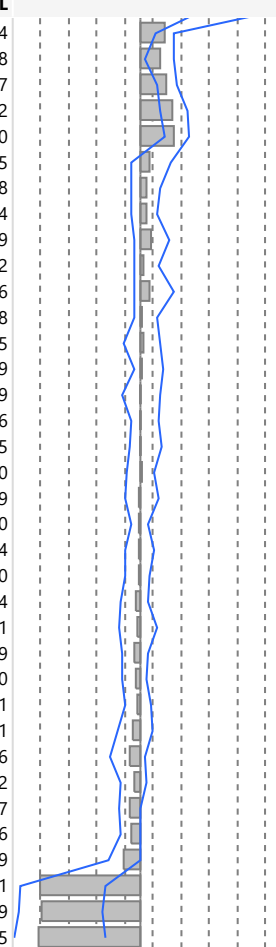
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha							
1.95996		0.05							
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
MCN1-COMP-T	LA3-REF	4.80000	1.909043	2.51435	0.0119*	1.12906	0.44673	1.28574	
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.12029	0.44949	1.39411	
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.11394	0.44835	1.26730	
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.04111	0.39145	1.22796	
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.01406	0.37217	1.18316	
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.31092	0.17928	0.45625	
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.33026	0.15347	0.46821	
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.26962	0.14313	0.50392	
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.37358	0.69807	1.55917	

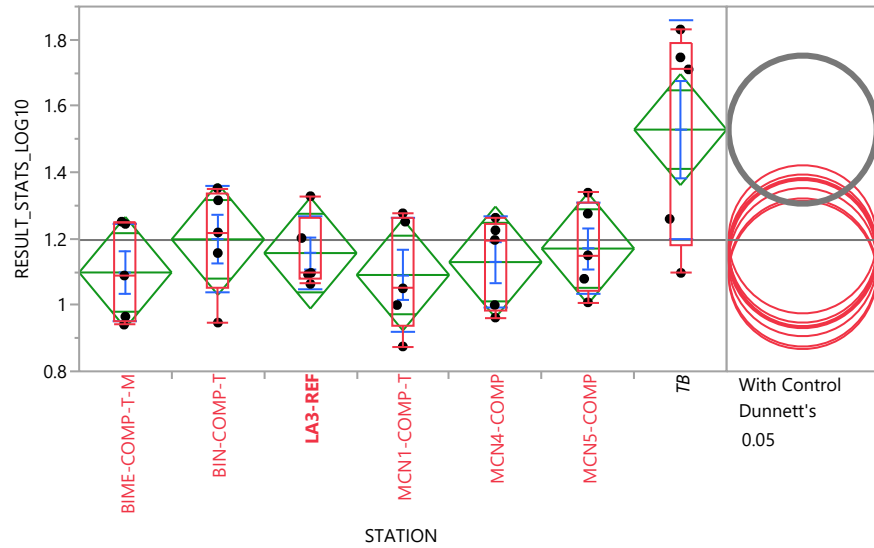
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB138/158**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN1-COMP-T	4.80000	1.909043	2.51435	0.0119*	0.25087	0.15490	0.33734
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.20995	0.04773	0.33458
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.26472	0.17454	0.37697
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.33121	0.19772	0.47512
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.35491	0.25007	0.49440
MCN2-COMP-T	BIMW-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.09151	-0.09511	0.30315
MCN1-COMP-T	BIMW-COMP-T-M	2.80000	1.909043	1.46670	0.1425	0.05964	-0.09787	0.19478
MCN3-COMP	BIMW-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.06126	-0.09625	0.17634
MCN2-COMP-T	BIME-COMP-T-M	2.00000	1.914854	1.04447	0.2963	0.11200	-0.06930	0.29119
MCN1-COMP-T	BIME-COMP-T-M	1.60000	1.909043	0.83812	0.4020	0.03876	-0.07206	0.18282
MCN2-COMP-T	BIN-COMP-T	1.60000	1.914854	0.83557	0.4034	0.09277	-0.07130	0.33886
MCN3-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.02032	-0.07044	0.16438
BIN-COMP-T	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.04033	-0.17366	0.20775
MCN1-COMP-T	BIN-COMP-T	0.80000	1.909043	0.41906	0.6752	0.02609	-0.07035	0.23049
BIN-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.00233	-0.19300	0.19579
MCN2-COMP-T	MCN1-COMP-T	0.40000	1.909043	0.20953	0.8340	0.00276	-0.09368	0.18406
MCN3-COMP	BIN-COMP-T	0.40000	1.914854	0.20889	0.8345	0.00508	-0.11651	0.21205
MCN4-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.01233	-0.14486	0.13700
BIMW-COMP-T-M	BIME-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.01807	-0.15729	0.17879
MCN3-COMP	MCN1-COMP-T	-0.80000	1.909043	-0.41906	0.6752	-0.01844	-0.10354	0.07280
MCN4-COMP	BIME-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.01902	-0.16420	0.13454
MCN5-COMP	BIMW-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.01472	-0.16414	0.09220
MCN3-COMP	MCN2-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.04521	-0.21191	0.07004
MCN4-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.02135	-0.21466	0.17271
MCN5-COMP	BIME-COMP-T-M	-1.60000	1.914854	-0.83557	0.4034	-0.06509	-0.18348	0.08219
MCN4-COMP	MCN3-COMP	-2.00000	1.914854	-1.04447	0.2963	-0.03941	-0.18325	0.05200
MCN5-COMP	MCN4-COMP	-2.00000	1.914854	-1.04447	0.2963	-0.02705	-0.16319	0.09911
MCN5-COMP	BIN-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.06908	-0.23394	0.12791
MCN4-COMP	MCN2-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-0.10950	-0.31006	0.05086
MCN4-COMP	MCN1-COMP-T	-3.60000	1.909043	-1.88576	0.0593	-0.05778	-0.20169	0.05362
MCN5-COMP	MCN1-COMP-T	-4.00000	1.909043	-2.09529	0.0361*	-0.10258	-0.22097	0.00127
MCN5-COMP	MCN3-COMP	-4.00000	1.914854	-2.08893	0.0367*	-0.08414	-0.20253	0.00096
MCN5-COMP	MCN2-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-0.16185	-0.32934	-0.00149
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.03466	-1.24825	-0.36581
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.02270	-1.26060	-0.38709
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.05525	-1.29871	-0.36265



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB141**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.940879	0.940879	0.953059	1.08894	1.247945	1.25134	1.25134
BIN-COMP-T	0.947064	0.947064	1.051927	1.21884	1.333965	1.35218	1.35218
LA3-REF	1.06367	1.06367	1.07811	1.09691	1.265075	1.32818	1.32818
MCN1-COMP-T	0.875061	0.875061	0.937531	1.05017	1.263975	1.27661	1.27661
MCN4-COMP	0.962211	0.962211	0.981106	1.19629	1.244345	1.26324	1.26324
MCN5-COMP	1.00812	1.00812	1.04365	1.14976	1.30715	1.33882	1.33882
TB	1.09691	1.09691	1.178275	1.71055	1.7888	1.83086	1.83086

**Oneway Anova**

**Summary of Fit**

Rsquare	0.424588
Adj Rsquare	0.301285
Root Mean Square Error	0.182855
Mean of Response	1.196037
Observations (or Sum Wgts)	35

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	6	0.6908117	0.115135	3.4435	0.0113*
Error	28	0.9362047	0.033436		
C. Total	34	1.6270164			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB141**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.09819	0.08178	0.9307	1.2657
BIN-COMP-T	5	1.19812	0.08178	1.0306	1.3656
LA3-REF	5	1.15666	0.08178	0.9891	1.3242
MCN1-COMP-T	5	1.09064	0.08178	0.9231	1.2581
MCN4-COMP	5	1.12944	0.08178	0.9619	1.2969
MCN5-COMP	5	1.17027	0.08178	1.0028	1.3378
TB	5	1.52894	0.08178	1.3614	1.6964

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.09819	0.147805	0.06610	0.9147	1.2817
BIN-COMP-T	5	1.19812	0.160264	0.07167	0.9991	1.3971
LA3-REF	5	1.15666	0.109315	0.04889	1.0209	1.2924
MCN1-COMP-T	5	1.09064	0.170834	0.07640	0.8785	1.3028
MCN4-COMP	5	1.12944	0.138121	0.06177	0.9579	1.3009
MCN5-COMP	5	1.17027	0.136463	0.06103	1.0008	1.3397
TB	5	1.52894	0.328157	0.14676	1.1215	1.9364

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.73128	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.056	0.0161*
BIN-COMP-T	-0.27	0.9984
MCN5-COMP	-0.3	1.0000
LA3-REF	-0.32	1.0000
MCN4-COMP	-0.29	0.9999
BIME-COMP-T-M	-0.26	0.9903
MCN1-COMP-T	-0.25	0.9823

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB141**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

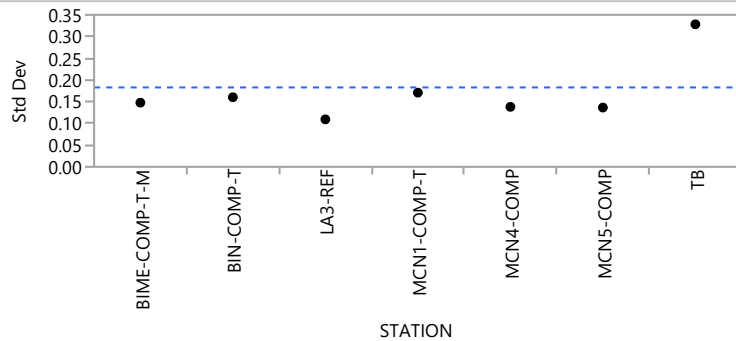
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	64.500	90.000	12.9000	-1.179
BIN-COMP-T	5	101.000	90.000	20.2000	0.495
LA3-REF	5	86.500	90.000	17.3000	-0.141
MCN1-COMP-T	5	68.000	90.000	13.6000	-1.014
MCN4-COMP	5	75.500	90.000	15.1000	-0.660
MCN5-COMP	5	93.000	90.000	18.6000	0.118
TB	5	141.500	90.000	28.3000	2.405

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
7.8871	6	0.2465

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478045	0.1198045	0.1179546
BIN-COMP-T	5	0.1602638	0.1169582	0.1128152
LA3-REF	5	0.1093154	0.0867352	0.0747860
MCN1-COMP-T	5	0.1708340	0.1386710	0.1305778
MCN4-COMP	5	0.1381209	0.1186662	0.1052958
MCN5-COMP	5	0.1364633	0.1095024	0.1054000
TB	5	0.3281566	0.2805320	0.2442100

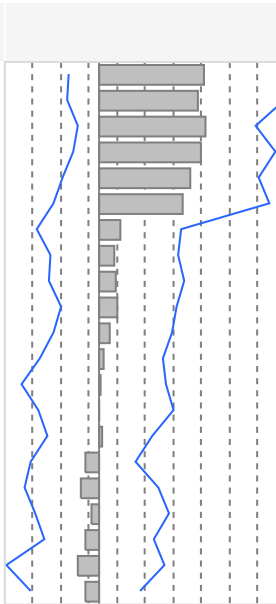
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	3.5476	6	28	0.0097*
Brown-Forsythe	0.8282	6	28	0.5581
Levene	4.1972	6	28	0.0039*
Bartlett	1.1146	6	.	0.3507

Warning: Small sample sizes. Use Caution.

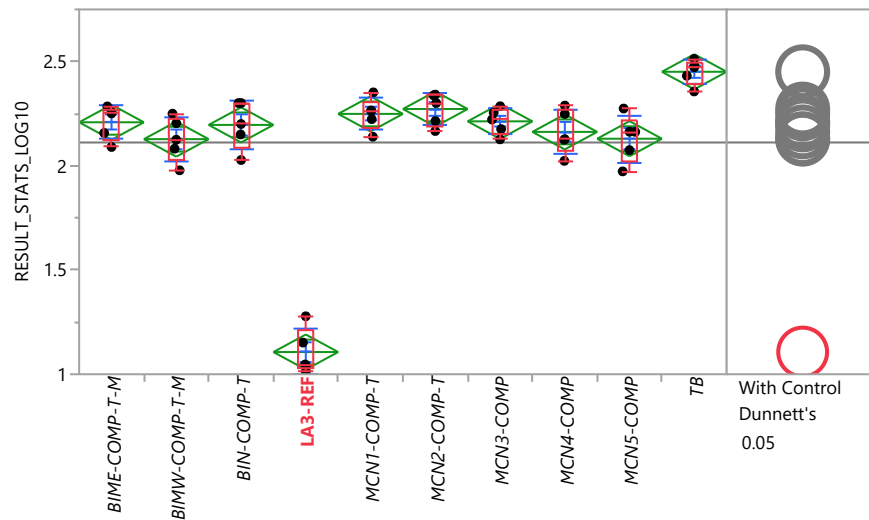
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB141**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	BIME-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	0.495400	-0.147640	0.8656220
TB	MCN1-COMP-T	3.60000	1.914854	1.88004	0.0601	0.470130	-0.154430	0.8716790
TB	LA3-REF	3.40000	1.909043	1.78100	0.0749	0.502680	-0.105060	0.7383100
TB	MCN4-COMP	3.20000	1.914854	1.67115	0.0947	0.485100	-0.128540	0.8308600
TB	MCN5-COMP	2.80000	1.914854	1.46225	0.1437	0.435070	-0.178570	0.7516800
TB	BIN-COMP-T	2.40000	1.914854	1.25336	0.2101	0.394800	-0.218840	0.7996760
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297486	0.3869420
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067241	-0.236430	0.3735820
MCN5-COMP	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	0.079180	-0.243220	0.4004190
LA3-REF	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.083630	-0.180880	0.3629420
MCN5-COMP	MCN4-COMP	1.20000	1.914854	0.62668	0.5309	0.050030	-0.217330	0.3388200
MCN4-COMP	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.018690	-0.282339	0.2980020
MCN1-COMP-T	BIME-COMP-T-M	0.20000	1.909043	0.10476	0.9166	0.006790	-0.369489	0.3113720
MCN4-COMP	MCN1-COMP-T	0.00000	1.909043	0.00000	1.0000	0.000000	-0.289129	0.3503890
MCN5-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	0.010640	-0.249000	0.2462700
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063670	-0.328180	0.1706900
MCN4-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.088940	-0.353539	0.2783860
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040270	-0.307630	0.3284160
LA3-REF	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.064240	-0.259630	0.2549060
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.100840	-0.440689	0.3042760
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.063670	-0.328180	0.1876700



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB149**





**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB149**

STATION

Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	2.09018	2.09018	2.12372	2.25134	2.27224	2.28484	2.28484
BIMW-COMP-T-M	1.97828	1.97828	2.03009	2.12494	2.227	2.24988	2.24988
BIN-COMP-T	2.02758	2.02758	2.08887	2.20036	2.30103	2.30103	2.30103
LA3-REF	1.0135	1.0135	1.02794	1.04674	1.214915	1.27802	1.27802
MCN1-COMP-T	2.1395	2.1395	2.18156	2.26431	2.308605	2.35218	2.35218
MCN2-COMP-T	2.16675	2.16675	2.19071	2.30103	2.339535	2.34132	2.34132
MCN3-COMP	2.12687	2.12687	2.15148	2.22185	2.27044	2.28561	2.28561
MCN4-COMP	2.02348	2.02348	2.07421	2.1274	2.26856	2.2888	2.2888
MCN5-COMP	1.97313	1.97313	2.024095	2.16273	2.2191	2.2747	2.2747
TB	2.35655	2.35655	2.394175	2.47243	2.497075	2.51266	2.51266

**Oneway Anova**

**Summary of Fit**

Rsquare	0.945335
Adj Rsquare	0.933035
Root Mean Square Error	0.09314
Mean of Response	2.111677
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	6.0008330	0.666759	76.8590	<.0001*
Error	40	0.3470039	0.008675		
C. Total	49	6.3478368			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.20865	0.04165	2.1245	2.2928
BIMW-COMP-T-M	5	2.12782	0.04165	2.0436	2.2120
BIN-COMP-T	5	2.19603	0.04165	2.1118	2.2802
LA3-REF	5	1.10649	0.04165	1.0223	1.1907
MCN1-COMP-T	5	2.24893	0.04165	2.1647	2.3331
MCN2-COMP-T	5	2.27230	0.04165	2.1881	2.3565
MCN3-COMP	5	2.21314	0.04165	2.1290	2.2973
MCN4-COMP	5	2.16259	0.04165	2.0784	2.2468
MCN5-COMP	5	2.12982	0.04165	2.0456	2.2140
TB	5	2.45099	0.04165	2.3668	2.5352

Std Error uses a pooled estimate of error variance

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB149**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	2.20865	0.082011	0.03668	2.1068	2.3105
BIMW-COMP-T-M	5	2.12782	0.106301	0.04754	1.9958	2.2598
BIN-COMP-T	5	2.19603	0.114617	0.05126	2.0537	2.3383
LA3-REF	5	1.10649	0.109320	0.04889	0.9708	1.2422
MCN1-COMP-T	5	2.24893	0.077091	0.03448	2.1532	2.3446
MCN2-COMP-T	5	2.27230	0.077998	0.03488	2.1755	2.3692
MCN3-COMP	5	2.21314	0.063083	0.02821	2.1348	2.2915
MCN4-COMP	5	2.16259	0.106403	0.04758	2.0305	2.2947
MCN5-COMP	5	2.12982	0.112648	0.05038	1.9900	2.2697
TB	5	2.45099	0.060167	0.02691	2.3763	2.5257

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	1.179	<.0001*
MCN2-COMP-T	1	<.0001*
MCN1-COMP-T	0.977	<.0001*
MCN3-COMP	0.941	<.0001*
BIME-COMP-T-M	0.937	<.0001*
BIN-COMP-T	0.924	<.0001*
MCN4-COMP	0.89	<.0001*
MCN5-COMP	0.858	<.0001*
BIMW-COMP-T-M	0.856	<.0001*
LA3-REF	-0.17	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	132.000	127.500	26.4000	0.129
BIMW-COMP-T-M	5	86.500	127.500	17.3000	-1.310
BIN-COMP-T	5	133.000	127.500	26.6000	0.162
LA3-REF	5	15.000	127.500	3.0000	-3.622
MCN1-COMP-T	5	159.000	127.500	31.8000	1.003
MCN2-COMP-T	5	176.000	127.500	35.2000	1.552
MCN3-COMP	5	135.000	127.500	27.0000	0.226
MCN4-COMP	5	105.500	127.500	21.1000	-0.695
MCN5-COMP	5	93.000	127.500	18.6000	-1.100

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB149**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

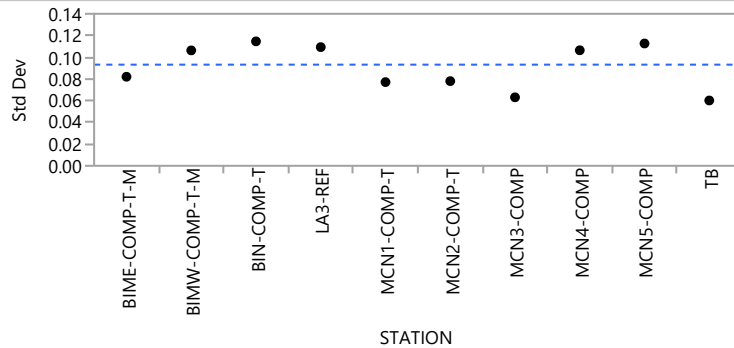
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
TB	5	240.000	127.500	48.0000	3.622

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
30.2369	9	0.0004*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0820113	0.0679456	0.0594080
BIMW-COMP-T-M	5	0.1063009	0.0793408	0.0787640
BIN-COMP-T	5	0.1146170	0.0857296	0.0848640
LA3-REF	5	0.1093203	0.0867400	0.0747900
MCN1-COMP-T	5	0.0770906	0.0538944	0.0508180
MCN2-COMP-T	5	0.0779982	0.0652752	0.0595300
MCN3-COMP	5	0.0630831	0.0493264	0.0475840
MCN4-COMP	5	0.1064026	0.0847776	0.0777400
MCN5-COMP	5	0.1126477	0.0845832	0.0780020
TB	5	0.0601670	0.0454488	0.0411600

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[5]	0.5110	9	40	0.8578
Brown-Forsythe	0.2803	9	40	0.9764
Levene	0.5959	9	40	0.7926
Bartlett	0.4049	9	.	0.9332

Warning: Small sample sizes. Use Caution.

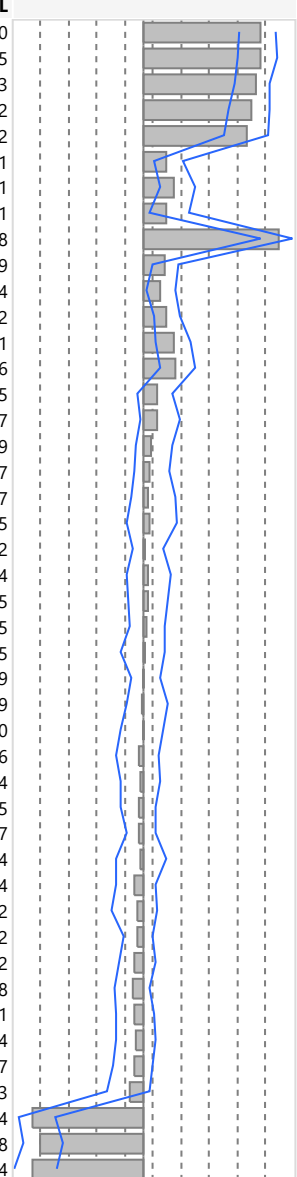
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*	Alpha
1.95996	0.05

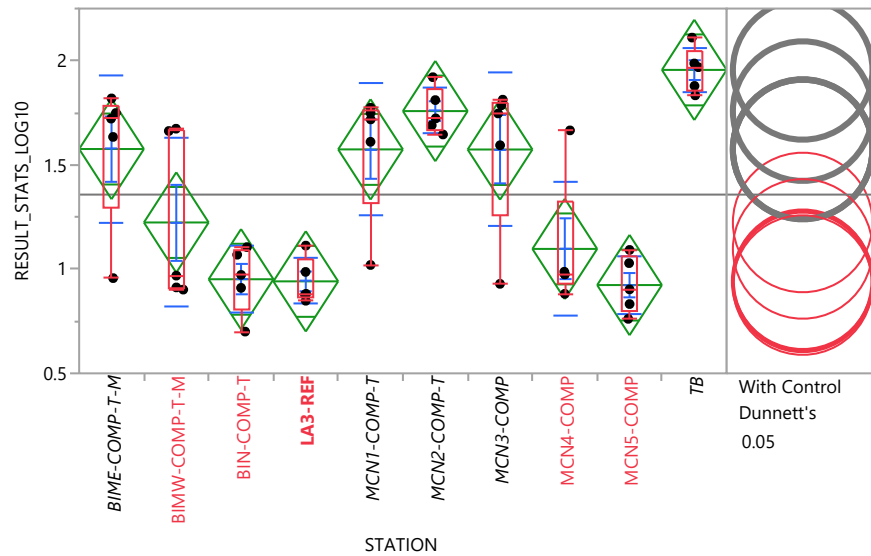
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB149**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.17688	0.94560	1.30980
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.17229	0.93665	1.32425
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.12935	0.89807	1.24323
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.08066	0.84692	1.24642
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.02832	0.79704	1.23232
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.22782	0.09691	0.39131
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.30854	0.15243	0.50321
TB	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	0.23144	0.05552	0.45391
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.36085	1.15378	1.47028
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.20818	0.07962	0.34199
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.17140	0.01880	0.31474
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.22968	0.10128	0.35462
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.30440	0.10823	0.45801
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.31799	0.15710	0.50836
MCN1-COMP-T	BIMW-COMP-T-M	3.60000	1.914854	1.88004	0.0601	0.13937	-0.06462	0.28675
MCN2-COMP-T	BIMW-COMP-T-M	3.60000	1.914854	1.88004	0.0601	0.13363	-0.03737	0.35947
MCN3-COMP	BIMW-COMP-T-M	2.80000	1.914854	1.46225	0.1437	0.08149	-0.07725	0.27699
MCN2-COMP-T	BIME-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.05741	-0.09289	0.24757
MCN2-COMP-T	BIN-COMP-T	2.40000	1.891501	1.26883	0.2045	0.04029	-0.13428	0.31017
BIN-COMP-T	BIMW-COMP-T-M	1.60000	1.909043	0.83812	0.4020	0.06826	-0.17654	0.32275
MCN1-COMP-T	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.01369	-0.12014	0.19492
MCN4-COMP	BIMW-COMP-T-M	1.00000	1.909043	0.52382	0.6004	0.04304	-0.18064	0.27004
MCN1-COMP-T	BIN-COMP-T	0.80000	1.909043	0.41906	0.6752	0.05115	-0.16153	0.23745
MCN2-COMP-T	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.03600	-0.13751	0.19825
BIN-COMP-T	BIME-COMP-T-M	0.00000	1.909043	0.00000	1.0000	0.01619	-0.23206	0.21085
MCN3-COMP	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.00077	-0.13277	0.16509
MCN3-COMP	BIN-COMP-T	0.00000	1.909043	0.00000	1.0000	-0.01542	-0.17416	0.22769
MCN5-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.00515	-0.23099	0.19280
MCN5-COMP	MCN4-COMP	-0.40000	1.914854	-0.20889	0.8345	-0.04988	-0.27519	0.14976
MCN4-COMP	BIME-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.03232	-0.23616	0.15814
MCN4-COMP	MCN3-COMP	-1.20000	1.914854	-0.62668	0.5309	-0.04869	-0.23179	0.12145
MCN3-COMP	MCN1-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.04246	-0.17609	0.11577
MCN4-COMP	BIN-COMP-T	-1.60000	1.909043	-0.83812	0.4020	-0.02522	-0.27755	0.22074
MCN5-COMP	BIME-COMP-T-M	-1.60000	1.914854	-0.83557	0.4034	-0.08861	-0.28651	0.11744
MCN5-COMP	BIN-COMP-T	-1.60000	1.909043	-0.83812	0.4020	-0.05445	-0.32790	0.13592
MCN3-COMP	MCN2-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.05571	-0.21088	0.08852
MCN4-COMP	MCN1-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.09868	-0.24155	0.10882
MCN5-COMP	MCN1-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.10158	-0.29190	0.05108
MCN5-COMP	MCN3-COMP	-2.40000	1.914854	-1.25336	0.2101	-0.09177	-0.28214	0.09861
BIMW-COMP-T-M	BIME-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-0.07536	-0.28136	0.11394
MCN4-COMP	MCN2-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-0.08973	-0.31427	0.08157
MCN5-COMP	MCN2-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.13961	-0.36462	0.06003
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.11052	-1.24614	-0.87924
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.03952	-1.20750	-0.80388
LA3-REF	BIN-COMP-T	-4.80000	1.909043	-2.51435	0.0119*	-1.10778	-1.28753	-0.87214



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB151**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.956843	0.956843	1.295542	1.72204	1.783945	1.81895	1.81895
BIMW-COMP-T-M	0.901796	0.901796	0.907029	0.968742	1.66821	1.67366	1.67366
BIN-COMP-T	0.700392	0.700392	0.805253	0.972171	1.087295	1.10551	1.10551
LA3-REF	0.848351	0.848351	0.862789	0.881592	1.049757	1.11286	1.11286
MCN1-COMP-T	1.01989	1.01989	1.31536	1.71828	1.76144	1.77422	1.77422
MCN2-COMP-T	1.64603	1.64603	1.66783	1.7231	1.86588	1.92082	1.92082
MCN3-COMP	0.929419	0.929419	1.261825	1.74674	1.799515	1.81291	1.81291
MCN4-COMP	0.881592	0.881592	0.928384	0.975176	1.326481	1.66555	1.66555
MCN5-COMP	0.761446	0.761446	0.796978	0.90309	1.060475	1.09215	1.09215
TB	1.83367	1.83367	1.856315	1.96859	2.04867	2.1107	2.1107

**Oneway Anova**

**Summary of Fit**

Rsquare	0.691658
Adj Rsquare	0.622281
Root Mean Square Error	0.266248
Mean of Response	1.357549
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	6.3604949	0.706722	9.9696	<.0001*
Error	40	2.8355162	0.070888		
C. Total	49	9.1960111			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB151**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.57620	0.11907	1.3356	1.8169
BIMW-COMP-T-M	5	1.22384	0.11907	0.9832	1.4645
BIN-COMP-T	5	0.95145	0.11907	0.7108	1.1921
LA3-REF	5	0.94134	0.11907	0.7007	1.1820
MCN1-COMP-T	5	1.57438	0.11907	1.3337	1.8150
MCN2-COMP-T	5	1.75810	0.11907	1.5175	1.9988
MCN3-COMP	5	1.57388	0.11907	1.3332	1.8145
MCN4-COMP	5	1.09698	0.11907	0.8563	1.3376
MCN5-COMP	5	0.92360	0.11907	0.6830	1.1642
TB	5	1.95571	0.11907	1.7151	2.1964

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.57620	0.352494	0.15764	1.1385	2.0139
BIMW-COMP-T-M	5	1.22384	0.406466	0.18178	0.7191	1.7285
BIN-COMP-T	5	0.95145	0.160265	0.07167	0.7525	1.1504
LA3-REF	5	0.94134	0.109316	0.04889	0.8056	1.0771
MCN1-COMP-T	5	1.57438	0.316150	0.14139	1.1818	1.9669
MCN2-COMP-T	5	1.75810	0.109251	0.04886	1.6225	1.8938
MCN3-COMP	5	1.57388	0.370070	0.16550	1.1144	2.0334
MCN4-COMP	5	1.09698	0.320680	0.14341	0.6988	1.4952
MCN5-COMP	5	0.92360	0.136463	0.06103	0.7542	1.0930
TB	5	1.95571	0.107155	0.04792	1.8227	2.0888

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB151**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.541	<.0001*
MCN2-COMP-T	0.343	0.0002*
BIME-COMP-T-M	0.161	0.0040*
MCN1-COMP-T	0.16	0.0042*
MCN3-COMP	0.159	0.0042*
BIMW-COMP-T-M	-0.19	0.4557
MCN4-COMP	-0.32	0.9348
BIN-COMP-T	-0.46	1.0000
LA3-REF	-0.47	1.0000
MCN5-COMP	-0.46	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	159.000	127.500	31.8000	1.003
BIMW-COMP-T-M	5	95.000	127.500	19.0000	-1.035
BIN-COMP-T	5	72.000	127.500	14.4000	-1.779
LA3-REF	5	58.500	127.500	11.7000	-2.215
MCN1-COMP-T	5	159.000	127.500	31.8000	1.003
MCN2-COMP-T	5	187.000	127.500	37.4000	1.908
MCN3-COMP	5	159.000	127.500	31.8000	1.003
MCN4-COMP	5	89.500	127.500	17.9000	-1.213
MCN5-COMP	5	58.000	127.500	11.6000	-2.231
TB	5	238.000	127.500	47.6000	3.557

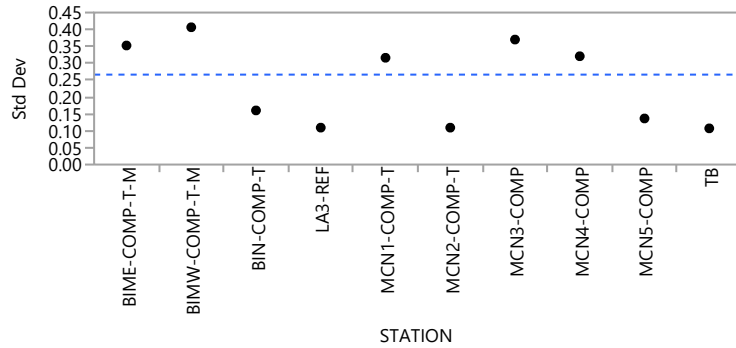
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
31.9080	9	0.0002*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB151**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.3524939	0.2477438	0.1953614
BIMW-COMP-T-M	5	0.4064657	0.3554930	0.3044726
BIN-COMP-T	5	0.1602650	0.1169603	0.1128168
LA3-REF	5	0.1093157	0.0867362	0.0747872
MCN1-COMP-T	5	0.3161505	0.2217944	0.1784320
MCN2-COMP-T	5	0.1092505	0.0862208	0.0792200
MCN3-COMP	5	0.3700695	0.2577859	0.2150762
MCN4-COMP	5	0.3206796	0.2274276	0.1592386
MCN5-COMP	5	0.1364627	0.1095008	0.1053990
TB	5	0.1071550	0.0795176	0.0769420

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.9141	9	40	0.5229
Brown-Forsythe	0.4994	9	40	0.8660
Levene	2.2071	9	40	0.0420*
Bartlett	2.0164	9	.	0.0335*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

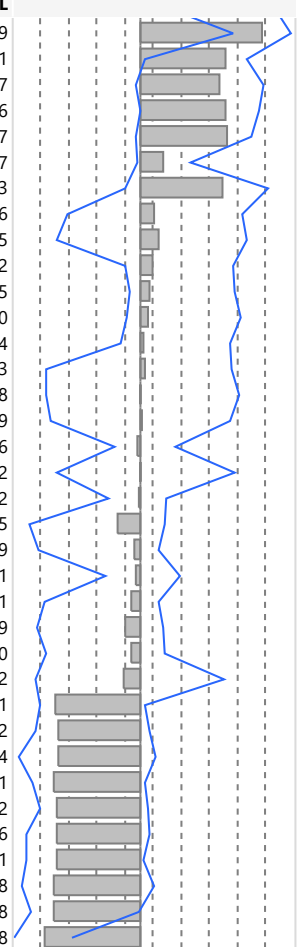
q*		Alpha							
1.95996		0.05							
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
MCN2-COMP-T	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.77952	0.57695	1.11055	
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.81240	0.57677	1.04359	
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.24655	0.06001	1.02980	
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.92141	0.17091	1.19844	
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.99642	0.76459	1.28625	
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.99999	0.76610	1.23347	
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.26813	0.08501	0.96675	
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.23990	0.04755	1.05722	
TB	MCN4-COMP	4.80000	1.909043	2.51435	0.0119*	0.98118	0.21341	1.13552	



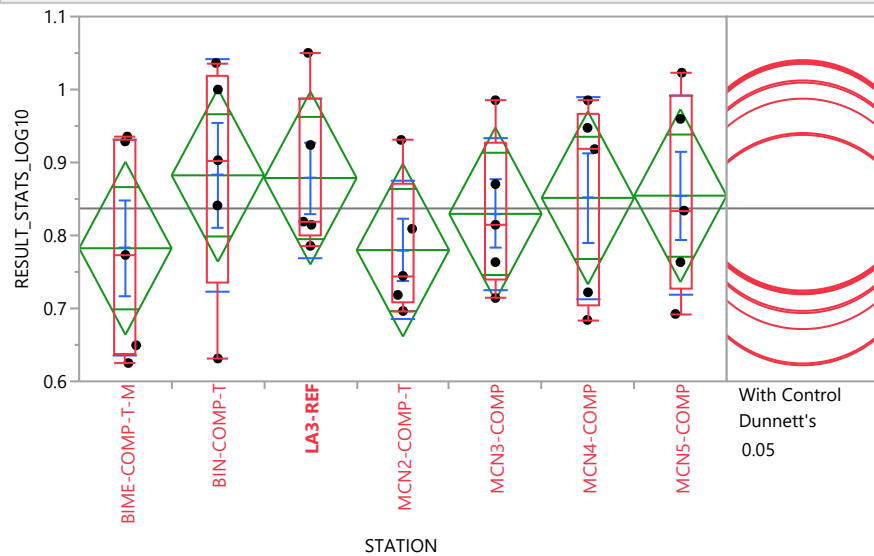
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB151**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	1.04645	0.78681	1.27819
MCN1-COMP-T	LA3-REF	4.40000	1.914854	2.29783	0.0216*	0.73360	0.03324	0.90031
MCN1-COMP-T	BIN-COMP-T	4.00000	1.914854	2.08893	0.0367*	0.67958	-0.04919	1.04827
MCN2-COMP-T	BIMW-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	0.73377	-0.01673	1.00856
MCN3-COMP	LA3-REF	4.00000	1.914854	2.08893	0.0367*	0.74588	-0.05724	0.93777
TB	MCN2-COMP-T	4.00000	1.914854	2.08893	0.0367*	0.18933	-0.04186	0.42107
MCN3-COMP	BIN-COMP-T	3.60000	1.914854	1.88004	0.0601	0.70740	-0.13966	1.08573
MCN1-COMP-T	BIMW-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.11809	-0.64287	0.86196
MCN3-COMP	BIMW-COMP-T-M	2.80000	1.914854	1.46225	0.1437	0.15015	-0.73334	0.90065
MCN4-COMP	LA3-REF	1.80000	1.903214	0.94577	0.3443	0.09358	-0.13768	0.78832
MCN2-COMP-T	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	0.07880	-0.10263	0.79105
MCN2-COMP-T	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.06200	-0.12932	0.85410
MCN4-COMP	BIN-COMP-T	0.80000	1.909043	0.41906	0.6752	0.01524	-0.18749	0.75544
MCN3-COMP	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.02846	-0.81924	0.76623
MCN3-COMP	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.00220	-0.81952	0.82928
MCN4-COMP	BIMW-COMP-T-M	0.00000	1.909043	0.00000	1.0000	0.00279	-0.78117	0.75329
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.03289	-0.22828	0.28626
MCN1-COMP-T	BIME-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.00376	-0.72905	0.79182
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.02071	-0.28035	0.21492
BIN-COMP-T	BIMW-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.20140	-0.96237	0.19325
MCN3-COMP	MCN2-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.06420	-0.88152	0.14009
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.04028	-0.30763	0.32841
MCN5-COMP	MCN4-COMP	-1.20000	1.909043	-0.62859	0.5296	-0.08432	-0.83304	0.14721
MCN5-COMP	BIMW-COMP-T-M	-2.00000	1.914854	-1.04447	0.2963	-0.14035	-0.90131	0.17989
LA3-REF	BIMW-COMP-T-M	-2.40000	1.914854	-1.25336	0.2101	-0.08715	-0.81441	0.20060
BIMW-COMP-T-M	BIME-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-0.15619	-0.90669	0.70592
MCN4-COMP	BIME-COMP-T-M	-2.80000	1.909043	-1.46670	0.1425	-0.73463	-0.86735	0.03131
MCN4-COMP	MCN3-COMP	-2.80000	1.909043	-1.46670	0.1425	-0.71264	-0.90453	0.07132
BIN-COMP-T	BIME-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-0.71344	-1.04855	0.11224
LA3-REF	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.75701	-0.94172	0.02981
MCN4-COMP	MCN1-COMP-T	-4.00000	1.909043	-2.09529	0.0361*	-0.72924	-0.86707	0.05472
MCN5-COMP	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.73115	-0.98749	0.07196
MCN5-COMP	MCN1-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.71986	-0.98721	0.00891
MCN5-COMP	MCN3-COMP	-4.00000	1.914854	-2.08893	0.0367*	-0.75732	-1.02467	0.09938
MCN4-COMP	MCN2-COMP-T	-4.40000	1.909043	-2.30482	0.0212*	-0.74792	-0.94564	-0.02408
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.82867	-1.08831	-0.59748



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB156**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.625125	0.625125	0.637305	0.773188	0.932192	0.935589	0.935589
BIN-COMP-T	0.631311	0.631311	0.736172	0.90309	1.018215	1.03643	1.03643
LA3-REF	0.785704	0.785704	0.800143	0.818945	0.987114	1.05022	1.05022
MCN2-COMP-T	0.696481	0.696481	0.707471	0.744543	0.870053	0.930919	0.930919
MCN3-COMP	0.71421	0.71421	0.738819	0.814581	0.9278	0.985277	0.985277
MCN4-COMP	0.684247	0.684247	0.703141	0.91833	0.966383	0.985277	0.985277
MCN5-COMP	0.692365	0.692365	0.727897	0.834009	0.991397	1.02307	1.02307

**Oneway Anova**

**Summary of Fit**

Rsquare	0.101727
Adj Rsquare	-0.09076
Root Mean Square Error	0.12931
Mean of Response	0.836997
Observations (or Sum Wgts)	35

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	6	0.05302079	0.008837	0.5285	0.7818
Error	28	0.46818824	0.016721		
C. Total	34	0.52120903			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB156**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.782436	0.05783	0.66398	0.9009
BIN-COMP-T	5	0.882373	0.05783	0.76392	1.0008
LA3-REF	5	0.878691	0.05783	0.76023	0.9971
MCN2-COMP-T	5	0.779918	0.05783	0.66146	0.8984
MCN3-COMP	5	0.829564	0.05783	0.71111	0.9480
MCN4-COMP	5	0.851475	0.05783	0.73302	0.9699
MCN5-COMP	5	0.854519	0.05783	0.73606	0.9730

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.782436	0.147805	0.06610	0.59891	0.9660
BIN-COMP-T	5	0.882373	0.160265	0.07167	0.68338	1.0814
LA3-REF	5	0.878691	0.109318	0.04889	0.74295	1.0144
MCN2-COMP-T	5	0.779918	0.094403	0.04222	0.66270	0.8971
MCN3-COMP	5	0.829564	0.104657	0.04680	0.69961	0.9595
MCN4-COMP	5	0.851475	0.138122	0.06177	0.67997	1.0230
MCN5-COMP	5	0.854519	0.136464	0.06103	0.68508	1.0240

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.73128	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.22	1.0000
LA3-REF	-0.22	1.0000
MCN5-COMP	-0.2	0.9995
MCN4-COMP	-0.2	0.9990
MCN3-COMP	-0.17	0.9774
BIME-COMP-T-M	-0.13	0.7043
MCN2-COMP-T	-0.12	0.6830

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB156**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

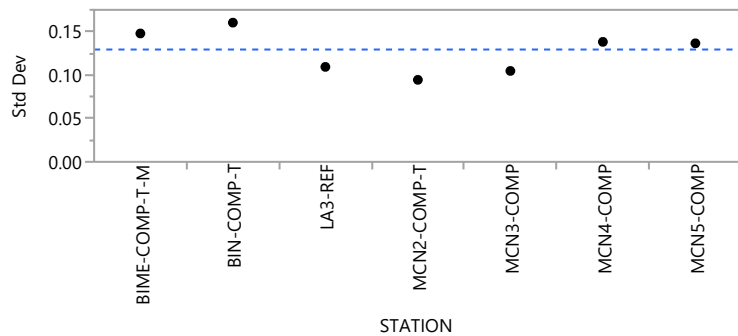
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	69.000	90.000	13.8000	-0.967
BIN-COMP-T	5	110.000	90.000	22.0000	0.919
LA3-REF	5	107.500	90.000	21.5000	0.802
MCN2-COMP-T	5	65.000	90.000	13.0000	-1.155
MCN3-COMP	5	86.500	90.000	17.3000	-0.141
MCN4-COMP	5	94.500	90.000	18.9000	0.189
MCN5-COMP	5	97.500	90.000	19.5000	0.330

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
3.5463	6	0.7378

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478048	0.1198045	0.1179548
BIN-COMP-T	5	0.1602654	0.1169606	0.1128172
LA3-REF	5	0.1093183	0.0867377	0.0747884
MCN2-COMP-T	5	0.0944034	0.0721076	0.0650326
MCN3-COMP	5	0.1046575	0.0785887	0.0755922
MCN4-COMP	5	0.1381222	0.1186675	0.1052966
MCN5-COMP	5	0.1364638	0.1095020	0.1054000

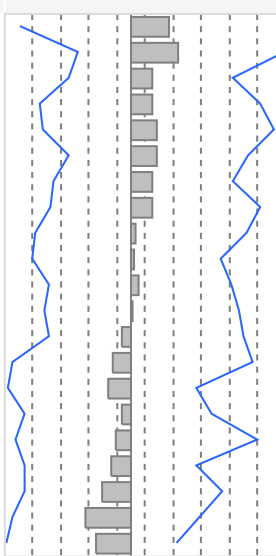
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.4929	6	28	0.8080
Brown-Forsythe	0.3211	6	28	0.9204
Levene	0.5723	6	28	0.7489
Bartlett	0.2752	6	.	0.9488

Warning: Small sample sizes. Use Caution.

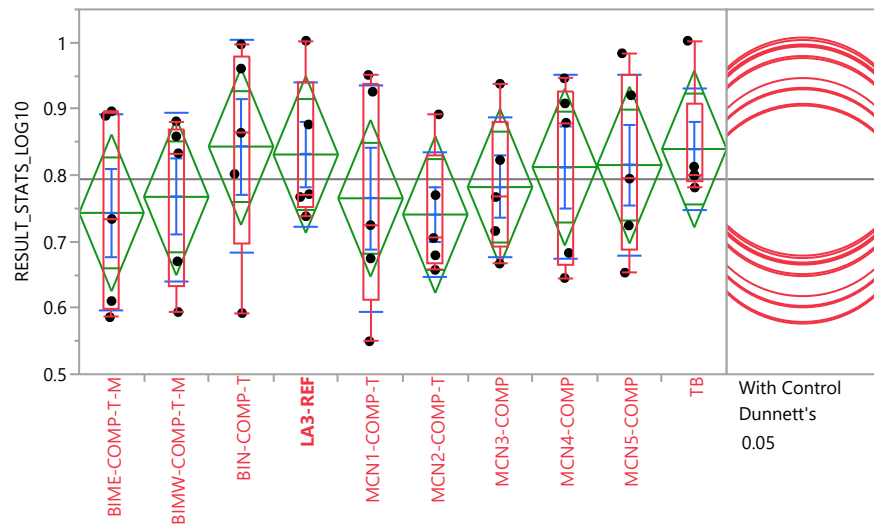
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB156**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100841	-0.297484	0.3869450
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.121425	-0.143091	0.4007350
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054358	-0.167491	0.2668160
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.056482	-0.244548	0.3357920
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067240	-0.236430	0.3735850
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066947	-0.167491	0.3046090
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054358	-0.208884	0.2668160
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.056482	-0.214585	0.3357920
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012235	-0.255123	0.3010350
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007825	-0.263242	0.2332780
MCN5-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.019428	-0.221849	0.2596420
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.002124	-0.232314	0.2814340
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.026452	-0.221849	0.2926960
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051153	-0.315753	0.3161770
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063669	-0.328185	0.1706960
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.027150	-0.286792	0.2084890
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040277	-0.307635	0.3284120
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053685	-0.286792	0.1706960
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.077605	-0.285790	0.2390110
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.122572	-0.317969	0.1778750
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096120	-0.331759	0.1163380



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB157**



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB157**

STATION

**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.585973	0.585973	0.598153	0.734036	0.89304	0.896437	0.896437
BIMW-COMP-T-M	0.593787	0.593787	0.632017	0.833117	0.870021	0.881371	0.881371
BIN-COMP-T	0.592159	0.592159	0.69702	0.863938	0.979063	0.997277	0.997277
LA3-REF	0.73828	0.73828	0.752718	0.771521	0.939686	1.00279	1.00279
MCN1-COMP-T	0.549672	0.549672	0.612142	0.724777	0.938585	0.951216	0.951216
MCN2-COMP-T	0.657329	0.657329	0.668319	0.705391	0.8309	0.891767	0.891767
MCN3-COMP	0.666785	0.666785	0.691394	0.767156	0.880375	0.937852	0.937852
MCN4-COMP	0.645095	0.645095	0.663989	0.879178	0.927231	0.946125	0.946125
MCN5-COMP	0.653212	0.653212	0.688744	0.794857	0.952242	0.983913	0.983913
TB	0.781505	0.781505	0.790527	0.801014	0.907852	1.00279	1.00279

**Oneway Anova**

**Summary of Fit**

Rsquare	0.091385
Adj Rsquare	-0.11305
Root Mean Square Error	0.130762
Mean of Response	0.79406
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	0.06878888	0.007643	0.4470	0.9006
Error	40	0.68395083	0.017099		
C. Total	49	0.75273971			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.743284	0.05848	0.62509	0.86147
BIMW-COMP-T-M	5	0.767438	0.05848	0.64925	0.88563
BIN-COMP-T	5	0.843221	0.05848	0.72503	0.96141
LA3-REF	5	0.831266	0.05848	0.71308	0.94946
MCN1-COMP-T	5	0.765246	0.05848	0.64706	0.88344
MCN2-COMP-T	5	0.740766	0.05848	0.62258	0.85896
MCN3-COMP	5	0.782139	0.05848	0.66395	0.90033
MCN4-COMP	5	0.812323	0.05848	0.69413	0.93051
MCN5-COMP	5	0.815366	0.05848	0.69718	0.93356
TB	5	0.839554	0.05848	0.72136	0.95774

Std Error uses a pooled estimate of error variance

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB157**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.743284	0.147805	0.06610	0.55976	0.9268
BIMW-COMP-T-M	5	0.767438	0.127690	0.05710	0.60889	0.9260
BIN-COMP-T	5	0.843221	0.160265	0.07167	0.64423	1.0422
LA3-REF	5	0.831266	0.109316	0.04889	0.69553	0.9670
MCN1-COMP-T	5	0.765246	0.170833	0.07640	0.55313	0.9774
MCN2-COMP-T	5	0.740766	0.094403	0.04222	0.62355	0.8580
MCN3-COMP	5	0.782139	0.104658	0.04680	0.65219	0.9121
MCN4-COMP	5	0.812323	0.138122	0.06177	0.64082	0.9838
MCN5-COMP	5	0.815366	0.136462	0.06103	0.64593	0.9848
TB	5	0.839554	0.091939	0.04112	0.72540	0.9537

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.22	1.0000
TB	-0.22	1.0000
LA3-REF	-0.23	1.0000
MCN5-COMP	-0.22	1.0000
MCN4-COMP	-0.21	1.0000
MCN3-COMP	-0.18	0.9957
BIMW-COMP-T-M	-0.17	0.9762
MCN1-COMP-T	-0.17	0.9709
BIME-COMP-T-M	-0.14	0.8723
MCN2-COMP-T	-0.14	0.8558

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	101.000	127.500	20.2000	-0.841
BIMW-COMP-T-M	5	113.000	127.500	22.6000	-0.453
BIN-COMP-T	5	158.000	127.500	31.6000	0.970
LA3-REF	5	146.000	127.500	29.2000	0.582
MCN1-COMP-T	5	116.000	127.500	23.2000	-0.356
MCN2-COMP-T	5	94.000	127.500	18.8000	-1.067
MCN3-COMP	5	117.500	127.500	23.5000	-0.307
MCN4-COMP	5	138.000	127.500	27.6000	0.323
MCN5-COMP	5	136.000	127.500	27.2000	0.259

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB157**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

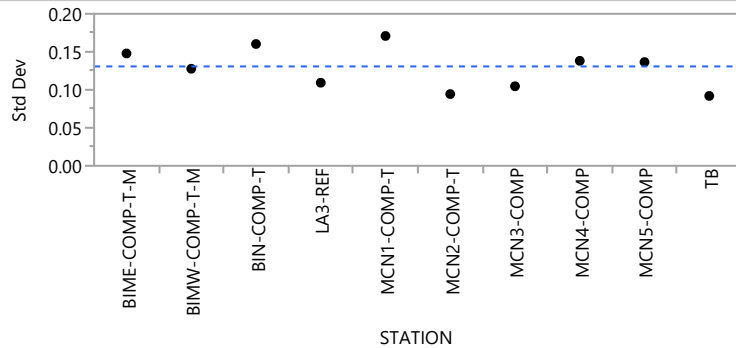
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
TB	5	155.500	127.500	31.1000	0.889

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
4.2413	9	0.8948

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478050	0.1198046	0.1179550
BIMW-COMP-T-M	5	0.1276899	0.1083375	0.0952018
BIN-COMP-T	5	0.1602652	0.1169605	0.1128170
LA3-REF	5	0.1093160	0.0867362	0.0747872
MCN1-COMP-T	5	0.1708334	0.1386710	0.1305772
MCN2-COMP-T	5	0.0944033	0.0721074	0.0650324
MCN3-COMP	5	0.1046576	0.0785890	0.0755924
MCN4-COMP	5	0.1381222	0.1186675	0.1052966
MCN5-COMP	5	0.1364624	0.1095007	0.1053990
TB	5	0.0919390	0.0652943	0.0469298

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[5]	0.6384	9	40	0.7575
Brown-Forsythe	0.4500	9	40	0.8988
Levene	0.8216	9	40	0.5999
Bartlett	0.3363	9	.	0.9632

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

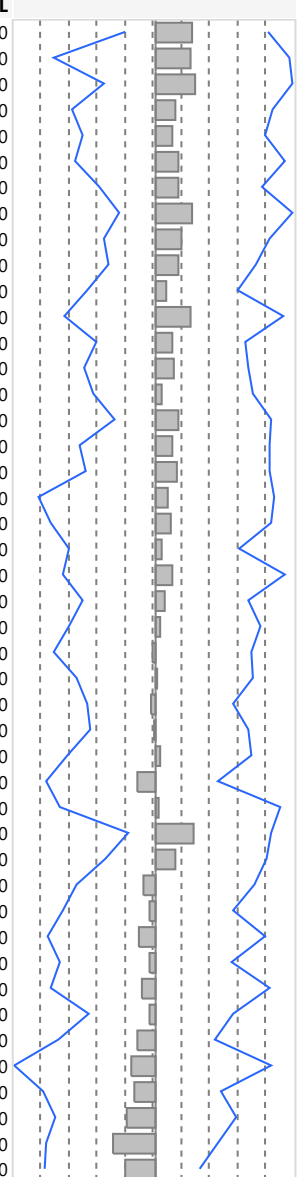
q*	Alpha
1.95996	0.05



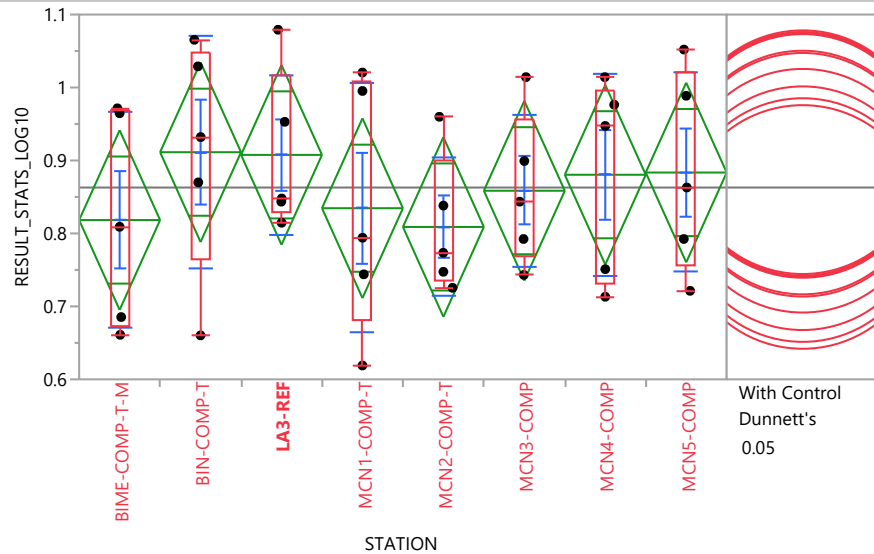
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB157**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN2-COMP-T	3.20000	1.914854	1.67115	0.0947	0.107522	-0.092218	0.3234810
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297484	0.3869450
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.113147	-0.151363	0.3924580
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.056482	-0.244548	0.3357930
MCN4-COMP	BIMW-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.049665	-0.213576	0.3145490
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067239	-0.236431	0.3735810
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066947	-0.167491	0.3046040
TB	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.106353	-0.108138	0.3924580
TB	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	0.076837	-0.151667	0.3281790
TB	MCN3-COMP	1.60000	1.914854	0.83557	0.4034	0.064938	-0.138303	0.2867870
TB	LA3-REF	1.40000	1.909043	0.73335	0.4633	0.029493	-0.203241	0.2356340
BIN-COMP-T	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.102177	-0.266512	0.3670610
MCN3-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.046085	-0.175764	0.2585430
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054358	-0.208884	0.2668160
TB	MCN5-COMP	1.20000	1.914854	0.62668	0.5309	0.018877	-0.184364	0.2785140
LA3-REF	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.068034	-0.120391	0.3325440
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.048209	-0.222858	0.3275200
MCN5-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.059425	-0.205459	0.3267830
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.036310	-0.339971	0.3408840
MCN1-COMP-T	BIMW-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.044582	-0.308999	0.3321660
MCN4-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.016098	-0.254969	0.2415510
MCN5-COMP	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.049665	-0.272741	0.3708980
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.027701	-0.213576	0.2679100
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012234	-0.255124	0.3010300
BIMW-COMP-T-M	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.008272	-0.295856	0.2726980
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.002124	-0.232314	0.2814350
MCN2-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.012917	-0.202062	0.2215210
MCN3-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.003461	-0.191886	0.2676060
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.011899	-0.259168	0.2732260
MCN4-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	-0.055397	-0.319907	0.1789690
MCN4-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.008272	-0.280858	0.3586640
TB	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.111259	-0.081822	0.3325440
TB	MCN4-COMP	0.00000	1.914854	0.00000	1.0000	0.056665	-0.146576	0.3199070
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.034725	-0.230121	0.2844230
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.019386	-0.271907	0.2203610
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051152	-0.315753	0.3161770
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.018877	-0.278514	0.2167570
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040278	-0.307636	0.3284110
TB	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.020376	-0.197728	0.2207540
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053684	-0.286787	0.1706960
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.071324	-0.411176	0.3337940
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.063669	-0.328179	0.1876730
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.085878	-0.294063	0.2307390
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.122572	-0.317968	0.1778740
MCN2-COMP-T	LA3-REF	-2.40000	1.914854	-1.25336	0.2101	-0.087847	-0.323481	0.1246110



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB167**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.661038	0.661038	0.673218	0.8091	0.968105	0.971502	0.971502
BIN-COMP-T	0.660274	0.660274	0.765136	0.932054	1.047175	1.06539	1.06539
LA3-REF	0.814668	0.814668	0.829106	0.847909	1.016076	1.07918	1.07918
MCN1-COMP-T	0.618998	0.618998	0.681468	0.794104	1.00791	1.02054	1.02054
MCN2-COMP-T	0.725445	0.725445	0.736435	0.773506	0.899016	0.959883	0.959883
MCN3-COMP	0.743174	0.743174	0.767783	0.843544	0.956763	1.01424	1.01424
MCN4-COMP	0.71321	0.71321	0.732105	0.947294	0.995346	1.01424	1.01424
MCN5-COMP	0.721328	0.721328	0.75686	0.862973	1.020358	1.05203	1.05203

**Oneway Anova**

**Summary of Fit**

Rsquare	0.08455
Adj Rsquare	-0.1157
Root Mean Square Error	0.135199
Mean of Response	0.862905
Observations (or Sum Wgts)	40

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	7	0.05402266	0.007718	0.4222	0.8812
Error	32	0.58491952	0.018279		
C. Total	39	0.63894218			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB167**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.818349	0.06046	0.69519	0.9415
BIN-COMP-T	5	0.911335	0.06046	0.78818	1.0345
LA3-REF	5	0.907654	0.06046	0.78450	1.0308
MCN1-COMP-T	5	0.834572	0.06046	0.71141	0.9577
MCN2-COMP-T	5	0.808882	0.06046	0.68572	0.9320
MCN3-COMP	5	0.858527	0.06046	0.73537	0.9817
MCN4-COMP	5	0.880439	0.06046	0.75728	1.0036
MCN5-COMP	5	0.883482	0.06046	0.76032	1.0066

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.818349	0.147805	0.06610	0.63482	1.0019
BIN-COMP-T	5	0.911335	0.160264	0.07167	0.71234	1.1103
LA3-REF	5	0.907654	0.109317	0.04889	0.77192	1.0434
MCN1-COMP-T	5	0.834572	0.170833	0.07640	0.62245	1.0467
MCN2-COMP-T	5	0.808882	0.094403	0.04222	0.69166	0.9261
MCN3-COMP	5	0.858527	0.104657	0.04680	0.72858	0.9885
MCN4-COMP	5	0.880439	0.138122	0.06177	0.70894	1.0519
MCN5-COMP	5	0.883482	0.136463	0.06103	0.71404	1.0529

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.76173	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.23	1.0000
LA3-REF	-0.24	1.0000
MCN5-COMP	-0.21	0.9999
MCN4-COMP	-0.21	0.9997
MCN3-COMP	-0.19	0.9897
MCN1-COMP-T	-0.16	0.9235
BIME-COMP-T-M	-0.15	0.8291
MCN2-COMP-T	-0.14	0.7591

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB167**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

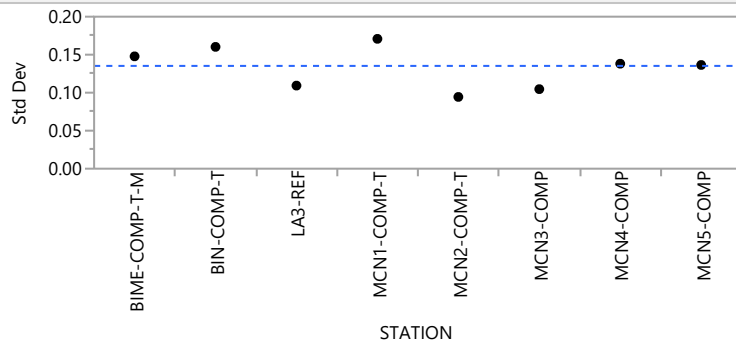
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	82.000	102.500	16.4000	-0.818
BIN-COMP-T	5	126.000	102.500	25.2000	0.941
LA3-REF	5	124.500	102.500	24.9000	0.879
MCN1-COMP-T	5	94.000	102.500	18.8000	-0.327
MCN2-COMP-T	5	75.000	102.500	15.0000	-1.104
MCN3-COMP	5	99.500	102.500	19.9000	-0.102
MCN4-COMP	5	107.500	102.500	21.5000	0.184
MCN5-COMP	5	111.500	102.500	22.3000	0.348

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
3.5132	7	0.8338

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478050	0.1198048	0.1179550
BIN-COMP-T	5	0.1602641	0.1169596	0.1128158
LA3-REF	5	0.1093169	0.0867369	0.0747878
MCN1-COMP-T	5	0.1708328	0.1386703	0.1305768
MCN2-COMP-T	5	0.0944034	0.0721075	0.0650324
MCN3-COMP	5	0.1046572	0.0785886	0.0755920
MCN4-COMP	5	0.1381223	0.1186676	0.1052966
MCN5-COMP	5	0.1364627	0.1095010	0.1053992

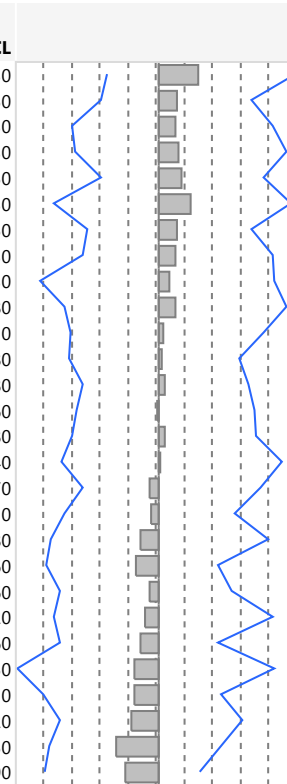
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.6051	7	32	0.7472
Brown-Forsythe	0.3754	7	32	0.9099
Levene	0.7048	7	32	0.6679
Bartlett	0.3175	7	.	0.9465

Warning: Small sample sizes. Use Caution.

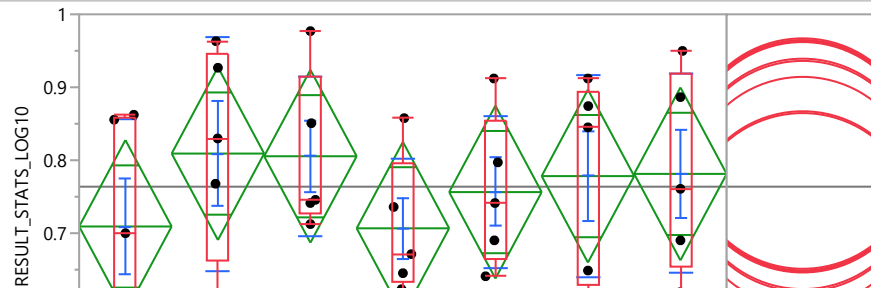
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB167**

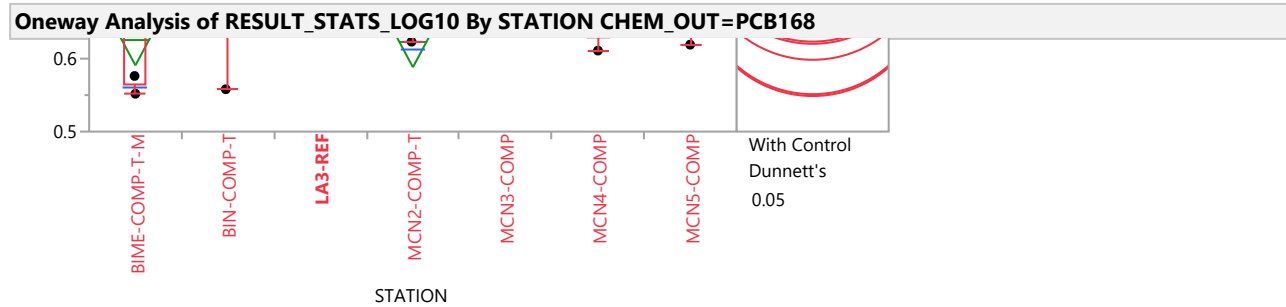
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha								
1.95996		0.05								
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL		
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.114472	-0.150040	0.3937830		
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054357	-0.167491	0.2668150		
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.049532	-0.251498	0.3288430		
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.060290	-0.243380	0.3666330		
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066947	-0.167491	0.3046050		
BIN-COMP-T	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.093888	-0.304434	0.3799930		
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054357	-0.208884	0.2668150		
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.049532	-0.221534	0.3288430		
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.030571	-0.345710	0.3351430		
MCN5-COMP	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.048455	-0.273951	0.3696880		
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012234	-0.255124	0.3010310		
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007825	-0.263241	0.2332780		
MCN5-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.019429	-0.221848	0.2596380		
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.004825	-0.239263	0.2744860		
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.018961	-0.252105	0.2802880		
MCN4-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.007062	-0.282069	0.3574540		
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.026453	-0.221846	0.2926970		
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.020598	-0.273115	0.2191510		
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051150	-0.315750	0.3161780		
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063669	-0.328181	0.1706960		
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.027150	-0.286788	0.2084860		
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040274	-0.307632	0.3284120		
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053685	-0.286788	0.1706960		
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.070111	-0.409962	0.3350050		
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.070731	-0.335243	0.1806110		
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.077605	-0.285786	0.2390120		
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.122572	-0.317965	0.1778750		
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096119	-0.331755	0.1163390		



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB168**





Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.551893	0.551893	0.564073	0.699956	0.858961	0.862357	0.862357
BIN-COMP-T	0.558079	0.558079	0.66294	0.829858	0.944983	0.963197	0.963197
LA3-REF	0.712472	0.712472	0.726911	0.745713	0.913881	0.976986	0.976986
MCN2-COMP-T	0.623249	0.623249	0.634239	0.671311	0.796821	0.857687	0.857687
MCN3-COMP	0.640978	0.640978	0.665587	0.741349	0.854568	0.912045	0.912045
MCN4-COMP	0.611015	0.611015	0.629909	0.845098	0.893151	0.912045	0.912045
MCN5-COMP	0.619133	0.619133	0.654665	0.760777	0.918162	0.949833	0.949833

**Oneway Anova**

**Summary of Fit**

Rsquare	0.101726
Adj Rsquare	-0.09076
Root Mean Square Error	0.129309
Mean of Response	0.763764
Observations (or Sum Wgts)	35

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	6	0.05302025	0.008837	0.5285	0.7818
Error	28	0.46818585	0.016721		
C. Total	34	0.52120610			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.709205	0.05783	0.59075	0.82766
BIN-COMP-T	5	0.809141	0.05783	0.69068	0.92760
LA3-REF	5	0.805459	0.05783	0.68700	0.92392
MCN2-COMP-T	5	0.706686	0.05783	0.58823	0.82514
MCN3-COMP	5	0.756332	0.05783	0.63787	0.87479
MCN4-COMP	5	0.778243	0.05783	0.65979	0.89670
MCN5-COMP	5	0.781286	0.05783	0.66283	0.89974

Std Error uses a pooled estimate of error variance

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB168**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.709205	0.147805	0.06610	0.52568	0.8927
BIN-COMP-T	5	0.809141	0.160265	0.07167	0.61015	1.0081
LA3-REF	5	0.805459	0.109318	0.04889	0.66972	0.9412
MCN2-COMP-T	5	0.706686	0.094403	0.04222	0.58947	0.8239
MCN3-COMP	5	0.756332	0.104657	0.04680	0.62638	0.8863
MCN4-COMP	5	0.778243	0.138122	0.06177	0.60674	0.9497
MCN5-COMP	5	0.781286	0.136462	0.06103	0.61185	0.9507

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.73128	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.22	1.0000
LA3-REF	-0.22	1.0000
MCN5-COMP	-0.2	0.9995
MCN4-COMP	-0.2	0.9990
MCN3-COMP	-0.17	0.9774
BIME-COMP-T-M	-0.13	0.7043
MCN2-COMP-T	-0.12	0.6830

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	69.000	90.000	13.8000	-0.967
BIN-COMP-T	5	110.000	90.000	22.0000	0.919
LA3-REF	5	107.500	90.000	21.5000	0.802
MCN2-COMP-T	5	65.000	90.000	13.0000	-1.155
MCN3-COMP	5	86.500	90.000	17.3000	-0.141
MCN4-COMP	5	94.500	90.000	18.9000	0.189
MCN5-COMP	5	97.500	90.000	19.5000	0.330

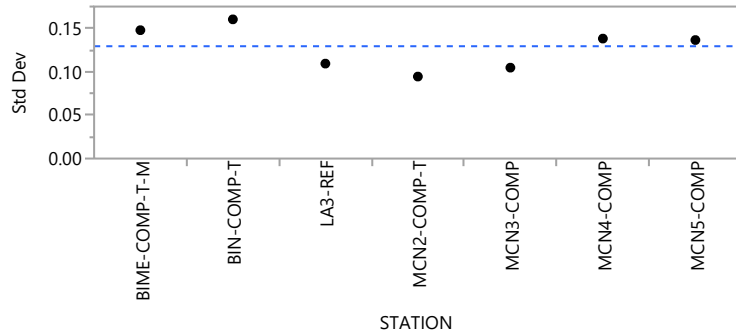
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
3.5463	6	0.7378

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB168**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478051	0.1198047	0.1179550
BIN-COMP-T	5	0.1602652	0.1169605	0.1128170
LA3-REF	5	0.1093176	0.0867372	0.0747880
MCN2-COMP-T	5	0.0944034	0.0721076	0.0650326
MCN3-COMP	5	0.1046575	0.0785887	0.0755922
MCN4-COMP	5	0.1381222	0.1186675	0.1052966
MCN5-COMP	5	0.1364623	0.1095008	0.1053990

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.4930	6	28	0.8080
Brown-Forsythe	0.3211	6	28	0.9204
Levene	0.5723	6	28	0.7489
Bartlett	0.2752	6	.	0.9488

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

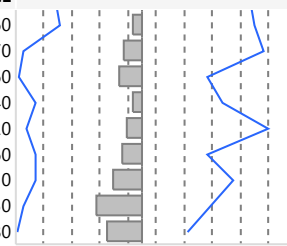
q*		Alpha							
1.95996		0.05							
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297485	0.3869440	
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.121422	-0.143092	0.4007330	
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054358	-0.167491	0.2668160	
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.056481	-0.244549	0.3357920	
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067240	-0.236431	0.3735800	
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066947	-0.167491	0.3046040	
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054358	-0.208884	0.2668160	
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.056481	-0.214586	0.3357920	
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012235	-0.255123	0.3010300	
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007825	-0.263242	0.2332780	
MCN5-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.019428	-0.221849	0.2596370	
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.002123	-0.232315	0.2814340	



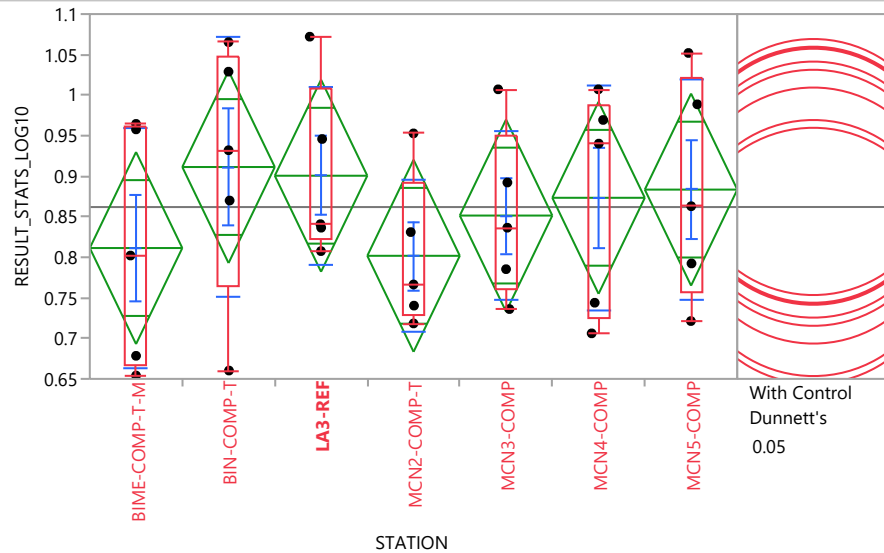
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB168**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.026452	-0.221848	0.2926960
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051152	-0.315753	0.3161770
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063669	-0.328183	0.1706960
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.027153	-0.286790	0.2084840
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040277	-0.307635	0.3284120
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053685	-0.286790	0.1706960
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.077605	-0.285790	0.2390110
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.122572	-0.317968	0.1778750
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096120	-0.331757	0.1163380



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB169**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.654089	0.654089	0.666269	0.802152	0.961156	0.964553	0.964553
BIN-COMP-T	0.660274	0.660274	0.765136	0.932054	1.047175	1.06539	1.06539
LA3-REF	0.807606	0.807606	0.822044	0.840847	1.009015	1.07212	1.07212
MCN2-COMP-T	0.718383	0.718383	0.729373	0.766445	0.891954	0.952821	0.952821
MCN3-COMP	0.736112	0.736112	0.760721	0.836482	0.949702	1.00718	1.00718
MCN4-COMP	0.706149	0.706149	0.725043	0.940232	0.988285	1.00718	1.00718
MCN5-COMP	0.721328	0.721328	0.75686	0.862973	1.020358	1.05203	1.05203

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB169**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.103473
Adj Rsquare	-0.08864
Root Mean Square Error	0.129309
Mean of Response	0.861925
Observations (or Sum Wgts)	35

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	6	0.05403597	0.009006	0.5386	0.7743
Error	28	0.46818559	0.016721		
C. Total	34	0.52222156			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.811400	0.05783	0.69294	0.9299
BIN-COMP-T	5	0.911335	0.05783	0.79288	1.0298
LA3-REF	5	0.900593	0.05783	0.78214	1.0190
MCN2-COMP-T	5	0.801820	0.05783	0.68336	0.9203
MCN3-COMP	5	0.851466	0.05783	0.73301	0.9699
MCN4-COMP	5	0.873378	0.05783	0.75492	0.9918
MCN5-COMP	5	0.883482	0.05783	0.76502	1.0019

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.811400	0.147805	0.06610	0.62788	0.9949
BIN-COMP-T	5	0.911335	0.160264	0.07167	0.71234	1.1103
LA3-REF	5	0.900593	0.109318	0.04889	0.76486	1.0363
MCN2-COMP-T	5	0.801820	0.094403	0.04222	0.68460	0.9190
MCN3-COMP	5	0.851466	0.104658	0.04680	0.72152	0.9814
MCN4-COMP	5	0.873378	0.138122	0.06177	0.70188	1.0449
MCN5-COMP	5	0.883482	0.136463	0.06103	0.71404	1.0529

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.73128	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB169**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.21	1.0000
LA3-REF	-0.22	1.0000
MCN5-COMP	-0.21	0.9999
MCN4-COMP	-0.2	0.9990
MCN3-COMP	-0.17	0.9774
BIME-COMP-T-M	-0.13	0.7625
MCN2-COMP-T	-0.12	0.6830

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

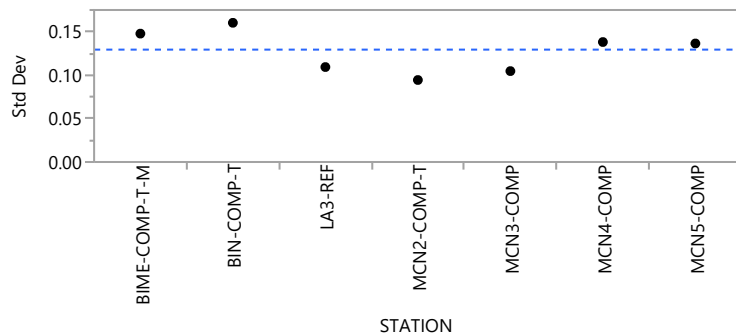
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	70.000	90.000	14.0000	-0.919
BIN-COMP-T	5	110.000	90.000	22.0000	0.919
LA3-REF	5	107.500	90.000	21.5000	0.801
MCN2-COMP-T	5	63.000	90.000	12.6000	-1.249
MCN3-COMP	5	86.000	90.000	17.2000	-0.165
MCN4-COMP	5	94.500	90.000	18.9000	0.189
MCN5-COMP	5	99.000	90.000	19.8000	0.401

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
3.7201	6	0.7145

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB169**

**Tests that the Variances are Equal**

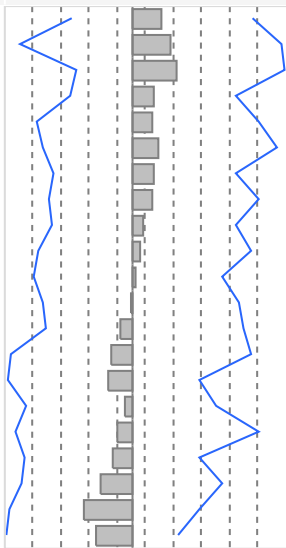
Level	Count	Std Dev	MeanAbsDif	MeanAbsDif
			to Mean	to Median
BIME-COMP-T-M	5	0.1478050	0.1198046	0.1179550
BIN-COMP-T	5	0.1602641	0.1169596	0.1128158
LA3-REF	5	0.1093177	0.0867374	0.0747882
MCN2-COMP-T	5	0.0944033	0.0721074	0.0650324
MCN3-COMP	5	0.1046579	0.0785891	0.0755924
MCN4-COMP	5	0.1381225	0.1186677	0.1052968
MCN5-COMP	5	0.1364627	0.1095010	0.1053992

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[5]	0.4929	6	28	0.8081
Brown-Forsythe	0.3211	6	28	0.9204
Levene	0.5723	6	28	0.7489
Bartlett	0.2751	6	.	0.9488

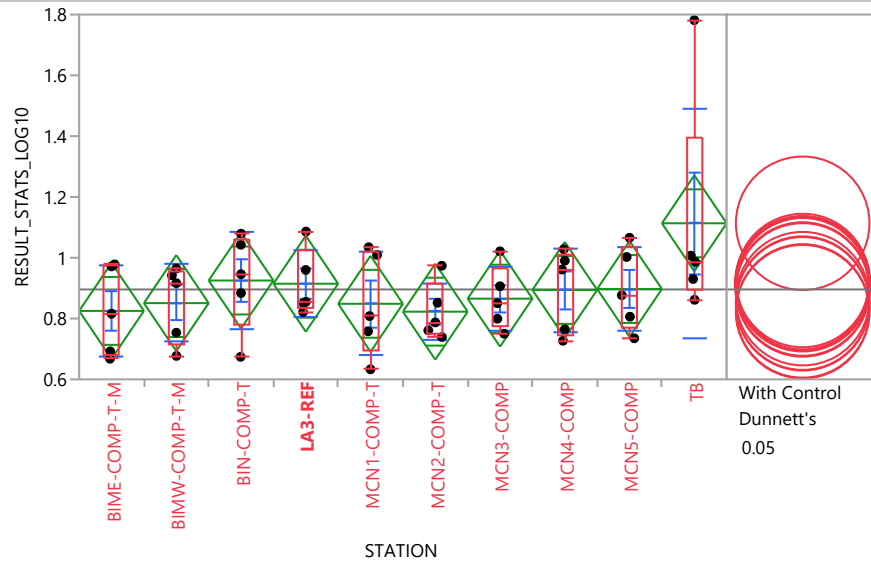
Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha											
1.95996		0.05											
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL					
MCN5-COMP	MCN2-COMP-T	2.00000	1.914854	1.04447	0.2963	0.074009	-0.160429	0.3116670					
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100837	-0.297485	0.3869420					
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.114361	-0.150153	0.3936720					
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054359	-0.167491	0.2668170					
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.049421	-0.251610	0.3287320					
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067239	-0.236431	0.3735820					
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054359	-0.208884	0.2668170					
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.049421	-0.221647	0.3287320					
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.026491	-0.214788	0.2667000					
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.019296	-0.248062	0.3080930					
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007825	-0.263243	0.2332780					
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.004938	-0.239376	0.2743730					
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.033515	-0.228908	0.2856350					
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.058210	-0.322811	0.3091160					
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063669	-0.328183	0.1706980					
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.020090	-0.279728	0.2155480					
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040274	-0.307632	0.3284120					
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053685	-0.286790	0.1706980					
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.084667	-0.292848	0.2319500					
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.129634	-0.325027	0.1708130					
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096119	-0.331757	0.1163390					



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB170**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.667877	0.667877	0.680057	0.81594	0.974944	0.978341	0.978341
BIMW-COMP-T-M	0.677125	0.677125	0.715354	0.916454	0.953358	0.964708	0.964708
BIN-COMP-T	0.674063	0.674063	0.778924	0.945842	1.060965	1.07918	1.07918
LA3-REF	0.821617	0.821617	0.836055	0.854858	1.023025	1.08613	1.08613
MCN1-COMP-T	0.633009	0.633009	0.695479	0.808114	1.02192	1.03455	1.03455
MCN2-COMP-T	0.739233	0.739233	0.750223	0.787295	0.912804	0.973671	0.973671
MCN3-COMP	0.750123	0.750123	0.774732	0.850493	0.963713	1.02119	1.02119
MCN4-COMP	0.726999	0.726999	0.745893	0.961082	1.009135	1.02803	1.02803
MCN5-COMP	0.735117	0.735117	0.770649	0.876761	1.034145	1.06582	1.06582
TB	0.861697	0.861697	0.895903	0.986636	1.394225	1.7815	1.7815

**Oneway Anova**

**Summary of Fit**

Rsquare	0.207855
Adj Rsquare	0.029622
Root Mean Square Error	0.174703
Mean of Response	0.89573
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	0.3203434	0.035594	1.1662	0.3422
Error	40	1.2208467	0.030521		
C. Total	49	1.5411901			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB170**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.82519	0.07813	0.66728	0.9831
BIMW-COMP-T-M	5	0.85078	0.07813	0.69287	1.0087
BIN-COMP-T	5	0.92512	0.07813	0.76722	1.0830
LA3-REF	5	0.91460	0.07813	0.75670	1.0725
MCN1-COMP-T	5	0.84858	0.07813	0.69068	1.0065
MCN2-COMP-T	5	0.82267	0.07813	0.66476	0.9806
MCN3-COMP	5	0.86548	0.07813	0.70757	1.0234
MCN4-COMP	5	0.89423	0.07813	0.73632	1.0521
MCN5-COMP	5	0.89727	0.07813	0.73936	1.0552
TB	5	1.11338	0.07813	0.95547	1.2713

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.82519	0.147805	0.06610	0.64166	1.0087
BIMW-COMP-T-M	5	0.85078	0.127690	0.05710	0.69223	1.0093
BIN-COMP-T	5	0.92512	0.160265	0.07167	0.72613	1.1241
LA3-REF	5	0.91460	0.109317	0.04889	0.77887	1.0503
MCN1-COMP-T	5	0.84858	0.170833	0.07640	0.63647	1.0607
MCN2-COMP-T	5	0.82267	0.094403	0.04222	0.70545	0.9399
MCN3-COMP	5	0.86548	0.104658	0.04680	0.73553	0.9954
MCN4-COMP	5	0.89423	0.138122	0.06177	0.72273	1.0657
MCN5-COMP	5	0.89727	0.136462	0.06103	0.72783	1.0667
TB	5	1.11338	0.377726	0.16892	0.64437	1.5824

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB170****Means Comparisons****Comparisons with a control using Dunnett's Method****LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	-0.11	0.3793
BIN-COMP-T	-0.3	1.0000
LA3-REF	-0.31	1.0000
MCN5-COMP	-0.29	1.0000
MCN4-COMP	-0.29	1.0000
MCN3-COMP	-0.26	0.9995
BIMW-COMP-T-M	-0.25	0.9965
MCN1-COMP-T	-0.24	0.9955
BIME-COMP-T-M	-0.22	0.9685
MCN2-COMP-T	-0.22	0.9631

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	97.000	127.500	19.4000	-0.970
BIMW-COMP-T-M	5	106.000	127.500	21.2000	-0.679
BIN-COMP-T	5	154.000	127.500	30.8000	0.841
LA3-REF	5	143.500	127.500	28.7000	0.501
MCN1-COMP-T	5	116.000	127.500	23.2000	-0.356
MCN2-COMP-T	5	92.000	127.500	18.4000	-1.132
MCN3-COMP	5	114.500	127.500	22.9000	-0.404
MCN4-COMP	5	135.000	127.500	27.0000	0.226
MCN5-COMP	5	135.000	127.500	27.0000	0.226
TB	5	182.000	127.500	36.4000	1.746

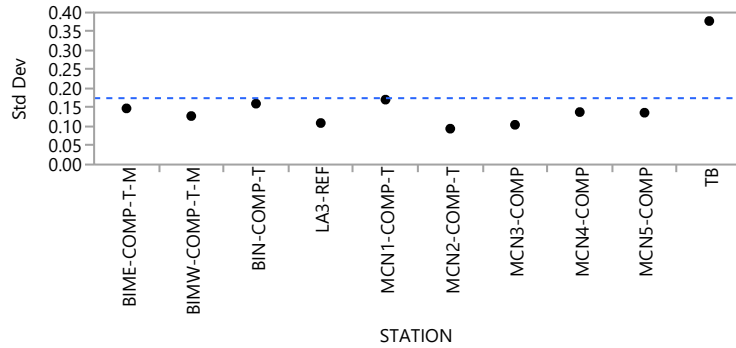
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
6.5838	9	0.6804

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB170**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478048	0.1198045	0.1179548
BIMW-COMP-T-M	5	0.1276896	0.1083373	0.0952016
BIN-COMP-T	5	0.1602645	0.1169600	0.1128164
LA3-REF	5	0.1093173	0.0867371	0.0747880
MCN1-COMP-T	5	0.1708326	0.1386702	0.1305766
MCN2-COMP-T	5	0.0944033	0.0721074	0.0650324
MCN3-COMP	5	0.1046575	0.0785889	0.0755922
MCN4-COMP	5	0.1381225	0.1186677	0.1052968
MCN5-COMP	5	0.1364622	0.1095003	0.1053986
TB	5	0.3777262	0.2672486	0.1993288

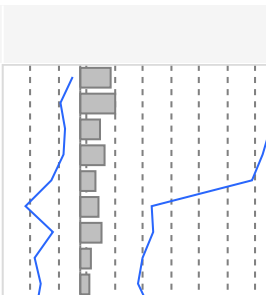
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.0227	9	40	0.4390
Brown-Forsythe	0.3992	9	40	0.9281
Levene	1.7690	9	40	0.1051
Bartlett	1.5446	9	.	0.1259

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN2-COMP-T	4.00000	1.914854	2.08893	0.0367*	0.168896	-0.043562	1.020287
TB	BIME-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.191010	-0.109850	1.089263
TB	BIMW-COMP-T-M	2.80000	1.914854	1.46225	0.1437	0.108114	-0.080311	1.027917
TB	MCN3-COMP	2.80000	1.914854	1.46225	0.1437	0.130768	-0.091081	0.982159
TB	LA3-REF	2.40000	1.914854	1.25336	0.2101	0.079616	-0.156021	0.931007
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100839	-0.297484	0.386943
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.114583	-0.149930	0.393893
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.056483	-0.244548	0.335793
MCN4-COMP	BIMW-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.048232	-0.215009	0.313115

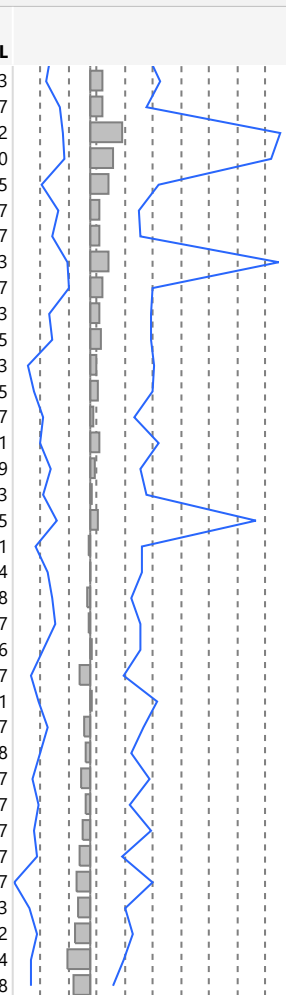




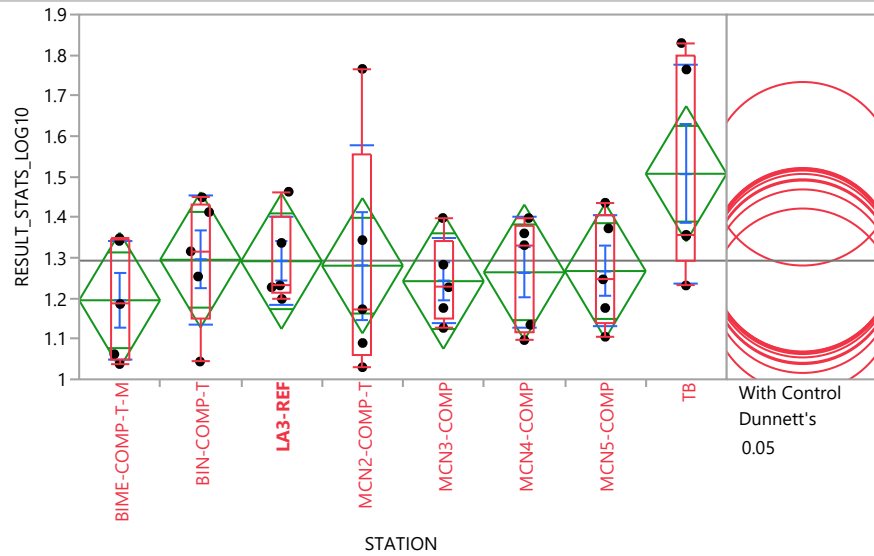
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB170**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067240	-0.236430	0.373583
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066947	-0.167491	0.304607
TB	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	0.178522	-0.147593	1.023552
TB	MCN5-COMP	1.60000	1.914854	0.83557	0.4034	0.123929	-0.140773	0.975320
BIN-COMP-T	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.100742	-0.267945	0.365625
MCN3-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.047519	-0.174330	0.259977
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054359	-0.208884	0.266817
TB	MCN4-COMP	1.20000	1.914854	0.62668	0.5309	0.096910	-0.128543	1.016713
LA3-REF	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.068034	-0.120391	0.332547
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.049643	-0.221424	0.328953
MCN5-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.057992	-0.206891	0.325345
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.037743	-0.338538	0.342313
MCN1-COMP-T	BIMW-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.044582	-0.308999	0.332165
MCN4-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.014664	-0.256403	0.240117
MCN5-COMP	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.048232	-0.274173	0.369461
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.026268	-0.215010	0.266479
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012230	-0.255123	0.301033
TB	BIN-COMP-T	0.40000	1.914854	0.20889	0.8345	0.046324	-0.181053	0.897715
BIMW-COMP-T-M	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.006839	-0.294422	0.274131
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.002124	-0.232314	0.281434
MCN2-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.014350	-0.203495	0.220088
MCN3-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.003460	-0.191885	0.267607
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.011900	-0.259167	0.273226
MCN4-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	-0.056830	-0.321343	0.177537
MCN4-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.006839	-0.282291	0.357231
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.033292	-0.228687	0.285857
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.020819	-0.273337	0.218928
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051150	-0.315751	0.316177
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.020310	-0.279950	0.215327
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040280	-0.307633	0.328407
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053685	-0.286789	0.170697
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.069890	-0.409741	0.335227
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.063669	-0.328182	0.187673
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.084444	-0.292627	0.232172
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.122572	-0.317967	0.177874
MCN2-COMP-T	LA3-REF	-2.40000	1.914854	-1.25336	0.2101	-0.089280	-0.324917	0.123178



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB174**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.03779	1.03779	1.04997	1.18585	1.344855	1.34825	1.34825
BIN-COMP-T	1.04397	1.04397	1.148835	1.31575	1.430875	1.44909	1.44909
LA3-REF	1.19837	1.19837	1.212805	1.23161	1.399775	1.46288	1.46288
MCN2-COMP-T	1.02996	1.02996	1.059845	1.173	1.55475	1.76592	1.76592
MCN3-COMP	1.12687	1.12687	1.15148	1.22724	1.340465	1.39794	1.39794
MCN4-COMP	1.09691	1.09691	1.115805	1.33099	1.379045	1.39794	1.39794
MCN5-COMP	1.10503	1.10503	1.14056	1.24667	1.40406	1.43573	1.43573
TB	1.23161	1.23161	1.292675	1.35655	1.797105	1.82974	1.82974

**Oneway Anova**

**Summary of Fit**

Rsquare	0.217333
Adj Rsquare	0.046124
Root Mean Square Error	0.18331
Mean of Response	1.292837
Observations (or Sum Wgts)	40

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	7	0.2985875	0.042655	1.2694	0.2963
Error	32	1.0752839	0.033603		
C. Total	39	1.3738714			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB174**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.19510	0.08198	1.0281	1.3621
BIN-COMP-T	5	1.29503	0.08198	1.1280	1.4620
LA3-REF	5	1.29135	0.08198	1.1244	1.4583
MCN2-COMP-T	5	1.28044	0.08198	1.1135	1.4474
MCN3-COMP	5	1.24223	0.08198	1.0752	1.4092
MCN4-COMP	5	1.26414	0.08198	1.0972	1.4311
MCN5-COMP	5	1.26718	0.08198	1.1002	1.4342
TB	5	1.50722	0.08198	1.3402	1.6742

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.19510	0.147804	0.06610	1.0116	1.3786
BIN-COMP-T	5	1.29503	0.160265	0.07167	1.0960	1.4940
LA3-REF	5	1.29135	0.109317	0.04889	1.1556	1.4271
MCN2-COMP-T	5	1.28044	0.295944	0.13235	0.9130	1.6479
MCN3-COMP	5	1.24223	0.104659	0.04680	1.1123	1.3722
MCN4-COMP	5	1.26414	0.138121	0.06177	1.0926	1.4356
MCN5-COMP	5	1.26718	0.136463	0.06103	1.0977	1.4366
TB	5	1.50722	0.270377	0.12092	1.1715	1.8429

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.76173	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	-0.1	0.3011
BIN-COMP-T	-0.32	1.0000
LA3-REF	-0.32	1.0000
MCN2-COMP-T	-0.31	1.0000
MCN5-COMP	-0.3	1.0000
MCN4-COMP	-0.29	1.0000
MCN3-COMP	-0.27	0.9983
BIME-COMP-T-M	-0.22	0.9328

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB174**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

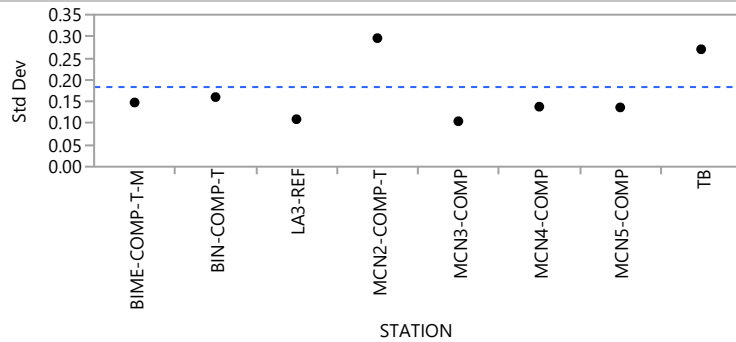
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	71.000	102.500	14.2000	-1.268
BIN-COMP-T	5	115.000	102.500	23.0000	0.491
LA3-REF	5	108.000	102.500	21.6000	0.205
MCN2-COMP-T	5	81.000	102.500	16.2000	-0.859
MCN3-COMP	5	88.500	102.500	17.7000	-0.552
MCN4-COMP	5	100.500	102.500	20.1000	-0.061
MCN5-COMP	5	103.500	102.500	20.7000	0.020
TB	5	152.500	102.500	30.5000	2.025

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
6.3565	7	0.4988

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478038	0.1198040	0.1179540
BIN-COMP-T	5	0.1602653	0.1169592	0.1128160
LA3-REF	5	0.1093168	0.0867368	0.0747880
MCN2-COMP-T	5	0.2959440	0.2194496	0.1979620
MCN3-COMP	5	0.1046591	0.0785912	0.0755940
MCN4-COMP	5	0.1381212	0.1186664	0.1052960
MCN5-COMP	5	0.1364633	0.1095024	0.1054000
TB	5	0.2703771	0.2319064	0.2017720

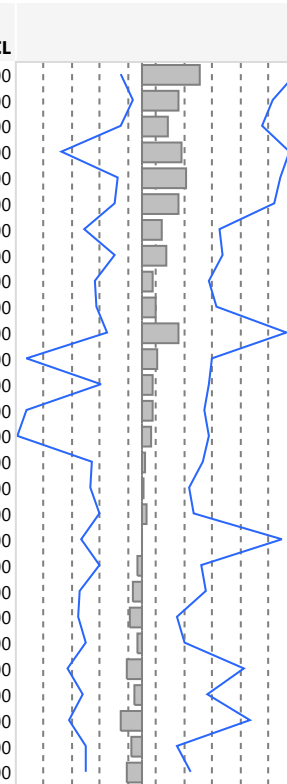
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.4172	7	32	0.2327
Brown-Forsythe	0.6615	7	32	0.7024
Levene	2.3715	7	32	0.0452*
Bartlett	1.1887	7	.	0.3052

Warning: Small sample sizes. Use Caution.

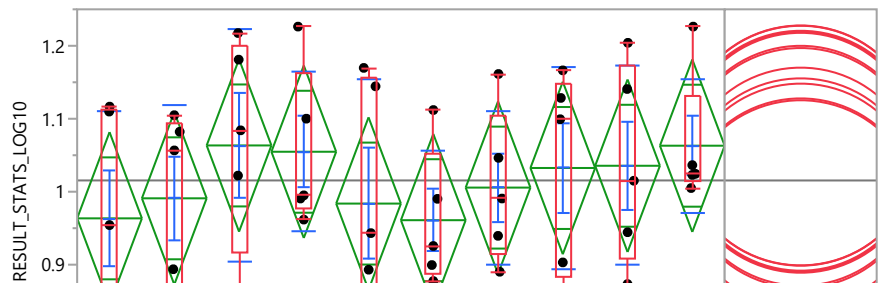
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB174**

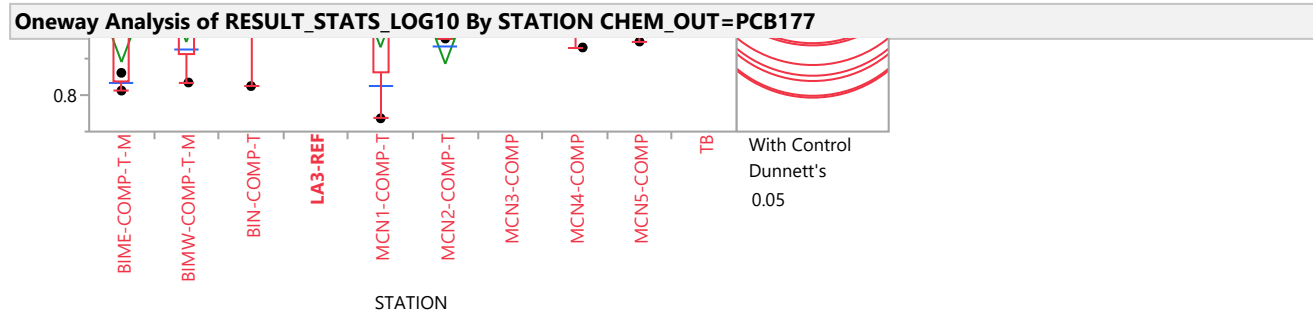
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha								
1.95996		0.05								
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL		
TB	BIME-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	0.294400	-0.109850	0.7675900		
TB	MCN3-COMP	3.20000	1.914854	1.67115	0.0947	0.180460	-0.051380	0.6536500		
TB	LA3-REF	3.00000	1.909043	1.57147	0.1161	0.129310	-0.109140	0.6025000		
TB	MCN2-COMP-T	2.80000	1.914854	1.46225	0.1437	0.201650	-0.412180	0.7400100		
TB	MCN4-COMP	2.00000	1.914854	1.04447	0.2963	0.221850	-0.128540	0.6950400		
TB	MCN5-COMP	2.00000	1.914854	1.04447	0.2963	0.180460	-0.140780	0.6594400		
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297490	0.3869400		
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.121420	-0.143090	0.4007300		
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.056480	-0.244550	0.3357900		
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067240	-0.236430	0.3735800		
TB	BIN-COMP-T	1.60000	1.914854	0.83557	0.4034	0.187640	-0.181050	0.7205000		
MCN5-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.073670	-0.589830	0.3460000		
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.056480	-0.214590	0.3357900		
MCN3-COMP	MCN2-COMP-T	0.80000	1.914854	0.41779	0.6761	0.054240	-0.589830	0.3082100		
MCN4-COMP	MCN2-COMP-T	0.80000	1.914854	0.41779	0.6761	0.044970	-0.631220	0.3301900		
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012240	-0.255120	0.3010300		
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007830	-0.263240	0.2332800		
MCN5-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.019430	-0.221850	0.2596400		
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.002120	-0.311500	0.7037700		
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.026460	-0.221850	0.2927000		
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051150	-0.315750	0.3161800		
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063670	-0.328180	0.1707000		
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.027150	-0.286790	0.2084900		
MCN2-COMP-T	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.080700	-0.382700	0.5122200		
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040270	-0.307630	0.3284200		
MCN2-COMP-T	LA3-REF	-1.20000	1.914854	-0.62668	0.5309	-0.108640	-0.373150	0.5386800		
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053680	-0.286790	0.1707000		
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.077610	-0.285790	0.2390200		



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB177**





Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.80618	0.80618	0.81836	0.954243	1.113245	1.11664	1.11664
BIMW-COMP-T-M	0.817303	0.817303	0.855533	1.05663	1.09354	1.10489	1.10489
BIN-COMP-T	0.812365	0.812365	0.917228	1.08414	1.199265	1.21748	1.21748
LA3-REF	0.961796	0.961796	0.976234	0.995037	1.163205	1.22631	1.22631
MCN1-COMP-T	0.768167	0.768167	0.830637	0.943272	1.15708	1.16971	1.16971
MCN2-COMP-T	0.877536	0.877536	0.888526	0.925597	1.051105	1.11197	1.11197
MCN3-COMP	0.890301	0.890301	0.91491	0.990672	1.10389	1.16137	1.16137
MCN4-COMP	0.865301	0.865301	0.884196	1.09938	1.147435	1.16633	1.16633
MCN5-COMP	0.873419	0.873419	0.908951	1.01506	1.17245	1.20412	1.20412
TB	1.00502	1.00502	1.014045	1.02453	1.13137	1.22631	1.22631

**Oneway Anova**

**Summary of Fit**

Rsquare	0.093939
Adj Rsquare	-0.10992
Root Mean Square Error	0.130762
Mean of Response	1.015419
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	9	0.07091100	0.007879	0.4608	0.8920
Error	40	0.68394947	0.017099		
C. Total	49	0.75486047			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.96349	0.05848	0.84530	1.0817
BIMW-COMP-T-M	5	0.99096	0.05848	0.87277	1.1091
BIN-COMP-T	5	1.06343	0.05848	0.94524	1.1816
LA3-REF	5	1.05478	0.05848	0.93659	1.1730
MCN1-COMP-T	5	0.98374	0.05848	0.86555	1.1019
MCN2-COMP-T	5	0.96097	0.05848	0.84278	1.0792
MCN3-COMP	5	1.00565	0.05848	0.88746	1.1238
MCN4-COMP	5	1.03253	0.05848	0.91434	1.1507

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB177**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
MCN5-COMP	5	1.03557	0.05848	0.91738	1.1538
TB	5	1.06307	0.05848	0.94488	1.1813

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.96349	0.147804	0.06610	0.77997	1.1470
BIMW-COMP-T-M	5	0.99096	0.127691	0.05711	0.83241	1.1495
BIN-COMP-T	5	1.06343	0.160263	0.07167	0.86443	1.2624
LA3-REF	5	1.05478	0.109318	0.04889	0.91905	1.1905
MCN1-COMP-T	5	0.98374	0.170834	0.07640	0.77162	1.1959
MCN2-COMP-T	5	0.96097	0.094402	0.04222	0.84376	1.0782
MCN3-COMP	5	1.00565	0.104658	0.04680	0.87570	1.1356
MCN4-COMP	5	1.03253	0.138121	0.06177	0.86103	1.2040
MCN5-COMP	5	1.03557	0.136463	0.06103	0.86613	1.2050
TB	5	1.06307	0.091940	0.04112	0.94891	1.1772

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.22	1.0000
TB	-0.22	1.0000
LA3-REF	-0.23	1.0000
MCN5-COMP	-0.21	1.0000
MCN4-COMP	-0.21	1.0000
MCN3-COMP	-0.18	0.9957
BIMW-COMP-T-M	-0.17	0.9762
MCN1-COMP-T	-0.16	0.9559
BIME-COMP-T-M	-0.14	0.8504
MCN2-COMP-T	-0.14	0.8326

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB177**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

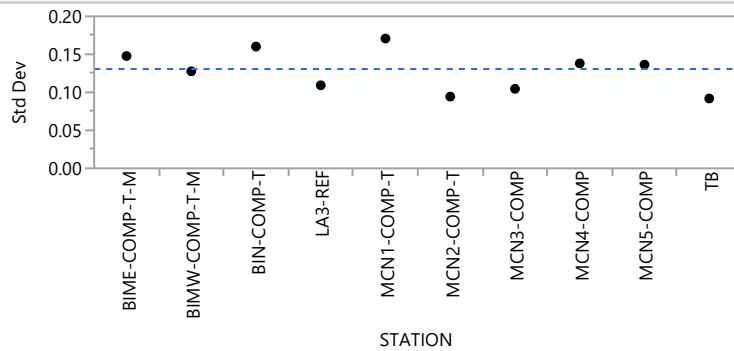
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	101.000	127.500	20.2000	-0.841
BIMW-COMP-T-M	5	114.000	127.500	22.8000	-0.420
BIN-COMP-T	5	156.000	127.500	31.2000	0.906
LA3-REF	5	148.000	127.500	29.6000	0.647
MCN1-COMP-T	5	114.000	127.500	22.8000	-0.420
MCN2-COMP-T	5	92.000	127.500	18.4000	-1.132
MCN3-COMP	5	118.500	127.500	23.7000	-0.275
MCN4-COMP	5	137.000	127.500	27.4000	0.291
MCN5-COMP	5	137.000	127.500	27.4000	0.291
TB	5	157.500	127.500	31.5000	0.954

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
4.4437	9	0.8799

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478040	0.1198037	0.1179542
BIMW-COMP-T-M	5	0.1276908	0.1083380	0.0952030
BIN-COMP-T	5	0.1602634	0.1169580	0.1128150
LA3-REF	5	0.1093178	0.0867376	0.0747884
MCN1-COMP-T	5	0.1708336	0.1386712	0.1305774
MCN2-COMP-T	5	0.0944018	0.0721066	0.0650316
MCN3-COMP	5	0.1046579	0.0785885	0.0755920
MCN4-COMP	5	0.1381209	0.1186662	0.1052958
MCN5-COMP	5	0.1364631	0.1095021	0.1053996
TB	5	0.0919404	0.0652952	0.0469300



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB177**

**Tests that the Variances are Equal**

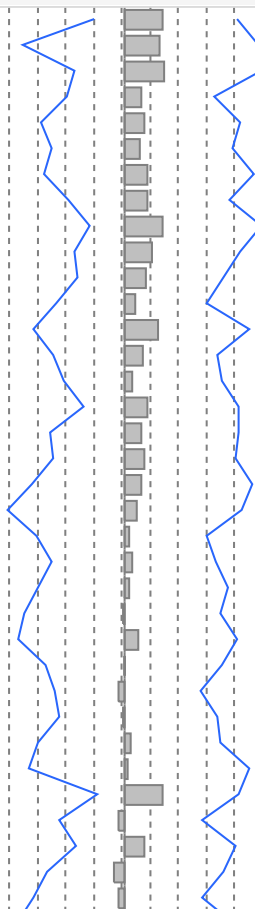
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.6384	9	40	0.7575
Brown-Forsythe	0.4500	9	40	0.8988
Levene	0.8216	9	40	0.5999
Bartlett	0.3362	9	.	0.9632

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN2-COMP-T	3.20000	1.914854	1.67115	0.0947	0.110833	-0.088900	0.3267940
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297485	0.3869410
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.116460	-0.148054	0.3957710
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.049400	-0.172451	0.2618540
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.056480	-0.244549	0.3357910
MCN4-COMP	BIMW-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.046350	-0.216889	0.3112370
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067239	-0.236431	0.3735810
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.066947	-0.167487	0.3046040
TB	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.109670	-0.104830	0.3957710
TB	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	0.081860	-0.146640	0.3332040
TB	MCN3-COMP	1.60000	1.914854	0.83557	0.4034	0.064940	-0.138300	0.2867910
TB	LA3-REF	1.40000	1.909043	0.73335	0.4633	0.029493	-0.203240	0.2356380
BIN-COMP-T	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	0.098860	-0.269825	0.3637470
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054360	-0.208880	0.2668140
TB	MCN5-COMP	1.20000	1.914854	0.62668	0.5309	0.022190	-0.181050	0.2818270
LA3-REF	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.068034	-0.120394	0.3325480
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.051520	-0.219549	0.3308310
MCN5-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.056116	-0.208771	0.3234770
MCN5-COMP	MCN1-COMP-T	0.80000	1.914854	0.41779	0.6761	0.051377	-0.271031	0.3726130
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.034600	-0.341683	0.3391710
MCN4-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.012789	-0.258280	0.2382390
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.024388	-0.216887	0.2646010
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012240	-0.255121	0.3010300
BIMW-COMP-T-M	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.004960	-0.292547	0.2760100
MCN1-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.039560	-0.314023	0.3271470
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.002120	-0.232314	0.2814310
MCN2-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.016226	-0.205374	0.2182080
MCN3-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.003461	-0.191889	0.2676080
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.016920	-0.254149	0.2782430
MCN4-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.009984	-0.279149	0.3603730
TB	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.111258	-0.081820	0.3325480
TB	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.017070	-0.194410	0.2240650
TB	MCN4-COMP	0.00000	1.914854	0.00000	1.0000	0.059980	-0.143260	0.3232200
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.031418	-0.226808	0.2877350
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.017675	-0.270194	0.2220730

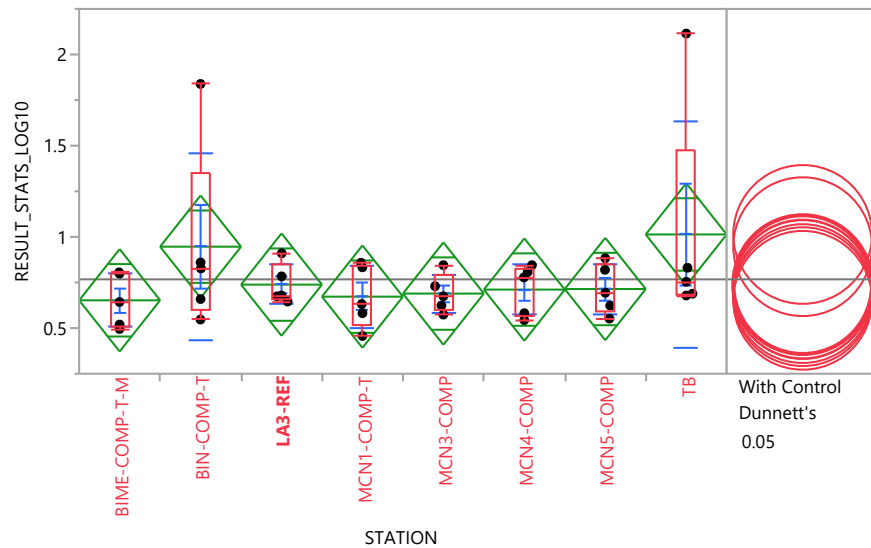


**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB177**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051150	-0.315749	0.3161750
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.058706	-0.323220	0.1756580
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.022190	-0.281827	0.2134480
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040270	-0.307631	0.3284150
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053690	-0.286791	0.1706980
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.073030	-0.412883	0.3320850
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.068690	-0.333204	0.1826540
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.082571	-0.290749	0.2340450
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.122574	-0.317964	0.1778750
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.091156	-0.326794	0.1212980

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB180**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.495166	0.495166	0.507346	0.643228	0.802233	0.805629	0.805629
BIN-COMP-T	0.547109	0.547109	0.603285	0.827289	1.349226	1.83863	1.83863
LA3-REF	0.645526	0.645526	0.659964	0.678767	0.846934	0.910039	0.910039
MCN1-COMP-T	0.456918	0.456918	0.519388	0.632023	0.845831	0.858462	0.858462
MCN3-COMP	0.574031	0.574031	0.59864	0.674402	0.787621	0.845098	0.845098
MCN4-COMP	0.544068	0.544068	0.562963	0.778151	0.826204	0.845098	0.845098
MCN5-COMP	0.552186	0.552186	0.587718	0.69383	0.851216	0.882887	0.882887
TB	0.678767	0.678767	0.683759	0.754018	1.472904	2.11495	2.11495

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB180**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.17371
Adj Rsquare	-0.00704
Root Mean Square Error	0.308091
Mean of Response	0.767304
Observations (or Sum Wgts)	40

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	7	0.6385589	0.091223	0.9610	0.4755
Error	32	3.0374483	0.094920		
C. Total	39	3.6760071			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.65248	0.13778	0.37182	0.9331
BIN-COMP-T	5	0.94646	0.13778	0.66581	1.2271
LA3-REF	5	0.73851	0.13778	0.45786	1.0192
MCN1-COMP-T	5	0.67249	0.13778	0.39184	0.9531
MCN3-COMP	5	0.68938	0.13778	0.40873	0.9700
MCN4-COMP	5	0.71130	0.13778	0.43064	0.9920
MCN5-COMP	5	0.71434	0.13778	0.43369	0.9950
TB	5	1.01347	0.13778	0.73281	1.2941

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.65248	0.147805	0.06610	0.46895	0.8360
BIN-COMP-T	5	0.94646	0.514666	0.23017	0.30742	1.5855
LA3-REF	5	0.73851	0.109317	0.04889	0.60278	0.8742
MCN1-COMP-T	5	0.67249	0.170833	0.07640	0.46037	0.8846
MCN3-COMP	5	0.68938	0.104658	0.04680	0.55944	0.8193
MCN4-COMP	5	0.71130	0.138122	0.06177	0.53980	0.8828
MCN5-COMP	5	0.71434	0.136463	0.06103	0.54490	0.8838
TB	5	1.01347	0.618747	0.27671	0.24519	1.7817

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.76173	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB180**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	-0.26	0.5799
BIN-COMP-T	-0.33	0.8154
LA3-REF	-0.54	1.0000
MCN5-COMP	-0.51	1.0000
MCN4-COMP	-0.51	1.0000
MCN3-COMP	-0.49	0.9999
MCN1-COMP-T	-0.47	0.9996
BIME-COMP-T-M	-0.45	0.9978

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

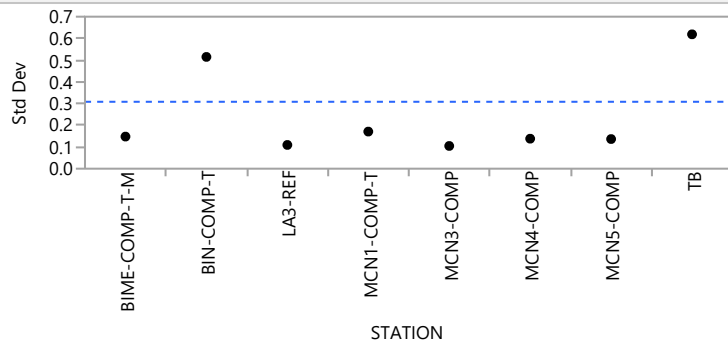
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	71.000	102.500	14.2000	-1.268
BIN-COMP-T	5	125.000	102.500	25.0000	0.900
LA3-REF	5	112.000	102.500	22.4000	0.368
MCN1-COMP-T	5	88.500	102.500	17.7000	-0.552
MCN3-COMP	5	89.500	102.500	17.9000	-0.511
MCN4-COMP	5	98.000	102.500	19.6000	-0.164
MCN5-COMP	5	103.500	102.500	20.7000	0.020
TB	5	132.500	102.500	26.5000	1.207

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
4.2093	7	0.7554

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB180**

**Tests that the Variances are Equal**

Level	Count	Std Dev	MeanAbsDif	MeanAbsDif
			to Mean	to Median
BIME-COMP-T-M	5	0.1478048	0.1198046	0.1179548
BIN-COMP-T	5	0.5146662	0.3568672	0.2983762
LA3-REF	5	0.1093172	0.0867369	0.0747878
MCN1-COMP-T	5	0.1708334	0.1386710	0.1305772
MCN3-COMP	5	0.1046576	0.0785890	0.0755924
MCN4-COMP	5	0.1381221	0.1186674	0.1052966
MCN5-COMP	5	0.1364626	0.1095010	0.1053992
TB	5	0.6187466	0.4405925	0.3156580

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.0691	7	32	0.4054
Brown-Forsythe	0.6758	7	32	0.6910
Levene	2.8424	7	32	0.0201*
Bartlett	4.0189	7	.	0.0002*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha							
1.95996		0.05							
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
BIN-COMP-T	BIME-COMP-T-M	2.80000	1.914854	1.46225	0.1437	0.139936	-0.25173	1.319105	
TB	BIME-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.169226	-0.12007	1.595425	
TB	MCN3-COMP	2.40000	1.914854	1.25336	0.2101	0.100714	-0.15635	1.491701	
TB	LA3-REF	1.80000	1.909043	0.94288	0.3457	0.043225	-0.22129	1.440548	
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.111203	-0.15331	0.390514	
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.046262	-0.25477	0.325573	
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.057020	-0.24665	0.363362	
TB	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	0.121995	-0.16971	1.533093	
TB	MCN5-COMP	1.20000	1.914854	0.62668	0.5309	0.065502	-0.19414	1.491701	
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.046262	-0.22481	0.325573	
TB	MCN4-COMP	0.80000	1.914854	0.41779	0.6761	0.096910	-0.15635	1.533093	
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.034363	-0.34192	0.338937	
MCN5-COMP	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.041392	-0.28101	0.362626	
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.012234	-0.25512	0.301030	
TB	BIN-COMP-T	0.40000	1.914854	0.20889	0.8345	0.019306	-1.14988	1.455489	
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007826	-0.26324	0.233279	
MCN5-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.019428	-0.22185	0.259638	
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.011899	-0.25917	0.273226	
MCN4-COMP	MCN1-COMP-T	0.00000	1.909043	0.00000	1.0000	0.000000	-0.28913	0.350392	
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.043461	-1.16423	0.250578	
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063669	-0.32818	0.170696	
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.027152	-0.28679	0.208485	
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040277	-1.21538	0.272435	
MCN3-COMP	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.097145	-1.21538	0.185637	
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053684	-0.28679	0.170696	

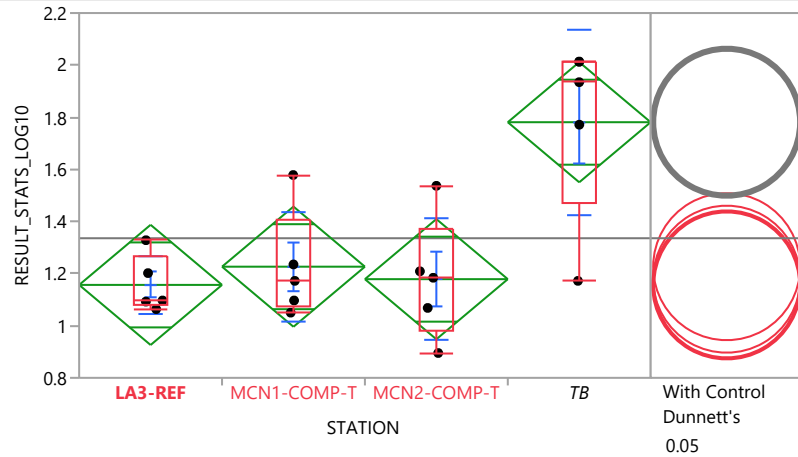
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB180**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.090191	-1.25677	0.286090
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.063669	-0.32818	0.187673
MCN4-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.052511	-1.25677	0.260201



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB183**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	1.06367	1.06367	1.07811	1.09691	1.265075	1.32818	1.32818
MCN1-COMP-T	1.05017	1.05017	1.07354	1.17216	1.406805	1.5784	1.5784
MCN2-COMP-T	0.895265	0.895265	0.981763	1.18406	1.372885	1.53689	1.53689
TB	1.17216	1.17216	1.47184	1.93473	2.013375	2.01379	2.01379

**Oneway Anova**

**Summary of Fit**

Rsquare	0.585033
Adj Rsquare	0.507227
Root Mean Square Error	0.243249
Mean of Response	1.335732
Observations (or Sum Wgts)	20

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	3	1.3347240	0.444908	7.5191	0.0023*
Error	16	0.9467251	0.059170		
C. Total	19	2.2814491			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB183**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
LA3-REF	5	1.15666	0.10878	0.9260	1.3873
MCN1-COMP-T	5	1.22657	0.10878	0.9960	1.4572
MCN2-COMP-T	5	1.17867	0.10878	0.9481	1.4093
TB	5	1.78103	0.10878	1.5504	2.0116

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
LA3-REF	5	1.15666	0.109315	0.04889	1.0209	1.2924
MCN1-COMP-T	5	1.22657	0.209014	0.09347	0.9670	1.4861
MCN2-COMP-T	5	1.17867	0.235463	0.10530	0.8863	1.4710
TB	5	1.78103	0.354403	0.15849	1.3410	2.2211

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.59232	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.226	0.0025*
MCN1-COMP-T	-0.33	0.9408
MCN2-COMP-T	-0.38	0.9978
LA3-REF	-0.4	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
LA3-REF	5	39.500	52.500	7.9000	-1.092
MCN1-COMP-T	5	46.000	52.500	9.2000	-0.524
MCN2-COMP-T	5	42.000	52.500	8.4000	-0.874
TB	5	82.500	52.500	16.5000	2.577

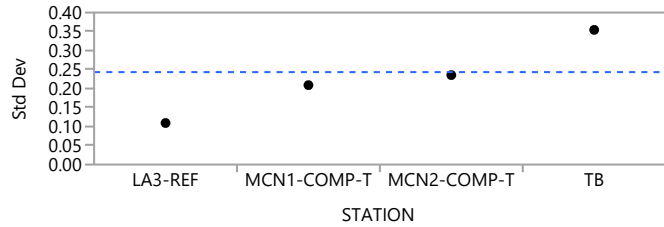
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
6.9905	3	0.0722

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB183**

**Tests that the Variances are Equal**



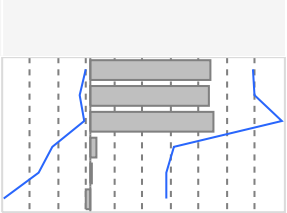
Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
LA3-REF	5	0.1093154	0.0867352	0.0747860
MCN1-COMP-T	5	0.2090144	0.1441880	0.1333060
MCN2-COMP-T	5	0.2354634	0.1575268	0.1564490
TB	5	0.3544029	0.2473536	0.2166140

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.7355	3	16	0.5460
Brown-Forsythe	0.4414	3	16	0.7266
Levene	0.9418	3	16	0.4436
Bartlett	1.4677	3	.	0.2211

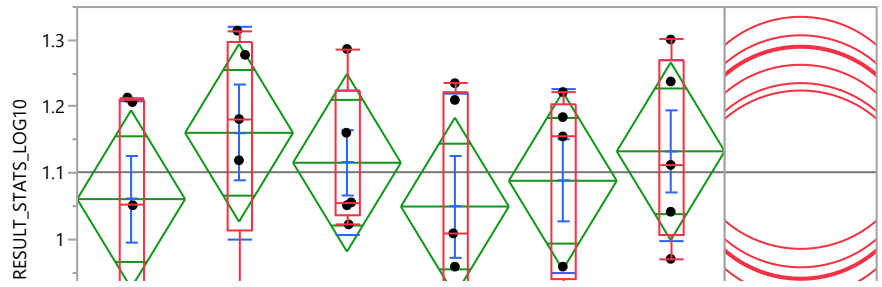
Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

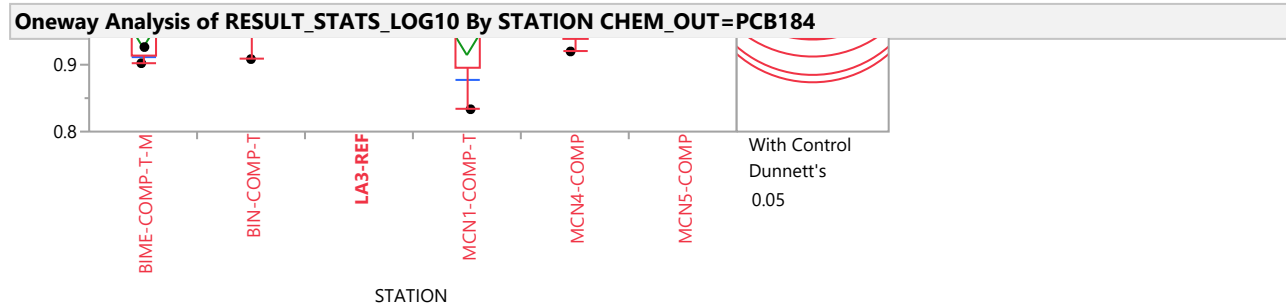
q*		Alpha	Score Mean		Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
Level	- Level	Difference	Std Err Dif						
TB	LA3-REF	4.00000	1.914854	2.08893	0.0367*	0.707850	-0.029810	0.949290	
TB	MCN1-COMP-T	3.80000	1.909043	1.99053	0.0465*	0.699520	-0.063050	0.962790	
TB	MCN2-COMP-T	3.60000	1.914854	1.88004	0.0601	0.725850	-0.036720	1.117695	
MCN1-COMP-T	LA3-REF	0.60000	1.909043	0.31429	0.7533	0.033240	-0.231270	0.485850	
MCN2-COMP-T	LA3-REF	0.00000	1.914854	0.00000	1.0000	0.004590	-0.306705	0.444340	
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.028650	-0.510140	0.439980	



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB184**







Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.90309	0.90309	0.91527	1.05115	1.210155	1.21355	1.21355
BIN-COMP-T	0.909275	0.909275	1.014138	1.18105	1.296175	1.31439	1.31439
LA3-REF	1.02228	1.02228	1.036715	1.05552	1.223685	1.28679	1.28679
MCN1-COMP-T	0.833669	0.833669	0.896138	1.00877	1.22258	1.23521	1.23521
MCN4-COMP	0.920819	0.920819	0.939713	1.1549	1.202955	1.22185	1.22185
MCN5-COMP	0.970329	0.970329	1.00586	1.11197	1.26936	1.30103	1.30103

**Oneway Anova**

**Summary of Fit**

Rsquare	0.083501
Adj Rsquare	-0.10744
Root Mean Square Error	0.145123
Mean of Response	1.100962
Observations (or Sum Wgts)	30

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	5	0.04605162	0.009210	0.4373	0.8180
Error	24	0.50545801	0.021061		
C. Total	29	0.55150962			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.06040	0.06490	0.9265	1.1943
BIN-COMP-T	5	1.16034	0.06490	1.0264	1.2943
LA3-REF	5	1.11526	0.06490	0.9813	1.2492
MCN1-COMP-T	5	1.04924	0.06490	0.9153	1.1832
MCN4-COMP	5	1.08805	0.06490	0.9541	1.2220
MCN5-COMP	5	1.13248	0.06490	0.9985	1.2664

Std Error uses a pooled estimate of error variance

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB184**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.06040	0.147804	0.06610	0.87688	1.2439
BIN-COMP-T	5	1.16034	0.160263	0.07167	0.96134	1.3593
LA3-REF	5	1.11526	0.109317	0.04889	0.97953	1.2510
MCN1-COMP-T	5	1.04924	0.170833	0.07640	0.83712	1.2614
MCN4-COMP	5	1.08805	0.138122	0.06177	0.91655	1.2595
MCN5-COMP	5	1.13248	0.136464	0.06103	0.96304	1.3019

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.69532	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.2	0.9831
MCN5-COMP	-0.23	0.9998
LA3-REF	-0.25	1.0000
MCN4-COMP	-0.22	0.9983
BIME-COMP-T-M	-0.19	0.9619
MCN1-COMP-T	-0.18	0.9226

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	63.500	77.500	12.7000	-0.751
BIN-COMP-T	5	95.000	77.500	19.0000	0.946
LA3-REF	5	82.500	77.500	16.5000	0.250
MCN1-COMP-T	5	63.500	77.500	12.7000	-0.751
MCN4-COMP	5	71.500	77.500	14.3000	-0.306
MCN5-COMP	5	89.000	77.500	17.8000	0.612

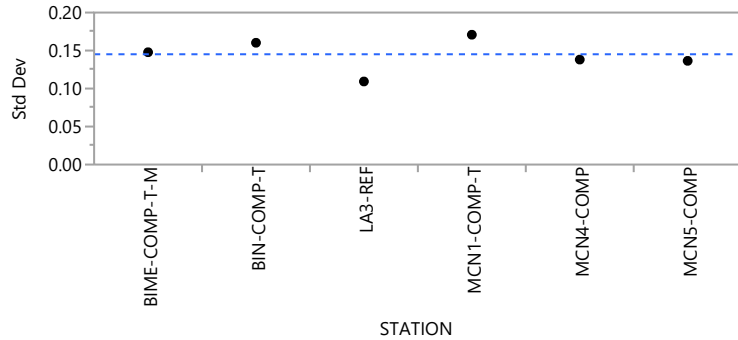
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
2.3017	5	0.8060

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB184**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478040	0.1198042	0.1179542
BIN-COMP-T	5	0.1602634	0.1169580	0.1128150
LA3-REF	5	0.1093168	0.0867368	0.0747880
MCN1-COMP-T	5	0.1708329	0.1386710	0.1305768
MCN4-COMP	5	0.1381222	0.1186674	0.1052968
MCN5-COMP	5	0.1364636	0.1095026	0.1054002

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.3510	5	24	0.8765
Brown-Forsythe	0.2087	5	24	0.9555
Levene	0.3392	5	24	0.8841
Bartlett	0.1657	5	.	0.9752

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

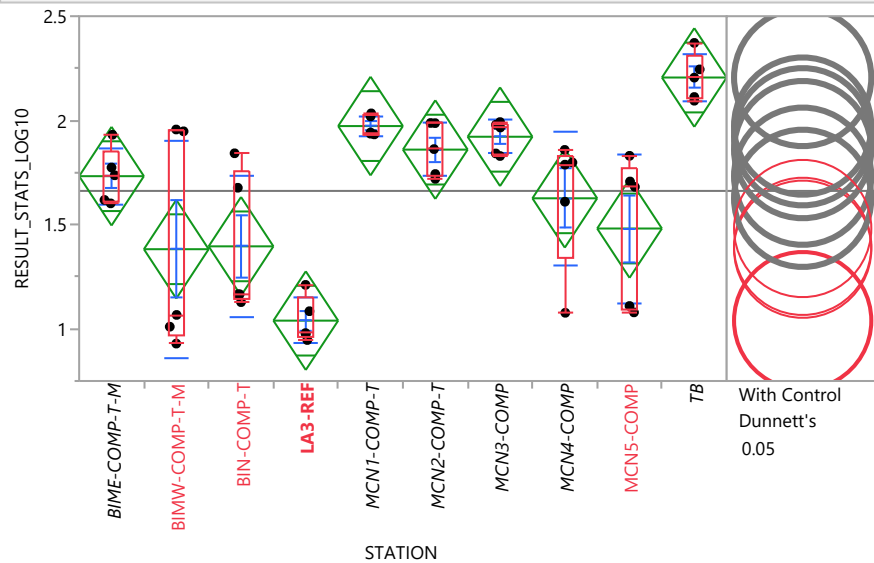
q*		Alpha							
1.95996		0.05							
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
MCN5-COMP	MCN1-COMP-T	2.00000	1.914854	1.04447	0.2963	0.082783	-0.239621	0.4040210	
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297485	0.3869410	
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067239	-0.236431	0.3735810	
MCN5-COMP	MCN4-COMP	1.20000	1.914854	0.62668	0.5309	0.053630	-0.213731	0.3424230	
LA3-REF	BIME-COMP-T-M	1.00000	1.909043	0.52382	0.6004	0.080030	-0.184480	0.3593410	
MCN4-COMP	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.015090	-0.285941	0.2944010	
MCN1-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.003190	-0.373091	0.3077610	
MCN4-COMP	MCN1-COMP-T	0.00000	1.909043	0.00000	1.0000	0.000000	-0.289131	0.3503910	
MCN5-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	0.014240	-0.245400	0.2498800	
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063673	-0.328183	0.1707000	
MCN4-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.092540	-0.357141	0.2747850	
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040270	-0.307631	0.3284150	
LA3-REF	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.067850	-0.263240	0.2513050	

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB184**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.104440	-0.444291	0.3006750
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.063673	-0.328183	0.1876700

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB187**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.60206	1.60206	1.610255	1.73676	1.85275	1.93128	1.93128
BIMW-COMP-T-M	0.929419	0.929419	0.969945	1.06695	1.952175	1.95653	1.95653
BIN-COMP-T	1.12832	1.12832	1.147155	1.16599	1.75973	1.84239	1.84239
LA3-REF	0.946556	0.946556	0.960994	0.979797	1.147965	1.21107	1.21107
MCN1-COMP-T	1.93305	1.93305	1.93469	1.94201	2.026585	2.03386	2.03386
MCN2-COMP-T	1.71982	1.71982	1.73135	1.86247	1.987405	1.98777	1.98777
MCN3-COMP	1.8293	1.8293	1.83547	1.96614	1.985745	1.99217	1.99217
MCN4-COMP	1.07717	1.07717	1.3436	1.78791	1.82851	1.85867	1.85867
MCN5-COMP	1.07918	1.07918	1.094525	1.68124	1.76867	1.83025	1.83025
TB	2.09456	2.09456	2.10349	2.20538	2.308435	2.37196	2.37196

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB187**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.662057
Adj Rsquare	0.58602
Root Mean Square Error	0.261826
Mean of Response	1.661871
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	5.3720187	0.596891	8.7070	<.0001*
Error	40	2.7421151	0.068553		
C. Total	49	8.1141338			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.73255	0.11709	1.4959	1.9692
BIMW-COMP-T-M	5	1.38224	0.11709	1.1456	1.6189
BIN-COMP-T	5	1.39595	0.11709	1.1593	1.6326
LA3-REF	5	1.03954	0.11709	0.8029	1.2762
MCN1-COMP-T	5	1.97291	0.11709	1.7363	2.2096
MCN2-COMP-T	5	1.86000	0.11709	1.6233	2.0966
MCN3-COMP	5	1.92171	0.11709	1.6851	2.1584
MCN4-COMP	5	1.62643	0.11709	1.3898	1.8631
MCN5-COMP	5	1.48153	0.11709	1.2449	1.7182
TB	5	2.20585	0.11709	1.9692	2.4425

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.73255	0.133505	0.05971	1.5668	1.8983
BIMW-COMP-T-M	5	1.38224	0.522579	0.23370	0.7334	2.0311
BIN-COMP-T	5	1.39595	0.337537	0.15095	0.9768	1.8151
LA3-REF	5	1.03954	0.109318	0.04889	0.9038	1.1753
MCN1-COMP-T	5	1.97291	0.049370	0.02208	1.9116	2.0342
MCN2-COMP-T	5	1.86000	0.128295	0.05738	1.7007	2.0193
MCN3-COMP	5	1.92171	0.079386	0.03550	1.8231	2.0203
MCN4-COMP	5	1.62643	0.320750	0.14344	1.2282	2.0247
MCN5-COMP	5	1.48153	0.357905	0.16006	1.0371	1.9259
TB	5	2.20585	0.112064	0.05012	2.0667	2.3450

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB187**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.701	<.0001*
MCN1-COMP-T	0.468	<.0001*
MCN3-COMP	0.417	<.0001*
MCN2-COMP-T	0.355	0.0001*
BIME-COMP-T-M	0.227	0.0012*
MCN4-COMP	0.121	0.0076*
MCN5-COMP	-0.02	0.0696
BIN-COMP-T	-0.11	0.2052
BIMW-COMP-T-M	-0.12	0.2393
LA3-REF	-0.47	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	111.000	127.500	22.2000	-0.517
BIMW-COMP-T-M	5	87.000	127.500	17.4000	-1.294
BIN-COMP-T	5	84.000	127.500	16.8000	-1.391
LA3-REF	5	32.000	127.500	6.4000	-3.072
MCN1-COMP-T	5	194.000	127.500	38.8000	2.134
MCN2-COMP-T	5	159.000	127.500	31.8000	1.003
MCN3-COMP	5	178.000	127.500	35.6000	1.617
MCN4-COMP	5	105.000	127.500	21.0000	-0.711
MCN5-COMP	5	85.000	127.500	17.0000	-1.358
TB	5	240.000	127.500	48.0000	3.622

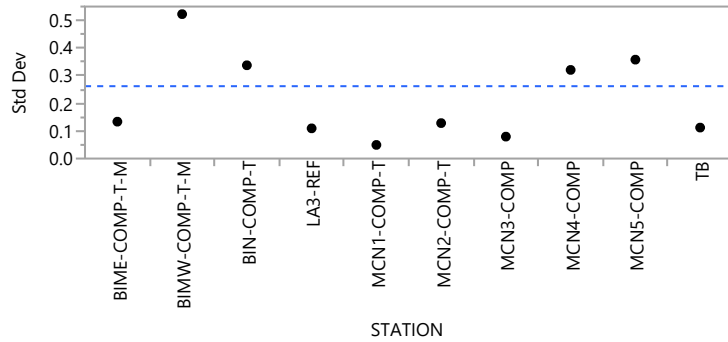
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
33.7508	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB187**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1335048	0.0978392	0.0969980
BIMW-COMP-T-M	5	0.5225795	0.4559498	0.3928922
BIN-COMP-T	5	0.3375375	0.2910224	0.2450300
LA3-REF	5	0.1093178	0.0867376	0.0747884
MCN1-COMP-T	5	0.0493700	0.0429384	0.0367580
MCN2-COMP-T	5	0.1282945	0.1029168	0.1024220
MCN3-COMP	5	0.0793857	0.0689952	0.0601100
MCN4-COMP	5	0.3207504	0.2262608	0.1939640
MCN5-COMP	5	0.3579049	0.3096008	0.2696580
TB	5	0.1120637	0.0820712	0.0819780

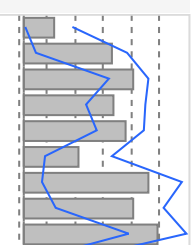
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	5.3303	9	40	<.0001*
Brown-Forsythe	1.2994	9	40	0.2677
Levene	11.1085	9	40	<.0001*
Bartlett	3.6722	9	.	0.0001*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

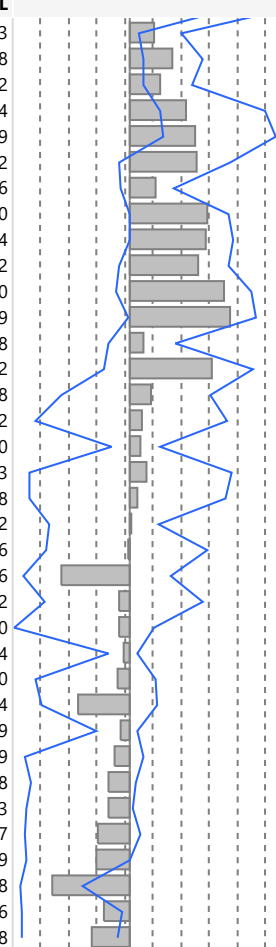
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.25964	0.00505	0.41725
MCN1-COMP-T	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	0.77034	0.09394	0.89099
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.95762	0.72526	1.07275
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.77761	0.53181	1.04048
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.88274	0.63057	1.03276
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.47611	0.18114	0.75351
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	1.08409	0.14674	1.36149
TB	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	0.94643	0.27003	1.20597
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.16005	0.90135	1.39653



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB187**

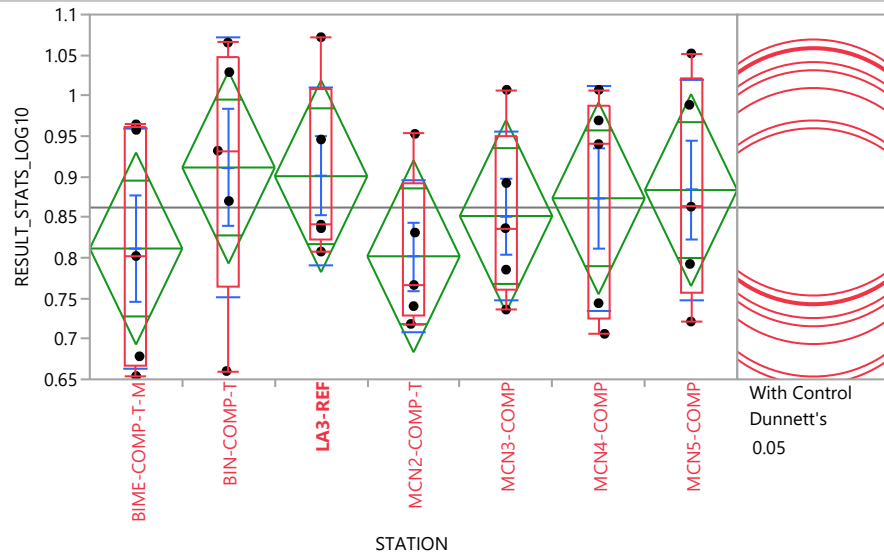
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.21105	0.07525	0.43563
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.36954	0.10752	0.62908
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.26559	0.11524	0.53032
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.48453	0.25375	1.16774
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.56367	0.28217	1.26209
MCN2-COMP-T	BIN-COMP-T	4.00000	1.909043	2.09529	0.0361*	0.57689	-0.09951	0.85872
MCN3-COMP	BIME-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	0.21795	-0.08964	0.37726
MCN3-COMP	BIN-COMP-T	4.00000	1.909043	2.09529	0.0361*	0.67565	-0.00075	0.85100
MCN4-COMP	LA3-REF	4.00000	1.914854	2.08893	0.0367*	0.66347	-0.00769	0.88324
MCN5-COMP	LA3-REF	3.60000	1.914854	1.88004	0.0601	0.59638	-0.10120	0.85482
MCN3-COMP	BIMW-COMP-T-M	3.20000	1.914854	1.67115	0.0947	0.81883	-0.11852	1.04990
MCN1-COMP-T	BIMW-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.87506	-0.02020	1.08989
MCN2-COMP-T	BIME-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.12443	-0.18840	0.38498
MCN2-COMP-T	BIMW-COMP-T-M	2.40000	1.914854	1.25336	0.2101	0.70935	-0.22800	1.05762
MCN4-COMP	BIN-COMP-T	1.20000	1.909043	0.62859	0.5296	0.18160	-0.59990	0.69268
BIN-COMP-T	BIMW-COMP-T-M	0.80000	1.909043	0.41906	0.6752	0.09904	-0.81950	0.83192
MCN3-COMP	MCN2-COMP-T	0.80000	1.914854	0.41779	0.6761	0.08642	-0.15774	0.25950
MCN4-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.14775	-0.87065	0.86893
MCN5-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.06871	-0.86864	0.81978
MCN4-COMP	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.00797	-0.69705	0.24022
MCN5-COMP	BIN-COMP-T	0.00000	1.909043	0.00000	1.0000	-0.01214	-0.73252	0.66426
BIMW-COMP-T-M	BIME-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.59159	-0.92081	0.34576
MCN5-COMP	MCN4-COMP	-0.80000	1.914854	-0.41779	0.6761	-0.09126	-0.74880	0.62992
LA3-REF	BIMW-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-0.08715	-1.00126	0.20060
MCN3-COMP	MCN1-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.05317	-0.19222	0.05584
MCN5-COMP	BIME-COMP-T-M	-1.60000	1.914854	-0.83557	0.4034	-0.10103	-0.82141	0.21180
BIN-COMP-T	BIME-COMP-T-M	-2.40000	1.909043	-1.25717	0.2087	-0.45246	-0.76529	0.22394
MCN2-COMP-T	MCN1-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.07954	-0.29949	0.05399
MCN4-COMP	MCN2-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.13285	-0.90987	0.11579
LA3-REF	BIN-COMP-T	-3.60000	1.909043	-1.88576	0.0593	-0.19056	-0.86696	0.04508
MCN4-COMP	MCN3-COMP	-4.00000	1.914854	-2.08893	0.0367*	-0.19141	-0.90215	0.01703
MCN5-COMP	MCN2-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-0.28068	-0.90786	0.08737
MCN5-COMP	MCN3-COMP	-4.40000	1.914854	-2.29783	0.0216*	-0.28508	-0.90014	-0.01139
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.67189	-0.95585	-0.40738
MCN4-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.23140	-0.94214	-0.07766
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.32677	-0.94013	-0.10608





**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB189**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.654089	0.654089	0.666269	0.802152	0.961156	0.964553	0.964553
BIN-COMP-T	0.660274	0.660274	0.765136	0.932054	1.047175	1.06539	1.06539
LA3-REF	0.807606	0.807606	0.822044	0.840847	1.009015	1.07212	1.07212
MCN2-COMP-T	0.718383	0.718383	0.729373	0.766445	0.891954	0.952821	0.952821
MCN3-COMP	0.736112	0.736112	0.760721	0.836482	0.949702	1.00718	1.00718
MCN4-COMP	0.706149	0.706149	0.725043	0.940232	0.988285	1.00718	1.00718
MCN5-COMP	0.721328	0.721328	0.75686	0.862973	1.020358	1.05203	1.05203

**Oneway Anova**

**Summary of Fit**

Rsquare	0.103473
Adj Rsquare	-0.08864
Root Mean Square Error	0.129309
Mean of Response	0.861925
Observations (or Sum Wgts)	35

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	6	0.05403597	0.009006	0.5386	0.7743
Error	28	0.46818559	0.016721		
C. Total	34	0.52222156			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB189**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.811400	0.05783	0.69294	0.9299
BIN-COMP-T	5	0.911335	0.05783	0.79288	1.0298
LA3-REF	5	0.900593	0.05783	0.78214	1.0190
MCN2-COMP-T	5	0.801820	0.05783	0.68336	0.9203
MCN3-COMP	5	0.851466	0.05783	0.73301	0.9699
MCN4-COMP	5	0.873378	0.05783	0.75492	0.9918
MCN5-COMP	5	0.883482	0.05783	0.76502	1.0019

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	0.811400	0.147805	0.06610	0.62788	0.9949
BIN-COMP-T	5	0.911335	0.160264	0.07167	0.71234	1.1103
LA3-REF	5	0.900593	0.109318	0.04889	0.76486	1.0363
MCN2-COMP-T	5	0.801820	0.094403	0.04222	0.68460	0.9190
MCN3-COMP	5	0.851466	0.104658	0.04680	0.72152	0.9814
MCN4-COMP	5	0.873378	0.138122	0.06177	0.70188	1.0449
MCN5-COMP	5	0.883482	0.136463	0.06103	0.71404	1.0529

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.73128	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.21	1.0000
LA3-REF	-0.22	1.0000
MCN5-COMP	-0.21	0.9999
MCN4-COMP	-0.2	0.9990
MCN3-COMP	-0.17	0.9774
BIME-COMP-T-M	-0.13	0.7625
MCN2-COMP-T	-0.12	0.6830

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB189**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

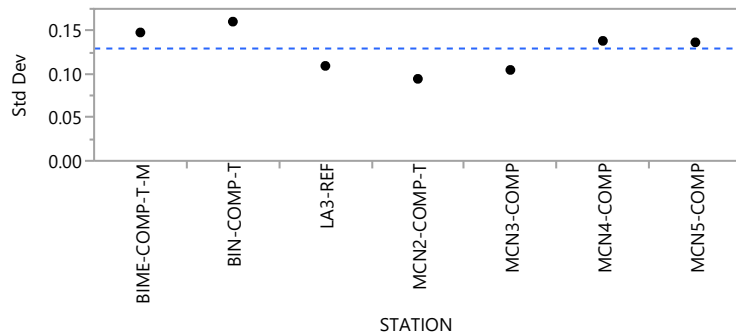
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	70.000	90.000	14.0000	-0.919
BIN-COMP-T	5	110.000	90.000	22.0000	0.919
LA3-REF	5	107.500	90.000	21.5000	0.801
MCN2-COMP-T	5	63.000	90.000	12.6000	-1.249
MCN3-COMP	5	86.000	90.000	17.2000	-0.165
MCN4-COMP	5	94.500	90.000	18.9000	0.189
MCN5-COMP	5	99.000	90.000	19.8000	0.401

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
3.7201	6	0.7145

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478050	0.1198046	0.1179550
BIN-COMP-T	5	0.1602641	0.1169596	0.1128158
LA3-REF	5	0.1093177	0.0867374	0.0747882
MCN2-COMP-T	5	0.0944033	0.0721074	0.0650324
MCN3-COMP	5	0.1046579	0.0785891	0.0755924
MCN4-COMP	5	0.1381225	0.1186677	0.1052968
MCN5-COMP	5	0.1364627	0.1095010	0.1053992

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.4929	6	28	0.8081
Brown-Forsythe	0.3211	6	28	0.9204
Levene	0.5723	6	28	0.7489
Bartlett	0.2751	6	.	0.9488

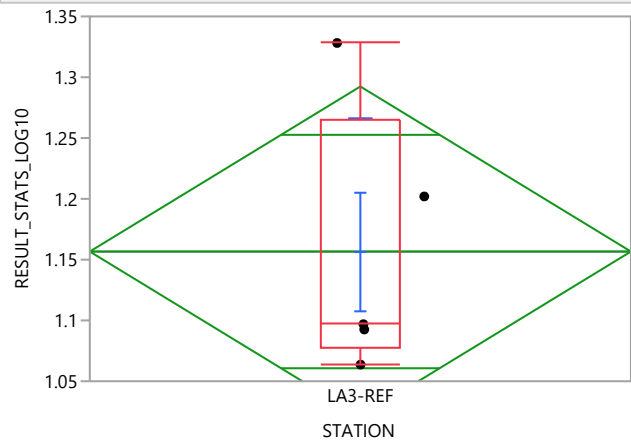
Warning: Small sample sizes. Use Caution.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB189**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha										
1.95996		0.05										
Level	- Level	Score Mean		Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL				
		Difference	Std Err Dif									
MCN5-COMP	MCN2-COMP-T	2.00000	1.914854	1.04447	0.2963	0.074009	-0.160429	0.3116670				
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100837	-0.297485	0.3869420				
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.114361	-0.150153	0.3936720				
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054359	-0.167491	0.2668170				
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.049421	-0.251610	0.3287320				
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067239	-0.236431	0.3735820				
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054359	-0.208884	0.2668170				
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.049421	-0.221647	0.3287320				
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.026491	-0.214788	0.2667000				
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.019296	-0.248062	0.3080930				
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007825	-0.263243	0.2332780				
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.004938	-0.239376	0.2743730				
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.033515	-0.228908	0.2856350				
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.058210	-0.322811	0.3091160				
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063669	-0.328183	0.1706980				
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.020090	-0.279728	0.2155480				
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040274	-0.307632	0.3284120				
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053685	-0.286790	0.1706980				
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.084667	-0.292848	0.2319500				
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.129634	-0.325027	0.1708130				
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096119	-0.331757	0.1163390				

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB194**

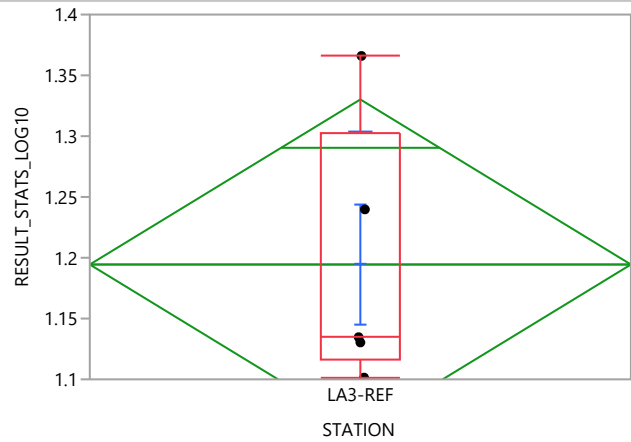


**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	1.06367	1.06367	1.07811	1.09691	1.265075	1.32818	1.32818



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB195**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	1.10146	1.10146	1.115895	1.1347	1.302865	1.36597	1.36597

**Oneway Anova**

**Summary of Fit**

Rsquare	0
Adj Rsquare	0
Root Mean Square Error	0.109317
Mean of Response	1.194444
Observations (or Sum Wgts)	5

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	0	0.00000000			
Error	4	0.04780068	0.011950		
C. Total	4	0.04780068			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
LA3-REF	5	1.19444	0.04889	1.0587	1.3302

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
LA3-REF	5	1.19444	0.109317	0.04889	1.0587	1.3302

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB195**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected Score	Score Mean	(Mean-Mean0)/Std0
LA3-REF	5	15.000	15.000	3.00000	

**1-Way Test, ChiSquare Approximation**

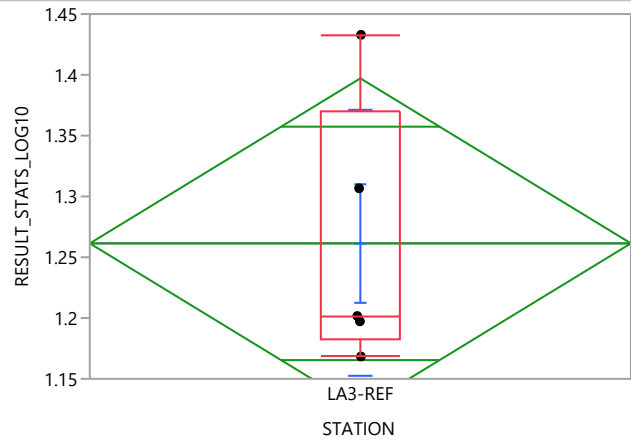
ChiSquare	DF	Prob>ChiSq
0.0000	0	

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB200**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	1.1684	1.1684	1.18284	1.20165	1.369815	1.43292	1.43292

**Oneway Anova**

**Summary of Fit**

Rsquare	0
Adj Rsquare	0
Root Mean Square Error	0.109319
Mean of Response	1.261392
Observations (or Sum Wgts)	5

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB200**

**Oneway Anova**

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	0	0.00000000			
Error	4	0.04780254	0.011951		
C. Total	4	0.04780254			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
LA3-REF	5	1.26139	0.04889	1.1257	1.3971

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err	Lower 95%	Upper 95%
LA3-REF	5	1.26139	0.109319	0.04889	1.1257	1.3971

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected Score	Score Mean	(Mean-Mean0)/Std0
LA3-REF	5	15.000	15.000	3.00000	

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
0.0000	0	

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

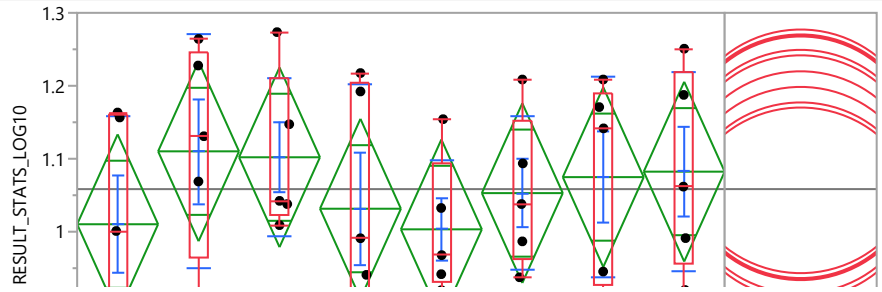
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*	Alpha
1.95996	0.05

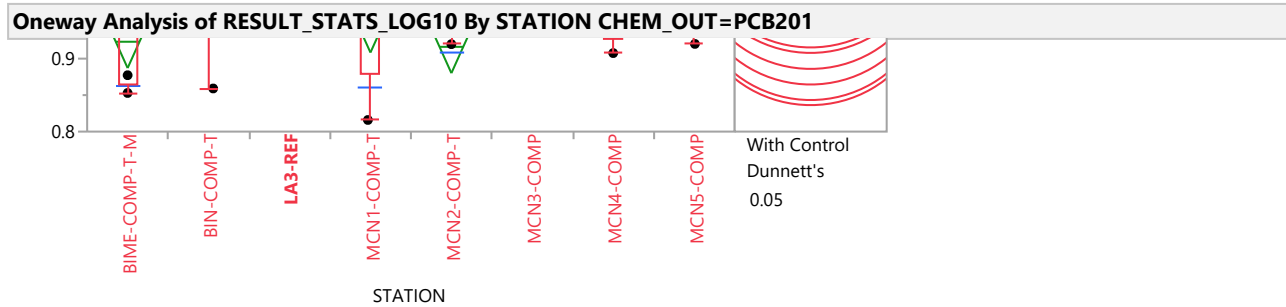
  

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB201**







Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	0.852923	0.852923	0.865103	1.00099	1.15999	1.16339	1.16339
BIN-COMP-T	0.859109	0.859109	0.96397	1.13089	1.246015	1.26423	1.26423
LA3-REF	1.00905	1.00905	1.023485	1.04229	1.210455	1.27356	1.27356
MCN1-COMP-T	0.81594	0.81594	0.87841	0.991045	1.20485	1.21748	1.21748
MCN2-COMP-T	0.919825	0.919825	0.930815	0.967886	1.093395	1.15426	1.15426
MCN3-COMP	0.937554	0.937554	0.962163	1.03792	1.151145	1.20862	1.20862
MCN4-COMP	0.90759	0.90759	0.926485	1.14167	1.189725	1.20862	1.20862
MCN5-COMP	0.920163	0.920163	0.955695	1.06181	1.21919	1.25086	1.25086

**Oneway Anova**

**Summary of Fit**

Rsquare	0.089782
Adj Rsquare	-0.10933
Root Mean Square Error	0.135199
Mean of Response	1.058407
Observations (or Sum Wgts)	40

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	7	0.05769491	0.008242	0.4509	0.8621
Error	32	0.58491796	0.018279		
C. Total	39	0.64261287			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.01024	0.06046	0.88708	1.1334
BIN-COMP-T	5	1.11017	0.06046	0.98701	1.2333
LA3-REF	5	1.10203	0.06046	0.97888	1.2252
MCN1-COMP-T	5	1.03151	0.06046	0.90835	1.1547
MCN2-COMP-T	5	1.00326	0.06046	0.88010	1.1264
MCN3-COMP	5	1.05291	0.06046	0.92975	1.1761
MCN4-COMP	5	1.07482	0.06046	0.95166	1.1980
MCN5-COMP	5	1.08232	0.06046	0.95916	1.2055

Std Error uses a pooled estimate of error variance

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB201**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.01024	0.147805	0.06610	0.82671	1.1938
BIN-COMP-T	5	1.11017	0.160266	0.07167	0.91117	1.3092
LA3-REF	5	1.10203	0.109317	0.04889	0.96630	1.2378
MCN1-COMP-T	5	1.03151	0.170832	0.07640	0.81940	1.2436
MCN2-COMP-T	5	1.00326	0.094402	0.04222	0.88605	1.1205
MCN3-COMP	5	1.05291	0.104658	0.04680	0.92296	1.1829
MCN4-COMP	5	1.07482	0.138121	0.06177	0.90332	1.2463
MCN5-COMP	5	1.08232	0.136461	0.06103	0.91288	1.2518

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.76173	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.23	1.0000
LA3-REF	-0.24	1.0000
MCN5-COMP	-0.22	1.0000
MCN4-COMP	-0.21	0.9997
MCN3-COMP	-0.19	0.9897
MCN1-COMP-T	-0.17	0.9348
BIME-COMP-T-M	-0.14	0.8115
MCN2-COMP-T	-0.14	0.7591

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	81.000	102.500	16.2000	-0.859
BIN-COMP-T	5	127.000	102.500	25.4000	0.982
LA3-REF	5	124.500	102.500	24.9000	0.879
MCN1-COMP-T	5	93.000	102.500	18.6000	-0.368
MCN2-COMP-T	5	74.000	102.500	14.8000	-1.145
MCN3-COMP	5	99.000	102.500	19.8000	-0.123
MCN4-COMP	5	107.500	102.500	21.5000	0.184
MCN5-COMP	5	114.000	102.500	22.8000	0.450

**1-Way Test, ChiSquare Approximation**

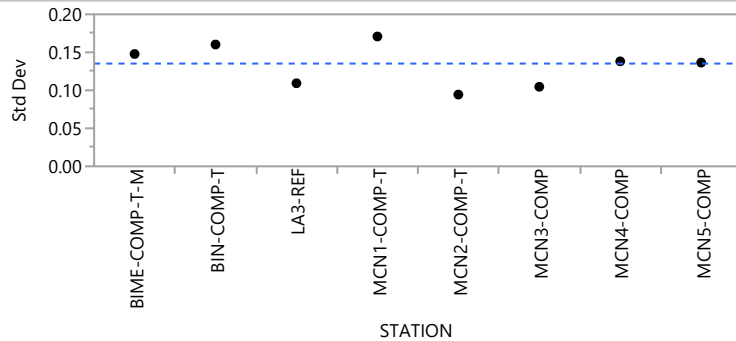
ChiSquare	DF	Prob>ChiSq
3.8327	7	0.7988

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB201**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478048	0.1198038	0.1179548
BIN-COMP-T	5	0.1602664	0.1169618	0.1128182
LA3-REF	5	0.1093168	0.0867368	0.0747880
MCN1-COMP-T	5	0.1708321	0.1386698	0.1305762
MCN2-COMP-T	5	0.0944023	0.0721070	0.0650320
MCN3-COMP	5	0.1046577	0.0785902	0.0755928
MCN4-COMP	5	0.1381214	0.1186666	0.1052962
MCN5-COMP	5	0.1364610	0.1094994	0.1053982

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.6051	7	32	0.7472
Brown-Forsythe	0.3755	7	32	0.9098
Levene	0.7048	7	32	0.6679
Bartlett	0.3175	7	.	0.9465

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

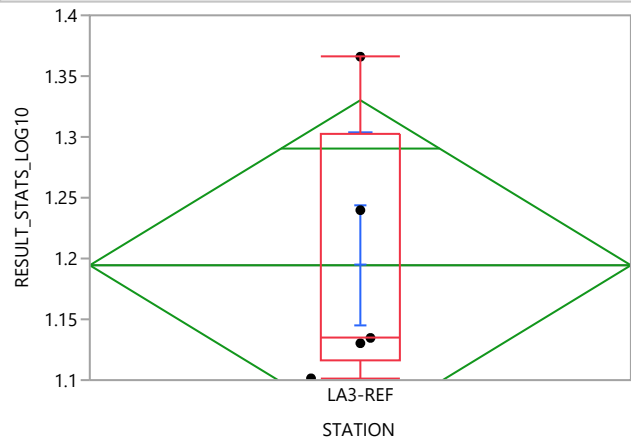
q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN5-COMP	MCN2-COMP-T	2.00000	1.914854	1.04447	0.2963	0.071401	-0.163034	0.3090550
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297481	0.3869470
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.116970	-0.147540	0.3962770
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054360	-0.167488	0.2668150
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.052030	-0.249000	0.3313370
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.067240	-0.236427	0.3735770
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054360	-0.208881	0.2668150
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.052030	-0.219036	0.3313370

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB201**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean		Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
		Difference	Std Err Dif						
MCN5-COMP	MCN1-COMP-T	0.80000	1.914854	0.41779	0.6761	0.050347	-0.272057	0.3715800	
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.035630	-0.340650	0.3401970	
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.023890	-0.217394	0.2640880	
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.016690	-0.250667	0.3054810	
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007825	-0.263241	0.2332760	
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.002330	-0.236765	0.2769770	
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.016400	-0.254666	0.2777300	
MCN4-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.004500	-0.284630	0.3548900	
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.030910	-0.226310	0.2882410	
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.023159	-0.275675	0.2165900	
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.055610	-0.320210	0.3117210	
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063671	-0.328181	0.1707000	
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.022700	-0.282334	0.2129400	
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.040280	-0.307637	0.3284110	
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053680	-0.286788	0.1707000	
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.072010	-0.411860	0.3331110	
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-0.068171	-0.332681	0.1831700	
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.082058	-0.290246	0.2345610	
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.127025	-0.322425	0.1734210	
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096115	-0.331755	0.1163400	

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB203**

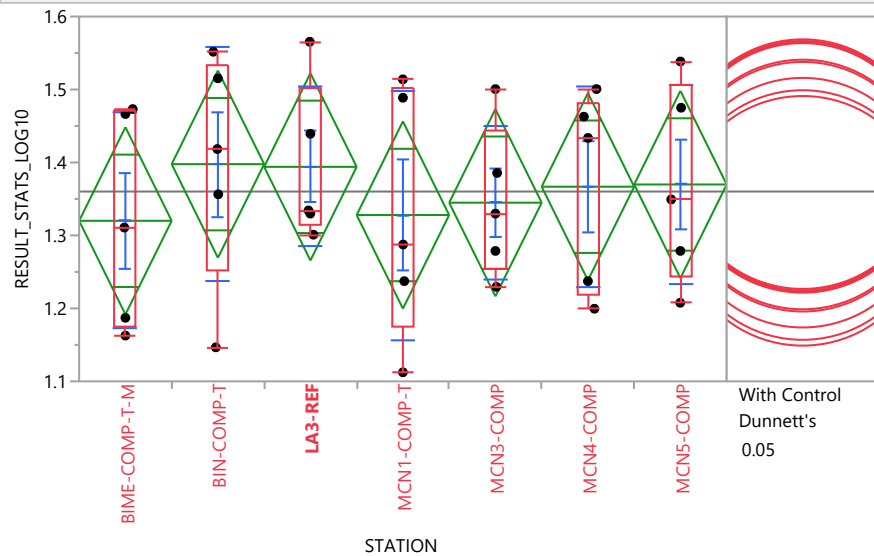


**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	1.10146	1.10146	1.115895	1.1347	1.302865	1.36597	1.36597



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB206**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.16273	1.16273	1.17491	1.31079	1.469795	1.47319	1.47319
BIN-COMP-T	1.14664	1.14664	1.2515	1.41842	1.53354	1.55175	1.55175
LA3-REF	1.30103	1.30103	1.31547	1.33427	1.502435	1.56554	1.56554
MCN1-COMP-T	1.11242	1.11242	1.17489	1.28753	1.501335	1.51397	1.51397
MCN3-COMP	1.22954	1.22954	1.254145	1.32991	1.443125	1.5006	1.5006
MCN4-COMP	1.19957	1.19957	1.218465	1.43366	1.481705	1.5006	1.5006
MCN5-COMP	1.20769	1.20769	1.24322	1.34933	1.50672	1.53839	1.53839

**Oneway Anova**

**Summary of Fit**

Rsquare	0.048262
Adj Rsquare	-0.15568
Root Mean Square Error	0.14006
Mean of Response	1.360183
Observations (or Sum Wgts)	35

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	6	0.02785309	0.004642	0.2366	0.9607
Error	28	0.54927006	0.019617		
C. Total	34	0.57712314			

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB206**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.32004	0.06264	1.1917	1.4483
BIN-COMP-T	5	1.39770	0.06264	1.2694	1.5260
LA3-REF	5	1.39402	0.06264	1.2657	1.5223
MCN1-COMP-T	5	1.32800	0.06264	1.1997	1.4563
MCN3-COMP	5	1.34489	0.06264	1.2166	1.4732
MCN4-COMP	5	1.36680	0.06264	1.2385	1.4951
MCN5-COMP	5	1.36984	0.06264	1.2415	1.4981

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.32004	0.147804	0.06610	1.1365	1.5036
BIN-COMP-T	5	1.39770	0.160264	0.07167	1.1987	1.5967
LA3-REF	5	1.39402	0.109315	0.04889	1.2583	1.5297
MCN1-COMP-T	5	1.32800	0.170834	0.07640	1.1159	1.5401
MCN3-COMP	5	1.34489	0.104656	0.04680	1.2149	1.4748
MCN4-COMP	5	1.36680	0.138122	0.06177	1.1953	1.5383
MCN5-COMP	5	1.36984	0.136463	0.06103	1.2004	1.5393

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.73128	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-0.24	1.0000
LA3-REF	-0.24	1.0000
MCN5-COMP	-0.22	0.9997
MCN4-COMP	-0.21	0.9993
MCN3-COMP	-0.19	0.9846
MCN1-COMP-T	-0.18	0.9406
BIME-COMP-T-M	-0.17	0.9057

Positive values show pairs of means that are significantly different.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB206**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

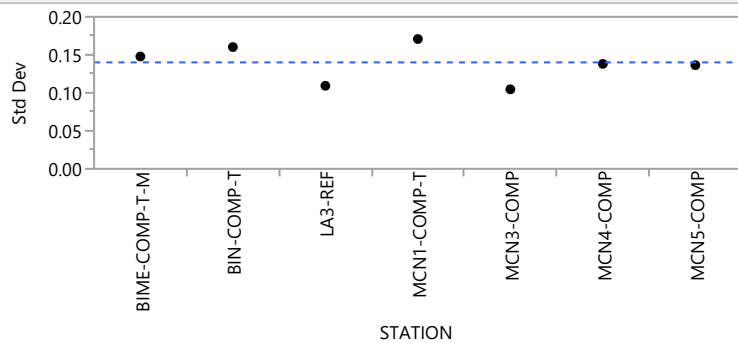
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	72.000	90.000	14.4000	-0.825
BIN-COMP-T	5	108.000	90.000	21.6000	0.825
LA3-REF	5	103.500	90.000	20.7000	0.613
MCN1-COMP-T	5	80.500	90.000	16.1000	-0.424
MCN3-COMP	5	82.500	90.000	16.5000	-0.330
MCN4-COMP	5	89.000	90.000	17.8000	-0.024
MCN5-COMP	5	94.500	90.000	18.9000	0.189

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
1.9020	6	0.9285

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	0.1478038	0.1198040	0.1179540
BIN-COMP-T	5	0.1602636	0.1169600	0.1128160
LA3-REF	5	0.1093154	0.0867352	0.0747860
MCN1-COMP-T	5	0.1708343	0.1386712	0.1305780
MCN3-COMP	5	0.1046560	0.0785880	0.0755920
MCN4-COMP	5	0.1381224	0.1186680	0.1052960
MCN5-COMP	5	0.1364633	0.1095024	0.1054000

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.4737	6	28	0.8220
Brown-Forsythe	0.2831	6	28	0.9401
Levene	0.5255	6	28	0.7840
Bartlett	0.2337	6	.	0.9657

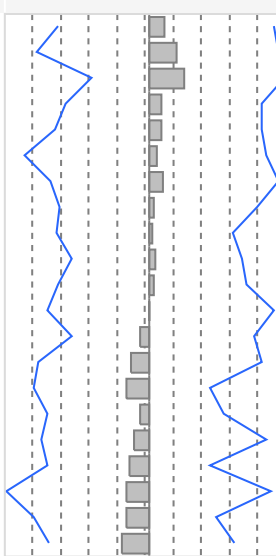
Warning: Small sample sizes. Use Caution.



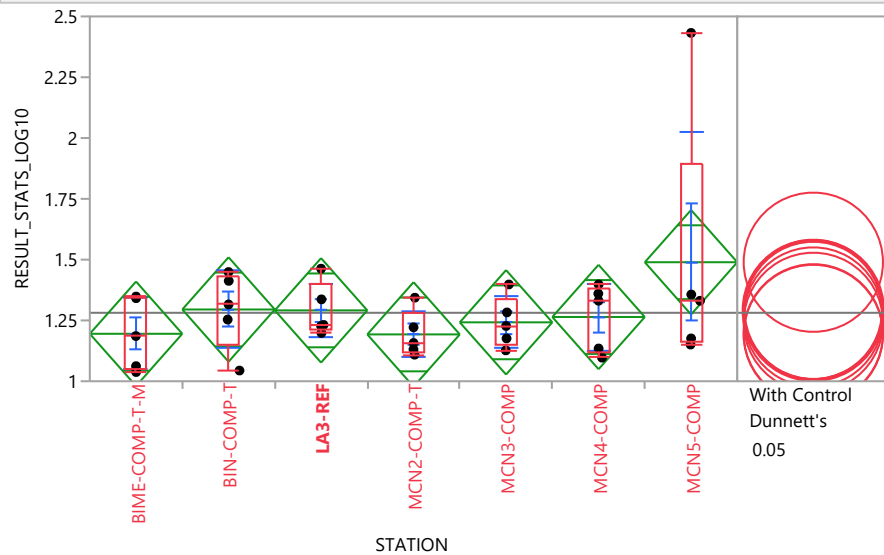
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB206**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha								
1.95996		0.05								
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL		
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.835573	0.4034	0.044960	-0.258710	0.3513000		
BIN-COMP-T	BIME-COMP-T-M	1.20000	1.914854	0.626680	0.5309	0.078560	-0.319760	0.3646600		
LA3-REF	BIME-COMP-T-M	1.20000	1.914854	0.626680	0.5309	0.099140	-0.165370	0.3784500		
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.417786	0.6761	0.034200	-0.236860	0.3135100		
MCN4-COMP	BIME-COMP-T-M	0.80000	1.914854	0.417786	0.6761	0.034200	-0.266830	0.3135100		
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.208893	0.8345	0.022300	-0.353980	0.3268800		
MCN5-COMP	MCN1-COMP-T	0.40000	1.914854	0.208893	0.8345	0.041390	-0.281010	0.3626300		
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.208893	0.8345	0.012240	-0.255120	0.3010300		
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.104765	0.9166	0.007820	-0.263240	0.2332700		
MCN5-COMP	MCN3-COMP	0.20000	1.909043	0.104765	0.9166	0.019420	-0.221850	0.2596400		
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.000000	1.0000	0.011900	-0.259160	0.2732300		
MCN4-COMP	MCN1-COMP-T	0.00000	1.909043	0.000000	1.0000	0.000000	-0.289130	0.3503900		
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.208893	0.8345	-0.026450	-0.221840	0.2926900		
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.208893	0.8345	-0.051150	-0.315760	0.3161700		
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.208893	0.8345	-0.063670	-0.328180	0.1706900		
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.208893	0.8345	-0.027150	-0.286790	0.2084800		
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.417786	0.6761	-0.040280	-0.307640	0.3284100		
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.733352	0.4633	-0.053680	-0.286790	0.1706900		
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.835573	0.4034	-0.063050	-0.402910	0.3420600		
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.835573	0.4034	-0.063670	-0.328180	0.1876700		
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.835573	0.4034	-0.077610	-0.285790	0.2390100		



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB209**



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB209**

Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	1.03779	1.03779	1.04997	1.18585	1.344855	1.34825	1.34825
BIN-COMP-T	1.04397	1.04397	1.148835	1.31575	1.430875	1.44909	1.44909
LA3-REF	1.19837	1.19837	1.212805	1.23161	1.399775	1.46288	1.46288
MCN2-COMP-T	1.10914	1.10914	1.12013	1.15721	1.282715	1.34358	1.34358
MCN3-COMP	1.12687	1.12687	1.15148	1.22724	1.340465	1.39794	1.39794
MCN4-COMP	1.09691	1.09691	1.115805	1.33099	1.379045	1.39794	1.39794
MCN5-COMP	1.15079	1.15079	1.16344	1.33099	1.89443	2.43231	2.43231

**Oneway Anova**

**Summary of Fit**

Rsquare	0.164771
Adj Rsquare	-0.01421
Root Mean Square Error	0.234394
Mean of Response	1.281397
Observations (or Sum Wgts)	35

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	6	0.3034788	0.050580	0.9206	0.4951
Error	28	1.5383388	0.054941		
C. Total	34	1.8418176			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.19510	0.10482	0.9804	1.4098
BIN-COMP-T	5	1.29503	0.10482	1.0803	1.5098
LA3-REF	5	1.29135	0.10482	1.0766	1.5061
MCN2-COMP-T	5	1.19258	0.10482	0.9779	1.4073
MCN3-COMP	5	1.24223	0.10482	1.0275	1.4569
MCN4-COMP	5	1.26414	0.10482	1.0494	1.4789
MCN5-COMP	5	1.48935	0.10482	1.2746	1.7041

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	1.19510	0.147804	0.06610	1.0116	1.3786
BIN-COMP-T	5	1.29503	0.160265	0.07167	1.0960	1.4940
LA3-REF	5	1.29135	0.109317	0.04889	1.1556	1.4271
MCN2-COMP-T	5	1.19258	0.094404	0.04222	1.0754	1.3098
MCN3-COMP	5	1.24223	0.104659	0.04680	1.1123	1.3722
MCN4-COMP	5	1.26414	0.138121	0.06177	1.0926	1.4356
MCN5-COMP	5	1.48935	0.534940	0.23923	0.8251	2.1536

**Means Comparisons**

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB209**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.73128	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
MCN5-COMP	-0.21	0.5936
BIN-COMP-T	-0.4	1.0000
LA3-REF	-0.4	1.0000
MCN4-COMP	-0.38	1.0000
MCN3-COMP	-0.36	0.9990
BIME-COMP-T-M	-0.31	0.9676
MCN2-COMP-T	-0.31	0.9636

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	69.000	90.000	13.8000	-0.967
BIN-COMP-T	5	107.000	90.000	21.4000	0.778
LA3-REF	5	106.500	90.000	21.3000	0.754
MCN2-COMP-T	5	63.000	90.000	12.6000	-1.250
MCN3-COMP	5	84.500	90.000	16.9000	-0.236
MCN4-COMP	5	94.000	90.000	18.8000	0.165
MCN5-COMP	5	106.000	90.000	21.2000	0.731

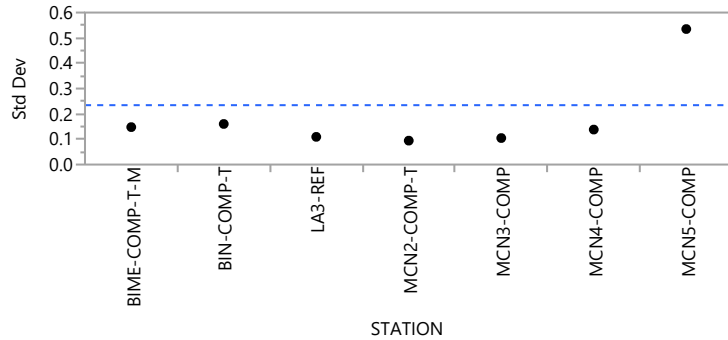
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
3.8755	6	0.6935

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB209**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.1478038	0.1198040	0.1179540
BIN-COMP-T	5	0.1602653	0.1169592	0.1128160
LA3-REF	5	0.1093168	0.0867368	0.0747880
MCN2-COMP-T	5	0.0944038	0.0721080	0.0650340
MCN3-COMP	5	0.1046591	0.0785912	0.0755940
MCN4-COMP	5	0.1381212	0.1186664	0.1052960
MCN5-COMP	5	0.5349397	0.3771856	0.2923960

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.2333	6	28	0.3194
Brown-Forsythe	0.8470	6	28	0.5449
Levene	3.0782	6	28	0.0193*
Bartlett	3.6808	6	.	0.0012*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

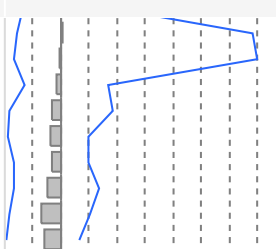
q\* 1.95996  
Alpha 0.05

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN5-COMP	MCN2-COMP-T	2.40000	1.914854	1.25336	0.2101	0.109140	-0.167490	1.301190
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.100840	-0.297490	0.386940
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.121420	-0.143090	0.400730
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.054360	-0.167490	0.266820
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.056480	-0.244550	0.335790
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.113940	-0.190670	1.370160
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	0.054360	-0.208880	0.266820
MCN5-COMP	MCN3-COMP	1.00000	1.909043	0.52382	0.6004	0.049220	-0.221850	1.256220
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.056480	-0.214590	0.335790
MCN5-COMP	MCN4-COMP	0.60000	1.909043	0.31429	0.7533	0.025560	-0.221850	1.297610
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.007830	-0.263240	0.233280
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.002120	-0.232320	0.281430

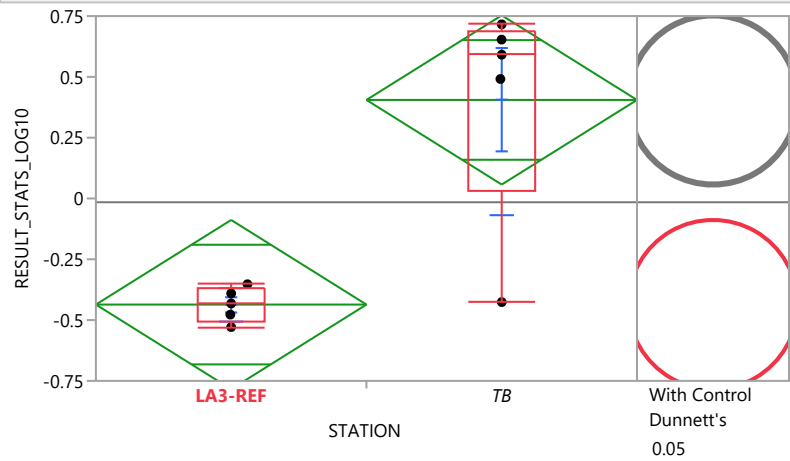
**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=PCB209**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN5-COMP	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	0.015240	-0.273000	1.178610
MCN5-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	-0.005680	-0.286790	1.205070
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.026460	-0.221850	0.292700
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.051150	-0.315750	0.316180
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.063670	-0.328180	0.170700
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.053680	-0.286790	0.170700
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-0.077610	-0.285790	0.239020
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.122580	-0.317970	0.177880
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-0.096120	-0.331760	0.116340



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total Butyltins (ND = 0)**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	-0.52871	-0.52871	-0.50313	-0.4318	-0.37151	-0.35262	-0.35262
TB	-0.42597	-0.42597	0.032697	0.591065	0.684608	0.716003	0.716003

**Oneway Anova**

**Summary of Fit**

Rsquare	0.660336
Adj Rsquare	0.617878
Root Mean Square Error	0.337322
Mean of Response	-0.01554
Observations (or Sum Wgts)	10

**t Test**

TB-LA3-REF

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total Butyltins (ND = 0)**

**Oneway Anova**

**t Test**

Assuming equal variances

Difference	0.84135	t Ratio	3.943687	
Std Err Dif	0.21334	DF	8	
Upper CL Dif	1.33332	Prob >  t	0.0043*	
Lower CL Dif	0.34939	Prob > t	0.0021*	
Confidence	0.95	Prob < t	0.9979	

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	1	1.7696813	1.76968	15.5527	0.0043*
Error	8	0.9102907	0.11379		
C. Total	9	2.6799720			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
LA3-REF	5	-0.43622	0.15086	-0.7841	-0.0883
TB	5	0.40513	0.15086	0.0573	0.7530

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
LA3-REF	5	-0.43622	0.069589	0.03112	-0.5226	-0.3498
TB	5	0.40513	0.471943	0.21106	-0.1809	0.9911

**t Test**

TB-LA3-REF

Assuming unequal variances

Difference	0.84135	t Ratio	3.943687	
Std Err Dif	0.21334	DF	4.173856	
Upper CL Dif	1.42408	Prob >  t	0.0156*	
Lower CL Dif	0.25863	Prob > t	0.0078*	
Confidence	0.95	Prob < t	0.9922	

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.30600	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total Butyltins (ND = 0)**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.349	0.0043*
LA3-REF	-0.49	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
LA3-REF	5	17.000	27.500	3.40000	-2.089
TB	5	38.000	27.500	7.60000	2.089

**2-Sample Test, Normal Approximation**

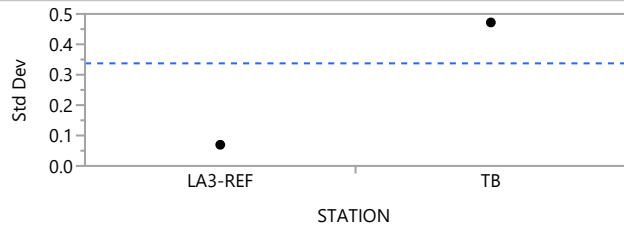
S	Z	Prob> Z
38	2.08893	0.0367*

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
4.8109	1	0.0283*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
LA3-REF	5	0.0695892	0.0535320	0.0526482
TB	5	0.4719428	0.3324414	0.2607644

Test	F Ratio	DFNum	DFDen	p-Value
O'Brien[.5]	1.3415	1	8	0.2802
Brown-Forsythe	1.1876	1	8	0.3075
Levene	4.5309	1	8	0.0659
Bartlett	8.8363	1	.	0.0030*
F Test 2-sided	45.9933	4	4	0.0027*

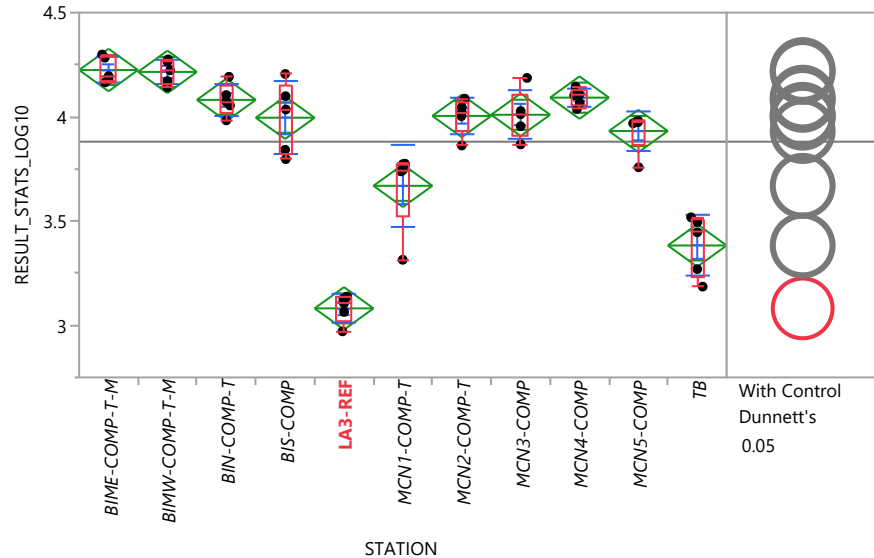
Warning: Small sample sizes. Use Caution.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total Butyltins (ND = 0)**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha							
1.95996		0.05							
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
TB	LA3-REF	4.000000	1.914854	2.088932	0.0367*	1.020070	-0.035563	1.193559	

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total DDTs (ND = 0)**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	4.16556	4.16556	4.1724	4.19569	4.291415	4.29891	4.29891
BIMW-COMP-T-M	4.14249	4.14249	4.157305	4.22309	4.27027	4.27572	4.27572
BIN-COMP-T	3.98321	3.98321	4.018925	4.07252	4.14858	4.19239	4.19239
BIS-COMP	3.79729	3.79729	3.81978	4.03528	4.152585	4.20581	4.20581
LA3-REF	2.97104	2.97104	3.01758	3.10506	3.133045	3.1383	3.1383
MCN1-COMP-T	3.31439	3.31439	3.526475	3.74489	3.774235	3.77563	3.77563
MCN2-COMP-T	3.86262	3.86262	3.933085	4.02233	4.067005	4.08738	4.08738
MCN3-COMP	3.868	3.868	3.911525	4.01284	4.107305	4.18682	4.18682
MCN4-COMP	4.03761	4.03761	4.052125	4.10393	4.12658	4.14527	4.14527
MCN5-COMP	3.75795	3.75795	3.86349	3.97479	3.97916	3.98099	3.98099
TB	3.18564	3.18564	3.22763	3.44645	3.506785	3.51816	3.51816



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total DDTs (ND = 0)**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.919913
Adj Rsquare	0.901711
Root Mean Square Error	0.11319
Mean of Response	3.880935
Observations (or Sum Wgts)	55

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	10	6.4752047	0.647520	50.5403	<.0001*
Error	44	0.5637266	0.012812		
C. Total	54	7.0389313			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	4.22466	0.05062	4.1226	4.3267
BIMW-COMP-T-M	5	4.21565	0.05062	4.1136	4.3177
BIN-COMP-T	5	4.08151	0.05062	3.9795	4.1835
BIS-COMP	5	3.99600	0.05062	3.8940	4.0980
LA3-REF	5	3.08126	0.05062	2.9792	3.1833
MCN1-COMP-T	5	3.66926	0.05062	3.5672	3.7713
MCN2-COMP-T	5	4.00450	0.05062	3.9025	4.1065
MCN3-COMP	5	4.01010	0.05062	3.9081	4.1121
MCN4-COMP	5	4.09227	0.05062	3.9902	4.1943
MCN5-COMP	5	3.93202	0.05062	3.8300	4.0340
TB	5	3.38306	0.05062	3.2810	3.4851

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	4.22466	0.062088	0.02777	4.1476	4.3018
BIMW-COMP-T-M	5	4.21565	0.057725	0.02582	4.1440	4.2873
BIN-COMP-T	5	4.08151	0.076324	0.03413	3.9867	4.1763
BIS-COMP	5	3.99600	0.172746	0.07725	3.7815	4.2105
LA3-REF	5	3.08126	0.067874	0.03035	2.9970	3.1655
MCN1-COMP-T	5	3.66926	0.199059	0.08902	3.4221	3.9164
MCN2-COMP-T	5	4.00450	0.085283	0.03814	3.8986	4.1104
MCN3-COMP	5	4.01010	0.117018	0.05233	3.8648	4.1554
MCN4-COMP	5	4.09227	0.041333	0.01848	4.0409	4.1436
MCN5-COMP	5	3.93202	0.097404	0.04356	3.8111	4.0530
TB	5	3.38306	0.147255	0.06585	3.2002	3.5659

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total DDTs (ND = 0)**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**Confidence Quantile**

d	Alpha
2.83292	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIME-COMP-T-M	0.941	<.0001*
BIMW-COMP-T-M	0.932	<.0001*
MCN4-COMP	0.808	<.0001*
BIN-COMP-T	0.797	<.0001*
MCN3-COMP	0.726	<.0001*
MCN2-COMP-T	0.72	<.0001*
BIS-COMP	0.712	<.0001*
MCN5-COMP	0.648	<.0001*
MCN1-COMP-T	0.385	<.0001*
TB	0.099	0.0011*
LA3-REF	-0.2	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	248.000	140.000	49.6000	3.147
BIMW-COMP-T-M	5	243.000	140.000	48.6000	3.001
BIN-COMP-T	5	184.000	140.000	36.8000	1.274
BIS-COMP	5	154.000	140.000	30.8000	0.395
LA3-REF	5	15.000	140.000	3.0000	-3.645
MCN1-COMP-T	5	64.000	140.000	12.8000	-2.210
MCN2-COMP-T	5	145.000	140.000	29.0000	0.132
MCN3-COMP	5	146.000	140.000	29.2000	0.161
MCN4-COMP	5	190.000	140.000	38.0000	1.449
MCN5-COMP	5	108.000	140.000	21.6000	-0.922
TB	5	43.000	140.000	8.6000	-2.825

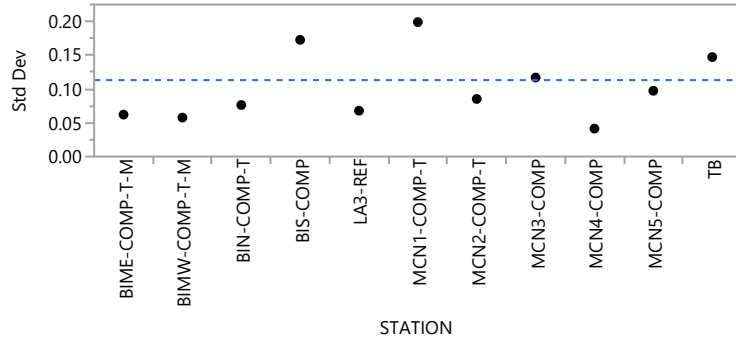
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
45.8182	10	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total DDTs (ND = 0)**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0620884	0.0534008	0.0476060
BIMW-COMP-T-M	5	0.0577250	0.0466744	0.0451860
BIN-COMP-T	5	0.0763235	0.0536592	0.0518620
BIS-COMP	5	0.1727462	0.1409776	0.1331220
LA3-REF	5	0.0678735	0.0509456	0.0461860
MCN1-COMP-T	5	0.1990593	0.1419488	0.0991040
MCN2-COMP-T	5	0.0852830	0.0571336	0.0535680
MCN3-COMP	5	0.1170185	0.0788600	0.0783120
MCN4-COMP	5	0.0413327	0.0321144	0.0297820
MCN5-COMP	5	0.0974044	0.0696272	0.0462680
TB	5	0.1472550	0.1243408	0.1116620

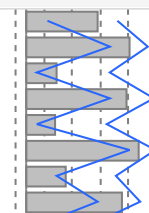
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.0522	10	44	0.4181
Brown-Forsythe	0.7279	10	44	0.6942
Levene	2.2032	10	44	0.0355*
Bartlett	1.7134	10	.	0.0715

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

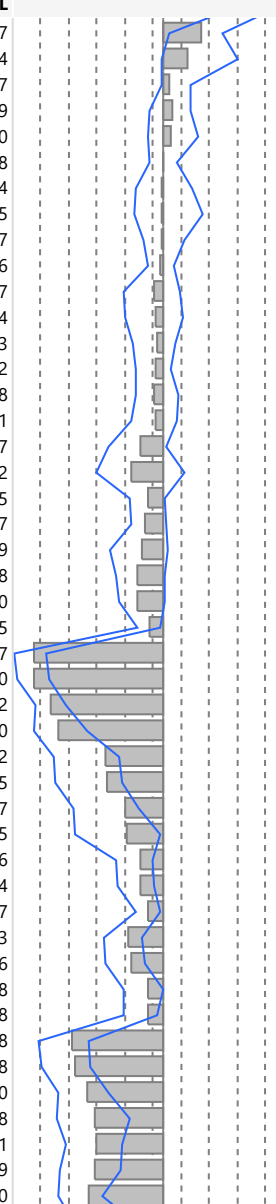
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.63983	0.18660	0.80180
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.91884	0.73483	1.07559
MCN2-COMP-T	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.27744	0.08978	0.73224
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.90000	0.74021	1.12270
MCN3-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.26795	0.09516	0.71340
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.00252	0.90982	1.13685
MCN4-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.35904	0.26477	0.79350
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.85320	0.63016	1.00629



**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total DDTs (ND = 0)**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.34139	0.05785	0.52437
MCN5-COMP	MCN1-COMP-T	4.00000	1.914854	2.08893	0.0367*	0.22414	-0.01489	0.66294
MCN4-COMP	MCN2-COMP-T	3.60000	1.914854	1.88004	0.0601	0.06309	-0.02074	0.24527
MCN4-COMP	MCN3-COMP	2.80000	1.914854	1.46225	0.1437	0.09109	-0.12018	0.23989
MCN4-COMP	BIS-COMP	2.00000	1.914854	1.04447	0.2963	0.06865	-0.13917	0.31060
MCN4-COMP	BIN-COMP-T	0.40000	1.914854	0.20889	0.8345	0.01200	-0.12575	0.12468
MCN2-COMP-T	BIS-COMP	0.00000	1.914854	0.00000	1.0000	-0.01198	-0.23674	0.24934
MCN3-COMP	BIS-COMP	0.00000	1.914854	0.00000	1.0000	-0.00749	-0.25076	0.34455
MCN3-COMP	MCN2-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.00949	-0.17863	0.18327
BIMW-COMP-T-M	BIME-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.01910	-0.14143	0.09926
BIS-COMP	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-0.06949	-0.35012	0.15117
MCN5-COMP	BIS-COMP	-1.60000	1.914854	-0.83557	0.4034	-0.06625	-0.34141	0.18004
MCN5-COMP	MCN3-COMP	-1.60000	1.914854	-0.83557	0.4034	-0.04680	-0.26984	0.10933
MCN2-COMP-T	BIN-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.05814	-0.24215	0.06342
MCN3-COMP	BIN-COMP-T	-2.40000	1.914854	-1.25336	0.2101	-0.07698	-0.23734	0.13218
MCN5-COMP	MCN2-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-0.06564	-0.28868	0.11471
BIS-COMP	BIME-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-0.19955	-0.48663	0.02657
TB	MCN1-COMP-T	-3.60000	1.914854	-1.88004	0.0601	-0.28022	-0.58720	0.18102
BIN-COMP-T	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.12460	-0.30071	0.01315
BIN-COMP-T	BIMW-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.15057	-0.28161	0.02027
BIS-COMP	BIMW-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.18781	-0.46753	0.03369
MCN3-COMP	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.22419	-0.41592	0.00758
MCN3-COMP	BIMW-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.21707	-0.39682	0.01470
MCN4-COMP	BIMW-COMP-T-M	-4.40000	1.914854	-2.29783	0.0216*	-0.11955	-0.22721	-0.02685
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.14562	-1.31288	-1.03777
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.13703	-1.29378	-1.01470
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.99052	-1.13373	-0.85542
LA3-REF	BIS-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.93022	-1.14169	-0.66950
MCN1-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.50829	-0.96953	-0.39272
MCN1-COMP-T	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.48919	-0.95043	-0.36965
MCN1-COMP-T	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.33193	-0.79038	-0.21037
MCN1-COMP-T	BIS-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.32373	-0.78497	-0.02445
MCN2-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.19654	-0.42130	-0.09186
MCN2-COMP-T	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.20076	-0.40220	-0.08474
MCN4-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.12905	-0.24631	-0.03397
MCN5-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.30293	-0.52597	-0.18823
MCN5-COMP	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.28383	-0.50687	-0.16516
MCN5-COMP	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.12378	-0.34682	-0.00588
MCN5-COMP	MCN4-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.13056	-0.34994	-0.06028
TB	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.80350	-1.09828	-0.66108
TB	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-0.78031	-1.07918	-0.64708
TB	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.67423	-0.92277	-0.48780
TB	BIS-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.60395	-0.93619	-0.30188
TB	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.59197	-0.86099	-0.36721
TB	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.59838	-0.91720	-0.37259
TB	MCN4-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.65748	-0.92225	-0.54220

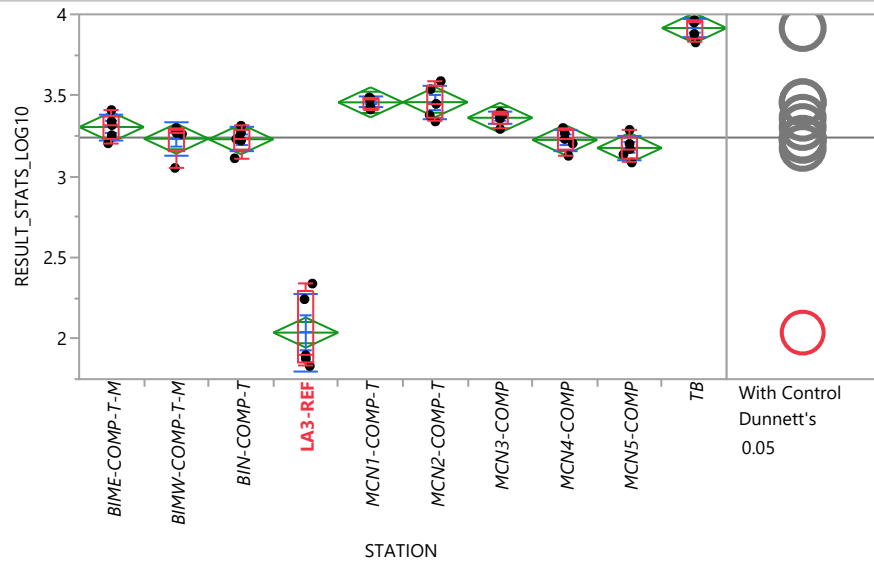


**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total DDTs (ND = 0)**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	MCN5-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.52258	-0.79169	-0.26254

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total PCB Congeners (ND = 0)**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	3.20454	3.20454	3.229245	3.31716	3.374905	3.40964	3.40964
BIMW-COMP-T-M	3.0528	3.0528	3.15774	3.26872	3.2908	3.29842	3.29842
BIN-COMP-T	3.1123	3.1123	3.166925	3.23133	3.291905	3.31308	3.31308
LA3-REF	1.83086	1.83086	1.85296	1.89734	2.291165	2.33929	2.33929
MCN1-COMP-T	3.41307	3.41307	3.421485	3.47505	3.48421	3.4874	3.4874
MCN2-COMP-T	3.33947	3.33947	3.3588	3.44804	3.563415	3.58827	3.58827
MCN3-COMP	3.2932	3.2932	3.32533	3.38063	3.38996	3.3962	3.3962
MCN4-COMP	3.12734	3.12734	3.165355	3.23161	3.283165	3.29916	3.29916
MCN5-COMP	3.08636	3.08636	3.11121	3.16991	3.24421	3.28741	3.28741
TB	3.82681	3.82681	3.852805	3.94969	3.961295	3.96455	3.96455

**Oneway Anova**

**Summary of Fit**

Rsquare	0.960035
Adj Rsquare	0.951042
Root Mean Square Error	0.102573
Mean of Response	3.240065
Observations (or Sum Wgts)	50

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total PCB Congeners (ND = 0)**

**Oneway Anova**

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	10.109479	1.12328	106.7630	<.0001*
Error	40	0.420848	0.01052		
C. Total	49	10.530327			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	3.30509	0.04587	3.2124	3.3978
BIMW-COMP-T-M	5	3.23316	0.04587	3.1404	3.3259
BIN-COMP-T	5	3.22980	0.04587	3.1371	3.3225
LA3-REF	5	2.03712	0.04587	1.9444	2.1298
MCN1-COMP-T	5	3.45729	0.04587	3.3646	3.5500
MCN2-COMP-T	5	3.45849	0.04587	3.3658	3.5512
MCN3-COMP	5	3.36224	0.04587	3.2695	3.4550
MCN4-COMP	5	3.22573	0.04587	3.1330	3.3184
MCN5-COMP	5	3.17615	0.04587	3.0834	3.2689
TB	5	3.91558	0.04587	3.8229	4.0083

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	3.30509	0.079108	0.03538	3.2069	3.4033
BIMW-COMP-T-M	5	3.23316	0.101768	0.04551	3.1068	3.3595
BIN-COMP-T	5	3.22980	0.074979	0.03353	3.1367	3.3229
LA3-REF	5	2.03712	0.235613	0.10537	1.7446	2.3297
MCN1-COMP-T	5	3.45729	0.033507	0.01498	3.4157	3.4989
MCN2-COMP-T	5	3.45849	0.104865	0.04690	3.3283	3.5887
MCN3-COMP	5	3.36224	0.041056	0.01836	3.3113	3.4132
MCN4-COMP	5	3.22573	0.065811	0.02943	3.1440	3.3074
MCN5-COMP	5	3.17615	0.075341	0.03369	3.0826	3.2697
TB	5	3.91558	0.060410	0.02702	3.8406	3.9906

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total PCB Congeners (ND = 0)**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	1.696	<.0001*
MCN2-COMP-T	1.239	<.0001*
MCN1-COMP-T	1.238	<.0001*
MCN3-COMP	1.143	<.0001*
BIME-COMP-T-M	1.086	<.0001*
BIMW-COMP-T-M	1.014	<.0001*
BIN-COMP-T	1.01	<.0001*
MCN4-COMP	1.006	<.0001*
MCN5-COMP	0.957	<.0001*
LA3-REF	-0.18	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	129.000	127.500	25.8000	0.032
BIMW-COMP-T-M	5	95.000	127.500	19.0000	-1.035
BIN-COMP-T	5	89.000	127.500	17.8000	-1.229
LA3-REF	5	15.000	127.500	3.0000	-3.622
MCN1-COMP-T	5	203.000	127.500	40.6000	2.425
MCN2-COMP-T	5	192.000	127.500	38.4000	2.070
MCN3-COMP	5	162.000	127.500	32.4000	1.099
MCN4-COMP	5	86.000	127.500	17.2000	-1.326
MCN5-COMP	5	64.000	127.500	12.8000	-2.037
TB	5	240.000	127.500	48.0000	3.622

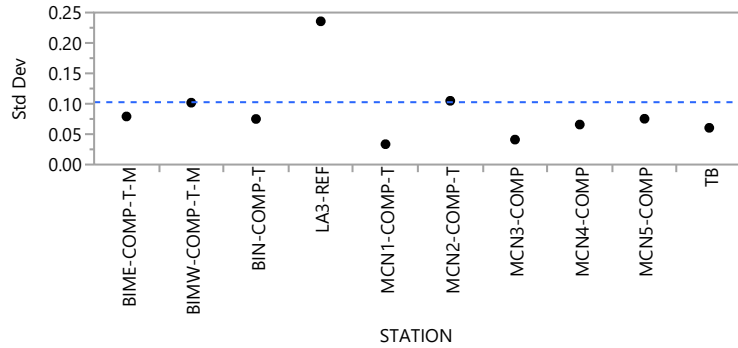
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
42.0315	9	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Total PCB Congeners (ND = 0)**

**Tests that the Variances are Equal**



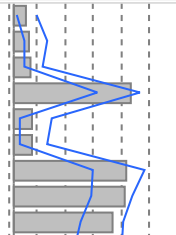
Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	0.0791085	0.0606776	0.0582640
BIMW-COMP-T-M	5	0.1017676	0.0721440	0.0532240
BIN-COMP-T	5	0.0749791	0.0502984	0.0499920
LA3-REF	5	0.2356135	0.2032376	0.1752820
MCN1-COMP-T	5	0.0335066	0.0286424	0.0250900
MCN2-COMP-T	5	0.1048651	0.0839368	0.0818460
MCN3-COMP	5	0.0410556	0.0295296	0.0258520
MCN4-COMP	5	0.0658110	0.0483000	0.0471240
MCN5-COMP	5	0.0753412	0.0544480	0.0532000
TB	5	0.0604096	0.0502184	0.0433960

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	5.3734	9	40	<.0001*
Brown-Forsythe	1.4134	9	40	0.2151
Levene	6.8184	9	40	<.0001*
Bartlett	2.4782	9	.	0.0080*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

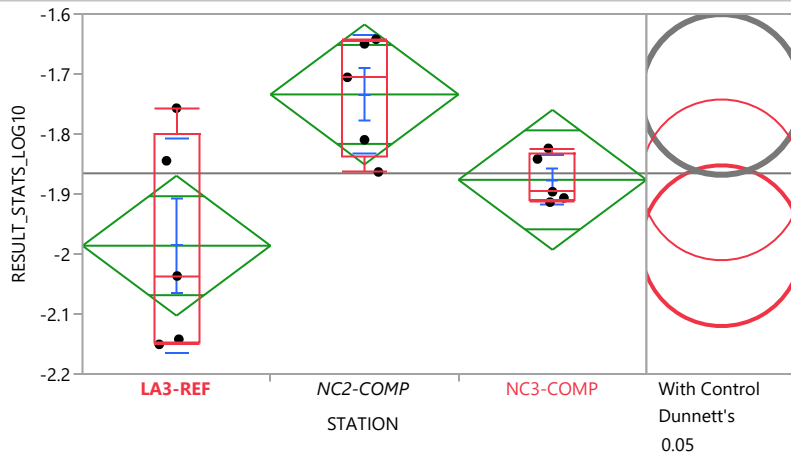
q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.15789	0.02026	0.27648
MCN1-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.19784	0.12989	0.42822
MCN1-COMP-T	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.21029	0.11682	0.36872
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.53801	1.09061	1.65016
MCN2-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.24014	0.05629	0.48576
MCN2-COMP-T	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.22649	0.06505	0.42626
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.48079	1.03884	1.71321
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.46012	1.01817	1.55286
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.29648	0.86408	1.43631





Oneway Analysis of RESULT_STATS_LOG10 By STATION CHEM_OUT=Total PCB Congeners (ND = 0)									
Nonparametric Comparisons For Each Pair Using Wilcoxon Method									
Level	- Level	Score Mean				Hodges-			
		Difference	Std Err Dif	Z	p-Value	Lehmann	Lower CL	Upper CL	
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.23872	0.79677	1.41235	
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.62227	0.46916	0.75350	
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	0.67486	0.54363	0.90524	
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.68731	0.55608	0.84574	
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1.98146	1.53951	2.12718	
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.47064	0.34579	0.54497	
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.44868	0.28825	0.61857	
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.56835	0.44309	0.66484	
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	0.69087	0.55964	0.83070	
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	0.74868	0.59139	0.87168	
MCN3-COMP	BIMW-COMP-T-M	4.40000	1.914854	2.29783	0.0216*	0.10054	0.01002	0.33092	
MCN3-COMP	BIN-COMP-T	4.40000	1.914854	2.29783	0.0216*	0.12613	0.02247	0.27142	
MCN2-COMP-T	BIME-COMP-T-M	3.60000	1.914854	1.88004	0.0601	0.13493	-0.03151	0.33432	
MCN3-COMP	BIME-COMP-T-M	2.00000	1.914854	1.04447	0.2963	0.05603	-0.05218	0.17918	
MCN2-COMP-T	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.02701	-0.14155	0.15837	
MCN4-COMP	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.00356	-0.14339	0.15487	
BIN-COMP-T	BIMW-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.02769	-0.17088	0.21793	
MCN4-COMP	BIMW-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-0.03107	-0.15584	0.21437	
BIMW-COMP-T-M	BIME-COMP-T-M	-1.60000	1.914854	-0.83557	0.4034	-0.05448	-0.28737	0.07864	
MCN5-COMP	BIMW-COMP-T-M	-1.60000	1.914854	-0.83557	0.4034	-0.09277	-0.19682	0.14821	
MCN3-COMP	MCN2-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.08493	-0.24536	0.04425	
MCN5-COMP	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-0.06142	-0.18437	0.08871	
MCN5-COMP	MCN4-COMP	-2.00000	1.914854	-1.04447	0.2963	-0.06170	-0.18081	0.08404	
BIN-COMP-T	BIME-COMP-T-M	-2.40000	1.914854	-1.25336	0.2101	-0.08583	-0.22787	0.06619	
MCN4-COMP	BIME-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-0.07720	-0.21283	0.06263	
MCN5-COMP	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-0.12223	-0.27358	0.03346	
MCN4-COMP	MCN3-COMP	-4.40000	1.914854	-2.29783	0.0216*	-0.12903	-0.25638	-0.02603	
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.35661	-1.53458	-0.91466	
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1.22194	-1.45232	-0.80976	
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1.28144	-1.43987	-0.86926	
MCN3-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.09442	-0.18782	-0.02935	
MCN4-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.22023	-0.35368	-0.13074	
MCN4-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.23940	-0.41122	-0.07230	
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.28639	-0.39466	-0.14249	
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-0.27813	-0.45221	-0.09072	
MCN5-COMP	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-0.19519	-0.29736	-0.07005	

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Mercury**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	-2.15058	-2.15058	-2.14632	-2.03668	-1.80081	-1.75696	-1.75696
NC2-COMP	-1.86328	-1.86328	-1.83648	-1.70553	-1.64591	-1.64207	-1.64207
NC3-COMP	-1.91364	-1.91364	-1.91011	-1.8962	-1.83278	-1.82391	-1.82391

**Oneway Anova**

**Summary of Fit**

Rsquare	0.481769
Adj Rsquare	0.395397
Root Mean Square Error	0.119686
Mean of Response	-1.86555
Observations (or Sum Wgts)	15

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	2	0.15980370	0.079902	5.5779	0.0194*
Error	12	0.17189803	0.014325		
C. Total	14	0.33170173			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
LA3-REF	5	-1.9862	0.05353	-2.103	-1.870
NC2-COMP	5	-1.7341	0.05353	-1.851	-1.617
NC3-COMP	5	-1.8764	0.05353	-1.993	-1.760

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
LA3-REF	5	-1.986188	0.1777962	0.0795129	-2.206951	-1.765425
NC2-COMP	5	-1.73406	0.0984873	0.0440449	-1.856348	-1.611772
NC3-COMP	5	-1.876394	0.0407834	0.0182389	-1.927033	-1.825755

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.50237	0.05

**Oneway Analysis of RESULT\_STATS\_LOG10 By STATION CHEM\_OUT=Mercury**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
NC2-COMP	0.063	0.0111*
NC3-COMP	-0.08	0.2863
LA3-REF	-0.19	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

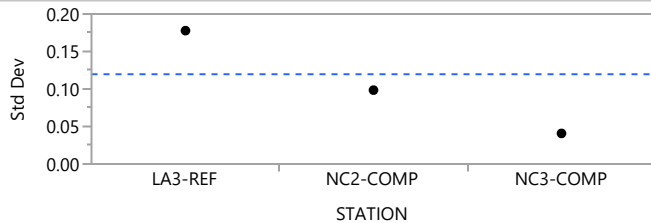
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
LA3-REF	5	26.000	40.000	5.2000	-1.653
NC2-COMP	5	60.000	40.000	12.0000	2.388
NC3-COMP	5	34.000	40.000	6.8000	-0.674

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
6.3200	2	0.0424*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	MeanAbsDif
			to Mean	to Median
LA3-REF	5	0.1777962	0.1483024	0.1382040
NC2-COMP	5	0.0984873	0.0819320	0.0762260
NC3-COMP	5	0.0407834	0.0348952	0.0309340

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	4.7469	2	12	0.0303*
Brown-Forsythe	2.8367	2	12	0.0980
Levene	8.7437	2	12	0.0045*
Bartlett	3.1528	2	.	0.0427*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*	Alpha
1.95996	0.05

Level	- Level	Score Mean	Std Err Dif	Z	p-Value	Hodges-	Lower CL	Upper CL	Difference Plot
		Difference				Lehmann			
NC2-COMP	LA3-REF	3.60000	1.914854	1.88004	0.0601	0.278780	-0.052710	0.5008300	
NC3-COMP	LA3-REF	1.60000	1.914854	0.83557	0.4034	0.140480	-0.149620	0.3181500	
NC3-COMP	NC2-COMP	-4.00000	1.914854	-2.08893	0.0367*	-0.174160	-0.264510	0.0216400	

**Distributions CHEM\_OUT=2,4'-DDD**

**RESULT\_STATS\_LOG10**

Normal(2.17941,0.3748)

**Quantiles**

100.0%	maximum	2.78791
99.5%		2.78791
97.5%		2.76927875
90.0%		2.673011
75.0%	quartile	2.4233625
50.0%	median	2.27253
25.0%	quartile	1.91587
10.0%		1.558871
2.5%		1.492612
0.5%		1.48467
0.0%	minimum	1.48467

**Summary Statistics**

Mean	2.1794074
Std Dev	0.3747976
Std Err Mean	0.0530044
Upper 95% Mean	2.2859237
Lower 95% Mean	2.0728911
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	2.1794074	2.0728911	2.2859237
Dispersion	$\sigma$	0.3747976	0.3130812	0.4670478

-2log(Likelihood) = 42.7569490458565

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.924953	0.0036*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=2,4'-DDE**

**RESULT\_STATS\_LOG10**

Normal(2.45944,0.26286)

**Quantiles**

100.0%	maximum	2.96286
99.5%		2.96286
97.5%		2.9561555
90.0%		2.776927
75.0%	quartile	2.6633925
50.0%	median	2.52288
25.0%	quartile	2.1839025
10.0%		2.115257
2.5%		2.05115
0.5%		2.05115
0.0%	minimum	2.05115

**Summary Statistics**

Mean	2.459444
Std Dev	0.2628638
Std Err Mean	0.0371746
Upper 95% Mean	2.5341491
Lower 95% Mean	2.3847389
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	2.459444	2.3847389	2.5341491
Dispersion	$\sigma$	0.2628638	0.219579	0.3275633

-2log(Likelihood) = 7.28191482475859

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.929948	0.0055*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=2,4'-DDT**

**RESULT\_STATS\_LOG10**

Normal(1.59129,0.16245)

**Quantiles**

100.0%	maximum	2.31575
99.5%		2.31575
97.5%		2.18945
90.0%		1.750948
75.0%	quartile	1.67731
50.0%	median	1.57491
25.0%	quartile	1.48626
10.0%		1.423098
2.5%		1.341758
0.5%		1.32503
0.0%	minimum	1.32503

**Summary Statistics**

Mean	1.5912893
Std Dev	0.1624492
Std Err Mean	0.0219046
Upper 95% Mean	1.6352054
Lower 95% Mean	1.5473731
N	55

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.5912893	1.5473731	1.6352054
Dispersion	$\sigma$	0.1624492	0.1367602	0.2001119

-2log(Likelihood) = -44.8296464563445

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.874775	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=4,4'-DDD**

**RESULT\_STATS\_LOG10**

Normal(3.24287,0.52976)

**Quantiles**

100.0%	maximum	3.78791
99.5%		3.78791
97.5%		3.776614
90.0%		3.694008
75.0%	quartile	3.58983
50.0%	median	3.4437
25.0%	quartile	3.22419
10.0%		2.278424
2.5%		1.771046
0.5%		1.75449
0.0%	minimum	1.75449

**Summary Statistics**

Mean	3.2428744
Std Dev	0.5297586
Std Err Mean	0.0714326
Upper 95% Mean	3.3860882
Lower 95% Mean	3.0996606
N	55

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	3.2428744	3.0996606	3.3860882
Dispersion	$\sigma$	0.5297586	0.4459848	0.6525792

-2log(Likelihood) = 85.1965139266607

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.785492	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=4,4'-DDE**

**RESULT\_STATS\_LOG10**

Normal(3.73033,0.32293)

**Quantiles**

100.0%	maximum	4.12758
99.5%		4.12758
97.5%		4.11984
90.0%		4.051956
75.0%	quartile	3.96108
50.0%	median	3.85733
25.0%	quartile	3.56508
10.0%		3.122654
2.5%		2.986912
0.5%		2.97104
0.0%	minimum	2.97104

**Summary Statistics**

Mean	3.7303258
Std Dev	0.3229266
Std Err Mean	0.0435434
Upper 95% Mean	3.8176251
Lower 95% Mean	3.6430265
N	55

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	3.7303258	3.6430265	3.8176251
Dispersion	$\sigma$	0.3229266	0.2718604	0.3977948

-2log(Likelihood) = 30.7469262078001

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.861948	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=4,4'-DDT**

**RESULT\_STATS\_LOG10**

Normal(1.70946,0.11839)

**Quantiles**

100.0%	maximum	1.93024
99.5%		1.93024
97.5%		1.93024
90.0%		1.8653
75.0%	quartile	1.8121075
50.0%	median	1.69461
25.0%	quartile	1.6011675
10.0%		1.565082
2.5%		1.50515
0.5%		1.50515
0.0%	minimum	1.50515

**Summary Statistics**

Mean	1.709458
Std Dev	0.1183872
Std Err Mean	0.0216144
Upper 95% Mean	1.7536645
Lower 95% Mean	1.6652515
N	30

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.709458	1.6652515	1.7536645
Dispersion	$\sigma$	0.1183872	0.0942844	0.1591497

-2log(Likelihood) = -43.8913766445569

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.958942	0.2910

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=Dibutyltin**

**RESULT\_STATS\_LOG10**

Normal(-0.0155,0.54569)

**Quantiles**

100.0%	maximum	0.716003
99.5%		0.716003
97.5%		0.716003
90.0%		0.7097239
75.0%	quartile	0.60660175
50.0%	median	-0.3715115
25.0%	quartile	-0.4432375
10.0%		-0.5235928
2.5%		-0.528708
0.5%		-0.528708
0.0%	minimum	-0.528708

**Summary Statistics**

Mean	-0.015541
Std Dev	0.5456873
Std Err Mean	0.1725615
Upper 95% Mean	0.37482
Lower 95% Mean	-0.405902
N	10

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	-0.015541	-0.405902	0.37482
Dispersion	$\sigma$	0.5456873	0.375343	0.9962123

-2log(Likelihood) = 15.2645881747306

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.751868	0.0038*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=Mercury**

**RESULT\_STATS\_LOG10**

Normal(-1.8614,0.334)

**Quantiles**

100.0%	maximum	-1.31695
99.5%		-1.31695
97.5%		-1.31695
90.0%		-1.378084
75.0%	quartile	-1.66505
50.0%	median	-1.83268
25.0%	quartile	-2.089915
10.0%		-2.3891
2.5%		-2.44733
0.5%		-2.44733
0.0%	minimum	-2.44733

**Summary Statistics**

Mean	-1.861376
Std Dev	0.3339997
Std Err Mean	0.0667999
Upper 95% Mean	-1.723508
Lower 95% Mean	-1.999245
N	25

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	-1.861376	-1.999245	-1.723508
Dispersion	$\sigma$	0.3339997	0.2607964	0.4646444

-2log(Likelihood) = 15.116168232011

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.961614	0.4475

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB003**

**RESULT\_STATS\_LOG10**

Normal(1.01092,0.12392)

**Quantiles**

100.0%	maximum	1.22129
99.5%		1.22129
97.5%		1.22129
90.0%		1.174944
75.0%	quartile	1.1115475
50.0%	median	1.01361
25.0%	quartile	0.89723325
10.0%		0.8335189
2.5%		0.7749383
0.5%		0.763088
0.0%	minimum	0.763088

**Summary Statistics**

Mean	1.010918
Std Dev	0.1239164
Std Err Mean	0.0175244
Upper 95% Mean	1.0461347
Lower 95% Mean	0.9757014
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.010918	0.9757014	1.0461347
Dispersion	$\sigma$	0.1239164	0.1035116	0.1544163

-2log(Likelihood) = -67.9209781945458

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.970119	0.2340

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB005/008**

**RESULT\_STATS\_LOG10**

Normal(1.33551,0.27839)

**Quantiles**

100.0%	maximum	2.12494
99.5%		2.12494
97.5%		2.123972
90.0%		1.984919
75.0%	quartile	1.3787775
50.0%	median	1.27602
25.0%	quartile	1.15444
10.0%		1.09691
2.5%		1.027727
0.5%		1.02391
0.0%	minimum	1.02391

**Summary Statistics**

Mean	1.3355064
Std Dev	0.278387
Std Err Mean	0.0393699
Upper 95% Mean	1.4146231
Lower 95% Mean	1.2563897
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.3355064	1.2563897	1.4146231
Dispersion	$\sigma$	0.278387	0.2325461	0.3469073

-2log(Likelihood) = 13.0195479458249

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.781044	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB015**

**RESULT\_STATS\_LOG10**

Normal(0.9024,0.12392)

**Quantiles**

100.0%	maximum	1.11286
99.5%		1.11286
97.5%		1.11286
90.0%		1.078308
75.0%	quartile	1.00467
50.0%	median	0.881592
25.0%	quartile	0.784682
10.0%		0.7355628
2.5%		0.694206
0.5%		0.694206
0.0%	minimum	0.694206

**Summary Statistics**

Mean	0.9024005
Std Dev	0.1239182
Std Err Mean	0.020946
Upper 95% Mean	0.9449679
Lower 95% Mean	0.8598331
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.9024005	0.8598331	0.9449679
Dispersion	$\sigma$	0.1239182	0.100234	0.1623579

-2log(Likelihood) = -47.8436638749491

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.957075	0.1866

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB018**

**RESULT\_STATS\_LOG10**

Normal(1.08396,0.41976)

**Quantiles**

100.0%	maximum	2.30798
99.5%		2.30798
97.5%		2.303036
90.0%		1.925036
75.0%	quartile	1.07311
50.0%	median	0.958153
25.0%	quartile	0.852565
10.0%		0.779418
2.5%		0.71995775
0.5%		0.71903
0.0%	minimum	0.71903

**Summary Statistics**

Mean	1.0839581
Std Dev	0.4197617
Std Err Mean	0.0625744
Upper 95% Mean	1.2100685
Lower 95% Mean	0.9578477
N	45

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.0839581	0.9578477	1.2100685
Dispersion	$\sigma$	0.4197617	0.3475015	0.5302428

-2log(Likelihood) = 48.5783328343626

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.674013	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB027**

**RESULT\_STATS\_LOG10**

Normal(0.95681,0.1239)

**Quantiles**

100.0%	maximum	1.1676
99.5%		1.1676
97.5%		1.1676
90.0%		1.132288
75.0%	quartile	1.05865
50.0%	median	0.936331
25.0%	quartile	0.839421
10.0%		0.789998
2.5%		0.748188
0.5%		0.748188
0.0%	minimum	0.748188

**Summary Statistics**

Mean	0.9568146
Std Dev	0.1239013
Std Err Mean	0.0209431
Upper 95% Mean	0.9993762
Lower 95% Mean	0.914253
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.9568146	0.914253	0.9993762
Dispersion	$\sigma$	0.1239013	0.1002203	0.1623357

-2log(Likelihood) = -47.8532173693718

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.957397	0.1908

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB028**

**RESULT\_STATS\_LOG10**

Normal(1.30105,0.8362)

**Quantiles**

100.0%	maximum	2.76024
99.5%		2.76024
97.5%		2.747183
90.0%		2.537339
75.0%	quartile	2.0993675
50.0%	median	0.7606895
25.0%	quartile	0.59242525
10.0%		0.4784175
2.5%		0.425121325
0.5%		0.417536
0.0%	minimum	0.417536

**Summary Statistics**

Mean	1.3010526
Std Dev	0.836201
Std Err Mean	0.1182567
Upper 95% Mean	1.5386983
Lower 95% Mean	1.0634069
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.3010526	1.0634069	1.5386983
Dispersion	$\sigma$	0.836201	0.6985072	1.042018

-2log(Likelihood) = 123.005232680365

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.799147	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB029**

**RESULT\_STATS\_LOG10**

Normal(0.98024,0.12377)

**Quantiles**

100.0%	maximum	1.18988
99.5%		1.18988
97.5%		1.18988
90.0%		1.144384
75.0%	quartile	1.0808775
50.0%	median	0.982578
25.0%	quartile	0.8661985
10.0%		0.8028134
2.5%		0.7474158
0.5%		0.736759
0.0%	minimum	0.736759

**Summary Statistics**

Mean	0.9802413
Std Dev	0.1237703
Std Err Mean	0.0175038
Upper 95% Mean	1.0154165
Lower 95% Mean	0.9450662
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.9802413	0.9450662	1.0154165
Dispersion	$\sigma$	0.1237703	0.1033895	0.1542342

-2log(Likelihood) = -68.0389642086308

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.969421	0.2192

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB031**

**RESULT\_STATS\_LOG10**

Normal(0.99254,0.48578)

**Quantiles**

100.0%	maximum	2.23798
99.5%		2.23798
97.5%		2.23658575
90.0%		2.082018
75.0%	quartile	0.94130825
50.0%	median	0.835748
25.0%	quartile	0.7149835
10.0%		0.6206008
2.5%		0.56236815
0.5%		0.560667
0.0%	minimum	0.560667

**Summary Statistics**

Mean	0.9925423
Std Dev	0.4857802
Std Err Mean	0.0686997
Upper 95% Mean	1.1305995
Lower 95% Mean	0.8544851
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.9925423	0.8544851	1.1305995
Dispersion	$\sigma$	0.4857802	0.4057887	0.6053469

-2log(Likelihood) = 68.6939556360428

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.691297	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB033**

**RESULT\_STATS\_LOG10**

Normal(1.43933,0.48893)

**Quantiles**

100.0%	maximum	2.55003
99.5%		2.55003
97.5%		2.54935125
90.0%		2.460648
75.0%	quartile	1.6749625
50.0%	median	1.258425
25.0%	quartile	1.11638
10.0%		1
2.5%		0.9341177
0.5%		0.933053
0.0%	minimum	0.933053

**Summary Statistics**

Mean	1.4393293
Std Dev	0.4889315
Std Err Mean	0.0773069
Upper 95% Mean	1.5956971
Lower 95% Mean	1.2829614
N	40

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.4393293	1.2829614	1.5956971
Dispersion	$\sigma$	0.4889315	0.4005136	0.6278054

-2log(Likelihood) = 55.2724508215576

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.786611	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB037**

**RESULT\_STATS\_LOG10**

Normal(0.85566,0.12396)

**Quantiles**

100.0%	maximum	1.06494
99.5%		1.06494
97.5%		1.06494
90.0%		1.021046
75.0%	quartile	0.9539885
50.0%	median	0.858804
25.0%	quartile	0.7430435
10.0%		0.6748623
2.5%		0.621501925
0.5%		0.61182
0.0%	minimum	0.61182

**Summary Statistics**

Mean	0.8556613
Std Dev	0.1239588
Std Err Mean	0.0175304
Upper 95% Mean	0.89089
Lower 95% Mean	0.8204326
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.8556613	0.8204326	0.89089
Dispersion	$\sigma$	0.1239588	0.103547	0.1544692

-2log(Likelihood) = -67.8867313976433

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.969603	0.2230

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB044**

**RESULT\_STATS\_LOG10**

Normal(1.04366,0.21368)

**Quantiles**

100.0%	maximum	2.18608
99.5%		2.18608
97.5%		2.0421145
90.0%		1.190278
75.0%	quartile	1.13286
50.0%	median	1.01506
25.0%	quartile	0.9093805
10.0%		0.8484184
2.5%		0.77386895
0.5%		0.768167
0.0%	minimum	0.768167

**Summary Statistics**

Mean	1.0436588
Std Dev	0.2136847
Std Err Mean	0.0318542
Upper 95% Mean	1.1078568
Lower 95% Mean	0.9794609
N	45

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.0436588	0.9794609	1.1078568
Dispersion	$\sigma$	0.2136847	0.1768998	0.2699265

-2log(Likelihood) = -12.1883624310242

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.691009	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB049**

**RESULT\_STATS\_LOG10**

Normal(1.75357,0.39191)

**Quantiles**

100.0%	maximum	2.55003
99.5%		2.55003
97.5%		2.53929125
90.0%		2.292529
75.0%	quartile	2.0103475
50.0%	median	1.806315
25.0%	quartile	1.315625
10.0%		1.185851
2.5%		1.071612
0.5%		1.06367
0.0%	minimum	1.06367

**Summary Statistics**

Mean	1.7535734
Std Dev	0.391909
Std Err Mean	0.0554243
Upper 95% Mean	1.8649527
Lower 95% Mean	1.6421941
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.7535734	1.6421941	1.8649527
Dispersion	$\sigma$	0.391909	0.3273749	0.4883709

-2log(Likelihood) = 47.2212878176549

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.934638	0.0083*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB052**

**RESULT\_STATS\_LOG10**

Normal(1.98885,0.45011)

**Quantiles**

100.0%	maximum	2.73676
99.5%		2.73676
97.5%		2.7344225
90.0%		2.579079
75.0%	quartile	2.15572
50.0%	median	2.07247
25.0%	quartile	1.95222
10.0%		1.040932
2.5%		0.8295579
0.5%		0.821617
0.0%	minimum	0.821617

**Summary Statistics**

Mean	1.98885
Std Dev	0.4501142
Std Err Mean	0.0636558
Upper 95% Mean	2.116771
Lower 95% Mean	1.8609289
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.98885	1.8609289	2.116771
Dispersion	$\sigma$	0.4501142	0.3759957	0.5609024

-2log(Likelihood) = 61.0684665809809

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.802844	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB056**

**RESULT\_STATS\_LOG10**

Normal(1.4738,0.37579)

**Quantiles**

100.0%	maximum	2.37911
99.5%		2.37911
97.5%		2.357638
90.0%		2.141021
75.0%	quartile	1.7387525
50.0%	median	1.33038
25.0%	quartile	1.16946
10.0%		1.09117
2.5%		0.99861585
0.5%		0.981826
0.0%	minimum	0.981826

**Summary Statistics**

Mean	1.4737999
Std Dev	0.3757939
Std Err Mean	0.0531453
Upper 95% Mean	1.5805994
Lower 95% Mean	1.3670005
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.4737999	1.3670005	1.5805994
Dispersion	$\sigma$	0.3757939	0.3139135	0.4682894

-2log(Likelihood) = 43.0224211866152

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.889794	0.0002*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB060**

**RESULT\_STATS\_LOG10**

Normal(1.31206,0.24436)

**Quantiles**

100.0%	maximum	2.08842
99.5%		2.08842
97.5%		2.0844255
90.0%		1.807434
75.0%	quartile	1.36798
50.0%	median	1.26496
25.0%	quartile	1.158275
10.0%		1.067761
2.5%		1.0146045
0.5%		1.01401
0.0%	minimum	1.01401

**Summary Statistics**

Mean	1.3120563
Std Dev	0.2443601
Std Err Mean	0.0386367
Upper 95% Mean	1.3902064
Lower 95% Mean	1.2339061
N	40

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.3120563	1.2339061	1.3902064
Dispersion	$\sigma$	0.2443601	0.2001703	0.3137671

-2log(Likelihood) = -0.213894009073158

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.813362	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB066**

**RESULT\_STATS\_LOG10**

Normal(2.11283,0.42093)

**Quantiles**

100.0%	maximum	2.90658
99.5%		2.90658
97.5%		2.90422325
90.0%		2.751261
75.0%	quartile	2.2698875
50.0%	median	2.14846
25.0%	quartile	2.0087225
10.0%		1.342621
2.5%		1.03021925
0.5%		1.02228
0.0%	minimum	1.02228

**Summary Statistics**

Mean	2.11283
Std Dev	0.4209336
Std Err Mean	0.059529
Upper 95% Mean	2.232458
Lower 95% Mean	1.993202
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	2.11283	1.993202	2.232458
Dispersion	$\sigma$	0.4209336	0.3516202	0.5245394

-2log(Likelihood) = 54.3658432366312

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.855206	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB070**

**RESULT\_STATS\_LOG10**

Normal(1.91865,0.45207)

**Quantiles**

100.0%	maximum	2.76447
99.5%		2.76447
97.5%		2.764316
90.0%		2.574247
75.0%	quartile	2.0890025
50.0%	median	1.96559
25.0%	quartile	1.844235
10.0%		1.019742
2.5%		0.8083689
0.5%		0.800428
0.0%	minimum	0.800428

**Summary Statistics**

Mean	1.9186514
Std Dev	0.4520701
Std Err Mean	0.0639324
Upper 95% Mean	2.0471283
Lower 95% Mean	1.7901745
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.9186514	1.7901745	2.0471283
Dispersion	$\sigma$	0.4520701	0.3776296	0.5633397

-2log(Likelihood) = 61.5020570255415

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.833530	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB074**

**RESULT\_STATS\_LOG10**

Normal(1.73247,0.43211)

**Quantiles**

100.0%	maximum	2.56067
99.5%		2.56067
97.5%		2.557744
90.0%		2.362038
75.0%	quartile	1.9150775
50.0%	median	1.832775
25.0%	quartile	1.63642
10.0%		0.9981043
2.5%		0.881872
0.5%		0.858123
0.0%	minimum	0.858123

**Summary Statistics**

Mean	1.7324686
Std Dev	0.4321106
Std Err Mean	0.0611097
Upper 95% Mean	1.8552731
Lower 95% Mean	1.6096642
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.7324686	1.6096642	1.8552731
Dispersion	$\sigma$	0.4321106	0.3609567	0.5384674

-2log(Likelihood) = 56.9864754199237

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.892642	0.0003*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB077**

**RESULT\_STATS\_LOG10**

Normal(1.0078,0.23052)

**Quantiles**

100.0%	maximum	1.97104
99.5%		1.97104
97.5%		1.9504345
90.0%		1.157078
75.0%	quartile	1.08227
50.0%	median	0.962676
25.0%	quartile	0.8619555
10.0%		0.8012214
2.5%		0.72603375
0.5%		0.720159
0.0%	minimum	0.720159

**Summary Statistics**

Mean	1.0078008
Std Dev	0.2305204
Std Err Mean	0.034364
Upper 95% Mean	1.0770568
Lower 95% Mean	0.9385448
N	45

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.0078008	0.9385448	1.0770568
Dispersion	$\sigma$	0.2305204	0.1908373	0.2911933

-2log(Likelihood) = -5.36296976063413

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.733658	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB081**

**RESULT\_STATS\_LOG10**

Normal(1.19444,0.10932)

**Quantiles**

100.0%	maximum	1.36597
99.5%		1.36597
97.5%		1.36597
90.0%		1.36597
75.0%	quartile	1.302865
50.0%	median	1.1347
25.0%	quartile	1.115895
10.0%		1.10146
2.5%		1.10146
0.5%		1.10146
0.0%	minimum	1.10146

**Summary Statistics**

Mean	1.194444
Std Dev	0.1093168
Std Err Mean	0.048888
Upper 95% Mean	1.3301788
Lower 95% Mean	1.0587092
N	5

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.194444	1.0587092	1.3301788
Dispersion	$\sigma$	0.1093168	0.0654953	0.314128

-2log(Likelihood) = -8.94566319449981

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.855452	0.2124

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB087**

**RESULT\_STATS\_LOG10**

Normal(1.97714,0.2936)

**Quantiles**

100.0%	maximum	2.30798
99.5%		2.30798
97.5%		2.297431
90.0%		2.205364
75.0%	quartile	2.122175
50.0%	median	2.056815
25.0%	quartile	1.9682075
10.0%		1.386819
2.5%		1.071612
0.5%		1.06367
0.0%	minimum	1.06367

**Summary Statistics**

Mean	1.977137
Std Dev	0.2936004
Std Err Mean	0.0415214
Upper 95% Mean	2.0605773
Lower 95% Mean	1.8936967
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.977137	1.8936967	2.0605773
Dispersion	$\sigma$	0.2936004	0.2452544	0.3658652

-2log(Likelihood) = 18.3402786570744

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.669507	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB095**

**RESULT\_STATS\_LOG10**

Normal(1.9735,0.2929)

**Quantiles**

100.0%	maximum	2.52288
99.5%		2.52288
97.5%		2.5200695
90.0%		2.383807
75.0%	quartile	2.1026825
50.0%	median	2
25.0%	quartile	1.89491
10.0%		1.495831
2.5%		1.20630925
0.5%		1.19837
0.0%	minimum	1.19837

**Summary Statistics**

Mean	1.9734986
Std Dev	0.2929028
Std Err Mean	0.0414227
Upper 95% Mean	2.0567407
Lower 95% Mean	1.8902565
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.9734986	1.8902565	2.0567407
Dispersion	$\sigma$	0.2929028	0.2446717	0.364996

-2log(Likelihood) = 18.1024199474391

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.888625	0.0002*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB097**

**RESULT\_STATS\_LOG10**

Normal(1.66387,0.3717)

**Quantiles**

100.0%	maximum	2.3837
99.5%		2.3837
97.5%		2.37897825
90.0%		2.249283
75.0%	quartile	1.9179375
50.0%	median	1.744805
25.0%	quartile	1.2979725
10.0%		1.203858
2.5%		1.04114975
0.5%		1.01401
0.0%	minimum	1.01401

**Summary Statistics**

Mean	1.6638702
Std Dev	0.3716951
Std Err Mean	0.0525656
Upper 95% Mean	1.7695048
Lower 95% Mean	1.5582356
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.6638702	1.5582356	1.7695048
Dispersion	$\sigma$	0.3716951	0.3104895	0.4631816

-2log(Likelihood) = 41.9257028438975

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.937510	0.0108*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB099**

**RESULT\_STATS\_LOG10**

Normal(1.9717,0.41614)

**Quantiles**

100.0%	maximum	2.62761
99.5%		2.62761
97.5%		2.62601225
90.0%		2.488137
75.0%	quartile	2.1679025
50.0%	median	2.03191
25.0%	quartile	1.880705
10.0%		1.1415
2.5%		0.8155469
0.5%		0.807606
0.0%	minimum	0.807606

**Summary Statistics**

Mean	1.9717007
Std Dev	0.4161383
Std Err Mean	0.0588508
Upper 95% Mean	2.0899659
Lower 95% Mean	1.8534355
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.9717007	1.8534355	2.0899659
Dispersion	$\sigma$	0.4161383	0.3476145	0.5185638

-2log(Likelihood) = 53.220095580489

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.808056	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB101**

**RESULT\_STATS\_LOG10**

Normal(2.17394,0.4081)

**Quantiles**

100.0%	maximum	2.80967
99.5%		2.80967
97.5%		2.80643325
90.0%		2.64411
75.0%	quartile	2.3315725
50.0%	median	2.25442
25.0%	quartile	2.1165225
10.0%		1.350218
2.5%		1.021442
0.5%		1.0135
0.0%	minimum	1.0135

**Summary Statistics**

Mean	2.1739362
Std Dev	0.408096
Std Err Mean	0.0577135
Upper 95% Mean	2.2899158
Lower 95% Mean	2.0579566
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	2.1739362	2.0579566	2.2899158
Dispersion	$\sigma$	0.408096	0.3408965	0.5085421

-2log(Likelihood) = 51.2685801492971

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.777383	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB105**

**RESULT\_STATS\_LOG10**

Normal(1.18577,0.58336)

**Quantiles**

100.0%	maximum	2.32818
99.5%		2.32818
97.5%		2.3256045
90.0%		2.196424
75.0%	quartile	1.833895
50.0%	median	0.924423
25.0%	quartile	0.745243
10.0%		0.654003
2.5%		0.59540875
0.5%		0.594235
0.0%	minimum	0.594235

**Summary Statistics**

Mean	1.1857738
Std Dev	0.5833618
Std Err Mean	0.0869624
Upper 95% Mean	1.3610351
Lower 95% Mean	1.0105125
N	45

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.1857738	1.0105125	1.3610351
Dispersion	$\sigma$	0.5833618	0.4829386	0.7369025

-2log(Likelihood) = 78.1991787381873

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.795410	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB110**

**RESULT\_STATS\_LOG10**

Normal(2.11174,0.48527)

**Quantiles**

100.0%	maximum	2.76447
99.5%		2.76447
97.5%		2.764316
90.0%		2.615262
75.0%	quartile	2.27488
50.0%	median	2.208815
25.0%	quartile	2.1138275
10.0%		1.0554043
2.5%		0.6929749
0.5%		0.685034
0.0%	minimum	0.685034

**Summary Statistics**

Mean	2.1117413
Std Dev	0.4852717
Std Err Mean	0.0686278
Upper 95% Mean	2.249654
Lower 95% Mean	1.9738286
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	2.1117413	1.9738286	2.249654
Dispersion	$\sigma$	0.4852717	0.405364	0.6047132

-2log(Likelihood) = 68.5892186200052

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.686821	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB114**

**RESULT\_STATS\_LOG10**

Normal(0.98964,0.12389)

**Quantiles**

100.0%	maximum	1.2006
99.5%		1.2006
97.5%		1.2006
90.0%		1.164878
75.0%	quartile	1.09124
50.0%	median	0.969331
25.0%	quartile	0.872421
10.0%		0.8228338
2.5%		0.780775
0.5%		0.780775
0.0%	minimum	0.780775

**Summary Statistics**

Mean	0.9896381
Std Dev	0.1238928
Std Err Mean	0.0209417
Upper 95% Mean	1.0321968
Lower 95% Mean	0.9470795
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.9896381	0.9470795	1.0321968
Dispersion	$\sigma$	0.1238928	0.1002134	0.1623246

-2log(Likelihood) = -47.8580234954684

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.957565	0.1931

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB118**

**RESULT\_STATS\_LOG10**

Normal(2.09014,0.34249)

**Quantiles**

100.0%	maximum	2.71276
99.5%		2.71276
97.5%		2.71171225
90.0%		2.585317
75.0%	quartile	2.2223525
50.0%	median	2.109835
25.0%	quartile	2.035505
10.0%		1.754063
2.5%		0.998720575
0.5%		0.979797
0.0%	minimum	0.979797

**Summary Statistics**

Mean	2.0901415
Std Dev	0.3424889
Std Err Mean	0.0484352
Upper 95% Mean	2.1874758
Lower 95% Mean	1.9928073
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	2.0901415	1.9928073	2.1874758
Dispersion	$\sigma$	0.3424889	0.2860926	0.4267869

-2log(Likelihood) = 33.742252992071

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.824819	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB119**

**RESULT\_STATS\_LOG10**

Normal(1.0498,0.12382)

**Quantiles**

100.0%	maximum	1.25992
99.5%		1.25992
97.5%		1.25992
90.0%		1.213704
75.0%	quartile	1.1493375
50.0%	median	1.051815
25.0%	quartile	0.93543725
10.0%		0.8713494
2.5%		0.817018575
0.5%		0.806796
0.0%	minimum	0.806796

**Summary Statistics**

Mean	1.0498016
Std Dev	0.1238152
Std Err Mean	0.0175101
Upper 95% Mean	1.0849895
Lower 95% Mean	1.0146137
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.0498016	1.0146137	1.0849895
Dispersion	$\sigma$	0.1238152	0.103427	0.1542902

-2log(Likelihood) = -68.0026933210053

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.969610	0.2232

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB123**

**RESULT\_STATS\_LOG10**

Normal(1.10096,0.1379)

**Quantiles**

100.0%	maximum	1.31439
99.5%		1.31439
97.5%		1.31439
90.0%		1.285907
75.0%	quartile	1.215625
50.0%	median	1.115485
25.0%	quartile	0.9673985
10.0%		0.9104294
2.5%		0.833669
0.5%		0.833669
0.0%	minimum	0.833669

**Summary Statistics**

Mean	1.1009615
Std Dev	0.1379042
Std Err Mean	0.0251778
Upper 95% Mean	1.1524558
Lower 95% Mean	1.0494672
N	30

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.1009615	1.0494672	1.1524558
Dispersion	$\sigma$	0.1379042	0.1098279	0.1853867

-2log(Likelihood) = -34.7354425746012

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.950160	0.1707

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB126**

**RESULT\_STATS\_LOG10**

Normal(0.97897,0.1239)

**Quantiles**

100.0%	maximum	1.18988
99.5%		1.18988
97.5%		1.18988
90.0%		1.154284
75.0%	quartile	1.08065
50.0%	median	0.958607
25.0%	quartile	0.861697
10.0%		0.8121622
2.5%		0.770182
0.5%		0.770182
0.0%	minimum	0.770182

**Summary Statistics**

Mean	0.9789707
Std Dev	0.1238961
Std Err Mean	0.0209423
Upper 95% Mean	1.0215305
Lower 95% Mean	0.9364109
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.9789707	0.9364109	1.0215305
Dispersion	$\sigma$	0.1238961	0.1002161	0.1623289

-2log(Likelihood) = -47.8561598833399

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.957513	0.1924

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB128**

**RESULT\_STATS\_LOG10**

Normal(1.35207,0.3679)

**Quantiles**

100.0%	maximum	1.92864
99.5%		1.92864
97.5%		1.92864
90.0%		1.928059
75.0%	quartile	1.796575
50.0%	median	1.184095
25.0%	quartile	1.0544275
10.0%		1.025167
2.5%		1.02228
0.5%		1.02228
0.0%	minimum	1.02228

**Summary Statistics**

Mean	1.352066
Std Dev	0.3679025
Std Err Mean	0.116341
Upper 95% Mean	1.6152476
Lower 95% Mean	1.0888844
N	10

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.352066	1.0888844	1.6152476
Dispersion	$\sigma$	0.3679025	0.2530563	0.6716466

-2log(Likelihood) = 7.38002444846403

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.784563	0.0094*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB132/153**

**RESULT\_STATS\_LOG10**

Normal(2.32283,0.19743)

**Quantiles**

100.0%	maximum	2.71276
99.5%		2.71276
97.5%		2.70615725
90.0%		2.589547
75.0%	quartile	2.411695
50.0%	median	2.3298
25.0%	quartile	2.2733575
10.0%		2.050272
2.5%		1.8054995
0.5%		1.79588
0.0%	minimum	1.79588

**Summary Statistics**

Mean	2.322825
Std Dev	0.1974281
Std Err Mean	0.0279206
Upper 95% Mean	2.3789335
Lower 95% Mean	2.2667165
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	2.322825	2.2667165	2.3789335
Dispersion	$\sigma$	0.1974281	0.1649184	0.2460218

-2log(Likelihood) = -21.3442092783506

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.920688	0.0025*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB137**

**RESULT\_STATS\_LOG10**

Normal(1.22921,0.10932)

**Quantiles**

100.0%	maximum	1.40073
99.5%		1.40073
97.5%		1.40073
90.0%		1.40073
75.0%	quartile	1.337625
50.0%	median	1.16946
25.0%	quartile	1.15066
10.0%		1.13622
2.5%		1.13622
0.5%		1.13622
0.0%	minimum	1.13622

**Summary Statistics**

Mean	1.229206
Std Dev	0.1093154
Std Err Mean	0.0488873
Upper 95% Mean	1.364939
Lower 95% Mean	1.093473
N	5

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.229206	1.093473	1.364939
Dispersion	$\sigma$	0.1093154	0.0654945	0.3141238

-2log(Likelihood) = -8.94579731572026

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.855455	0.2124

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB138/158**

**RESULT\_STATS\_LOG10**

Normal(2.19687,0.31944)

**Quantiles**

100.0%	maximum	2.59698
99.5%		2.59698
97.5%		2.594461
90.0%		2.467811
75.0%	quartile	2.3280175
50.0%	median	2.260275
25.0%	quartile	2.1987
10.0%		1.840009
2.5%		1.0474215
0.5%		1.02865
0.0%	minimum	1.02865

**Summary Statistics**

Mean	2.1968704
Std Dev	0.3194359
Std Err Mean	0.0451751
Upper 95% Mean	2.2876531
Lower 95% Mean	2.1060877
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	2.1968704	2.1060877	2.2876531
Dispersion	$\sigma$	0.3194359	0.2668357	0.3980597

-2log(Likelihood) = 26.7739875729889

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.680127	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB141**

**RESULT\_STATS\_LOG10**

Normal(1.19604,0.21875)

**Quantiles**

100.0%	maximum	1.83086
99.5%		1.83086
97.5%		1.83086
90.0%		1.495528
75.0%	quartile	1.27548
50.0%	median	1.19629
25.0%	quartile	1.05017
10.0%		0.9561522
2.5%		0.875061
0.5%		0.875061
0.0%	minimum	0.875061

**Summary Statistics**

Mean	1.1960367
Std Dev	0.2187543
Std Err Mean	0.0369762
Upper 95% Mean	1.2711814
Lower 95% Mean	1.1208919
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.1960367	1.1208919	1.2711814
Dispersion	$\sigma$	0.2187543	0.1769442	0.2866123

-2log(Likelihood) = -8.06074418765509

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.876066	0.0010*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB149**

**RESULT\_STATS\_LOG10**

Normal(2.11168,0.35993)

**Quantiles**

100.0%	maximum	2.51266
99.5%		2.51266
97.5%		2.50408825
90.0%		2.356113
75.0%	quartile	2.2864075
50.0%	median	2.209395
25.0%	quartile	2.11625
10.0%		1.347531
2.5%		1.021442
0.5%		1.0135
0.0%	minimum	1.0135

**Summary Statistics**

Mean	2.1116766
Std Dev	0.3599273
Std Err Mean	0.0509014
Upper 95% Mean	2.2139668
Lower 95% Mean	2.0093864
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	2.1116766	2.0093864	2.2139668
Dispersion	$\sigma$	0.3599273	0.3006595	0.4485175

-2log(Likelihood) = 38.7085432490314

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.671668	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB151**

**RESULT\_STATS\_LOG10**

Normal(1.35755,0.43321)

**Quantiles**

100.0%	maximum	2.1107
99.5%		2.1107
97.5%		2.0765835
90.0%		1.874431
75.0%	quartile	1.74873
50.0%	median	1.353545
25.0%	quartile	0.949987
10.0%		0.8776635
2.5%		0.71718185
0.5%		0.700392
0.0%	minimum	0.700392

**Summary Statistics**

Mean	1.3575492
Std Dev	0.4332132
Std Err Mean	0.0612656
Upper 95% Mean	1.4806671
Lower 95% Mean	1.2344314
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.3575492	1.2344314	1.4806671
Dispersion	$\sigma$	0.4332132	0.3618777	0.5398414

-2log(Likelihood) = 57.241329022708

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.854755	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB156**

**RESULT\_STATS\_LOG10**

Normal(0.837,0.12381)

**Quantiles**

100.0%	maximum	1.05022
99.5%		1.05022
97.5%		1.05022
90.0%		1.009228
75.0%	quartile	0.935589
50.0%	median	0.818945
25.0%	quartile	0.722035
10.0%		0.6703422
2.5%		0.625125
0.5%		0.625125
0.0%	minimum	0.625125

**Summary Statistics**

Mean	0.8369967
Std Dev	0.1238131
Std Err Mean	0.0209282
Upper 95% Mean	0.8795279
Lower 95% Mean	0.7944654
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.8369967	0.7944654	0.8795279
Dispersion	$\sigma$	0.1238131	0.1001489	0.1622202

-2log(Likelihood) = -47.9030648687822

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.959561	0.2218

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB157**

**RESULT\_STATS\_LOG10**

Normal(0.79406,0.12394)

**Quantiles**

100.0%	maximum	1.00279
99.5%		1.00279
97.5%		1.00279
90.0%		0.9598848
75.0%	quartile	0.8929345
50.0%	median	0.797203
25.0%	quartile	0.6819895
10.0%		0.6138083
2.5%		0.559654775
0.5%		0.549672
0.0%	minimum	0.549672

**Summary Statistics**

Mean	0.7940603
Std Dev	0.1239437
Std Err Mean	0.0175283
Upper 95% Mean	0.8292847
Lower 95% Mean	0.7588359
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.7940603	0.7588359	0.8292847
Dispersion	$\sigma$	0.1239437	0.1035344	0.1544503

-2log(Likelihood) = -67.8989509113303

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.969460	0.2200

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB167**

**RESULT\_STATS\_LOG10**

Normal(0.8629,0.128)

**Quantiles**

100.0%	maximum	1.07918
99.5%		1.07918
97.5%		1.07883525
90.0%		1.028118
75.0%	quartile	0.9752145
50.0%	median	0.8457265
25.0%	quartile	0.7483185
10.0%		0.6881783
2.5%		0.6200299
0.5%		0.618998
0.0%	minimum	0.618998

**Summary Statistics**

Mean	0.862905
Std Dev	0.1279966
Std Err Mean	0.020238
Upper 95% Mean	0.9038403
Lower 95% Mean	0.8219696
N	40

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.862905	0.8219696	0.9038403
Dispersion	$\sigma$	0.1279966	0.1048498	0.1643522

-2log(Likelihood) = -51.9450358475085

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.958110	0.1443

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB168**

**RESULT\_STATS\_LOG10**

Normal(0.76376,0.12381)

**Quantiles**

100.0%	maximum	0.976986
99.5%		0.976986
97.5%		0.976986
90.0%		0.935994
75.0%	quartile	0.862357
50.0%	median	0.745713
25.0%	quartile	0.648803
10.0%		0.5971102
2.5%		0.551893
0.5%		0.551893
0.0%	minimum	0.551893

**Summary Statistics**

Mean	0.7637645
Std Dev	0.1238127
Std Err Mean	0.0209282
Upper 95% Mean	0.8062956
Lower 95% Mean	0.7212333
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.7637645	0.7212333	0.8062956
Dispersion	$\sigma$	0.1238127	0.1001487	0.1622197

-2log(Likelihood) = -47.9032615473396

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.959560	0.2218

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB169**

**RESULT\_STATS\_LOG10**

Normal(0.86192,0.12393)

**Quantiles**

100.0%	maximum	1.07212
99.5%		1.07212
97.5%		1.07212
90.0%		1.038188
75.0%	quartile	0.964553
50.0%	median	0.840847
25.0%	quartile	0.743937
10.0%		0.6950686
2.5%		0.654089
0.5%		0.654089
0.0%	minimum	0.654089

**Summary Statistics**

Mean	0.8619247
Std Dev	0.1239333
Std Err Mean	0.0209485
Upper 95% Mean	0.9044973
Lower 95% Mean	0.8193521
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.8619247	0.8193521	0.9044973
Dispersion	$\sigma$	0.1239333	0.1002462	0.1623776

-2log(Likelihood) = -47.8351374971978

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.956795	0.1830

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB170**

**RESULT\_STATS\_LOG10**

Normal(0.89573,0.17735)

**Quantiles**

100.0%	maximum	1.7815
99.5%		1.7815
97.5%		1.59027325
90.0%		1.04193
75.0%	quartile	0.987537
50.0%	median	0.880273
25.0%	quartile	0.7638935
10.0%		0.6957132
2.5%		0.6425977
0.5%		0.633009
0.0%	minimum	0.633009

**Summary Statistics**

Mean	0.8957296
Std Dev	0.1773495
Std Err Mean	0.025081
Upper 95% Mean	0.9461317
Lower 95% Mean	0.8453274
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.8957296	0.8453274	0.9461317
Dispersion	$\sigma$	0.1773495	0.1481461	0.2210012

-2log(Likelihood) = -32.0694176797201

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.800445	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB174**

**RESULT\_STATS\_LOG10**

Normal(1.29284,0.18769)

**Quantiles**

100.0%	maximum	1.82974
99.5%		1.82974
97.5%		1.8281445
90.0%		1.461501
75.0%	quartile	1.36933
50.0%	median	1.268345
25.0%	quartile	1.1737725
10.0%		1.064908
2.5%		1.03015575
0.5%		1.02996
0.0%	minimum	1.02996

**Summary Statistics**

Mean	1.2928368
Std Dev	0.1876898
Std Err Mean	0.0296764
Upper 95% Mean	1.3528629
Lower 95% Mean	1.2328106
N	40

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.2928368	1.2328106	1.3528629
Dispersion	$\sigma$	0.1876898	0.1537482	0.2410004

-2log(Likelihood) = -21.3220804249941

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.899046	0.0018*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB177**

**RESULT\_STATS\_LOG10**

Normal(1.01542,0.12412)

**Quantiles**

100.0%	maximum	1.22631
99.5%		1.22631
97.5%		1.22631
90.0%		1.179916
75.0%	quartile	1.1131375
50.0%	median	1.018575
25.0%	quartile	0.9021965
10.0%		0.8340152
2.5%		0.778620575
0.5%		0.768167
0.0%	minimum	0.768167

**Summary Statistics**

Mean	1.0154193
Std Dev	0.1241182
Std Err Mean	0.017553
Upper 95% Mean	1.0506933
Lower 95% Mean	0.9801453
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.0154193	0.9801453	1.0506933
Dispersion	$\sigma$	0.1241182	0.1036801	0.1546678

-2log(Likelihood) = -67.7582793613848

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.970478	0.2420

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB180**

**RESULT\_STATS\_LOG10**

Normal(0.7673,0.30701)

**Quantiles**

100.0%	maximum	2.11495
99.5%		2.11495
97.5%		2.108042
90.0%		0.8805804
75.0%	quartile	0.82996575
50.0%	median	0.6912905
25.0%	quartile	0.623249
10.0%		0.5443721
2.5%		0.4578742
0.5%		0.456918
0.0%	minimum	0.456918

**Summary Statistics**

Mean	0.7673041
Std Dev	0.3070124
Std Err Mean	0.0485429
Upper 95% Mean	0.8654914
Lower 95% Mean	0.6691168
N	40

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.7673041	0.6691168	0.8654914
Dispersion	$\sigma$	0.3070124	0.2514926	0.3942148

-2log(Likelihood) = 18.0457026022407

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.610626	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB183**

**RESULT\_STATS\_LOG10**

Normal(1.33573,0.34652)

**Quantiles**

100.0%	maximum	2.01379
99.5%		2.01379
97.5%		2.01379
90.0%		2.005137
75.0%	quartile	1.5680225
50.0%	median	1.193015
25.0%	quartile	1.09364
10.0%		1.05152
2.5%		0.895265
0.5%		0.895265
0.0%	minimum	0.895265

**Summary Statistics**

Mean	1.3357323
Std Dev	0.3465202
Std Err Mean	0.0774843
Upper 95% Mean	1.4979087
Lower 95% Mean	1.1735558
N	20

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.3357323	1.1735558	1.4979087
Dispersion	$\sigma$	0.3465202	0.2635253	0.5061176

-2log(Likelihood) = 13.3649781296661

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.833411	0.0028*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB184**

**RESULT\_STATS\_LOG10**

Normal(1.10096,0.1379)

**Quantiles**

100.0%	maximum	1.31439
99.5%		1.31439
97.5%		1.31439
90.0%		1.285907
75.0%	quartile	1.215625
50.0%	median	1.115485
25.0%	quartile	0.9673985
10.0%		0.9104294
2.5%		0.833669
0.5%		0.833669
0.0%	minimum	0.833669

**Summary Statistics**

Mean	1.1009615
Std Dev	0.1379042
Std Err Mean	0.0251778
Upper 95% Mean	1.1524558
Lower 95% Mean	1.0494672
N	30

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.1009615	1.0494672	1.1524558
Dispersion	$\sigma$	0.1379042	0.1098279	0.1853867

-2log(Likelihood) = -34.7354425746012

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.950160	0.1707

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB187**

**RESULT\_STATS\_LOG10**

Normal(1.66187,0.40693)

**Quantiles**

100.0%	maximum	2.37196
99.5%		2.37196
97.5%		2.33702125
90.0%		2.08849
75.0%	quartile	1.9589325
50.0%	median	1.79313
25.0%	quartile	1.16599
10.0%		1.016118
2.5%		0.934131675
0.5%		0.929419
0.0%	minimum	0.929419

**Summary Statistics**

Mean	1.6618707
Std Dev	0.4069331
Std Err Mean	0.057549
Upper 95% Mean	1.7775198
Lower 95% Mean	1.5462216
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.6618707	1.5462216	1.7775198
Dispersion	$\sigma$	0.4069331	0.3399251	0.5070929

-2log(Likelihood) = 50.9832108798353

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.886156	0.0002*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB189**

**RESULT\_STATS\_LOG10**

Normal(0.86192,0.12393)

**Quantiles**

100.0%	maximum	1.07212
99.5%		1.07212
97.5%		1.07212
90.0%		1.038188
75.0%	quartile	0.964553
50.0%	median	0.840847
25.0%	quartile	0.743937
10.0%		0.6950686
2.5%		0.654089
0.5%		0.654089
0.0%	minimum	0.654089

**Summary Statistics**

Mean	0.8619247
Std Dev	0.1239333
Std Err Mean	0.0209485
Upper 95% Mean	0.9044973
Lower 95% Mean	0.8193521
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.8619247	0.8193521	0.9044973
Dispersion	$\sigma$	0.1239333	0.1002462	0.1623776

-2log(Likelihood) = -47.8351374971978

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.956795	0.1830

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB194**

**RESULT\_STATS\_LOG10**

Normal(1.15666,0.10932)

**Quantiles**

100.0%	maximum	1.32818
99.5%		1.32818
97.5%		1.32818
90.0%		1.32818
75.0%	quartile	1.265075
50.0%	median	1.09691
25.0%	quartile	1.07811
10.0%		1.06367
2.5%		1.06367
0.5%		1.06367
0.0%	minimum	1.06367

**Summary Statistics**

Mean	1.156656
Std Dev	0.1093154
Std Err Mean	0.0488873
Upper 95% Mean	1.292389
Lower 95% Mean	1.020923
N	5

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.156656	1.020923	1.292389
Dispersion	$\sigma$	0.1093154	0.0654945	0.3141238

-2log(Likelihood) = -8.94579731572026

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.855455	0.2124

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB195**

**RESULT\_STATS\_LOG10**

Normal(1.19444,0.10932)

**Quantiles**

100.0%	maximum	1.36597
99.5%		1.36597
97.5%		1.36597
90.0%		1.36597
75.0%	quartile	1.302865
50.0%	median	1.1347
25.0%	quartile	1.115895
10.0%		1.10146
2.5%		1.10146
0.5%		1.10146
0.0%	minimum	1.10146

**Summary Statistics**

Mean	1.194444
Std Dev	0.1093168
Std Err Mean	0.048888
Upper 95% Mean	1.3301788
Lower 95% Mean	1.0587092
N	5

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.194444	1.0587092	1.3301788
Dispersion	$\sigma$	0.1093168	0.0654953	0.314128

-2log(Likelihood) = -8.94566319449981

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.855452	0.2124

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB200**

**RESULT\_STATS\_LOG10**

Normal(1.26139,0.10932)

**Quantiles**

100.0%	maximum	1.43292
99.5%		1.43292
97.5%		1.43292
90.0%		1.43292
75.0%	quartile	1.369815
50.0%	median	1.20165
25.0%	quartile	1.18284
10.0%		1.1684
2.5%		1.1684
0.5%		1.1684
0.0%	minimum	1.1684

**Summary Statistics**

Mean	1.261392
Std Dev	0.109319
Std Err Mean	0.0488889
Upper 95% Mean	1.3971294
Lower 95% Mean	1.1256546
N	5

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.261392	1.1256546	1.3971294
Dispersion	$\sigma$	0.109319	0.0654966	0.3141341

-2log(Likelihood) = -8.94546866550008

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.855475	0.2125

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB201**

**RESULT\_STATS\_LOG10**

Normal(1.05841,0.12836)

**Quantiles**

100.0%	maximum	1.27356
99.5%		1.27356
97.5%		1.27332675
90.0%		1.226768
75.0%	quartile	1.16897
50.0%	median	1.040105
25.0%	quartile	0.9426985
10.0%		0.8803137
2.5%		0.816864575
0.5%		0.81594
0.0%	minimum	0.81594

**Summary Statistics**

Mean	1.058407
Std Dev	0.1283638
Std Err Mean	0.0202961
Upper 95% Mean	1.0994597
Lower 95% Mean	1.0173543
N	40

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.058407	1.0173543	1.0994597
Dispersion	$\sigma$	0.1283638	0.1051506	0.1648236

-2log(Likelihood) = -51.7158953963513

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.958363	0.1472

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB203**

**RESULT\_STATS\_LOG10**

Normal(1.19444,0.10932)

**Quantiles**

100.0%	maximum	1.36597
99.5%		1.36597
97.5%		1.36597
90.0%		1.36597
75.0%	quartile	1.302865
50.0%	median	1.1347
25.0%	quartile	1.115895
10.0%		1.10146
2.5%		1.10146
0.5%		1.10146
0.0%	minimum	1.10146

**Summary Statistics**

Mean	1.194444
Std Dev	0.1093168
Std Err Mean	0.048888
Upper 95% Mean	1.3301788
Lower 95% Mean	1.0587092
N	5

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.194444	1.0587092	1.3301788
Dispersion	$\sigma$	0.1093168	0.0654953	0.314128

-2log(Likelihood) = -8.94566319449981

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.855452	0.2124

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB206**

**RESULT\_STATS\_LOG10**

Normal(1.36018,0.13029)

**Quantiles**

100.0%	maximum	1.56554
99.5%		1.56554
97.5%		1.56554
90.0%		1.524554
75.0%	quartile	1.47505
50.0%	median	1.34933
25.0%	quartile	1.23736
10.0%		1.177346
2.5%		1.11242
0.5%		1.11242
0.0%	minimum	1.11242

**Summary Statistics**

Mean	1.3601834
Std Dev	0.1302851
Std Err Mean	0.0220222
Upper 95% Mean	1.4049379
Lower 95% Mean	1.3154289
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.3601834	1.3154289	1.4049379
Dispersion	$\sigma$	0.1302851	0.105384	0.1706998

-2log(Likelihood) = -44.3364075436043

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.952603	0.1362

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB209**

**RESULT\_STATS\_LOG10**

Normal(1.2814,0.23275)

**Quantiles**

100.0%	maximum	2.43231
99.5%		2.43231
97.5%		2.43231
90.0%		1.427232
75.0%	quartile	1.34825
50.0%	median	1.23161
25.0%	quartile	1.15079
10.0%		1.083006
2.5%		1.03779
0.5%		1.03779
0.0%	minimum	1.03779

**Summary Statistics**

Mean	1.2813969
Std Dev	0.2327469
Std Err Mean	0.0393414
Upper 95% Mean	1.3613482
Lower 95% Mean	1.2014455
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.2813969	1.2014455	1.3613482
Dispersion	$\sigma$	0.2327469	0.1882624	0.3049454

-2log(Likelihood) = -3.72056887195302

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.647472	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=Total Butyltins (ND = 0)**

**RESULT\_STATS\_LOG10**

Normal(-0.0155,0.54569)

**Quantiles**

100.0%	maximum	0.716003
99.5%		0.716003
97.5%		0.716003
90.0%		0.7097239
75.0%	quartile	0.60660175
50.0%	median	-0.3715115
25.0%	quartile	-0.4432375
10.0%		-0.5235928
2.5%		-0.528708
0.5%		-0.528708
0.0%	minimum	-0.528708

**Summary Statistics**

Mean	-0.015541
Std Dev	0.5456873
Std Err Mean	0.1725615
Upper 95% Mean	0.37482
Lower 95% Mean	-0.405902
N	10

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	-0.015541	-0.405902	0.37482
Dispersion	$\sigma$	0.5456873	0.375343	0.9962123

-2log(Likelihood) = 15.2645881747306

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.751868	0.0038*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=Total DDTs (ND = 0)**

**RESULT\_STATS\_LOG10**

Normal(3.88094,0.36104)

**Quantiles**

100.0%	maximum	4.29891
99.5%		4.29891
97.5%		4.292914
90.0%		4.212722
75.0%	quartile	4.14249
50.0%	median	4.01284
25.0%	quartile	3.75795
10.0%		3.166704
2.5%		3.008272
0.5%		2.97104
0.0%	minimum	2.97104

**Summary Statistics**

Mean	3.8809353
Std Dev	0.361041
Std Err Mean	0.0486828
Upper 95% Mean	3.9785383
Lower 95% Mean	3.7833322
N	55

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	3.8809353	3.7833322	3.9785383
Dispersion	$\sigma$	0.361041	0.3039475	0.4447456

-2log(Likelihood) = 43.0192156683856

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.843201	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=Total PCB Congeners (ND = 0)**

**RESULT\_STATS\_LOG10**

Normal(3.24007,0.46358)

**Quantiles**

100.0%	maximum	3.96455
99.5%		3.96455
97.5%		3.96275975
90.0%		3.802956
75.0%	quartile	3.4172775
50.0%	median	3.29581
25.0%	quartile	3.20278
10.0%		2.410641
2.5%		1.843015
0.5%		1.83086
0.0%	minimum	1.83086

**Summary Statistics**

Mean	3.240065
Std Dev	0.4635781
Std Err Mean	0.0655598
Upper 95% Mean	3.3718124
Lower 95% Mean	3.1083176
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	3.240065	3.1083176	3.3718124
Dispersion	$\sigma$	0.4635781	0.3872425	0.5776801

-2log(Likelihood) = 64.0158075815445

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.771697	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=Mercury****RESULT\_STATS\_LOG10**

Normal(-1.8655,0.15393)

**Quantiles**

100.0%	maximum	-1.64207
99.5%		-1.64207
97.5%		-1.64207
90.0%		-1.646678
75.0%	quartile	-1.75696
50.0%	median	-1.84466
25.0%	quartile	-1.91364
10.0%		-2.145468
2.5%		-2.15058
0.5%		-2.15058
0.0%	minimum	-2.15058

**Summary Statistics**

Mean	-1.865547
Std Dev	0.1539252
Std Err Mean	0.0397433
Upper 95% Mean	-1.780306
Lower 95% Mean	-1.950788
N	15

**Fitted Normal****Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	-1.865547	-1.950788	-1.780306
Dispersion	$\sigma$	0.1539252	0.1126928	0.2427553

**Measure**

-2*LogLikelihood	-14.57049
AICc	-9.570491
BIC	-9.154391

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.935676	0.3311

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=2,4'-DDD**

**RESULT\_STATS**

Normal(205.83,149.342)

**Quantiles**

100.0%	maximum	613.636
99.5%		613.636
97.5%		589.2611
90.0%		470.9998
75.0%	quartile	265.0775
50.0%	median	187.3015
25.0%	quartile	82.861775
10.0%		36.22658
2.5%		31.1034425
0.5%		30.5263
0.0%	minimum	30.5263

**Summary Statistics**

Mean	205.83013
Std Dev	149.34213
Std Err Mean	21.120167
Upper 95% Mean	248.2727
Lower 95% Mean	163.38757
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	205.83013	163.38757	248.2727
Dispersion	$\sigma$	149.34213	124.75056	186.10022

-2log(Likelihood) = 641.517841045758

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.897038	0.0004*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=2,4'-DDE**

**RESULT\_STATS**

Normal(341.821,198.429)

**Quantiles**

100.0%	maximum	918.033
99.5%		918.033
97.5%		904.253025
90.0%		598.3333
75.0%	quartile	460.7145
50.0%	median	333.333
25.0%	quartile	152.7225
10.0%		130.3946
2.5%		112.5
0.5%		112.5
0.0%	minimum	112.5

**Summary Statistics**

Mean	341.82072
Std Dev	198.42874
Std Err Mean	28.062061
Upper 95% Mean	398.21354
Lower 95% Mean	285.4279
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	341.82072	285.4279	398.21354
Dispersion	$\sigma$	198.42874	165.75427	247.26867

-2log(Likelihood) = 669.93685694357

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.905333	0.0007*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=2,4'-DDT**

**RESULT\_STATS**

Normal(42.6541,26.0569)

**Quantiles**

100.0%	maximum	206.897
99.5%		206.897
97.5%		164.1382
90.0%		56.37616
75.0%	quartile	47.5676
50.0%	median	37.5758
25.0%	quartile	30.6383
10.0%		26.49182
2.5%		21.99092
0.5%		21.1364
0.0%	minimum	21.1364

**Summary Statistics**

Mean	42.654131
Std Dev	26.0569
Std Err Mean	3.5135117
Upper 95% Mean	49.698298
Lower 95% Mean	35.609964
N	55

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	42.654131	35.609964	49.698298
Dispersion	$\sigma$	26.0569	21.936372	32.097999

-2log(Likelihood) = 513.714324810869

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.519785	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=4,4'-DDD**

**RESULT\_STATS**

Normal(2652.95,1659.11)

**Quantiles**

100.0%	maximum	6136.36
99.5%		6136.36
97.5%		5981.816
90.0%		4943.396
75.0%	quartile	3888.89
50.0%	median	2777.78
25.0%	quartile	1675.68
10.0%		195.0238
2.5%		59.09092
0.5%		56.8182
0.0%	minimum	56.8182

**Summary Statistics**

Mean	2652.9461
Std Dev	1659.1135
Std Err Mean	223.71482
Upper 95% Mean	3101.4673
Lower 95% Mean	2204.4249
N	55

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	2652.9461	2204.4249	3101.4673
Dispersion	$\sigma$	1659.1135	1396.7483	2043.7667

-2log(Likelihood) = 970.627495117485

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.965656	0.1170

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=4,4'-DDE**

**RESULT\_STATS**

Normal(6615.67,3452.87)

**Quantiles**

100.0%	maximum	13414.6
99.5%		13414.6
97.5%		13180.84
90.0%		11271.82
75.0%	quartile	9142.86
50.0%	median	7200
25.0%	quartile	3673.47
10.0%		1326.478
2.5%		971.2904
0.5%		935.484
0.0%	minimum	935.484

**Summary Statistics**

Mean	6615.6721
Std Dev	3452.8748
Std Err Mean	465.58554
Upper 95% Mean	7549.1149
Lower 95% Mean	5682.2293
N	55

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	6615.6721	5682.2293	7549.1149
Dispersion	$\sigma$	3452.8748	2906.8518	4253.3983

-2log(Likelihood) = 1051.24910716248

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.959740	0.0629

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=4,4'-DDT**

**RESULT\_STATS**

Normal(53.1052,14.6499)

**Quantiles**

100.0%	maximum	85.1613
99.5%		85.1613
97.5%		85.1613
90.0%		73.3333
75.0%	quartile	64.880775
50.0%	median	49.5
25.0%	quartile	39.918025
10.0%		36.73588
2.5%		32
0.5%		32
0.0%	minimum	32

**Summary Statistics**

Mean	53.105183
Std Dev	14.649909
Std Err Mean	2.6746951
Upper 95% Mean	58.575549
Lower 95% Mean	47.634818
N	30

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	53.105183	47.634818	58.575549
Dispersion	$\sigma$	14.649909	11.667289	19.694094

-2log(Likelihood) = 245.20235764522

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.938597	0.0834

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=Dibutyltin**

**RESULT\_STATS**

Normal(1.8925,2.03124)

**Quantiles**

100.0%	maximum	5.2
99.5%		5.2
97.5%		5.2
90.0%		5.13
75.0%	quartile	4.05
50.0%	median	0.4255
25.0%	quartile	0.36075
10.0%		0.2997
2.5%		0.296
0.5%		0.296
0.0%	minimum	0.296

**Summary Statistics**

Mean	1.8925
Std Dev	2.0312353
Std Err Mean	0.642333
Upper 95% Mean	3.345582
Lower 95% Mean	0.4394418
N	10

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.8925	0.4394418	3.345582
Dispersion	$\sigma$	2.0312353	1.3971552	3.7082439

-2log(Likelihood) = 41.5516535105562

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.749929	0.0036*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=Mercury**

**RESULT\_STATS**

Normal(0.01797,0.01331)

**Quantiles**

100.0%	maximum	0.0482
99.5%		0.0482
97.5%		0.0482
90.0%		0.04202
75.0%	quartile	0.02165
50.0%	median	0.0147
25.0%	quartile	0.0082
10.0%		0.004092
2.5%		0.00357
0.5%		0.00357
0.0%	minimum	0.00357

**Summary Statistics**

Mean	0.0179732
Std Dev	0.0133062
Std Err Mean	0.0026612
Upper 95% Mean	0.0234657
Lower 95% Mean	0.0124807
N	25

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.0179732	0.0124807	0.0234657
Dispersion	$\sigma$	0.0133062	0.0103898	0.0185109

-2log(Likelihood) = -146.029457758585

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.860221	0.0028*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB003**

**RESULT\_STATS**

Normal(10.6663,3.00223)

**Quantiles**

100.0%	maximum	16.6452
99.5%		16.6452
97.5%		16.6452
90.0%		14.96094
75.0%	quartile	12.928775
50.0%	median	10.31875
25.0%	quartile	7.8928825
10.0%		6.817307
2.5%		5.96170125
0.5%		5.79545
0.0%	minimum	5.79545

**Summary Statistics**

Mean	10.66629
Std Dev	3.0022309
Std Err Mean	0.4245796
Upper 95% Mean	11.519514
Lower 95% Mean	9.8130652
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	10.66629	9.8130652	11.519514
Dispersion	$\sigma$	3.0022309	2.5078656	3.7411801

-2log(Likelihood) = 250.829418977725

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.957916	0.0727

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB005/008**

**RESULT\_STATS**

Normal(28.6893,30.5359)

**Quantiles**

100.0%	maximum	133.333
99.5%		133.333
97.5%		133.037375
90.0%		98.87978
75.0%	quartile	23.92855
50.0%	median	18.88885
25.0%	quartile	14.271275
10.0%		12.5
2.5%		10.6603525
0.5%		10.566
0.0%	minimum	10.566

**Summary Statistics**

Mean	28.689342
Std Dev	30.535851
Std Err Mean	4.3184214
Upper 95% Mean	37.367535
Lower 95% Mean	20.011149
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	28.689342	20.011149	37.367535
Dispersion	$\sigma$	30.535851	25.507634	38.051742

-2log(Likelihood) = 482.783995419636

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.530544	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB015**

**RESULT\_STATS**

Normal(8.30808,2.36545)

**Quantiles**

100.0%	maximum	12.9677
99.5%		12.9677
97.5%		12.9677
90.0%		11.9799
75.0%	quartile	10.1081
50.0%	median	7.61364
25.0%	quartile	6.09091
10.0%		5.442306
2.5%		4.94545
0.5%		4.94545
0.0%	minimum	4.94545

**Summary Statistics**

Mean	8.308078
Std Dev	2.365454
Std Err Mean	0.3998347
Upper 95% Mean	9.1206399
Lower 95% Mean	7.4955161
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	8.308078	7.4955161	9.1206399
Dispersion	$\sigma$	2.365454	1.9133497	3.0992229

-2log(Likelihood) = 158.593595929989

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.942299	0.0658

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB018**

**RESULT\_STATS**

Normal(25.6569,48.2074)

**Quantiles**

100.0%	maximum	203.226
99.5%		203.226
97.5%		200.9979
90.0%		85
75.0%	quartile	11.8333
50.0%	median	9.0814
25.0%	quartile	7.12143
10.0%		6.018094
2.5%		5.247628
0.5%		5.23636
0.0%	minimum	5.23636

**Summary Statistics**

Mean	25.656893
Std Dev	48.207377
Std Err Mean	7.1863315
Upper 95% Mean	40.139992
Lower 95% Mean	11.173793
N	45

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	25.656893	11.173793	40.139992
Dispersion	$\sigma$	48.207377	39.908682	60.895542

-2log(Likelihood) = 475.500554202547

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.440203	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB027**

**RESULT\_STATS**

Normal(9.41688,2.68005)

**Quantiles**

100.0%	maximum	14.7097
99.5%		14.7097
97.5%		14.7097
90.0%		13.56554
75.0%	quartile	11.4459
50.0%	median	8.63636
25.0%	quartile	6.90909
10.0%		6.16923
2.5%		5.6
0.5%		5.6
0.0%	minimum	5.6

**Summary Statistics**

Mean	9.41688
Std Dev	2.6800455
Std Err Mean	0.4530104
Upper 95% Mean	10.337508
Lower 95% Mean	8.4962522
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	9.41688	8.4962522	10.337508
Dispersion	$\sigma$	2.6800455	2.1678139	3.5114013

-2log(Likelihood) = 167.334061373158

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.942751	0.0679

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB028**

**RESULT\_STATS**

Normal(94.395,147.974)

**Quantiles**

100.0%	maximum	575.758
99.5%		575.758
97.5%		559.360025
90.0%		348.5224
75.0%	quartile	125.95775
50.0%	median	5.76437
25.0%	quartile	3.9123375
10.0%		3.009091
2.5%		2.66254525
0.5%		2.61538
0.0%	minimum	2.61538

**Summary Statistics**

Mean	94.394985
Std Dev	147.97378
Std Err Mean	20.926653
Upper 95% Mean	136.44867
Lower 95% Mean	52.341303
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	94.394985	52.341303	136.44867
Dispersion	$\sigma$	147.97378	123.60753	184.39506

-2log(Likelihood) = 640.597362299633

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.668730	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB029**

**RESULT\_STATS**

Normal(9.93822,2.79659)

**Quantiles**

100.0%	maximum	15.4839
99.5%		15.4839
97.5%		15.4839
90.0%		13.94395
75.0%	quartile	12.0473
50.0%	median	9.607095
25.0%	quartile	7.34855
10.0%		6.351921
2.5%		5.59454975
0.5%		5.45455
0.0%	minimum	5.45455

**Summary Statistics**

Mean	9.9382158
Std Dev	2.7965922
Std Err Mean	0.3954979
Upper 95% Mean	10.732999
Lower 95% Mean	9.1434331
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	9.9382158	9.1434331	10.732999
Dispersion	$\sigma$	2.7965922	2.3360886	3.4849268

-2log(Likelihood) = 243.734013196778

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.956919	0.0661

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB031**

**RESULT\_STATS**

Normal(24.9526,47.5625)

**Quantiles**

100.0%	maximum	172.973
99.5%		172.973
97.5%		172.421625
90.0%		124.1362
75.0%	quartile	8.738245
50.0%	median	6.851055
25.0%	quartile	5.1879875
10.0%		4.174531
2.5%		3.650704
0.5%		3.63636
0.0%	minimum	3.63636

**Summary Statistics**

Mean	24.952555
Std Dev	47.562541
Std Err Mean	6.7263591
Upper 95% Mean	38.469679
Lower 95% Mean	11.43543
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	24.952555	11.43543	38.469679
Dispersion	$\sigma$	47.562541	39.730608	59.269269

-2log(Likelihood) = 527.098403693912

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.468072	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB033**

**RESULT\_STATS**

Normal(61.333,97.3807)

**Quantiles**

100.0%	maximum	354.839
99.5%		354.839
97.5%		354.30135
90.0%		289.84
75.0%	quartile	50.35605
50.0%	median	18.13215
25.0%	quartile	13.073875
10.0%		10
2.5%		8.593508
0.5%		8.57143
0.0%	minimum	8.57143

**Summary Statistics**

Mean	61.332979
Std Dev	97.380715
Std Err Mean	15.397243
Upper 95% Mean	92.476842
Lower 95% Mean	30.189115
N	40

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	61.332979	30.189115	92.476842
Dispersion	$\sigma$	97.380715	79.770486	125.04029

-2log(Likelihood) = 478.805337933256

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.567574	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB037**

**RESULT\_STATS**

Normal(7.46069,2.10254)

**Quantiles**

100.0%	maximum	11.6129
99.5%		11.6129
97.5%		11.6129
90.0%		10.49673
75.0%	quartile	8.994835
50.0%	median	7.2246
25.0%	quartile	5.5340875
10.0%		4.731412
2.5%		4.18590875
0.5%		4.09091
0.0%	minimum	4.09091

**Summary Statistics**

Mean	7.4606858
Std Dev	2.1025446
Std Err Mean	0.2973447
Upper 95% Mean	8.0582224
Lower 95% Mean	6.8631492
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	7.4606858	6.8631492	8.0582224
Dispersion	$\sigma$	2.1025446	1.756327	2.620051

-2log(Likelihood) = 215.208686137042

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.956777	0.0652

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB044**

**RESULT\_STATS**

Normal(14.0091,21.4774)

**Quantiles**

100.0%	maximum	153.488
99.5%		153.488
97.5%		132.990605
90.0%		15.50344
75.0%	quartile	13.58095
50.0%	median	10.3529
25.0%	quartile	8.11944
10.0%		7.057692
2.5%		5.944094
0.5%		5.86364
0.0%	minimum	5.86364

**Summary Statistics**

Mean	14.009051
Std Dev	21.477397
Std Err Mean	3.2016613
Upper 95% Mean	20.461575
Lower 95% Mean	7.5565265
N	45

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	14.009051	7.5565265	20.461575
Dispersion	$\sigma$	21.477397	17.780154	27.130241

-2log(Likelihood) = 402.734565734078

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.241677	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB049**

**RESULT\_STATS**

Normal(82.3622,77.2883)

**Quantiles**

100.0%	maximum	354.839
99.5%		354.839
97.5%		346.447375
90.0%		198.0263
75.0%	quartile	102.5
50.0%	median	64.0199
25.0%	quartile	20.7091
10.0%		15.34213
2.5%		11.7978275
0.5%		11.5789
0.0%	minimum	11.5789

**Summary Statistics**

Mean	82.362224
Std Dev	77.288294
Std Err Mean	10.930215
Upper 95% Mean	104.32731
Lower 95% Mean	60.397134
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	82.362224	60.397134	104.32731
Dispersion	$\sigma$	77.288294	64.561541	96.311521

-2log(Likelihood) = 575.64810405644

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.751640	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB052**

**RESULT\_STATS**

Normal(142.696,123.952)

**Quantiles**

100.0%	maximum	545.455
99.5%		545.455
97.5%		542.547975
90.0%		385.7469
75.0%	quartile	143.1275
50.0%	median	118.182
25.0%	quartile	89.6104
10.0%		10.99524
2.5%		6.756958
0.5%		6.63158
0.0%	minimum	6.63158

**Summary Statistics**

Mean	142.6958
Std Dev	123.95171
Std Err Mean	17.52942
Upper 95% Mean	177.92249
Lower 95% Mean	107.46911
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	142.6958	107.46911	177.92249
Dispersion	$\sigma$	123.95171	103.54108	154.46037

-2log(Likelihood) = 622.883062623926

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.707384	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB056**

**RESULT\_STATS**

Normal(46.1775,54.5872)

**Quantiles**

100.0%	maximum	239.394
99.5%		239.394
97.5%		228.56065
90.0%		139.73303
75.0%	quartile	54.798025
50.0%	median	21.4212
25.0%	quartile	14.7727
10.0%		12.33778
2.5%		9.9882335
0.5%		9.59016
0.0%	minimum	9.59016

**Summary Statistics**

Mean	46.177481
Std Dev	54.587157
Std Err Mean	7.7197897
Upper 95% Mean	61.690979
Lower 95% Mean	30.663983
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	46.177481	30.663983	61.690979
Dispersion	$\sigma$	54.587157	45.598508	68.022877

-2log(Likelihood) = 540.873716186877

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.640294	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB060**

**RESULT\_STATS**

Normal(25.2898,23.1237)

**Quantiles**

100.0%	maximum	122.581
99.5%		122.581
97.5%		121.6376875
90.0%		65.82096
75.0%	quartile	23.3333
50.0%	median	18.41295
25.0%	quartile	14.398475
10.0%		11.68871
2.5%		10.34243
0.5%		10.3279
0.0%	minimum	10.3279

**Summary Statistics**

Mean	25.289793
Std Dev	23.123739
Std Err Mean	3.6561841
Upper 95% Mean	32.685123
Lower 95% Mean	17.894462
N	40

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	25.289793	17.894462	32.685123
Dispersion	$\sigma$	23.123739	18.942065	29.691701

-2log(Likelihood) = 363.783861750758

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.556103	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB066**

**RESULT\_STATS**

Normal(192.056,193.409)

**Quantiles**

100.0%	maximum	806.452
99.5%		806.452
97.5%		802.11965
90.0%		578.6613
75.0%	quartile	186.1605
50.0%	median	140.7545
25.0%	quartile	102.14335
10.0%		24.41932
2.5%		10.7253175
0.5%		10.5263
0.0%	minimum	10.5263

**Summary Statistics**

Mean	192.056
Std Dev	193.40925
Std Err Mean	27.352198
Upper 95% Mean	247.0223
Lower 95% Mean	137.0897
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	192.056	137.0897	247.0223
Dispersion	$\sigma$	193.40925	161.56132	241.01372

-2log(Likelihood) = 667.374693964426

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.642894	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB070**

**RESULT\_STATS**

— Normal(129.46,140.618)

**Quantiles**

100.0%	maximum	581.395
99.5%		581.395
97.5%		581.18875
90.0%		385.4041
75.0%	quartile	122.7475
50.0%	median	92.38505
25.0%	quartile	69.8611
10.0%		10.47161
2.5%		6.43519775
0.5%		6.31579
0.0%	minimum	6.31579

**Summary Statistics**

Mean	129.45969
Std Dev	140.61826
Std Err Mean	19.886424
Upper 95% Mean	169.42296
Lower 95% Mean	89.496425
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	129.45969	89.496425	169.42296
Dispersion	$\sigma$	140.61826	117.46321	175.2291

-2log(Likelihood) = 635.498734570453

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.606184	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB074**

**RESULT\_STATS**

Normal(83.4795,86.6885)

**Quantiles**

100.0%	maximum	363.636
99.5%		363.636
97.5%		361.216825
90.0%		235.9375
75.0%	quartile	82.2917
50.0%	median	68.05555
25.0%	quartile	43.469925
10.0%		9.958704
2.5%		7.64950475
0.5%		7.21311
0.0%	minimum	7.21311

**Summary Statistics**

Mean	83.479513
Std Dev	86.688541
Std Err Mean	12.259611
Upper 95% Mean	108.11612
Lower 95% Mean	58.842903
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	83.479513	58.842903	108.11612
Dispersion	$\sigma$	86.688541	72.413887	108.02548

-2log(Likelihood) = 587.126024510409

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.664823	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB077**

**RESULT\_STATS**

Normal(12.7915,15.3221)

**Quantiles**

100.0%	maximum	93.5484
99.5%		93.5484
97.5%		89.74341
90.0%		14.35908
75.0%	quartile	12.0869
50.0%	median	9.17647
25.0%	quartile	7.279495
10.0%		6.330768
2.5%		5.3243175
0.5%		5.25
0.0%	minimum	5.25

**Summary Statistics**

Mean	12.791498
Std Dev	15.322061
Std Err Mean	2.284078
Upper 95% Mean	17.394755
Lower 95% Mean	8.1882412
N	45

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	12.791498	8.1882412	17.394755
Dispersion	$\sigma$	15.322061	12.684433	19.354822

-2log(Likelihood) = 372.340900129336

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.368269	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB081**

**RESULT\_STATS**

— Normal(16.0724,4.39435)

**Quantiles**

100.0%	maximum	23.2258
99.5%		23.2258
97.5%		23.2258
90.0%		23.2258
75.0%	quartile	20.2971
50.0%	median	13.6364
25.0%	quartile	13.0658
10.0%		12.6316
2.5%		12.6316
0.5%		12.6316
0.0%	minimum	12.6316

**Summary Statistics**

Mean	16.07244
Std Dev	4.3943484
Std Err Mean	1.9652123
Upper 95% Mean	21.528744
Lower 95% Mean	10.616136
N	5

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	16.07244	10.616136	21.528744
Dispersion	$\sigma$	4.3943484	2.6327997	12.627404

-2log(Likelihood) = 27.9925778431739

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.823403	0.1240

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB087**

**RESULT\_STATS**

Normal(109.614,42.0373)

**Quantiles**

100.0%	maximum	203.226
99.5%		203.226
97.5%		198.501775
90.0%		160.4666
75.0%	quartile	132.50025
50.0%	median	113.9765
25.0%	quartile	92.94075
10.0%		27.37556
2.5%		11.7978275
0.5%		11.5789
0.0%	minimum	11.5789

**Summary Statistics**

Mean	109.61426
Std Dev	42.03732
Std Err Mean	5.9449748
Upper 95% Mean	121.56113
Lower 95% Mean	97.667386
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	109.61426	97.667386	121.56113
Dispersion	$\sigma$	42.03732	35.115203	52.384107

-2log(Likelihood) = 514.749632348655

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.927629	0.0045*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB095**

**RESULT\_STATS**

Normal(114.306,73.1563)

**Quantiles**

100.0%	maximum	333.333
99.5%		333.333
97.5%		331.2012
90.0%		243.0556
75.0%	quartile	126.817
50.0%	median	100
25.0%	quartile	78.52705
10.0%		32.32907
2.5%		16.0880125
0.5%		15.7895
0.0%	minimum	15.7895

**Summary Statistics**

Mean	114.30568
Std Dev	73.156297
Std Err Mean	10.345863
Upper 95% Mean	135.09647
Lower 95% Mean	93.514894
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	114.30568	93.514894	135.09647
Dispersion	$\sigma$	73.156297	61.109943	91.162502

-2log(Likelihood) = 570.153674277806

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.809893	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB097**

**RESULT\_STATS**

Normal(65.8323,59.7581)

**Quantiles**

100.0%	maximum	241.935
99.5%		241.935
97.5%		239.356325
90.0%		179.1982
75.0%	quartile	82.7841
50.0%	median	55.57465
25.0%	quartile	19.8611
10.0%		15.9921
2.5%		11.0525525
0.5%		10.3279
0.0%	minimum	10.3279

**Summary Statistics**

Mean	65.832278
Std Dev	59.758064
Std Err Mean	8.4510664
Upper 95% Mean	82.815332
Lower 95% Mean	48.849224
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	65.832278	48.849224	82.815332
Dispersion	$\sigma$	59.758064	49.917943	74.466517

-2log(Likelihood) = 549.924267469104

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.775357	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB099**

**RESULT\_STATS**

Normal(128.6,95.9971)

**Quantiles**

100.0%	maximum	424.242
99.5%		424.242
97.5%		422.691825
90.0%		311.0583
75.0%	quartile	147.2145
50.0%	median	107.6255
25.0%	quartile	75.981475
10.0%		16.45918
2.5%		6.54244875
0.5%		6.42105
0.0%	minimum	6.42105

**Summary Statistics**

Mean	128.60027
Std Dev	95.997123
Std Err Mean	13.576043
Upper 95% Mean	155.88235
Lower 95% Mean	101.31819
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	128.60027	101.31819	155.88235
Dispersion	$\sigma$	95.997123	80.189662	119.62522

-2log(Likelihood) = 597.325675877171

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.791768	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB101**

**RESULT\_STATS**

Normal(201.481,145.338)

**Quantiles**

100.0%	maximum	645.161
99.5%		645.161
97.5%		640.41615
90.0%		442.4238
75.0%	quartile	214.6455
50.0%	median	179.659
25.0%	quartile	130.80325
10.0%		27.07093
2.5%		10.51083
0.5%		10.3158
0.0%	minimum	10.3158

**Summary Statistics**

Mean	201.4813
Std Dev	145.3382
Std Err Mean	20.553926
Upper 95% Mean	242.78596
Lower 95% Mean	160.17664
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	201.4813	160.17664	242.78596
Dispersion	$\sigma$	145.3382	121.40594	181.11078

-2log(Likelihood) = 638.800200232817

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.776123	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB105**

**RESULT\_STATS**

Normal(40.5105,59.882)

**Quantiles**

100.0%	maximum	212.903
99.5%		212.903
97.5%		211.6652
90.0%		157.3098
75.0%	quartile	68.29005
50.0%	median	8.40278
25.0%	quartile	5.5625
10.0%		4.5082
2.5%		3.9392845
0.5%		3.92857
0.0%	minimum	3.92857

**Summary Statistics**

Mean	40.510509
Std Dev	59.881989
Std Err Mean	8.9266798
Upper 95% Mean	58.50105
Lower 95% Mean	22.519968
N	45

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	40.510509	22.519968	58.50105
Dispersion	$\sigma$	59.881989	49.573559	75.642907

-2log(Likelihood) = 495.018287262623

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.651007	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB110**

**RESULT\_STATS**

Normal(184.514,131.709)

**Quantiles**

100.0%	maximum	581.395
99.5%		581.395
97.5%		581.18875
90.0%		415.8584
75.0%	quartile	188.31625
50.0%	median	161.754
25.0%	quartile	129.969
10.0%		18.201607
2.5%		4.93365475
0.5%		4.84211
0.0%	minimum	4.84211

**Summary Statistics**

Mean	184.51385
Std Dev	131.70916
Std Err Mean	18.626488
Upper 95% Mean	221.94518
Lower 95% Mean	147.08252
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	184.51385	147.08252	221.94518
Dispersion	$\sigma$	131.70916	110.02114	164.12718

-2log(Likelihood) = 628.95347075606

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.758574	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB114**

**RESULT\_STATS**

Normal(10.1561,2.88978)

**Quantiles**

100.0%	maximum	15.871
99.5%		15.871
97.5%		15.871
90.0%		14.62254
75.0%	quartile	12.3378
50.0%	median	9.31818
25.0%	quartile	7.45455
10.0%		6.653846
2.5%		6.03636
0.5%		6.03636
0.0%	minimum	6.03636

**Summary Statistics**

Mean	10.156077
Std Dev	2.8897785
Std Err Mean	0.4884617
Upper 95% Mean	11.148751
Lower 95% Mean	9.1634038
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	10.156077	9.1634038	11.148751
Dispersion	$\sigma$	2.8897785	2.3374611	3.7861939

-2log(Likelihood) = 172.608287133982

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.942990	0.0690

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB118**

**RESULT\_STATS**

Normal(157.565,116.836)

**Quantiles**

100.0%	maximum	516.129
99.5%		516.129
97.5%		514.891225
90.0%		390.4041
75.0%	quartile	166.86075
50.0%	median	128.8145
25.0%	quartile	108.52275
10.0%		56.9591
2.5%		9.99610625
0.5%		9.54545
0.0%	minimum	9.54545

**Summary Statistics**

Mean	157.56525
Std Dev	116.83592
Std Err Mean	16.523094
Upper 95% Mean	190.76965
Lower 95% Mean	124.36084
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	157.56525	124.36084	190.76965
Dispersion	$\sigma$	116.83592	97.597018	145.59314

-2log(Likelihood) = 616.970909521826

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.719724	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB119**

**RESULT\_STATS**

Normal(11.6648,3.28303)

**Quantiles**

100.0%	maximum	18.1935
99.5%		18.1935
97.5%		18.1935
90.0%		16.357
75.0%	quartile	14.104175
50.0%	median	11.2676
25.0%	quartile	8.6186625
10.0%		7.437825
2.5%		6.56659075
0.5%		6.40909
0.0%	minimum	6.40909

**Summary Statistics**

Mean	11.664826
Std Dev	3.2830274
Std Err Mean	0.4642902
Upper 95% Mean	12.597852
Lower 95% Mean	10.7318
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	11.664826	10.7318	12.597852
Dispersion	$\sigma$	3.2830274	2.7424244	4.0910899

-2log(Likelihood) = 259.770451002803

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.957292	0.0685

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB123**

**RESULT\_STATS**

Normal(13.2299,4.05122)

**Quantiles**

100.0%	maximum	20.625
99.5%		20.625
97.5%		20.625
90.0%		19.31587
75.0%	quartile	16.430225
50.0%	median	13.0467
25.0%	quartile	9.2774425
10.0%		8.136608
2.5%		6.81818
0.5%		6.81818
0.0%	minimum	6.81818

**Summary Statistics**

Mean	13.229888
Std Dev	4.0512169
Std Err Mean	0.7396476
Upper 95% Mean	14.742637
Lower 95% Mean	11.717139
N	30

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	13.229888	11.717139	14.742637
Dispersion	$\sigma$	4.0512169	3.2264172	5.4461124

-2log(Likelihood) = 168.077350438619

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.947246	0.1426

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB126**

**RESULT\_STATS**

Normal(9.90968,2.81986)

**Quantiles**

100.0%	maximum	15.4839
99.5%		15.4839
97.5%		15.4839
90.0%		14.27022
75.0%	quartile	12.0405
50.0%	median	9.09091
25.0%	quartile	7.27273
10.0%		6.49231
2.5%		5.89091
0.5%		5.89091
0.0%	minimum	5.89091

**Summary Statistics**

Mean	9.909676
Std Dev	2.8198636
Std Err Mean	0.4766439
Upper 95% Mean	10.878333
Lower 95% Mean	8.941019
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	9.909676	8.941019	10.878333
Dispersion	$\sigma$	2.8198636	2.2809089	3.6945913

-2log(Likelihood) = 170.893893937946

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.942915	0.0687

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB128**

**RESULT\_STATS**

Normal(32.1999,30.6627)

**Quantiles**

100.0%	maximum	84.8485
99.5%		84.8485
97.5%		84.8485
90.0%		84.73574
75.0%	quartile	63.543875
50.0%	median	15.30135
25.0%	quartile	11.3352
10.0%		10.59867
2.5%		10.5263
0.5%		10.5263
0.0%	minimum	10.5263

**Summary Statistics**

Mean	32.19985
Std Dev	30.662706
Std Err Mean	9.6963991
Upper 95% Mean	54.134629
Lower 95% Mean	10.265071
N	10

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	32.19985	10.265071	54.134629
Dispersion	$\sigma$	30.662706	21.090889	55.978149

-2log(Likelihood) = 95.8397133886657

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.700809	0.0009*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB132/153**

**RESULT\_STATS**

Normal(230.838,99.3309)

**Quantiles**

100.0%	maximum	516.129
99.5%		516.129
97.5%		508.495825
90.0%		388.6365
75.0%	quartile	258.07675
50.0%	median	213.7005
25.0%	quartile	187.663
10.0%		112.4002
2.5%		63.9415225
0.5%		62.5
0.0%	minimum	62.5

**Summary Statistics**

Mean	230.83799
Std Dev	99.330902
Std Err Mean	14.047511
Upper 95% Mean	259.06752
Lower 95% Mean	202.60846
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	230.83799	202.60846	259.06752
Dispersion	$\sigma$	99.330902	82.974481	123.77955

-2log(Likelihood) = 600.739525336673

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.895757	0.0003*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB137**

**RESULT\_STATS**

Normal(17.4118,4.76057)

**Quantiles**

100.0%	maximum	25.1613
99.5%		25.1613
97.5%		25.1613
90.0%		25.1613
75.0%	quartile	21.98855
50.0%	median	14.7727
25.0%	quartile	14.1546
10.0%		13.6842
2.5%		13.6842
0.5%		13.6842
0.0%	minimum	13.6842

**Summary Statistics**

Mean	17.4118
Std Dev	4.7605691
Std Err Mean	2.1289912
Upper 95% Mean	23.322827
Lower 95% Mean	11.500773
N	5

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	17.4118	11.500773	23.322827
Dispersion	$\sigma$	4.7605691	2.8522147	13.67976

-2log(Likelihood) = 28.7930574450132

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.823402	0.1240

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB138/158**

**RESULT\_STATS**

Normal(185.431,80.1834)

**Quantiles**

100.0%	maximum	395.349
99.5%		395.349
97.5%		393.0797
90.0%		293.6873
75.0%	quartile	212.82325
50.0%	median	182.0855
25.0%	quartile	158.01925
10.0%		70.6311
2.5%		11.181805
0.5%		10.6818
0.0%	minimum	10.6818

**Summary Statistics**

Mean	185.43079
Std Dev	80.1834
Std Err Mean	11.339645
Upper 95% Mean	208.21866
Lower 95% Mean	162.64292
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	185.43079	162.64292	208.21866
Dispersion	$\sigma$	80.1834	66.979921	99.919209

-2log(Likelihood) = 579.325503839693

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.913831	0.0014*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB141**

**RESULT\_STATS**

Normal(18.2942,13.2639)

**Quantiles**

100.0%	maximum	67.7419
99.5%		67.7419
97.5%		67.7419
90.0%		34.04056
75.0%	quartile	18.8571
50.0%	median	15.7143
25.0%	quartile	11.2245
10.0%		9.040986
2.5%		7.5
0.5%		7.5
0.0%	minimum	7.5

**Summary Statistics**

Mean	18.294162
Std Dev	13.263943
Std Err Mean	2.2420156
Upper 95% Mean	22.850486
Lower 95% Mean	13.737838
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	18.294162	13.737838	22.850486
Dispersion	$\sigma$	13.263943	10.728833	17.378446

-2log(Likelihood) = 279.279148347518

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.628730	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB149**

**RESULT\_STATS**

Normal(158.16,69.6448)

**Quantiles**

100.0%	maximum	325.581
99.5%		325.581
97.5%		319.379475
90.0%		227.0457
75.0%	quartile	193.37825
50.0%	median	161.967
25.0%	quartile	130.769
10.0%		26.47093
2.5%		10.51083
0.5%		10.3158
0.0%	minimum	10.3158

**Summary Statistics**

Mean	158.16024
Std Dev	69.644767
Std Err Mean	9.8492573
Upper 95% Mean	177.95306
Lower 95% Mean	138.36742
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	158.16024	138.36742	177.95306
Dispersion	$\sigma$	69.644767	58.176642	86.786667

-2log(Likelihood) = 565.234609101957

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.943052	0.0178*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB151**

**RESULT\_STATS**

Normal(35.3852,30.3681)

**Quantiles**

100.0%	maximum	129.032
99.5%		129.032
97.5%		120.2148675
90.0%		74.92631
75.0%	quartile	56.06985
50.0%	median	26.1267
25.0%	quartile	8.9155375
10.0%		7.545114
2.5%		5.22461725
0.5%		5.01639
0.0%	minimum	5.01639

**Summary Statistics**

Mean	35.385166
Std Dev	30.368086
Std Err Mean	4.294696
Upper 95% Mean	44.01568
Lower 95% Mean	26.754651
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	35.385166	26.754651	44.01568
Dispersion	$\sigma$	30.368086	25.367495	37.842686

-2log(Likelihood) = 482.233080102643

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.843612	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB156**

**RESULT\_STATS**

Normal(7.14558,2.02798)

**Quantiles**

100.0%	maximum	11.2258
99.5%		11.2258
97.5%		11.2258
90.0%		10.2182
75.0%	quartile	8.62162
50.0%	median	6.59091
25.0%	quartile	5.27273
10.0%		4.684614
2.5%		4.21818
0.5%		4.21818
0.0%	minimum	4.21818

**Summary Statistics**

Mean	7.145582
Std Dev	2.027981
Std Err Mean	0.3427914
Upper 95% Mean	7.8422178
Lower 95% Mean	6.4489462
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	7.145582	6.4489462	7.8422178
Dispersion	$\sigma$	2.027981	1.6403772	2.657065

-2log(Likelihood) = 147.818547682076

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.945795	0.0842

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB157**

**RESULT\_STATS**

Normal(6.47405,1.82463)

**Quantiles**

100.0%	maximum	10.0645
99.5%		10.0645
97.5%		10.0645
90.0%		9.117887
75.0%	quartile	7.815185
50.0%	median	6.26916
25.0%	quartile	4.8083075
10.0%		4.110895
2.5%		3.6304525
0.5%		3.54545
0.0%	minimum	3.54545

**Summary Statistics**

Mean	6.47405
Std Dev	1.8246276
Std Err Mean	0.2580413
Upper 95% Mean	6.9926034
Lower 95% Mean	5.9554966
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	6.47405	5.9554966	6.9926034
Dispersion	$\sigma$	1.8246276	1.5241735	2.2737293

-2log(Likelihood) = 201.031444323599

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.956383	0.0627

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB167**

**RESULT\_STATS**

Normal(7.60489,2.21414)

**Quantiles**

100.0%	maximum	12
99.5%		12
97.5%		11.990625
90.0%		10.66917
75.0%	quartile	9.4453825
50.0%	median	7.010225
25.0%	quartile	5.60171
10.0%		4.878202
2.5%		4.169457
0.5%		4.15909
0.0%	minimum	4.15909

**Summary Statistics**

Mean	7.6048863
Std Dev	2.2141392
Std Err Mean	0.3500861
Upper 95% Mean	8.3130023
Lower 95% Mean	6.8967702
N	40

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	7.6048863	6.8967702	8.3130023
Dispersion	$\sigma$	2.2141392	1.8137365	2.8430333

-2log(Likelihood) = 176.104179767156

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.944563	0.0494*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB168**

**RESULT\_STATS**

Normal(6.03678,1.71329)

**Quantiles**

100.0%	maximum	9.48387
99.5%		9.48387
97.5%		9.48387
90.0%		8.632604
75.0%	quartile	7.28378
50.0%	median	5.56818
25.0%	quartile	4.45455
10.0%		3.95769
2.5%		3.56364
0.5%		3.56364
0.0%	minimum	3.56364

**Summary Statistics**

Mean	6.0367837
Std Dev	1.7132928
Std Err Mean	0.2895993
Upper 95% Mean	6.6253204
Lower 95% Mean	5.448247
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	6.0367837	5.448247	6.6253204
Dispersion	$\sigma$	1.7132928	1.3858347	2.2447599

-2log(Likelihood) = 136.014897851816

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.945795	0.0842

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB169**

**RESULT\_STATS**

Normal(7.56889,2.15576)

**Quantiles**

100.0%	maximum	11.8065
99.5%		11.8065
97.5%		11.8065
90.0%		10.9229
75.0%	quartile	9.21622
50.0%	median	6.93182
25.0%	quartile	5.54545
10.0%		4.95769
2.5%		4.50909
0.5%		4.50909
0.0%	minimum	4.50909

**Summary Statistics**

Mean	7.5688869
Std Dev	2.1557578
Std Err Mean	0.3643896
Upper 95% Mean	8.3094156
Lower 95% Mean	6.8283582
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	7.5688869	6.8283582	8.3094156
Dispersion	$\sigma$	2.1557578	1.7437322	2.8244784

-2log(Likelihood) = 152.095657694145

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.941910	0.0640

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB170**

**RESULT\_STATS**

Normal(8.89901,7.74896)

**Quantiles**

100.0%	maximum	60.4651
99.5%		60.4651
97.5%		47.19041
90.0%		11.01386
75.0%	quartile	9.7171725
50.0%	median	7.59079
25.0%	quartile	5.8062575
10.0%		4.964105
2.5%		4.3942025
0.5%		4.29545
0.0%	minimum	4.29545

**Summary Statistics**

Mean	8.8990126
Std Dev	7.7489597
Std Err Mean	1.0958684
Upper 95% Mean	11.101243
Lower 95% Mean	6.6967826
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	8.8990126	6.6967826	11.101243
Dispersion	$\sigma$	7.7489597	6.4729696	9.6562372

-2log(Likelihood) = 345.649714035365

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.354475	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB174**

**RESULT\_STATS**

Normal(21.8421,12.5328)

**Quantiles**

100.0%	maximum	67.5676
99.5%		67.5676
97.5%		67.3367425
90.0%		28.94157
75.0%	quartile	23.407725
50.0%	median	18.5604
25.0%	quartile	14.9202
10.0%		11.61416
2.5%		10.71917
0.5%		10.7143
0.0%	minimum	10.7143

**Summary Statistics**

Mean	21.84213
Std Dev	12.532797
Std Err Mean	1.9816091
Upper 95% Mean	25.850313
Lower 95% Mean	17.833947
N	40

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	21.84213	17.833947	25.850313
Dispersion	$\sigma$	12.532797	10.266378	16.092556

-2log(Likelihood) = 314.782997499939

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.687433	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB177**

**RESULT\_STATS**

Normal(10.7787,3.03784)

**Quantiles**

100.0%	maximum	16.8387
99.5%		16.8387
97.5%		16.8387
90.0%		15.13329
75.0%	quartile	12.976175
50.0%	median	10.4373
25.0%	quartile	7.9836075
10.0%		6.82564
2.5%		6.011139
0.5%		5.86364
0.0%	minimum	5.86364

**Summary Statistics**

Mean	10.778677
Std Dev	3.0378361
Std Err Mean	0.4296149
Upper 95% Mean	11.64202
Lower 95% Mean	9.9153335
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	10.778677	9.9153335	11.64202
Dispersion	$\sigma$	3.0378361	2.5376078	3.7855489

-2log(Likelihood) = 252.00839823394

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.958355	0.0759

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB180**

**RESULT\_STATS**

Normal(9.96978,22.0048)

**Quantiles**

100.0%	maximum	130.303
99.5%		130.303
97.5%		128.7695625
90.0%		7.596862
75.0%	quartile	6.76033
50.0%	median	4.91245
25.0%	quartile	4.2
10.0%		3.502459
2.5%		2.87023075
0.5%		2.86364
0.0%	minimum	2.86364

**Summary Statistics**

Mean	9.9697848
Std Dev	22.004779
Std Err Mean	3.4792611
Upper 95% Mean	17.007255
Lower 95% Mean	2.9323149
N	40

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	9.9697848	2.9323149	17.007255
Dispersion	$\sigma$	22.004779	18.025458	28.254918

-2log(Likelihood) = 359.815857037329

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.280422	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB183**

**RESULT\_STATS**

Normal(30.951,31.1962)

**Quantiles**

100.0%	maximum	103.226
99.5%		103.226
97.5%		103.226
90.0%		101.33165
75.0%	quartile	37.01565
50.0%	median	15.59945
25.0%	quartile	12.40625
10.0%		11.25994
2.5%		7.85714
0.5%		7.85714
0.0%	minimum	7.85714

**Summary Statistics**

Mean	30.950952
Std Dev	31.196175
Std Err Mean	6.9756767
Upper 95% Mean	45.551211
Lower 95% Mean	16.350693
N	20

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	30.950952	16.350693	45.551211
Dispersion	$\sigma$	31.196175	23.724391	45.564248

-2log(Likelihood) = 193.36936033949

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.677713	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB184**

**RESULT\_STATS**

Normal(13.2299,4.05122)

**Quantiles**

100.0%	maximum	20.625
99.5%		20.625
97.5%		20.625
90.0%		19.31587
75.0%	quartile	16.430225
50.0%	median	13.0467
25.0%	quartile	9.2774425
10.0%		8.136608
2.5%		6.81818
0.5%		6.81818
0.0%	minimum	6.81818

**Summary Statistics**

Mean	13.229888
Std Dev	4.0512169
Std Err Mean	0.7396476
Upper 95% Mean	14.742637
Lower 95% Mean	11.717139
N	30

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	13.229888	11.717139	14.742637
Dispersion	$\sigma$	4.0512169	3.2264172	5.4461124

-2log(Likelihood) = 168.077350438619

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.947246	0.1426

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB187**

**RESULT\_STATS**

Normal(64.8582,47.8375)

**Quantiles**

100.0%	maximum	235.484
99.5%		235.484
97.5%		219.05935
90.0%		122.7024
75.0%	quartile	90.98215
50.0%	median	62.11035
25.0%	quartile	14.6552
10.0%		10.38618
2.5%		8.59408025
0.5%		8.5
0.0%	minimum	8.5

**Summary Statistics**

Mean	64.858219
Std Dev	47.837518
Std Err Mean	6.7652467
Upper 95% Mean	78.453491
Lower 95% Mean	51.262947
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	64.858219	51.262947	78.453491
Dispersion	$\sigma$	47.837518	39.960306	59.611927

-2log(Likelihood) = 527.674876776782

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.896830	0.0004*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB189**

**RESULT\_STATS**

Normal(7.56889,2.15576)

**Quantiles**

100.0%	maximum	11.8065
99.5%		11.8065
97.5%		11.8065
90.0%		10.9229
75.0%	quartile	9.21622
50.0%	median	6.93182
25.0%	quartile	5.54545
10.0%		4.95769
2.5%		4.50909
0.5%		4.50909
0.0%	minimum	4.50909

**Summary Statistics**

Mean	7.5688869
Std Dev	2.1557578
Std Err Mean	0.3643896
Upper 95% Mean	8.3094156
Lower 95% Mean	6.8283582
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	7.5688869	6.8283582	8.3094156
Dispersion	$\sigma$	2.1557578	1.7437322	2.8244784

-2log(Likelihood) = 152.095657694145

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.941910	0.0640

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB194**

**RESULT\_STATS**

Normal(14.7331,4.02817)

**Quantiles**

100.0%	maximum	21.2903
99.5%		21.2903
97.5%		21.2903
90.0%		21.2903
75.0%	quartile	18.6057
50.0%	median	12.5
25.0%	quartile	11.97695
10.0%		11.5789
2.5%		11.5789
0.5%		11.5789
0.0%	minimum	11.5789

**Summary Statistics**

Mean	14.73306
Std Dev	4.0281685
Std Err Mean	1.8014517
Upper 95% Mean	19.734692
Lower 95% Mean	9.7314282
N	5

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	14.73306	9.7314282	19.734692
Dispersion	$\sigma$	4.0281685	2.4134092	11.575166

-2log(Likelihood) = 27.1225033038173

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.823407	0.1240

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB195**

**RESULT\_STATS**

Normal(16.0724,4.39435)

**Quantiles**

100.0%	maximum	23.2258
99.5%		23.2258
97.5%		23.2258
90.0%		23.2258
75.0%	quartile	20.2971
50.0%	median	13.6364
25.0%	quartile	13.0658
10.0%		12.6316
2.5%		12.6316
0.5%		12.6316
0.0%	minimum	12.6316

**Summary Statistics**

Mean	16.07244
Std Dev	4.3943484
Std Err Mean	1.9652123
Upper 95% Mean	21.528744
Lower 95% Mean	10.616136
N	5

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	16.07244	10.616136	21.528744
Dispersion	$\sigma$	4.3943484	2.6327997	12.627404

-2log(Likelihood) = 27.9925778431739

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.823403	0.1240

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=PCB200**

**RESULT\_STATS**

Normal(18.7512,5.12678)

**Quantiles**

100.0%	maximum	27.0968
99.5%		27.0968
97.5%		27.0968
90.0%		27.0968
75.0%	quartile	23.68
50.0%	median	15.9091
25.0%	quartile	15.2434
10.0%		14.7368
2.5%		14.7368
0.5%		14.7368
0.0%	minimum	14.7368

**Summary Statistics**

Mean	18.75118
Std Dev	5.1267759
Std Err Mean	2.2927639
Upper 95% Mean	25.116913
Lower 95% Mean	12.385447
N	5

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	18.75118	12.385447	25.116913
Dispersion	$\sigma$	5.1267759	3.0716213	14.732076

-2log(Likelihood) = 29.5341551552985

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.823406	0.1240

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB201**

**RESULT\_STATS**

Normal(11.932,3.48783)

**Quantiles**

100.0%	maximum	18.7742
99.5%		18.7742
97.5%		18.76422
90.0%		16.85694
75.0%	quartile	14.75645
50.0%	median	10.9676
25.0%	quartile	8.76397
10.0%		7.592947
2.5%		6.5599955
0.5%		6.54545
0.0%	minimum	6.54545

**Summary Statistics**

Mean	11.931969
Std Dev	3.487827
Std Err Mean	0.5514739
Upper 95% Mean	13.04743
Lower 95% Mean	10.816508
N	40

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	11.931969	10.816508	13.04743
Dispersion	$\sigma$	3.487827	2.8570919	4.4784937

-2log(Likelihood) = 212.457395256198

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.944144	0.0478*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB203**

**RESULT\_STATS**

Normal(16.0724,4.39435)

**Quantiles**

100.0%	maximum	23.2258
99.5%		23.2258
97.5%		23.2258
90.0%		23.2258
75.0%	quartile	20.2971
50.0%	median	13.6364
25.0%	quartile	13.0658
10.0%		12.6316
2.5%		12.6316
0.5%		12.6316
0.0%	minimum	12.6316

**Summary Statistics**

Mean	16.07244
Std Dev	4.3943484
Std Err Mean	1.9652123
Upper 95% Mean	21.528744
Lower 95% Mean	10.616136
N	5

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	16.07244	10.616136	21.528744
Dispersion	$\sigma$	4.3943484	2.6327997	12.627404

-2log(Likelihood) = 27.9925778431739

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.823403	0.1240

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB206**

**RESULT\_STATS**

Normal(23.9191,6.96595)

**Quantiles**

100.0%	maximum	36.7742
99.5%		36.7742
97.5%		36.7742
90.0%		33.47336
75.0%	quartile	29.8571
50.0%	median	22.3529
25.0%	quartile	17.2727
10.0%		15.04896
2.5%		12.9545
0.5%		12.9545
0.0%	minimum	12.9545

**Summary Statistics**

Mean	23.919097
Std Dev	6.9659529
Std Err Mean	1.1774609
Upper 95% Mean	26.311986
Lower 95% Mean	21.526209
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	23.919097	21.526209	26.311986
Dispersion	$\sigma$	6.9659529	5.6345646	9.1268062

-2log(Likelihood) = 234.198105607182

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

	W	Prob<W
	0.946151	0.0863

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=PCB209**

**RESULT\_STATS**

Normal(25.5562,42.926)

**Quantiles**

100.0%	maximum	270.588
99.5%		270.588
97.5%		270.588
90.0%		26.76726
75.0%	quartile	22.2973
50.0%	median	17.0455
25.0%	quartile	14.1509
10.0%		12.1154
2.5%		10.9091
0.5%		10.9091
0.0%	minimum	10.9091

**Summary Statistics**

Mean	25.55618
Std Dev	42.92597
Std Err Mean	7.2558133
Upper 95% Mean	40.301767
Lower 95% Mean	10.810593
N	35

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	25.55618	10.810593	40.301767
Dispersion	$\sigma$	42.92597	34.721618	56.241697

-2log(Likelihood) = 361.48908783124

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.252087	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=Total Butyltins (ND = 0)**

**RESULT\_STATS**

Normal(1.8925,2.03124)

**Quantiles**

100.0%	maximum	5.2
99.5%		5.2
97.5%		5.2
90.0%		5.13
75.0%	quartile	4.05
50.0%	median	0.4255
25.0%	quartile	0.36075
10.0%		0.2997
2.5%		0.296
0.5%		0.296
0.0%	minimum	0.296

**Summary Statistics**

Mean	1.8925
Std Dev	2.0312353
Std Err Mean	0.642333
Upper 95% Mean	3.3455582
Lower 95% Mean	0.4394418
N	10

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	1.8925	0.4394418	3.3455582
Dispersion	$\sigma$	2.0312353	1.3971552	3.7082439

-2log(Likelihood) = 41.5516535105562

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.749929	0.0036*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=Total DDTs (ND = 0)**

**RESULT\_STATS**

— Normal(9715.71,5291.39)

**Quantiles**

100.0%	maximum	19902.4
99.5%		19902.4
97.5%		19632.36
90.0%		16323.22
75.0%	quartile	13883.3
50.0%	median	10300
25.0%	quartile	5727.27
10.0%		1469.998
2.5%		1024.9264
0.5%		935.484
0.0%	minimum	935.484

**Summary Statistics**

Mean	9715.7088
Std Dev	5291.3883
Std Err Mean	713.49066
Upper 95% Mean	11146.171
Lower 95% Mean	8285.2462
N	55

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	9715.7088	8285.2462	11146.171
Dispersion	$\sigma$	5291.3883	4454.6305	6518.1575

-2log(Likelihood) = 1098.20519131331

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.960767	0.0701

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Distributions CHEM\_OUT=Total PCB Congeners (ND = 0)**

**RESULT\_STATS**

Normal(2526.73,2129.42)

**Quantiles**

100.0%	maximum	9216.13
99.5%		9216.13
97.5%		9178.4385
90.0%		6427.724
75.0%	quartile	2614.2075
50.0%	median	1976.145
25.0%	quartile	1595.0575
10.0%		309.5059
2.5%		69.7378775
0.5%		67.7419
0.0%	minimum	67.7419

**Summary Statistics**

Mean	2526.7296
Std Dev	2129.4234
Std Err Mean	301.14595
Upper 95% Mean	3131.905
Lower 95% Mean	1921.5542
N	50

**Fitted Normal**

**Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	2526.7296	1921.5542	3131.905
Dispersion	$\sigma$	2129.4234	1778.7798	2653.5456

-2log(Likelihood) = 907.254505667644

**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.715296	<.0001*

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.



**Distributions CHEM\_OUT=Mercury****RESULT\_STATS**

Normal(0.0144,0.00477)

**Quantiles**

100.0%	maximum	0.0228
99.5%		0.0228
97.5%		0.0228
90.0%		0.02256
75.0%	quartile	0.0175
50.0%	median	0.0143
25.0%	quartile	0.0122
10.0%		0.007154
2.5%		0.00707
0.5%		0.00707
0.0%	minimum	0.00707

**Summary Statistics**

Mean	0.0144047
Std Dev	0.0047707
Std Err Mean	0.0012318
Upper 95% Mean	0.0170466
Lower 95% Mean	0.0117628
N	15

**Fitted Normal****Parameter Estimates**

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	$\mu$	0.0144047	0.0117628	0.0170466
Dispersion	$\sigma$	0.0047707	0.0034927	0.0075238

**Measure**

-2*LogLikelihood	-118.79
AICc	-113.79
BIC	-113.3739

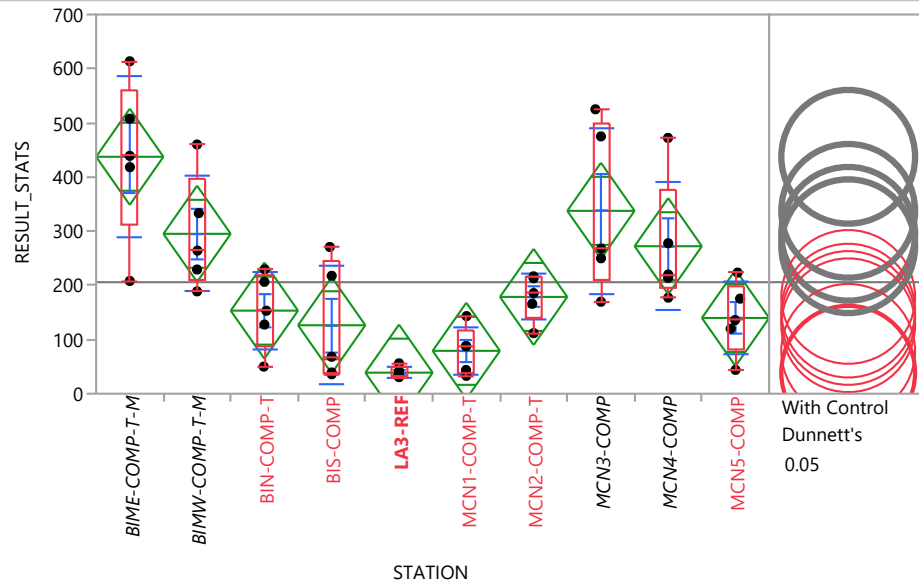
**Goodness-of-Fit Test**

Shapiro-Wilk W Test

W	Prob<W
0.949390	0.5149

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDD**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	208.108	208.108	313.145	439.024	560.664	613.636	613.636
BIMW-COMP-T-M	188.889	188.889	209.0785	264.151	396.6665	460	460
BIN-COMP-T	50	50	88.793	153.125	218.015	229.508	229.508
BIS-COMP	35.8974	35.8974	37.5433	68.1818	244.24	270.833	270.833
LA3-REF	30.5263	30.5263	31.57565	32.9545	49.05135	56.129	56.129
MCN1-COMP-T	32.9545	32.9545	38.35225	87.7551	115.5609	143.243	143.243
MCN2-COMP-T	111.765	111.765	138.861	185.714	214.891	216.667	216.667
MCN3-COMP	169.767	169.767	209.8835	267.857	500	525	525
MCN4-COMP	177.273	177.273	195.581	220	375	472.222	472.222
MCN5-COMP	43.9394	43.9394	81.9697	136	199.5005	223.529	223.529

**Oneway Anova**

**Summary of Fit**

Rsquare	0.647079
Adj Rsquare	0.567671
Root Mean Square Error	98.19501
Mean of Response	205.8301
Observations (or Sum Wgts)	50

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDD**

**Oneway Anova**

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	707160.2	78573.4	8.1489	<.0001*
Error	40	385690.4	9642.3		
C. Total	49	1092850.6			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	437.328	43.914	348.6	526.08
BIMW-COMP-T-M	5	295.128	43.914	206.4	383.88
BIN-COMP-T	5	153.348	43.914	64.6	242.10
BIS-COMP	5	126.350	43.914	37.6	215.10
LA3-REF	5	38.842	43.914	-49.9	127.60
MCN1-COMP-T	5	79.116	43.914	-9.6	167.87
MCN2-COMP-T	5	178.644	43.914	89.9	267.40
MCN3-COMP	5	337.525	43.914	248.8	426.28
MCN4-COMP	5	272.232	43.914	183.5	360.99
MCN5-COMP	5	139.788	43.914	51.0	228.54

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	437.328	149.120	66.688	252.2	622.49
BIMW-COMP-T-M	5	295.128	106.332	47.553	163.1	427.16
BIN-COMP-T	5	153.348	70.662	31.601	65.6	241.09
BIS-COMP	5	126.350	109.969	49.180	-10.2	262.89
LA3-REF	5	38.842	10.620	4.749	25.7	52.03
MCN1-COMP-T	5	79.116	43.719	19.552	24.8	133.40
MCN2-COMP-T	5	178.644	42.772	19.128	125.5	231.75
MCN3-COMP	5	337.525	153.869	68.813	146.5	528.58
MCN4-COMP	5	272.232	117.448	52.524	126.4	418.06
MCN5-COMP	5	139.788	66.856	29.899	56.8	222.80

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDD****Means Comparisons****Comparisons with a control using Dunnett's Method****LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIME-COMP-T-M	223.9	<.0001*
MCN3-COMP	124.1	0.0002*
BIMW-COMP-T-M	81.67	0.0014*
MCN4-COMP	58.77	0.0042*
MCN2-COMP-T	-34.8	0.1695
BIN-COMP-T	-60.1	0.3531
MCN5-COMP	-73.7	0.4908
BIS-COMP	-87.1	0.6452
MCN1-COMP-T	-134	0.9922
LA3-REF	-175	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	213.000	127.500	42.6000	2.749
BIMW-COMP-T-M	5	186.000	127.500	37.2000	1.876
BIN-COMP-T	5	110.000	127.500	22.0000	-0.550
BIS-COMP	5	95.000	127.500	19.0000	-1.035
LA3-REF	5	24.500	127.500	4.9000	-3.315
MCN1-COMP-T	5	57.500	127.500	11.5000	-2.248
MCN2-COMP-T	5	121.000	127.500	24.2000	-0.194
MCN3-COMP	5	194.000	127.500	38.8000	2.134
MCN4-COMP	5	174.000	127.500	34.8000	1.488
MCN5-COMP	5	100.000	127.500	20.0000	-0.873

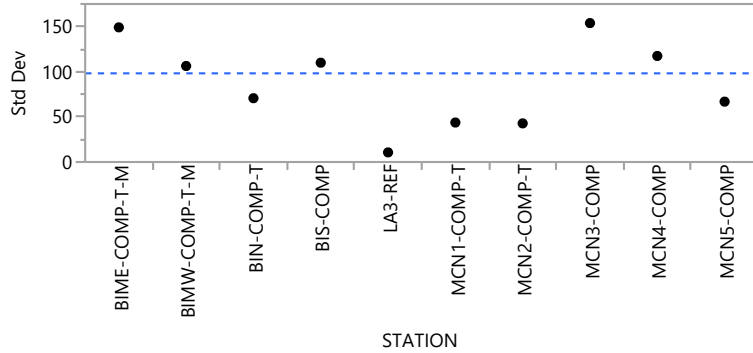
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
32.9305	9	0.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDD**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	149.1198	99.3467	99.0076
BIMW-COMP-T-M	5	106.3323	81.2306	75.0352
BIN-COMP-T	5	70.6618	51.7334	51.6888
BIS-COMP	5	109.9690	94.3123	82.6787
LA3-REF	5	10.6197	8.1677	6.9903
MCN1-COMP-T	5	43.7188	32.6112	30.8835
MCN2-COMP-T	5	42.7719	31.8261	30.4120
MCN3-COMP	5	153.8695	129.9802	116.0466
MCN4-COMP	5	117.4479	82.2141	71.7676
MCN5-COMP	5	66.8558	47.7699	47.0123

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.4090	9	40	0.2169
Brown-Forsythe	1.1018	9	40	0.3835
Levene	2.6779	9	40	0.0155*
Bartlett	2.7189	9	.	0.0036*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

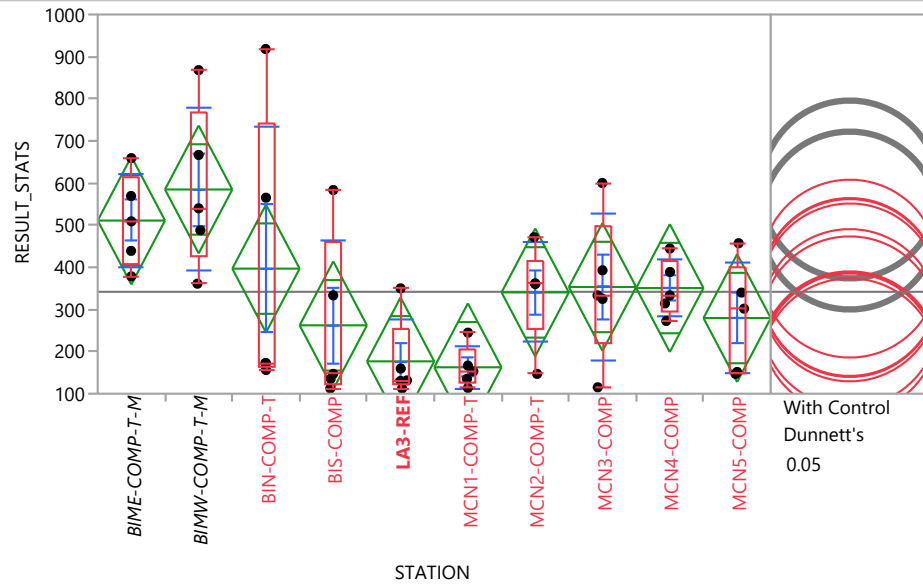
q*		Alpha									
1.95996		0.05									
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL			
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	152.760	69.791	184.042			
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	234.903	127.793	492.375			
MCN3-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	217.046	81.888	481.250			
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	187.046	135.299	439.597			
MCN4-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	170.139	70.646	428.472			
MCN2-COMP-T	MCN1-COMP-T	4.40000	1.914854	2.29783	0.0216*	97.959	22.714	180.161			
MCN5-COMP	LA3-REF	4.40000	1.914854	2.29783	0.0216*	103.046	1.966	190.904			

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDD**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean		Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
		Difference	Std Err Dif						
MCN3-COMP	BIN-COMP-T	4.00000	1.914854	2.08893	0.0367*	140.271	-36.755	425.000	
MCN3-COMP	MCN2-COMP-T	3.60000	1.914854	1.88004	0.0601	101.900	-43.348	363.235	
MCN1-COMP-T	LA3-REF	3.40000	1.909043	1.78100	0.0749	45.781	-12.379	110.618	
MCN3-COMP	BIS-COMP	3.20000	1.914854	1.67115	0.0947	210.811	-47.880	485.811	
MCN4-COMP	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	86.303	-29.249	344.636	
MCN4-COMP	MCN2-COMP-T	3.20000	1.914854	1.67115	0.0947	61.111	-35.842	306.265	
MCN4-COMP	BIS-COMP	2.80000	1.914854	1.46225	0.1437	151.818	-56.944	433.033	
MCN5-COMP	MCN1-COMP-T	2.80000	1.914854	1.46225	0.1437	76.250	-43.939	179.779	
MCN2-COMP-T	BIN-COMP-T	0.80000	1.914854	0.41779	0.6761	12.832	-94.757	163.115	
MCN2-COMP-T	BIS-COMP	0.80000	1.914854	0.41779	0.6761	75.868	-105.882	177.478	
MCN3-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	20.732	-210.000	295.732	
MCN5-COMP	BIS-COMP	0.80000	1.914854	0.41779	0.6761	8.042	-173.708	184.340	
MCN1-COMP-T	BIS-COMP	-0.40000	1.914854	-0.20889	0.8345	-6.235	-227.083	104.054	
BIS-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-14.103	-190.319	167.647	
MCN4-COMP	BIMW-COMP-T-M	-0.80000	1.914854	-0.41779	0.6761	-15.379	-246.111	242.954	
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-7.586	-162.583	125.472	
MCN3-COMP	BIME-COMP-T-M	-1.20000	1.914854	-0.62668	0.5309	-138.636	-363.636	266.892	
MCN4-COMP	MCN3-COMP	-1.20000	1.914854	-0.62668	0.5309	-47.857	-311.111	222.222	
MCN5-COMP	MCN2-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-41.195	-169.176	63.707	
BIMW-COMP-T-M	BIME-COMP-T-M	-2.40000	1.914854	-1.25336	0.2101	-174.359	-384.368	125.225	
MCN4-COMP	BIME-COMP-T-M	-2.40000	1.914854	-1.25336	0.2101	-204.293	-399.747	69.670	
BIS-COMP	BIMW-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-189.167	-420.811	41.565	
LA3-REF	BIS-COMP	-3.20000	1.914854	-1.67115	0.0947	-35.227	-238.208	16.940	
MCN1-COMP-T	BIN-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-83.836	-185.758	37.879	
BIN-COMP-T	BIMW-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-126.811	-332.414	17.633	
MCN5-COMP	MCN4-COMP	-3.60000	1.914854	-1.88004	0.0601	-100.000	-352.222	9.640	
BIS-COMP	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-350.000	-574.447	9.539	
MCN2-COMP-T	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-273.067	-447.679	5.007	
MCN2-COMP-T	BIMW-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-98.194	-294.043	24.226	
MCN5-COMP	MCN3-COMP	-4.00000	1.914854	-2.08893	0.0367*	-147.857	-431.061	5.705	
BIN-COMP-T	BIME-COMP-T-M	-4.40000	1.914854	-2.29783	0.0216*	-290.596	-486.050	-1.586	
LA3-REF	BIN-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-120.171	-196.883	-8.026	
MCN5-COMP	BIME-COMP-T-M	-4.40000	1.914854	-2.29783	0.0216*	-303.024	-493.636	-32.636	
MCN5-COMP	BIMW-COMP-T-M	-4.40000	1.914854	-2.29783	0.0216*	-144.151	-340.000	-5.739	
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-406.070	-581.011	-166.134	
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-231.197	-427.375	-146.915	
MCN1-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-374.432	-569.886	-120.229	
MCN1-COMP-T	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-190.090	-416.250	-86.025	

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDE**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	378.378	378.378	408.701	509.091	614.161	659.091	659.091
BIMW-COMP-T-M	361.111	361.111	424.458	540	767.2955	867.924	867.924
BIN-COMP-T	156.25	156.25	164.332	172.414	741.625	918.033	918.033
BIS-COMP	112.5	112.5	123.8175	147.059	458.333	583.333	583.333
LA3-REF	112.5	112.5	121.3815	131.579	254.8385	350	350
MCN1-COMP-T	113.636	113.636	124.3855	153.125	205.7825	244.898	244.898
MCN2-COMP-T	147.059	147.059	253.8575	361.111	416.5655	471.429	471.429
MCN3-COMP	115.116	115.116	220.058	333.333	496.4285	600	600
MCN4-COMP	272.727	272.727	293.5065	333.333	416.6665	444.444	444.444
MCN5-COMP	147.059	147.059	149.287	301.887	398.5715	457.143	457.143

**Oneway Anova**

**Summary of Fit**

Rsquare	0.41561
Adj Rsquare	0.284123
Root Mean Square Error	167.8897
Mean of Response	341.8207
Observations (or Sum Wgts)	50

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDE**

**Oneway Anova**

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	801846.9	89094.1	3.1608	0.0057*
Error	40	1127477.4	28186.9		
C. Total	49	1929324.3			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	510.963	75.083	359.22	662.71
BIMW-COMP-T-M	5	584.701	75.083	432.95	736.45
BIN-COMP-T	5	396.866	75.083	245.12	548.61
BIS-COMP	5	262.272	75.083	110.52	414.02
LA3-REF	5	176.804	75.083	25.06	328.55
MCN1-COMP-T	5	162.692	75.083	10.94	314.44
MCN2-COMP-T	5	340.391	75.083	188.64	492.14
MCN3-COMP	5	353.261	75.083	201.51	505.01
MCN4-COMP	5	350.736	75.083	198.99	502.48
MCN5-COMP	5	279.521	75.083	127.77	431.27

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	510.963	109.652	49.04	374.8	647.11
BIMW-COMP-T-M	5	584.701	192.557	86.11	345.6	823.79
BIN-COMP-T	5	396.866	338.604	151.43	-23.6	817.30
BIS-COMP	5	262.272	200.000	89.44	13.9	510.60
LA3-REF	5	176.804	98.281	43.95	54.8	298.84
MCN1-COMP-T	5	162.692	50.078	22.40	100.5	224.87
MCN2-COMP-T	5	340.391	118.155	52.84	193.7	487.10
MCN3-COMP	5	353.261	173.462	77.57	137.9	568.64
MCN4-COMP	5	350.736	66.996	29.96	267.5	433.92
MCN5-COMP	5	279.521	131.946	59.01	115.7	443.35

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05



**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDE****Means Comparisons****Comparisons with a control using Dunnett's Method****LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIMW-COMP-T-M	109.3	0.0033*
BIME-COMP-T-M	35.6	0.0219*
BIN-COMP-T	-78.5	0.2380
MCN3-COMP	-122	0.4663
MCN4-COMP	-125	0.4823
MCN2-COMP-T	-135	0.5501
MCN5-COMP	-196	0.9180
BIS-COMP	-213	0.9695
LA3-REF	-299	1.0000
MCN1-COMP-T	-284	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	201.000	127.500	40.2000	2.361
BIMW-COMP-T-M	5	209.500	127.500	41.9000	2.636
BIN-COMP-T	5	142.000	127.500	28.4000	0.453
BIS-COMP	5	89.000	127.500	17.8000	-1.229
LA3-REF	5	55.500	127.500	11.1000	-2.313
MCN1-COMP-T	5	58.500	127.500	11.7000	-2.216
MCN2-COMP-T	5	140.500	127.500	28.1000	0.404
MCN3-COMP	5	133.000	127.500	26.6000	0.162
MCN4-COMP	5	138.000	127.500	27.6000	0.323
MCN5-COMP	5	108.000	127.500	21.6000	-0.615

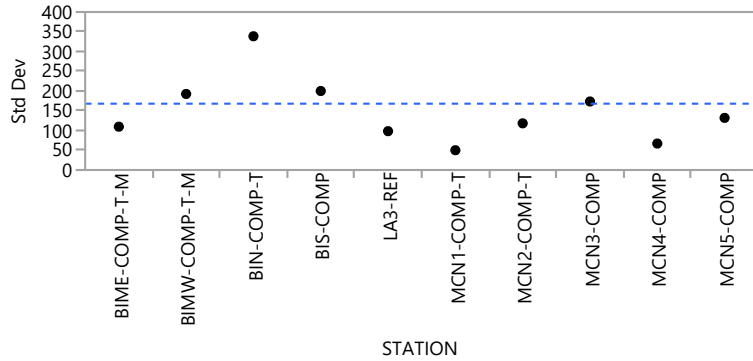
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
23.0283	9	0.0061*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDE**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	109.6524	82.5584	82.1840
BIMW-COMP-T-M	5	192.5573	146.0753	137.1350
BIN-COMP-T	5	338.6040	275.8075	230.9172
BIS-COMP	5	199.9996	156.8488	133.8062
LA3-REF	5	98.2809	69.2785	53.3828
MCN1-COMP-T	5	50.0775	34.4722	32.5588
MCN2-COMP-T	5	118.1549	77.3330	65.0832
MCN3-COMP	5	173.4624	114.5338	110.5482
MCN4-COMP	5	66.9957	52.7446	49.2640
MCN5-COMP	5	131.9462	104.1870	99.7138

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.7468	9	40	0.1100
Brown-Forsythe	0.8223	9	40	0.5993
Levene	3.3352	9	40	0.0040*
Bartlett	2.1462	9	.	0.0226*

Warning: Small sample sizes. Use Caution.

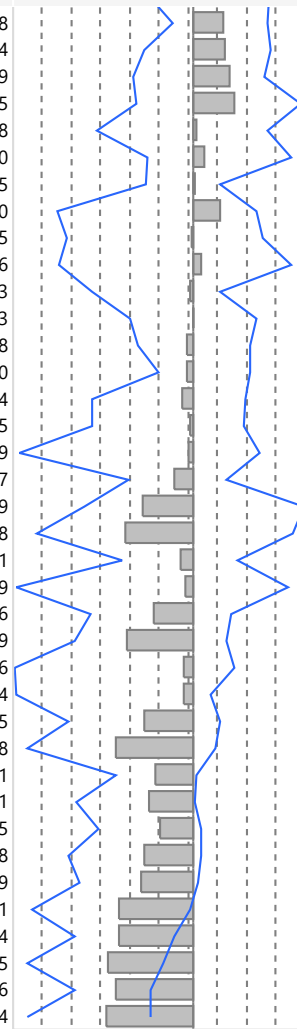
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha									
1.95996		0.05									
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL			
MCN4-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	180.208	69.388	309.309			
MCN2-COMP-T	LA3-REF	4.00000	1.914854	2.08893	0.0367*	229.077	-12.618	341.166			
MCN2-COMP-T	MCN1-COMP-T	3.60000	1.914854	1.88004	0.0601	207.986	-19.608	336.294			
MCN4-COMP	LA3-REF	3.60000	1.914854	1.88004	0.0601	184.023	-35.714	314.181			
MCN3-COMP	MCN1-COMP-T	3.20000	1.914854	1.67115	0.0947	189.865	-51.551	464.865			
MCN3-COMP	LA3-REF	2.40000	1.914854	1.25336	0.2101	201.754	-44.561	469.737			
MCN5-COMP	LA3-REF	2.40000	1.914854	1.25336	0.2101	107.143	-198.485	326.880			

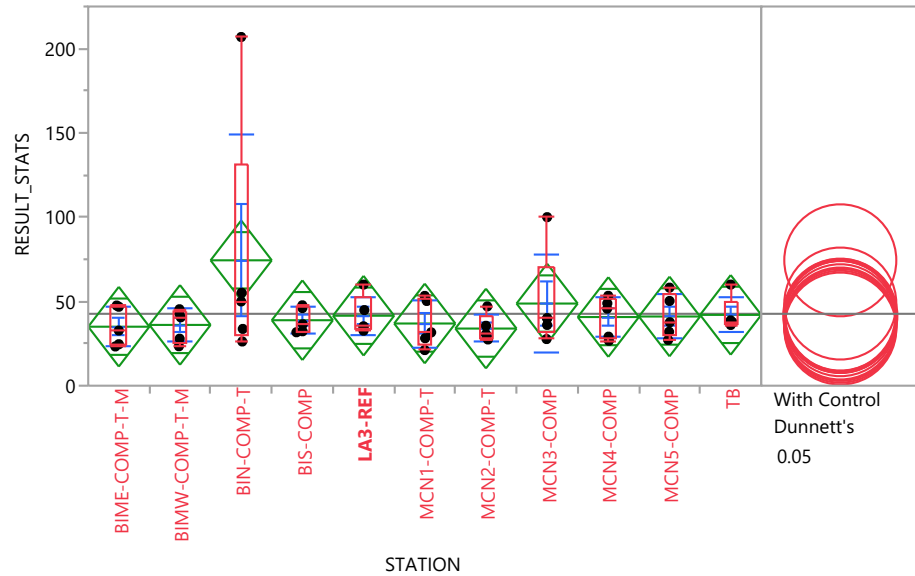
**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDE**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean		Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
		Difference	Std Err Dif						
MCN5-COMP	MCN1-COMP-T	2.40000	1.914854	1.25336	0.2101	135.220	-93.383	322.008	
MCN2-COMP-T	BIS-COMP	2.20000	1.909043	1.15241	0.2492	138.096	-222.677	336.294	
MCN4-COMP	BIS-COMP	1.80000	1.909043	0.94288	0.3457	160.227	-269.047	309.309	
MCN3-COMP	BIS-COMP	1.40000	1.909043	0.73335	0.4633	177.941	-258.333	464.865	
MCN5-COMP	BIS-COMP	1.40000	1.909043	0.73335	0.4633	16.380	-431.818	322.008	
BIMW-COMP-T-M	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	48.781	-208.120	428.900	
MCN1-COMP-T	LA3-REF	0.80000	1.914854	0.41779	0.6761	4.872	-214.865	114.635	
MCN4-COMP	BIN-COMP-T	0.80000	1.909043	0.41906	0.6752	116.477	-603.747	272.030	
MCN2-COMP-T	BIN-COMP-T	0.00000	1.909043	0.00000	1.0000	-9.191	-557.377	299.015	
MCN3-COMP	BIN-COMP-T	0.00000	1.909043	0.00000	1.0000	34.783	-593.033	427.586	
MCN1-COMP-T	BIS-COMP	-0.20000	1.909043	-0.10476	0.9166	-11.924	-448.198	109.763	
MCN4-COMP	MCN3-COMP	-0.20000	1.909043	-0.10476	0.9166	-3.968	-285.714	273.773	
MCN3-COMP	MCN2-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-27.778	-246.586	245.798	
MCN4-COMP	MCN2-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-27.323	-157.143	241.830	
MCN5-COMP	MCN3-COMP	-0.80000	1.914854	-0.41779	0.6761	-52.857	-448.485	224.884	
LA3-REF	BIS-COMP	-1.00000	1.909043	-0.52382	0.6004	-15.480	-453.070	214.865	
MCN5-COMP	BIN-COMP-T	-1.20000	1.909043	-0.62859	0.5296	-20.899	-766.518	284.729	
MCN5-COMP	MCN4-COMP	-1.20000	1.914854	-0.62668	0.5309	-87.002	-292.929	142.857	
BIN-COMP-T	BIME-COMP-T-M	-1.60000	1.909043	-0.83812	0.4020	-222.128	-486.677	479.009	
BIN-COMP-T	BIMW-COMP-T-M	-1.60000	1.909043	-0.83812	0.4020	-302.707	-695.510	430.228	
MCN5-COMP	MCN2-COMP-T	-1.80000	1.909043	-0.94288	0.3457	-58.769	-319.914	192.941	
BIS-COMP	BIN-COMP-T	-2.00000	1.909043	-1.04765	0.2948	-37.279	-782.898	410.919	
MCN3-COMP	BIME-COMP-T-M	-2.80000	1.914854	-1.46225	0.1437	-175.758	-454.115	160.976	
BIS-COMP	BIME-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-291.965	-523.956	144.309	
LA3-REF	BIN-COMP-T	-3.20000	1.909043	-1.67623	0.0937	-43.750	-787.770	177.586	
MCN1-COMP-T	BIN-COMP-T	-3.20000	1.909043	-1.67623	0.0937	-42.614	-782.898	72.484	
MCN3-COMP	BIMW-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-215.000	-551.551	112.195	
BIS-COMP	BIMW-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-340.746	-732.789	95.528	
MCN4-COMP	BIME-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-166.297	-344.805	10.511	
MCN2-COMP-T	BIMW-COMP-T-M	-3.80000	1.909043	-1.99053	0.0465*	-195.238	-519.608	0.591	
MCN2-COMP-T	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-148.435	-422.172	32.405	
MCN4-COMP	BIMW-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-215.078	-553.638	27.778	
MCN5-COMP	BIME-COMP-T-M	-4.00000	1.914854	-2.08893	0.0367*	-229.231	-507.576	18.119	
MCN5-COMP	BIMW-COMP-T-M	-4.40000	1.914854	-2.29783	0.0216*	-326.667	-716.409	-21.111	
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-326.524	-528.828	-89.024	
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-380.323	-737.661	-137.805	
MCN1-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-342.424	-523.956	-194.126	
MCN1-COMP-T	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-386.875	-732.789	-194.444	



**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDT**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	23.2727	23.2727	23.94405	32.7273	47.19845	47.5676	47.5676
BIMW-COMP-T-M	23.3962	23.3962	25.6481	40.5952	44.21075	45.3659	45.3659
BIN-COMP-T	26.2295	26.2295	29.9626	50	131.0347	206.897	206.897
BIS-COMP	31.7045	31.7045	31.9981	36.4706	46.8867	47.6923	47.6923
LA3-REF	32.6316	32.6316	33.7533	35.2273	52.4342	60	60
MCN1-COMP-T	21.1364	21.1364	24.6591	31.6327	51.7758	53.2813	53.2813
MCN2-COMP-T	27.4286	27.4286	28.14055	30.6383	41.3072	47.0588	47.0588
MCN3-COMP	27.6786	27.6786	31.86255	40	70	100	100
MCN4-COMP	26.6667	26.6667	27.8788	45.7143	51.1111	53.3333	53.3333
MCN5-COMP	27.1698	27.1698	29.5849	37.6471	54.23375	58.1818	58.1818
TB	36.0465	36.0465	36.81115	37.7027	49.375	60	60

**Oneway Anova**

**Summary of Fit**

Rsquare	0.174401
Adj Rsquare	-0.01323
Root Mean Square Error	26.22876
Mean of Response	42.65413
Observations (or Sum Wgts)	55

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDT**

**Oneway Anova**

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	10	6394.238	639.424	0.9295	0.5160
Error	44	30269.712	687.948		
C. Total	54	36663.950			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	35.0025	11.730	11.362	58.642
BIMW-COMP-T-M	5	36.0626	11.730	12.423	59.703
BIN-COMP-T	5	74.3989	11.730	50.759	98.039
BIS-COMP	5	38.8480	11.730	15.208	62.488
LA3-REF	5	41.5205	11.730	17.880	65.160
MCN1-COMP-T	5	36.9005	11.730	13.261	60.540
MCN2-COMP-T	5	33.9068	11.730	10.267	57.547
MCN3-COMP	5	48.7450	11.730	25.105	72.385
MCN4-COMP	5	40.7388	11.730	17.099	64.379
MCN5-COMP	5	41.0569	11.730	17.417	64.697
TB	5	42.0150	11.730	18.375	65.655

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	35.0025	11.7091	5.236	20.46	49.54
BIMW-COMP-T-M	5	36.0626	9.7860	4.376	23.91	48.21
BIN-COMP-T	5	74.3989	74.9963	33.539	-18.72	167.52
BIS-COMP	5	38.8480	7.5863	3.393	29.43	48.27
LA3-REF	5	41.5205	11.3521	5.077	27.42	55.62
MCN1-COMP-T	5	36.9005	14.1364	6.322	19.35	54.45
MCN2-COMP-T	5	33.9068	7.9670	3.563	24.01	43.80
MCN3-COMP	5	48.7450	29.0907	13.010	12.62	84.87
MCN4-COMP	5	40.7388	12.0779	5.401	25.74	55.74
MCN5-COMP	5	41.0569	12.8932	5.766	25.05	57.07
TB	5	42.0150	10.1001	4.517	29.47	54.56

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.83292	0.05

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDT****Means Comparisons****Comparisons with a control using Dunnett's Method****LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-14.1	0.2955
MCN3-COMP	-39.8	0.9998
TB	-46.5	1.0000
LA3-REF	-47	1.0000
MCN5-COMP	-46.5	1.0000
MCN4-COMP	-46.2	1.0000
BIS-COMP	-44.3	1.0000
MCN1-COMP-T	-42.4	1.0000
BIMW-COMP-T-M	-41.5	1.0000
BIME-COMP-T-M	-40.5	0.9999
MCN2-COMP-T	-39.4	0.9997

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	108.000	140.000	21.6000	-0.922
BIMW-COMP-T-M	5	119.000	140.000	23.8000	-0.600
BIN-COMP-T	5	176.000	140.000	35.2000	1.039
BIS-COMP	5	143.000	140.000	28.6000	0.073
LA3-REF	5	152.500	140.000	30.5000	0.351
MCN1-COMP-T	5	121.000	140.000	24.2000	-0.542
MCN2-COMP-T	5	99.000	140.000	19.8000	-1.186
MCN3-COMP	5	153.500	140.000	30.7000	0.381
MCN4-COMP	5	150.000	140.000	30.0000	0.278
MCN5-COMP	5	151.000	140.000	30.2000	0.307
TB	5	167.000	140.000	33.4000	0.776

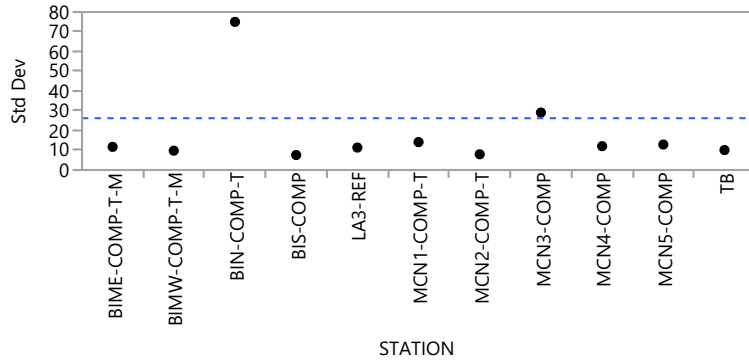
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
4.7542	10	0.9070

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDT**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	11.70909	9.75679	9.30176
BIMW-COMP-T-M	5	9.78601	8.33158	7.42506
BIN-COMP-T	5	74.99625	52.99923	40.42884
BIS-COMP	5	7.58627	6.43093	5.95544
LA3-REF	5	11.35209	8.73099	7.47236
MCN1-COMP-T	5	14.13643	11.90024	10.84668
MCN2-COMP-T	5	7.96696	5.92035	5.26666
MCN3-COMP	5	29.09068	20.50199	15.25498
MCN4-COMP	5	12.07786	10.28802	9.29292
MCN5-COMP	5	12.89320	10.54150	9.85954
TB	5	10.10007	7.19400	5.02554

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.2791	10	44	0.2715
Brown-Forsythe	1.0000	10	44	0.4583
Levene	3.8605	10	44	0.0008*
Bartlett	5.1083	10	.	<.0001*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha							
1.95996		0.05							
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
TB	MCN2-COMP-T	3.20000	1.914854	1.67115	0.0947	8.1117	-9.483	31.1475	
BIN-COMP-T	BIME-COMP-T-M	2.80000	1.914854	1.46225	0.1437	9.0803	-20.600	182.2816	
BIN-COMP-T	BIMW-COMP-T-M	2.00000	1.914854	1.04447	0.2963	9.8065	-16.826	178.9970	
MCN3-COMP	MCN2-COMP-T	2.00000	1.909043	1.04765	0.2948	7.1940	-11.012	71.1475	
MCN4-COMP	BIMW-COMP-T-M	2.00000	1.914854	1.04447	0.2963	5.1191	-16.389	25.4927	
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	4.4755	-20.163	28.7179	

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDT**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean		Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
		Difference	Std Err Dif						
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	4.9198	-19.660	33.5664	
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	4.5714	-15.059	29.3293	
TB	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	11.4311	-10.783	35.3846	
TB	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	7.1173	-15.706	31.8182	
TB	LA3-REF	1.40000	1.909043	0.73335	0.4633	2.4754	-22.424	25.1250	
BIS-COMP	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	3.8045	-13.074	22.6849	
LA3-REF	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	9.3589	-14.198	35.3846	
MCN3-COMP	BIME-COMP-T-M	1.20000	1.909043	0.62859	0.5296	7.2727	-19.151	75.3846	
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	6.2745	-17.968	24.4808	
MCN5-COMP	MCN1-COMP-T	1.20000	1.914854	0.62668	0.5309	4.9005	-23.101	30.0000	
TB	BIS-COMP	1.20000	1.914854	0.62668	0.5309	3.7548	-10.117	27.7083	
BIS-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	3.7433	-15.276	23.0769	
LA3-REF	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	4.7316	-10.491	32.1000	
MCN3-COMP	MCN1-COMP-T	0.80000	1.909043	0.41906	0.6752	7.8647	-22.592	71.8182	
MCN5-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	4.9198	-15.886	30.2818	
TB	MCN5-COMP	0.80000	1.914854	0.41779	0.6761	1.8182	-20.606	28.0000	
LA3-REF	BIS-COMP	0.40000	1.914854	0.20889	0.8345	0.9271	-13.450	27.7083	
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	3.4410	-25.693	28.6659	
MCN1-COMP-T	BIMW-COMP-T-M	0.40000	1.914854	0.20889	0.8345	3.7327	-21.919	26.8741	
MCN3-COMP	LA3-REF	0.40000	1.909043	0.20953	0.8340	1.1715	-23.954	65.1250	
MCN4-COMP	MCN1-COMP-T	0.40000	1.914854	0.20889	0.8345	0.9091	-24.190	27.7525	
MCN5-COMP	BIS-COMP	0.40000	1.914854	0.20889	0.8345	1.1765	-18.911	25.8901	
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	1.3968	-21.719	29.0909	
BIMW-COMP-T-M	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-1.2192	-23.433	20.7505	
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.2295	-19.401	22.4434	
MCN2-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.4714	-16.513	19.1588	
MCN3-COMP	BIMW-COMP-T-M	0.00000	1.909043	0.00000	1.0000	-0.2214	-15.377	72.1000	
MCN3-COMP	BIS-COMP	0.00000	1.909043	0.00000	1.0000	3.5294	-18.403	67.7083	
MCN4-COMP	BIS-COMP	0.00000	1.914854	-0.20889	0.8345	1.1966	-19.414	21.0416	
MCN4-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	-3.5407	-30.909	18.4583	
MCN4-COMP	MCN3-COMP	0.00000	1.909043	0.00000	1.0000	1.4123	-70.909	21.2103	
TB	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	8.1465	-7.790	32.1000	
TB	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-11.2500	-169.321	26.3043	
TB	MCN4-COMP	0.00000	1.914854	0.00000	1.0000	6.6667	-15.758	30.9091	
TB	MCN3-COMP	-0.20000	1.903214	-0.10509	0.9163	-1.2500	-62.424	23.9535	
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-5.1316	-172.022	26.3043	
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.9944	-24.429	18.8770	
MCN3-COMP	BIN-COMP-T	-0.40000	1.909043	-0.20953	0.8340	-10.0000	-170.851	66.3043	
MCN5-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-4.8867	-174.897	24.4861	
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-1.8182	-28.000	23.3068	
MCN5-COMP	MCN3-COMP	-0.40000	1.909043	-0.20953	0.8340	-2.3529	-68.000	22.6071	
MCN1-COMP-T	BIS-COMP	-0.80000	1.914854	-0.41779	0.6761	-3.5227	-24.945	20.9896	
MCN4-COMP	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-4.6048	-177.806	22.6594	
BIS-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-7.4801	-174.605	19.8516	

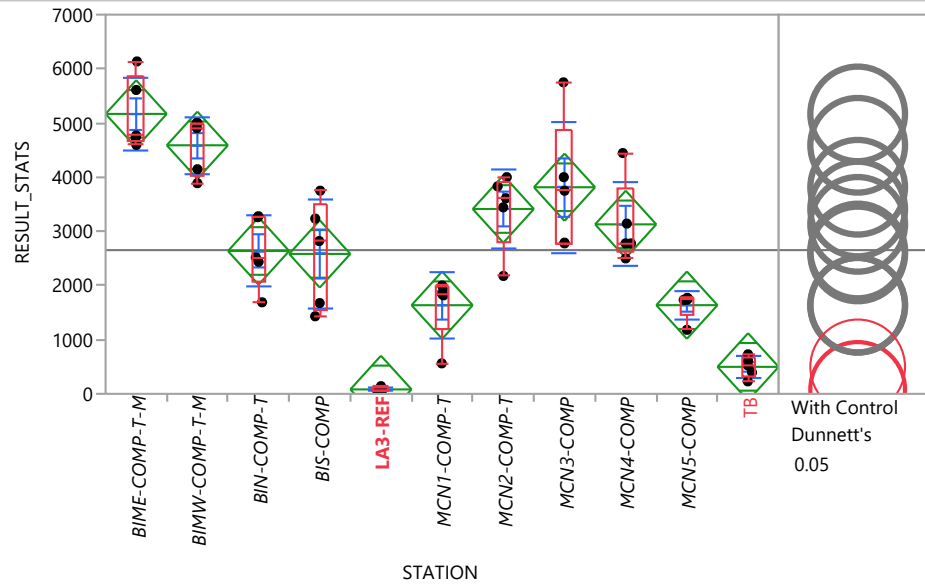


**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=2,4'-DDT**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean		Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
		Difference	Std Err Dif						
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-5.5139	-178.715	24.0408	
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-6.6932	-31.818	18.4063	
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-14.4444	-178.045	13.3631	
MCN2-COMP-T	LA3-REF	-2.00000	1.914854	-1.04447	0.2963	-6.0225	-31.148	12.1838	
MCN2-COMP-T	BIS-COMP	-2.40000	1.914854	-1.25336	0.2101	-4.2759	-18.840	14.7671	

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDD**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	4594.59	4594.59	4660.93	4769.23	5873.06	6136.36	6136.36
BIMW-COMP-T-M	3888.89	3888.89	4017.615	4905.66	5000	5000	5000
BIN-COMP-T	1689.66	1689.66	2063.58	2517.24	3269.78	3278.69	3278.69
BIS-COMP	1431.82	1431.82	1553.75	2820.51	3492.645	3750	3750
LA3-REF	56.8182	56.8182	59.6591	67.1053	111.3751	142.105	142.105
MCN1-COMP-T	562.5	562.5	1190.34	1840.91	1979.59	2000	2000
MCN2-COMP-T	2176.47	2176.47	2809.545	3611.11	3914.895	4000	4000
MCN3-COMP	2777.78	2777.78	2784.24	3750	4875	5750	5750
MCN4-COMP	2500	2500	2638.89	2777.78	3793.65	4444.44	4444.44
MCN5-COMP	1181.82	1181.82	1458.555	1735.85	1765.715	1771.43	1771.43
TB	230.303	230.303	312.826	522.727	671.3165	729.73	729.73

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDD**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.859187
Adj Rsquare	0.827185
Root Mean Square Error	689.7112
Mean of Response	2652.946
Observations (or Sum Wgts)	55

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	10	127712640	12771264	26.8472	<.0001*
Error	44	20930869	475701.56		
C. Total	54	148643509			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	5167.44	308.45	4546	5789.1
BIMW-COMP-T-M	5	4588.18	308.45	3967	5209.8
BIN-COMP-T	5	2636.79	308.45	2015	3258.4
BIS-COMP	5	2582.66	308.45	1961	3204.3
LA3-REF	5	81.83	308.45	-540	703.5
MCN1-COMP-T	5	1636.15	308.45	1015	2257.8
MCN2-COMP-T	5	3412.00	308.45	2790	4033.6
MCN3-COMP	5	3813.70	308.45	3192	4435.3
MCN4-COMP	5	3128.57	308.45	2507	3750.2
MCN5-COMP	5	1636.88	308.45	1015	2258.5
TB	5	498.20	308.45	-123	1119.8

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	5167.44	673.60	301.24	4331.1	6003.8
BIMW-COMP-T-M	5	4588.18	530.14	237.09	3929.9	5246.4
BIN-COMP-T	5	2636.79	661.92	296.02	1814.9	3458.7
BIS-COMP	5	2582.66	999.03	446.78	1342.2	3823.1
LA3-REF	5	81.83	34.82	15.57	38.6	125.1
MCN1-COMP-T	5	1636.15	605.09	270.60	884.8	2387.5
MCN2-COMP-T	5	3412.00	722.39	323.06	2515.0	4309.0
MCN3-COMP	5	3813.70	1215.29	543.49	2304.7	5322.7
MCN4-COMP	5	3128.57	770.22	344.45	2172.2	4084.9
MCN5-COMP	5	1636.88	254.86	113.98	1320.4	1953.3
TB	5	498.20	193.46	86.52	258.0	738.4

**Means Comparisons**

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDD**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.83292	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIME-COMP-T-M	3850	<.0001*
BIMW-COMP-T-M	3271	<.0001*
MCN3-COMP	2496	<.0001*
MCN2-COMP-T	2094	<.0001*
MCN4-COMP	1811	<.0001*
BIN-COMP-T	1319	<.0001*
BIS-COMP	1265	<.0001*
MCN5-COMP	319.3	0.0073*
MCN1-COMP-T	318.6	0.0074*
TB	-819	0.9386
LA3-REF	-1236	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	252.000	140.000	50.4000	3.265
BIMW-COMP-T-M	5	240.000	140.000	48.0000	2.913
BIN-COMP-T	5	138.000	140.000	27.6000	-0.044
BIS-COMP	5	132.500	140.000	26.5000	-0.205
LA3-REF	5	15.000	140.000	3.0000	-3.645
MCN1-COMP-T	5	95.000	140.000	19.0000	-1.303
MCN2-COMP-T	5	183.500	140.000	36.7000	1.259
MCN3-COMP	5	197.000	140.000	39.4000	1.654
MCN4-COMP	5	163.000	140.000	32.6000	0.659
MCN5-COMP	5	82.000	140.000	16.4000	-1.684
TB	5	42.000	140.000	8.4000	-2.855

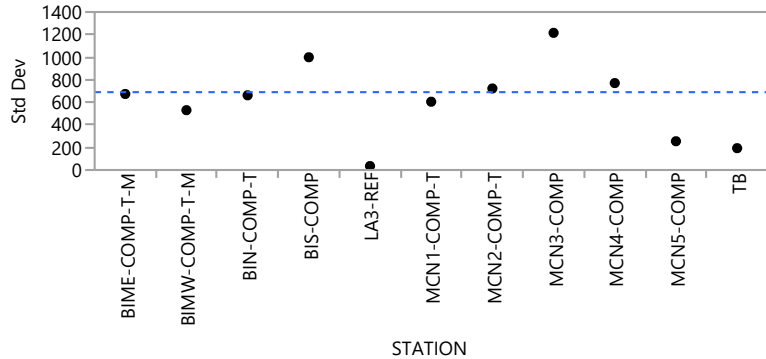
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
45.9019	10	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDD**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	673.597	564.4944	484.8520
BIMW-COMP-T-M	5	530.145	456.4504	392.9540
BIN-COMP-T	5	661.924	506.3904	482.4800
BIS-COMP	5	999.028	823.1280	775.5580
LA3-REF	5	34.823	24.1081	20.6864
MCN1-COMP-T	5	605.087	429.4616	315.7000
MCN2-COMP-T	5	722.393	494.2112	442.1400
MCN3-COMP	5	1215.286	849.0432	836.3040
MCN4-COMP	5	770.215	532.0624	461.9040
MCN5-COMP	5	254.863	182.0232	122.8640
TB	5	193.463	148.3011	143.3962

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.2256	10	44	0.3018
Brown-Forsythe	1.2497	10	44	0.2879
Levene	2.3756	10	44	0.0239*
Bartlett	3.3864	10	.	0.0002*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha		Score Mean		Hodges-Lehmann		Lower CL		Upper CL	
Level	- Level	Difference	Std Err Dif	Z	p-Value	Lehmann	Lower CL	Upper CL			
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1773.80	481.85	1937.50			
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	3544.00	2095.82	3937.50			
MCN2-COMP-T	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	1792.93	217.29	3267.29			
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	3682.89	2648.60	5687.50			
MCN3-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	2000.00	790.70	3931.82			
MCN4-COMP	LA3-REF	4.80000	1.909043	2.51435	0.0119*	2715.28	2419.35	4381.94			

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDD**

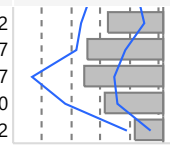
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean		Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
		Difference	Std Err Dif						
MCN4-COMP	MCN1-COMP-T	4.80000	1.909043	2.51435	0.0119*	1142.86	540.82	2626.26	
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	1668.74	1101.17	1708.93	
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	455.62	-149.66	667.23	
MCN2-COMP-T	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	739.13	-1084.40	2140.13	
MCN3-COMP	BIN-COMP-T	3.20000	1.914854	1.67115	0.0947	1088.12	-487.99	3312.50	
MCN2-COMP-T	BIS-COMP	2.80000	1.914854	1.46225	0.1437	744.65	-1058.82	2397.97	
MCN3-COMP	BIS-COMP	2.20000	1.909043	1.15241	0.2492	1115.02	-959.30	4074.32	
MCN4-COMP	BIN-COMP-T	1.20000	1.909043	0.62859	0.5296	340.28	-760.87	2006.94	
MCN3-COMP	MCN2-COMP-T	0.60000	1.909043	0.31429	0.7533	170.21	-1209.30	2307.38	
MCN4-COMP	BIS-COMP	0.40000	1.909043	0.20953	0.8340	694.44	-972.22	2768.76	
BIS-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-25.58	-1829.05	1545.63	
BIMW-COMP-T-M	BIME-COMP-T-M	-1.20000	1.909043	-0.62859	0.5296	-609.76	-1990.02	405.41	
MCN4-COMP	MCN2-COMP-T	-1.20000	1.909043	-0.62859	0.5296	-664.84	-1329.79	1001.82	
MCN1-COMP-T	BIS-COMP	-1.60000	1.914854	-0.83557	0.4034	-1002.33	-2672.79	527.36	
MCN5-COMP	BIS-COMP	-1.60000	1.914854	-0.83557	0.4034	-1084.66	-2053.47	328.18	
MCN4-COMP	MCN3-COMP	-2.00000	1.891501	-1.05736	0.2903	-607.14	-2972.22	1653.74	
MCN3-COMP	BIMW-COMP-T-M	-2.40000	1.909043	-1.25717	0.2087	-1098.19	-2222.22	1603.66	
MCN5-COMP	MCN1-COMP-T	-2.80000	1.914854	-1.46225	0.1437	-105.62	-777.36	1197.50	
MCN1-COMP-T	BIN-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-1127.16	-2698.37	269.52	
MCN3-COMP	BIME-COMP-T-M	-3.20000	1.914854	-1.67115	0.0947	-1803.89	-3345.66	1022.73	
MCN5-COMP	BIN-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-781.95	-2079.05	70.34	
MCN4-COMP	BIMW-COMP-T-M	-4.00000	1.903214	-2.10171	0.0356*	-1646.34	-2500.00	298.10	
TB	MCN1-COMP-T	-4.00000	1.914854	-2.08893	0.0367*	-1318.18	-1728.88	50.40	
MCN2-COMP-T	BIMW-COMP-T-M	-4.40000	1.909043	-2.30482	0.0212*	-1170.21	-2823.53	-59.10	
BIN-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-2331.73	-3920.10	-1333.72	
BIN-COMP-T	BIMW-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-1739.13	-3310.34	-628.02	
BIS-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-2789.25	-4460.68	-977.27	
BIS-COMP	BIMW-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-2085.15	-3568.18	-396.34	
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-4702.12	-6073.86	-4513.94	
LA3-REF	BIMW-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-4838.55	-4943.18	-3808.24	
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-2450.13	-3216.19	-1609.01	
LA3-REF	BIS-COMP	-4.80000	1.914854	-2.50672	0.0122*	-2753.40	-3687.50	-1351.17	
MCN1-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-3609.76	-5047.26	-2635.41	
MCN1-COMP-T	BIMW-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-3040.82	-4437.50	-1929.71	
MCN2-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1609.76	-3433.29	-727.27	
MCN4-COMP	BIME-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-1991.45	-3358.58	-282.83	
MCN5-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-3412.77	-4427.94	-2834.59	
MCN5-COMP	BIMW-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-3169.81	-3818.18	-2128.89	
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1875.82	-2647.97	-416.47	
MCN5-COMP	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-2014.15	-4014.71	-1017.78	
MCN5-COMP	MCN4-COMP	-4.80000	1.909043	-2.51435	0.0119*	-1318.18	-2709.15	-740.00	
TB	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-4373.88	-5741.01	-3981.69	
TB	BIMW-COMP-T-M	-4.80000	1.909043	-2.51435	0.0119*	-4270.27	-4769.70	-3275.99	
TB	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-2121.89	-3030.57	-1076.76	

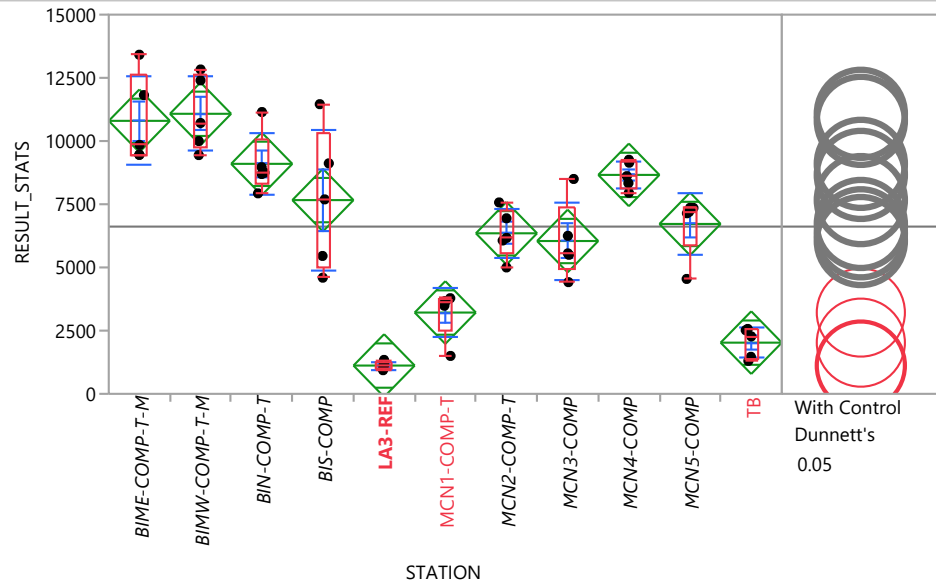
**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDD**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	BIS-COMP	-4.80000	1.914854	-2.50672	0.0122*	-2297.78	-3354.65	-818.92
TB	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-3100.06	-3604.65	-1563.57
TB	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-3227.27	-5354.65	-2060.97
TB	MCN4-COMP	-4.80000	1.909043	-2.51435	0.0119*	-2382.43	-4049.09	-1887.10
TB	MCN5-COMP	-4.80000	1.914854	-2.50672	0.0122*	-1158.53	-1529.70	-568.92



**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDE**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	9454.55	9454.55	9457.005	9846.15	12616.4	13414.6	13414.6
BIMW-COMP-T-M	9444.44	9444.44	9722.22	10714.3	12615.1	12830.2	12830.2
BIN-COMP-T	7931.03	7931.03	8313.34	8750	10056.51	11147.5	11147.5
BIS-COMP	4594.59	4594.59	5024.57	7692.31	10287.98	11458.3	11458.3
LA3-REF	935.484	935.484	980.242	1131.58	1250.6	1342.11	1342.11
MCN1-COMP-T	1500	1500	2492.425	3636.36	3728.625	3783.78	3783.78
MCN2-COMP-T	5000	5000	5532.785	6170.21	7257.935	7571.43	7571.43
MCN3-COMP	4418.6	4418.6	4959.3	5555.56	7375	8500	8500
MCN4-COMP	7954.55	7954.55	8143.94	8611.11	9201.06	9259.26	9259.26
MCN5-COMP	4545.45	4545.45	5844.155	7200	7355.715	7358.49	7358.49
TB	1303.03	1303.03	1384.075	2272.73	2541.85	2567.57	2567.57

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDE**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.870652
Adj Rsquare	0.841255
Root Mean Square Error	1375.724
Mean of Response	6615.672
Observations (or Sum Wgts)	55

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	10	560531513	56053151	29.6168	<.0001*
Error	44	83275087	1892615.6		
C. Total	54	643806600			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	10798.6	615.24	9559	12039
BIMW-COMP-T-M	5	11077.8	615.24	9838	12318
BIN-COMP-T	5	9097.9	615.24	7858	10338
BIS-COMP	5	7663.5	615.24	6424	8903
LA3-REF	5	1118.7	615.24	-121	2359
MCN1-COMP-T	5	3215.7	615.24	1976	4456
MCN2-COMP-T	5	6350.3	615.24	5110	7590
MCN3-COMP	5	6044.8	615.24	4805	7285
MCN4-COMP	5	8660.2	615.24	7420	9900
MCN5-COMP	5	6719.9	615.24	5480	7960
TB	5	2024.9	615.24	785	3265

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	10798.6	1759.97	787.1	8613.3	12984
BIMW-COMP-T-M	5	11077.8	1481.62	662.6	9238.1	12917
BIN-COMP-T	5	9097.9	1210.66	541.4	7594.7	10601
BIS-COMP	5	7663.5	2775.50	1241.2	4217.2	11110
LA3-REF	5	1118.7	153.34	68.6	928.3	1309
MCN1-COMP-T	5	3215.7	965.05	431.6	2017.4	4414
MCN2-COMP-T	5	6350.3	972.24	434.8	5143.1	7558
MCN3-COMP	5	6044.8	1520.76	680.1	4156.6	7933
MCN4-COMP	5	8660.2	547.50	244.8	7980.4	9340
MCN5-COMP	5	6719.9	1219.24	545.3	5206.1	8234
TB	5	2024.9	598.26	267.6	1282.1	2768

**Means Comparisons**

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDE**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.83292	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIMW-COMP-T-M	7494	<.0001*
BIME-COMP-T-M	7215	<.0001*
BIN-COMP-T	5514	<.0001*
MCN4-COMP	5077	<.0001*
BIS-COMP	4080	<.0001*
MCN5-COMP	3136	<.0001*
MCN2-COMP-T	2767	<.0001*
MCN3-COMP	2461	<.0001*
MCN1-COMP-T	-368	0.1297
TB	-1559	0.9031
LA3-REF	-2465	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	245.000	140.000	49.0000	3.059
BIMW-COMP-T-M	5	248.000	140.000	49.6000	3.147
BIN-COMP-T	5	200.000	140.000	40.0000	1.742
BIS-COMP	5	162.000	140.000	32.4000	0.629
LA3-REF	5	16.000	140.000	3.2000	-3.616
MCN1-COMP-T	5	62.000	140.000	12.4000	-2.269
MCN2-COMP-T	5	123.000	140.000	24.6000	-0.483
MCN3-COMP	5	120.000	140.000	24.0000	-0.571
MCN4-COMP	5	191.000	140.000	38.2000	1.478
MCN5-COMP	5	131.000	140.000	26.2000	-0.249
TB	5	42.000	140.000	8.4000	-2.855

**1-Way Test, ChiSquare Approximation**

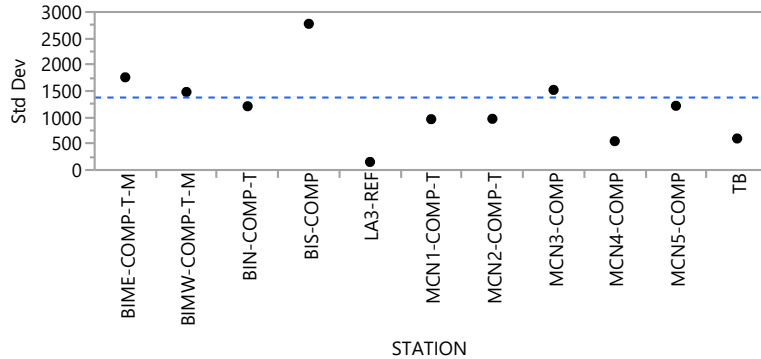
ChiSquare	DF	Prob>ChiSq
47.6945	10	<.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.



**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDE**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	1759.969	1454.246	1263.758
BIMW-COMP-T-M	5	1481.618	1229.850	1157.152
BIN-COMP-T	5	1210.662	819.824	697.268
BIS-COMP	5	2775.498	2111.128	2105.362
LA3-REF	5	153.344	110.729	108.143
MCN1-COMP-T	5	965.051	686.277	494.480
MCN2-COMP-T	5	972.236	726.084	690.060
MCN3-COMP	5	1520.757	1064.134	966.280
MCN4-COMP	5	547.501	432.670	422.848
MCN5-COMP	5	1219.238	869.799	604.624
TB	5	598.262	512.673	463.110

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[5]	2.0850	10	44	0.0466*
Brown-Forsythe	1.5731	10	44	0.1468
Levene	2.8853	10	44	0.0074*
Bartlett	2.7689	10	.	0.0020*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha									
1.95996		0.05									
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL			
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	2477.27	340.9	2758.78			
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	5130.09	3840.9	6546.43			
MCN2-COMP-T	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	3160.66	1326.5	5444.44			
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	4530.56	3259.5	7475.00			
MCN3-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	2466.22	745.1	5015.15			
MCN4-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	7479.53	6795.5	8234.26			

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDE**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

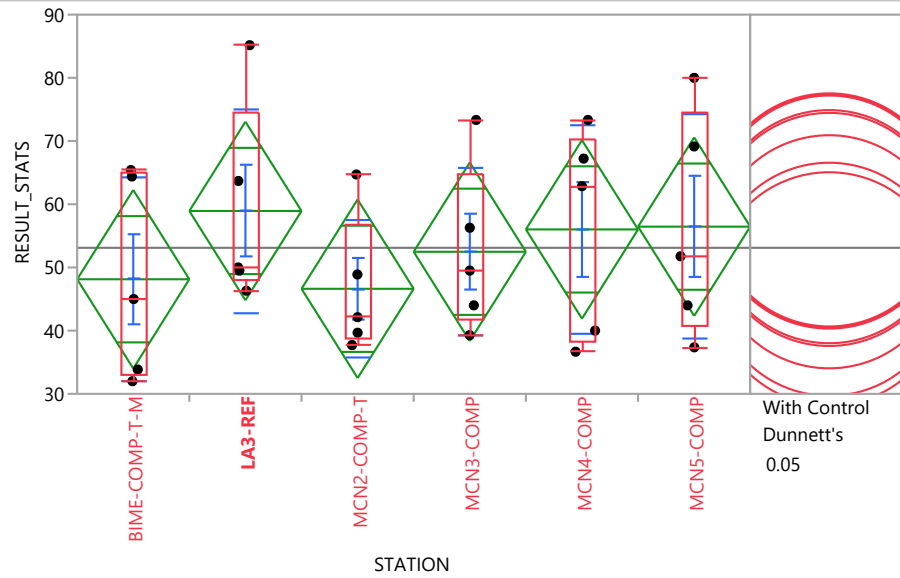
Level	- Level	Score Mean		Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
		Difference	Std Err Dif						
MCN4-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	5359.08	4281.1	7642.86	
MCN4-COMP	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	2267.76	761.9	4142.86	
MCN5-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	6068.42	3386.4	6417.46	
MCN5-COMP	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	3574.71	872.0	5852.94	
TB	LA3-REF	4.40000	1.914854	2.29783	0.0216*	1141.15	123.0	1580.65	
MCN4-COMP	MCN3-COMP	4.00000	1.914854	2.08893	0.0367*	2892.86	-166.7	4724.26	
MCN4-COMP	BIS-COMP	1.60000	1.914854	0.83557	0.4034	918.80	-3125.0	4548.27	
MCN5-COMP	MCN3-COMP	1.60000	1.914854	0.83557	0.4034	1108.49	-1704.6	2934.34	
MCN5-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	414.05	-2399.0	2352.94	
BIMW-COMP-T-M	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	540.54	-3414.6	3370.74	
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-138.89	-2814.2	1211.83	
MCN3-COMP	MCN2-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-581.40	-2525.8	2434.43	
BIS-COMP	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-1273.21	-5693.0	2762.65	
MCN2-COMP-T	BIS-COMP	-1.20000	1.914854	-0.62668	0.5309	-1522.10	-5392.7	2349.85	
MCN3-COMP	BIS-COMP	-1.20000	1.914854	-0.62668	0.5309	-1442.31	-5958.3	3045.45	
MCN5-COMP	BIS-COMP	-1.60000	1.914854	-0.83557	0.4034	-549.45	-4572.2	2758.35	
BIN-COMP-T	BIME-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-1150.50	-4719.0	1688.04	
BIN-COMP-T	BIMW-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-1748.78	-4469.0	1147.50	
BIS-COMP	BIME-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-4000.00	-7960.1	1998.84	
BIS-COMP	BIMW-COMP-T-M	-3.60000	1.914854	-1.88004	0.0601	-3712.55	-7805.4	1458.30	
TB	MCN1-COMP-T	-3.60000	1.914854	-1.88004	0.0601	-1216.21	-2370.4	1016.13	
MCN3-COMP	BIN-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-3194.44	-5647.5	-195.65	
LA3-REF	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-8714.57	-12389.6	-8117.35	
LA3-REF	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-9582.72	-11805.2	-8285.35	
LA3-REF	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-7670.65	-10122.5	-6771.94	
LA3-REF	BIS-COMP	-4.80000	1.914854	-2.50672	0.0122*	-6560.73	-10433.3	-3435.50	
MCN1-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-7954.55	-10318.2	-5675.68	
MCN1-COMP-T	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-7944.44	-10900.0	-5770.97	
MCN1-COMP-T	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-5265.15	-7662.7	-4257.56	
MCN1-COMP-T	BIS-COMP	-4.80000	1.914854	-2.50672	0.0122*	-4055.95	-7973.5	-921.12	
MCN2-COMP-T	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-4246.77	-7349.0	-1888.03	
MCN2-COMP-T	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-4648.73	-7400.0	-2428.57	
MCN2-COMP-T	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-2630.08	-5081.9	-986.59	
MCN3-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-4346.15	-7914.6	-959.46	
MCN3-COMP	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-5025.84	-7981.4	-1500.00	
MCN4-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-1504.91	-5081.3	-200.20	
MCN4-COMP	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-2103.19	-4496.9	-301.58	
MCN5-COMP	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-4459.71	-7272.8	-2100.97	
MCN5-COMP	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-4898.99	-7854.6	-2091.50	
MCN5-COMP	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-1607.14	-4420.1	-578.09	
MCN5-COMP	MCN4-COMP	-4.80000	1.914854	-2.50672	0.0122*	-1784.37	-4597.4	-601.61	
TB	BIME-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-8156.43	-11949.5	-6891.89	
TB	BIMW-COMP-T-M	-4.80000	1.914854	-2.50672	0.0122*	-8696.97	-11365.1	-6928.31	
TB	BIN-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-6628.00	-9682.4	-5414.90	

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDE**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean		Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
		Difference	Std Err Dif						
TB	BIS-COMP	-4.80000	1.914854	-2.50672	0.0122*	-5419.58	-9993.2	-2078.46	
TB	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-4428.31	-6106.3	-2483.87	
TB	MCN3-COMP	-4.80000	1.914854	-2.50672	0.0122*	-3733.87	-7034.9	-1902.47	
TB	MCN4-COMP	-4.80000	1.914854	-2.50672	0.0122*	-6651.52	-7839.8	-5438.42	
TB	MCN5-COMP	-4.80000	1.914854	-2.50672	0.0122*	-4842.36	-6049.9	-2029.32	

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDT**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	32	32	32.9231	45	64.8978	65.4054	65.4054
LA3-REF	46.3158	46.3158	47.9079	50	74.42275	85.1613	85.1613
MCN2-COMP-T	37.7143	37.7143	38.6932	42.1277	56.7974	64.7059	64.7059
MCN3-COMP	39.2857	39.2857	41.64285	49.5	64.8062	73.3333	73.3333
MCN4-COMP	36.6667	36.6667	38.33335	62.8571	70.27775	73.3333	73.3333
MCN5-COMP	37.3585	37.3585	40.67925	51.7647	74.57145	80	80

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDT**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.097069
Adj Rsquare	-0.09104
Root Mean Square Error	15.30226
Mean of Response	53.10518
Observations (or Sum Wgts)	30

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	5	604.1541	120.831	0.5160	0.7615
Error	24	5619.8207	234.159		
C. Total	29	6223.9748			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	48.1284	6.8434	34.004	62.252
LA3-REF	5	58.9323	6.8434	44.808	73.056
MCN2-COMP-T	5	46.6218	6.8434	32.498	60.746
MCN3-COMP	5	52.4796	6.8434	38.356	66.604
MCN4-COMP	5	56.0159	6.8434	41.892	70.140
MCN5-COMP	5	56.4532	6.8434	42.329	70.577

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	48.1284	16.1000	7.2001	28.138	68.119
LA3-REF	5	58.9323	16.1127	7.2058	38.926	78.939
MCN2-COMP-T	5	46.6218	10.9546	4.8990	33.020	60.224
MCN3-COMP	5	52.4796	13.2681	5.9337	36.005	68.954
MCN4-COMP	5	56.0159	16.6070	7.4269	35.395	76.636
MCN5-COMP	5	56.4532	17.7282	7.9283	34.441	78.466

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.69532	0.05

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDT**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
LA3-REF	-26.1	1.0000
MCN5-COMP	-23.6	0.9991
MCN4-COMP	-23.2	0.9981
MCN3-COMP	-19.6	0.9416
BIME-COMP-T-M	-15.3	0.6973
MCN2-COMP-T	-13.8	0.5902

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

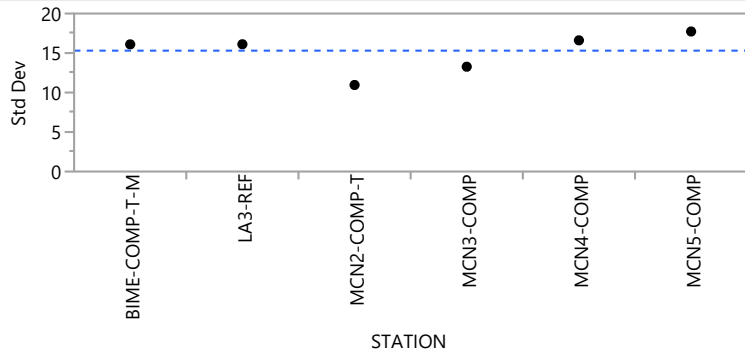
Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	61.000	77.500	12.2000	-0.891
LA3-REF	5	96.500	77.500	19.3000	1.030
MCN2-COMP-T	5	58.000	77.500	11.6000	-1.058
MCN3-COMP	5	78.500	77.500	15.7000	0.028
MCN4-COMP	5	83.500	77.500	16.7000	0.306
MCN5-COMP	5	87.500	77.500	17.5000	0.529

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
2.9710	5	0.7045

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=4,4'-DDT**

**Tests that the Variances are Equal**

Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	16.09996	13.41555	12.78988
LA3-REF	5	16.11266	12.39239	10.60594
MCN2-COMP-T	5	10.95460	8.14050	7.24168
MCN3-COMP	5	13.26814	9.86126	9.26534
MCN4-COMP	5	16.60705	14.14601	12.77776
MCN5-COMP	5	17.72817	14.49458	13.55688

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.3682	5	24	0.8653
Brown-Forsythe	0.2634	5	24	0.9286
Levene	0.7182	5	24	0.6161
Bartlett	0.2121	5	.	0.9575

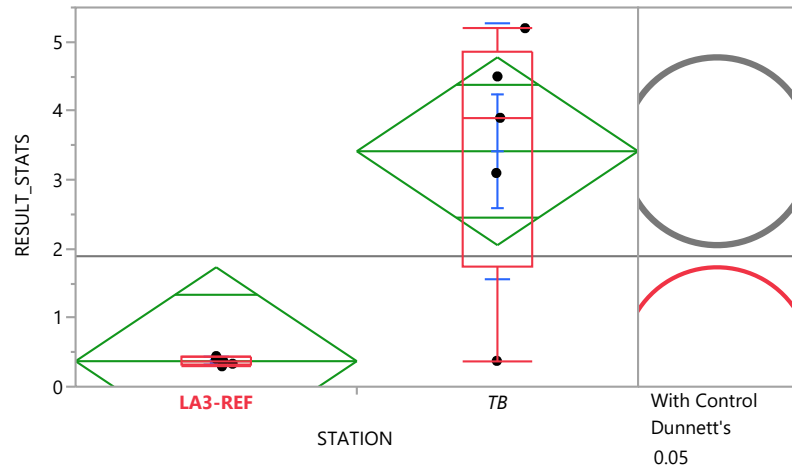
Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q\* Alpha  
1.95996 0.05

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	14.3158	-18.0744	51.31510	
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	6.2857	-20.7059	33.66120	
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	6.1538	-27.7235	39.48710	
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	6.7647	-27.0317	46.15380	
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	6.2857	-20.7059	40.32790	
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	8.6274	-24.7059	33.66120	
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	7.2857	-25.1045	39.48710	
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	1.9207	-29.8637	40.00000	
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.7143	-33.3333	29.33330	
MCN5-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	2.2647	-29.3333	36.00000	
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.3157	-26.6759	30.85970	
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-6.3158	-45.1613	23.83330	
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-5.1613	-41.1613	30.50000	
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-6.0000	-41.1613	23.83330	
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-9.8279	-45.4892	15.20590	

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=Dibutyltin**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	0.296	0.296	0.3145	0.37	0.4255	0.444	0.444
TB	0.375	0.375	1.7375	3.9	4.85	5.2	5.2

**Oneway Anova**

**Summary of Fit**

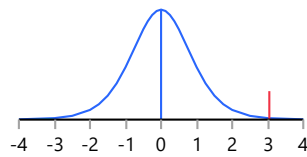
Rsquare	0.62424
Adj Rsquare	0.57727
Root Mean Square Error	1.320662
Mean of Response	1.8925
Observations (or Sum Wgts)	10

**t Test**

TB-LA3-REF

Assuming equal variances

Difference	3.04500	t Ratio	3.645571
Std Err Dif	0.83526	DF	8
Upper CL Dif	4.97111	Prob >  t	0.0065*
Lower CL Dif	1.11889	Prob > t	0.0033*
Confidence	0.95	Prob < t	0.9967



**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	1	23.180063	23.1801	13.2902	0.0065*
Error	8	13.953190	1.7441		
C. Total	9	37.133253			

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=Dibutyltin**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
LA3-REF	5	0.37000	0.59062	-0.992	1.7320
TB	5	3.41500	0.59062	2.053	4.7770

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

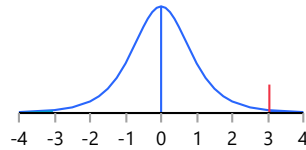
Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
LA3-REF	5	0.37000	0.05850	0.02616	0.2974	0.4426
TB	5	3.41500	1.86678	0.83485	1.0971	5.7329

**t Test**

TB-LA3-REF

Assuming unequal variances

Difference	3.04500	t Ratio	3.645571
Std Err Dif	0.83526	DF	4.007857
Upper CL Dif	5.36226	Prob >  t	0.0218*
Lower CL Dif	0.72774	Prob > t	0.0109*
Confidence	0.95	Prob < t	0.9891



**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.30600	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	1.119	0.0065*
LA3-REF	-1.93	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
LA3-REF	5	17.000	27.500	3.40000	-2.089
TB	5	38.000	27.500	7.60000	2.089

**2-Sample Test, Normal Approximation**

S	Z	Prob> Z
38	2.08893	0.0367*



**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=Dibutyltin**

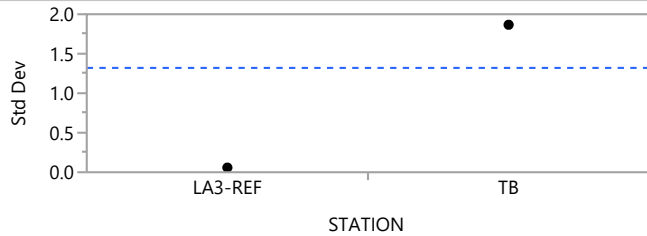
**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
4.8109	1	0.0283*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
LA3-REF	5	0.058502	0.044400	0.044400
TB	5	1.866782	1.342000	1.245000

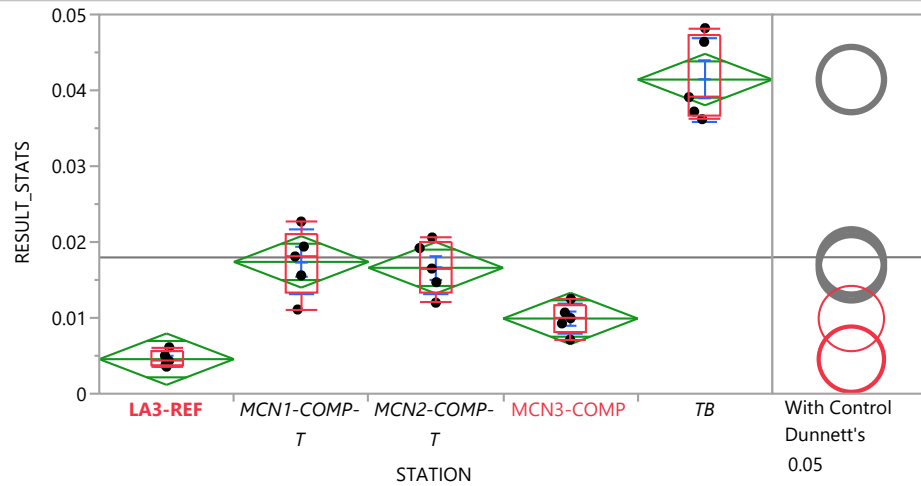
Test	F Ratio	DFNum	DFDen	p-Value
O'Brien[.5]	1.9602	1	8	0.1991
Brown-Forsythe	3.9120	1	8	0.0833
Levene	6.8189	1	8	0.0311*
Bartlett	19.7031	1	.	<.0001*
F Test 2-sided	1018.2250	4	4	<.0001*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha						
1.95996		0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	LA3-REF	4.000000	1.914854	2.088932	0.0367*	3.530000	-0.032000	4.867000

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=Mercury**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
LA3-REF	0.00357	0.00357	0.00366	0.00432	0.005565	0.00612	0.00612
MCN1-COMP-T	0.0111	0.0111	0.01335	0.0181	0.02105	0.0227	0.0227
MCN2-COMP-T	0.012	0.012	0.01335	0.0165	0.0199	0.0206	0.0206
MCN3-COMP	0.00713	0.00713	0.0082	0.00996	0.0116	0.0125	0.0125
TB	0.0362	0.0362	0.0367	0.0391	0.0473	0.0482	0.0482

**Oneway Anova**

**Summary of Fit**

Rsquare	0.937858
Adj Rsquare	0.92543
Root Mean Square Error	0.003634
Mean of Response	0.017973
Observations (or Sum Wgts)	25

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	4	0.00398524	0.000996	75.4613	<.0001*
Error	20	0.00026406	0.000013		
C. Total	24	0.00424930			

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=Mercury**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
LA3-REF	5	0.004554	0.00162	0.00116	0.00794
MCN1-COMP-T	5	0.017380	0.00162	0.01399	0.02077
MCN2-COMP-T	5	0.016600	0.00162	0.01321	0.01999
MCN3-COMP	5	0.009912	0.00162	0.00652	0.01330
TB	5	0.041420	0.00162	0.03803	0.04481

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
LA3-REF	5	0.004554	0.001040	0.00047	0.00326	0.00585
MCN1-COMP-T	5	0.017380	0.004345	0.00194	0.01199	0.02277
MCN2-COMP-T	5	0.016600	0.003447	0.00154	0.01232	0.02088
MCN3-COMP	5	0.009912	0.001967	0.00088	0.00747	0.01235
TB	5	0.041420	0.005505	0.00246	0.03458	0.04826

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.65103	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	0.031	<.0001*
MCN1-COMP-T	0.007	<.0001*
MCN2-COMP-T	0.006	0.0001*
MCN3-COMP	-7e-4	0.0948
LA3-REF	-0.01	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
LA3-REF	5	15.000	65.000	3.0000	-3.363
MCN1-COMP-T	5	78.000	65.000	15.6000	0.849
MCN2-COMP-T	5	75.000	65.000	15.0000	0.645
MCN3-COMP	5	42.000	65.000	8.4000	-1.529
TB	5	115.000	65.000	23.0000	3.363

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=Mercury**

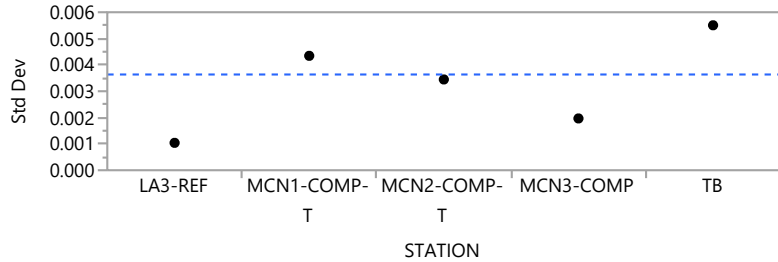
**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
21.4080	4	0.0003*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
LA3-REF	5	0.0010404	0.0008088	0.0007620
MCN1-COMP-T	5	0.0043448	0.0032240	0.0030800
MCN2-COMP-T	5	0.0034475	0.0026400	0.0026200
MCN3-COMP	5	0.0019668	0.0013696	0.0013600
TB	5	0.0055047	0.0047040	0.0042400

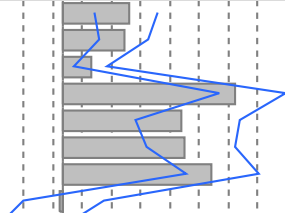
Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	2.6421	4	20	0.0641
Brown-Forsythe	1.7393	4	20	0.1809
Levene	4.4147	4	20	0.0102*
Bartlett	2.4052	4	.	0.0473*

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*	Alpha
1.95996	0.05

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.013280	0.006090	0.018950
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.012180	0.006990	0.016850
MCN3-COMP	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.005640	0.002120	0.008750
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	0.034780	0.031080	0.044450
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.023700	0.014500	0.035300
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	0.024400	0.016600	0.034400
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	0.029830	0.024700	0.039270
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.000900	-0.008000	0.008100

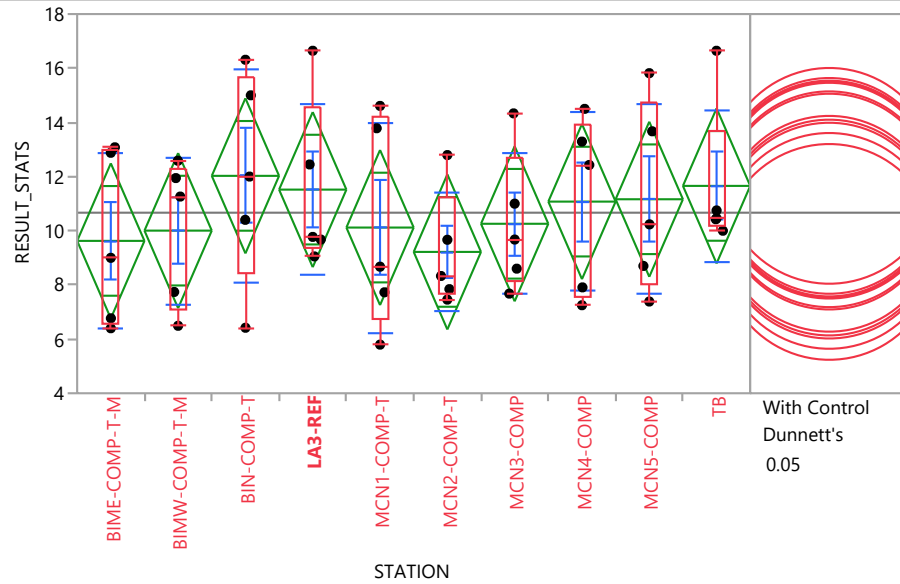


**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=Mercury**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN3-COMP	MCN1-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-0.008140	-0.013430	-0.000400
MCN3-COMP	MCN2-COMP-T	-4.40000	1.914854	-2.29783	0.0216*	-0.006700	-0.012070	-0.001300

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB003**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	6.4	6.4	6.584615	9	12.97955	13.0811	13.0811
BIMW-COMP-T-M	6.49057	6.49057	7.115285	11.2619	12.2649	12.5854	12.5854
BIN-COMP-T	6.41803	6.41803	8.410115	12	15.65625	16.3125	16.3125
LA3-REF	9.05263	9.05263	9.363815	9.77273	14.5463	16.6452	16.6452
MCN1-COMP-T	5.79545	5.79545	6.76136	8.67347	14.1966	14.6094	14.6094
MCN2-COMP-T	7.45714	7.45714	7.6507	8.32979	11.23039	12.7941	12.7941
MCN3-COMP	7.67857	7.67857	8.139285	9.675	12.66665	14.3333	14.3333
MCN4-COMP	7.25	7.25	7.579545	12.4286	13.89585	14.5	14.5
MCN5-COMP	7.38679	7.38679	8.043395	10.2353	14.7448	15.8182	15.8182
TB	10	10	10.2121	10.4595	13.6976	16.6452	16.6452

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB003**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.09119
Adj Rsquare	-0.11329
Root Mean Square Error	3.167734
Mean of Response	10.66629
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	40.27467	4.4750	0.4460	0.9013
Error	40	401.38147	10.0345		
C. Total	49	441.65614			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	9.6257	1.4167	6.7625	12.489
BIMW-COMP-T-M	5	10.0045	1.4167	7.1413	12.868
BIN-COMP-T	5	12.0265	1.4167	9.1634	14.890
LA3-REF	5	11.5186	1.4167	8.6554	14.382
MCN1-COMP-T	5	10.1179	1.4167	7.2547	12.981
MCN2-COMP-T	5	9.2184	1.4167	6.3552	12.082
MCN3-COMP	5	10.2574	1.4167	7.3942	13.121
MCN4-COMP	5	11.0759	1.4167	8.2127	13.939
MCN5-COMP	5	11.1623	1.4167	8.2992	14.026
TB	5	11.6558	1.4167	8.7926	14.519

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	9.6257	3.21999	1.4400	5.6275	13.624
BIMW-COMP-T-M	5	10.0045	2.71482	1.2141	6.6336	13.375
BIN-COMP-T	5	12.0265	3.91489	1.7508	7.1656	16.888
LA3-REF	5	11.5186	3.14931	1.4084	7.6082	15.429
MCN1-COMP-T	5	10.1179	3.87613	1.7335	5.3050	14.931
MCN2-COMP-T	5	9.2184	2.16602	0.9687	6.5289	11.908
MCN3-COMP	5	10.2574	2.59331	1.1598	7.0374	13.477
MCN4-COMP	5	11.0759	3.28368	1.4685	6.9987	15.153
MCN5-COMP	5	11.1623	3.50534	1.5676	6.8099	15.515
TB	5	11.6558	2.80197	1.2531	8.1767	15.135

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB003**

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-5.13	1.0000
TB	-5.5	1.0000
LA3-REF	-5.63	1.0000
MCN5-COMP	-5.28	1.0000
MCN4-COMP	-5.19	1.0000
MCN3-COMP	-4.37	0.9936
MCN1-COMP-T	-4.23	0.9871
BIMW-COMP-T-M	-4.12	0.9790
BIME-COMP-T-M	-3.74	0.9271
MCN2-COMP-T	-3.33	0.8242

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	102.000	127.500	20.4000	-0.808
BIMW-COMP-T-M	5	114.000	127.500	22.8000	-0.420
BIN-COMP-T	5	156.000	127.500	31.2000	0.906
LA3-REF	5	148.000	127.500	29.6000	0.647
MCN1-COMP-T	5	114.000	127.500	22.8000	-0.420
MCN2-COMP-T	5	91.000	127.500	18.2000	-1.164
MCN3-COMP	5	118.500	127.500	23.7000	-0.275
MCN4-COMP	5	137.000	127.500	27.4000	0.291
MCN5-COMP	5	137.000	127.500	27.4000	0.291
TB	5	157.500	127.500	31.5000	0.954

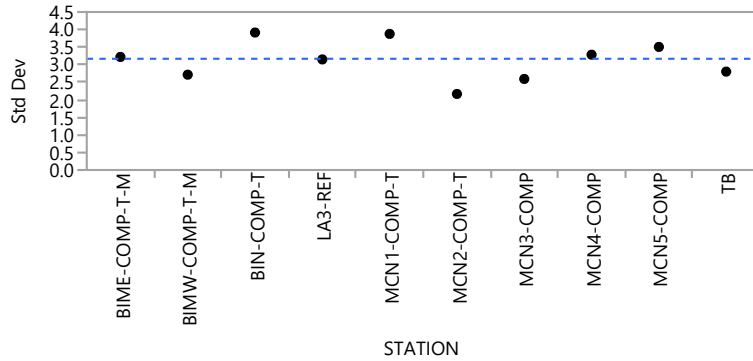
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
4.4625	9	0.8784

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB003**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	3.219989	2.683107	2.557974
BIMW-COMP-T-M	5	2.714819	2.311335	2.059846
BIN-COMP-T	5	3.914891	2.903763	2.898454
LA3-REF	5	3.149311	2.422166	2.072994
MCN1-COMP-T	5	3.876128	3.262978	2.974096
MCN2-COMP-T	5	2.166016	1.609594	1.431874
MCN3-COMP	5	2.593306	1.927421	1.810946
MCN4-COMP	5	3.283680	2.797066	2.526522
MCN5-COMP	5	3.505343	2.865970	2.680562
TB	5	2.801974	1.995768	1.394200

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.4426	9	40	0.9034
Brown-Forsythe	0.3337	9	40	0.9584
Levene	0.6513	9	40	0.7466
Bartlett	0.2409	9	.	0.9885

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha									
1.95996		0.05									
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL			
TB	MCN2-COMP-T	3.20000	1.914854	1.67115	0.0947	2.42021	-2.36990	8.800940			
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	3.00000	-6.45997	9.543270			
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	2.65263	-3.82537	9.875970			
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	1.14286	-4.19410	6.489040			
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	1.13986	-5.62800	7.730770			
MCN4-COMP	BIMW-COMP-T-M	1.60000	1.914854	0.83557	0.4034	1.16670	-4.69440	6.801130			
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	1.23530	-5.49121	9.048970			

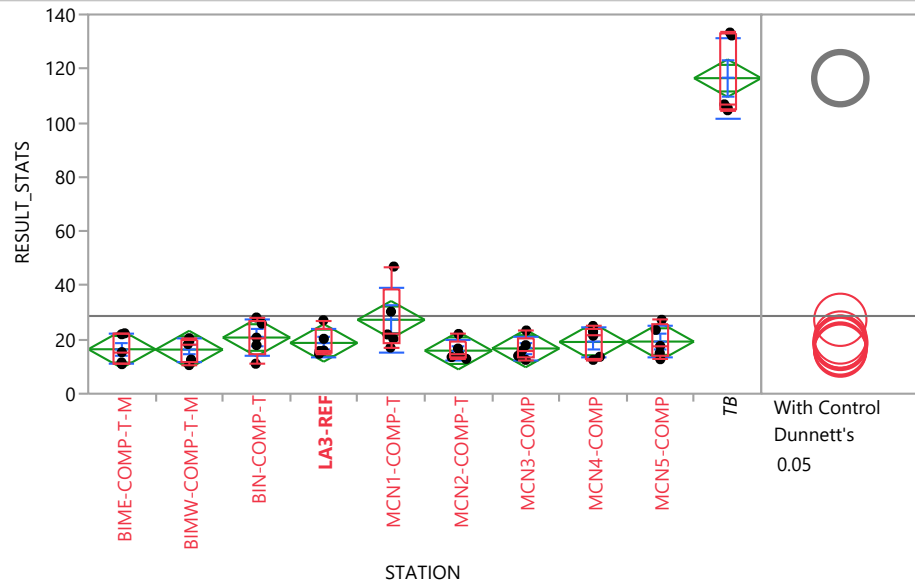


**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB003**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean				Hodges-				
		Difference	Std Err Dif	Z	p-Value	Lehmann	Lower CL	Upper CL		
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	1.24286	-4.09410	7.973940		
TB	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	3.23077	-2.87800	9.875970		
TB	MCN1-COMP-T	1.60000	1.914854	0.83557	0.4034	2.07653	-4.18520	8.917930		
TB	MCN3-COMP	1.60000	1.914854	0.83557	0.4034	1.40000	-3.90910	8.045200		
TB	LA3-REF	1.40000	1.909043	0.73335	0.4633	0.68677	-6.22100	6.970200		
BIN-COMP-T	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	2.66220	-5.52637	8.572500		
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	1.70590	-4.88501	6.655740		
TB	MCN5-COMP	1.20000	1.914854	0.62668	0.5309	0.82700	-5.39400	7.945200		
LA3-REF	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	1.31263	-2.91040	8.905200		
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	1.25220	-5.19943	7.564070		
MCN5-COMP	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	1.08600	-4.55761	8.078200		
MCN5-COMP	MCN1-COMP-T	0.80000	1.914854	0.41779	0.6761	1.20880	-6.39701	8.090930		
MCN1-COMP-T	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.90580	-7.08255	7.840170		
MCN4-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.23052	-6.42421	5.900000		
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.56030	-5.63330	7.218200		
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.37970	-5.90491	7.909110		
BIMW-COMP-T-M	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.27866	-6.38743	5.816170		
MCN1-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.93347	-6.14895	7.293230		
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.08390	-5.42086	6.024870		
MCN2-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.28286	-4.74114	5.054100		
MCN3-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.06143	-4.26583	6.593300		
MCN3-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.54950	-6.10523	6.606030		
MCN4-COMP	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.18182	-6.70031	7.496250		
TB	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	2.26000	-2.16120	8.905200		
TB	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.40220	-5.88830	6.243000		
TB	MCN4-COMP	0.00000	1.914854	0.00000	1.0000	2.09091	-4.07580	8.736110		
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.72720	-6.63750	6.243000		
MCN2-COMP-T	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.34368	-6.76514	5.066830		
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-1.70830	-8.40341	6.873670		
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-1.14354	-8.73611	4.825000		
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.82700	-7.94520	6.143200		
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-1.32860	-7.61321	7.253370		
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-1.17273	-8.04520	4.658300		
MCN1-COMP-T	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-1.72873	-9.20455	7.365770		
MCN1-COMP-T	LA3-REF	-1.60000	1.914854	-0.83557	0.4034	-1.94773	-8.91793	4.934400		
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-1.97920	-7.71250	4.581970		
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-2.94506	-8.46824	3.248640		
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-1.83074	-8.80094	3.119100		

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB005/008**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	10.9091	10.9091	11.2238	15.3409	22.12425	22.2973	22.2973
BIMW-COMP-T-M	10.566	10.566	11.583	18.3333	19.9661	20.4878	20.4878
BIN-COMP-T	11.0656	11.0656	14.5002	20.6897	26.99355	28.125	28.125
LA3-REF	14.7368	14.7368	15.2434	15.9091	23.68	27.0968	27.0968
MCN1-COMP-T	17.0455	17.0455	18.6579	21.875	38.6209	46.9388	46.9388
MCN2-COMP-T	12.8571	12.8571	13.19085	14.3617	19.36275	22.0588	22.0588
MCN3-COMP	12.5	12.5	13.25	15.75	20.62015	23.3333	23.3333
MCN4-COMP	12.5	12.5	13.0682	21.4286	23.95835	25	25
MCN5-COMP	12.7358	12.7358	13.8679	17.6471	25.42205	27.2727	27.2727
TB	104.651	104.651	105.028	106.818	132.7955	133.333	133.333

**Oneway Anova**

**Summary of Fit**

Rsquare	0.948456
Adj Rsquare	0.936859
Root Mean Square Error	7.673002
Mean of Response	28.68934
Observations (or Sum Wgts)	50

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB005/008**

**Oneway Anova**

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	43334.472	4814.94	81.7825	<.0001*
Error	40	2354.998	58.87		
C. Total	49	45689.470			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	16.407	3.4315	9.47	23.34
BIMW-COMP-T-M	5	16.286	3.4315	9.35	23.22
BIN-COMP-T	5	20.735	3.4315	13.80	27.67
LA3-REF	5	18.751	3.4315	11.82	25.69
MCN1-COMP-T	5	27.287	3.4315	20.35	34.22
MCN2-COMP-T	5	15.894	3.4315	8.96	22.83
MCN3-COMP	5	16.698	3.4315	9.76	23.63
MCN4-COMP	5	19.096	3.4315	12.16	26.03
MCN5-COMP	5	19.245	3.4315	12.31	26.18
TB	5	116.493	3.4315	109.56	123.43

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	16.407	5.4886	2.4546	9.592	23.22
BIMW-COMP-T-M	5	16.286	4.4195	1.9764	10.799	21.77
BIN-COMP-T	5	20.735	6.7498	3.0186	12.354	29.12
LA3-REF	5	18.751	5.1268	2.2928	12.385	25.12
MCN1-COMP-T	5	27.287	12.0281	5.3791	12.352	42.22
MCN2-COMP-T	5	15.894	3.7345	1.6701	11.257	20.53
MCN3-COMP	5	16.698	4.2217	1.8880	11.456	21.94
MCN4-COMP	5	19.096	5.6615	2.5319	12.067	26.13
MCN5-COMP	5	19.245	6.0437	2.7028	11.741	26.75
TB	5	116.493	14.9072	6.6667	97.983	135.00

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB005/008****Means Comparisons****Comparisons with a control using Dunnett's Method****LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	84.1	<.0001*
MCN1-COMP-T	-5.11	0.4037
BIN-COMP-T	-11.7	0.9997
MCN5-COMP	-13.2	1.0000
MCN4-COMP	-13.3	1.0000
LA3-REF	-13.6	1.0000
MCN3-COMP	-11.6	0.9997
BIME-COMP-T-M	-11.3	0.9991
BIMW-COMP-T-M	-11.2	0.9986
MCN2-COMP-T	-10.8	0.9960

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
BIME-COMP-T-M	5	90.000	127.500	18.0000	-1.197
BIMW-COMP-T-M	5	88.000	127.500	17.6000	-1.261
BIN-COMP-T	5	140.000	127.500	28.0000	0.388
LA3-REF	5	118.500	127.500	23.7000	-0.275
MCN1-COMP-T	5	170.000	127.500	34.0000	1.358
MCN2-COMP-T	5	86.000	127.500	17.2000	-1.326
MCN3-COMP	5	95.000	127.500	19.0000	-1.035
MCN4-COMP	5	122.500	127.500	24.5000	-0.146
MCN5-COMP	5	125.000	127.500	25.0000	-0.065
TB	5	240.000	127.500	48.0000	3.622

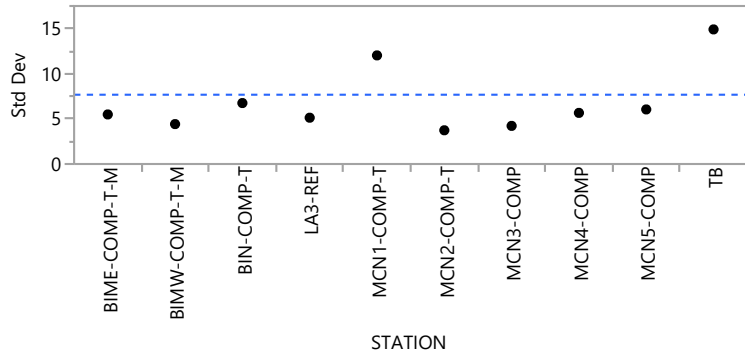
**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
19.2734	9	0.0230*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB005/008**

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	5.48861	4.57348	4.36018
BIMW-COMP-T-M	5	4.41948	3.76264	3.35324
BIN-COMP-T	5	6.74981	5.00649	4.99734
LA3-REF	5	5.12678	3.94306	3.37464
MCN1-COMP-T	5	12.02811	9.06750	7.98520
MCN2-COMP-T	5	3.73452	2.77518	2.46876
MCN3-COMP	5	4.22167	3.13767	2.94806
MCN4-COMP	5	5.66150	4.82251	4.35606
MCN5-COMP	5	6.04369	4.94132	4.62166
TB	5	14.90724	13.04200	11.10700

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	3.1812	9	40	0.0054*
Brown-Forsythe	0.9060	9	40	0.5295
Levene	5.1387	9	40	0.0001*
Bartlett	1.7626	9	.	0.0698

Warning: Small sample sizes. Use Caution.

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

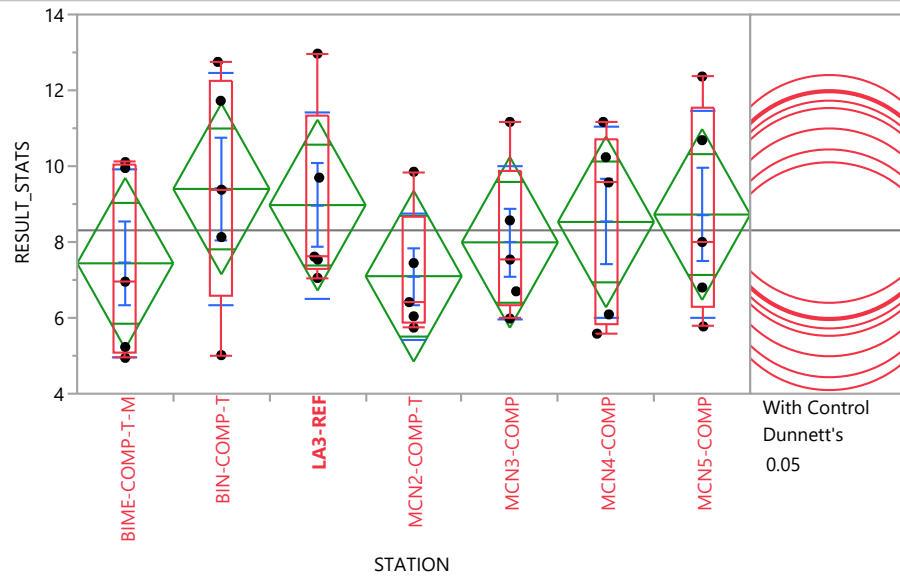
		q*	Alpha						
		1.95996	0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	94.4959	82.6998	121.7945	
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	94.2180	84.9172	121.6920	
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	93.5854	77.2800	121.1924	
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	90.9089	78.3082	117.5830	
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	86.3942	58.4662	115.2125	
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	92.5479	83.3462	119.8084	
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	92.8180	82.0717	119.7580	

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB005/008**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean		Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
		Difference	Std Err Dif						
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	92.9050	80.4050	119.7580	
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	91.9152	78.1323	119.5222	
MCN1-COMP-T	BIMW-COMP-T-M	3.20000	1.914854	1.67115	0.0947	9.2750	-2.3989	34.3388	
MCN1-COMP-T	LA3-REF	3.20000	1.914854	1.67115	0.0947	5.5335	-6.8265	31.1888	
MCN1-COMP-T	BIME-COMP-T-M	2.40000	1.914854	1.25336	0.2101	8.3518	-4.9057	35.4003	
BIN-COMP-T	BIMW-COMP-T-M	2.00000	1.914854	1.04447	0.2963	5.3743	-8.3788	15.5250	
MCN4-COMP	BIMW-COMP-T-M	2.00000	1.914854	1.04447	0.2963	3.0704	-6.9444	12.4000	
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	5.3488	-10.8856	16.5865	
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	2.0979	-9.4512	13.4615	
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	2.3062	-9.2154	15.7342	
MCN5-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	2.1429	-7.0588	13.7481	
LA3-REF	BIME-COMP-T-M	1.20000	1.914854	0.62668	0.5309	3.8277	-7.2144	15.5583	
MCN1-COMP-T	BIN-COMP-T	1.20000	1.914854	0.62668	0.5309	3.9402	-8.8166	29.0040	
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	2.9412	-8.4224	11.4754	
MCN5-COMP	BIMW-COMP-T-M	1.20000	1.914854	0.62668	0.5309	3.0836	-6.7086	14.6727	
MCN5-COMP	MCN3-COMP	1.20000	1.914854	0.62668	0.5309	1.8971	-8.3333	13.2727	
LA3-REF	BIMW-COMP-T-M	0.80000	1.914854	0.41779	0.6761	2.1368	-4.7378	14.4968	
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	1.0360	-9.4512	11.7948	
MCN4-COMP	MCN3-COMP	0.60000	1.909043	0.31429	0.7533	1.6667	-9.6969	11.0000	
MCN3-COMP	MCN2-COMP-T	0.40000	1.914854	0.20889	0.8345	1.1429	-8.0588	9.8087	
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.6547	-10.1809	13.6363	
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.1076	-9.0941	10.5203	
MCN2-COMP-T	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	0.2571	-6.9632	9.4588	
MCN3-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.1000	-6.9444	10.7333	
MCN4-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	-1.1004	-13.4604	9.2500	
MCN5-COMP	LA3-REF	0.00000	1.914854	0.00000	1.0000	0.1759	-12.0968	11.5227	
BIMW-COMP-T-M	BIME-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.9725	-11.3852	8.9493	
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-2.9454	-14.4886	11.8511	
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-2.2907	-13.1263	12.5058	
LA3-REF	BIN-COMP-T	-1.20000	1.914854	-0.62668	0.5309	-2.1848	-12.3750	9.1976	
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-1.9091	-13.0968	7.5833	
MCN4-COMP	MCN1-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-6.6339	-33.3024	5.8712	
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-5.0777	-14.6004	5.6011	
MCN2-COMP-T	LA3-REF	-2.00000	1.914854	-1.04447	0.2963	-2.2254	-13.5722	6.3088	
MCN3-COMP	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-4.7917	-14.1250	6.8414	
MCN5-COMP	MCN1-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-5.2703	-31.9388	7.0024	
MCN3-COMP	MCN1-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-6.9697	-32.9388	3.0630	
MCN2-COMP-T	MCN1-COMP-T	-3.60000	1.914854	-1.88004	0.0601	-7.5133	-33.4142	1.7885	

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB015**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	4.94545	4.94545	5.08811	6.95455	10.02966	10.1081	10.1081
BIN-COMP-T	5.01639	5.01639	6.57341	9.37931	12.23705	12.75	12.75
LA3-REF	7.05263	7.05263	7.295065	7.61364	11.33254	12.9677	12.9677
MCN2-COMP-T	5.74286	5.74286	5.89192	6.41489	8.64869	9.85294	9.85294
MCN3-COMP	5.98214	5.98214	6.34107	7.5375	9.868235	11.1667	11.1667
MCN4-COMP	5.58333	5.58333	5.83712	9.57143	10.7014	11.1667	11.1667
MCN5-COMP	5.77358	5.77358	6.28679	8	11.52465	12.3636	12.3636

**Oneway Anova**

**Summary of Fit**

Rsquare	0.109777
Adj Rsquare	-0.08098
Root Mean Square Error	2.459373
Mean of Response	8.308078
Observations (or Sum Wgts)	35

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	6	20.88428	3.48071	0.5755	0.7465
Error	28	169.35839	6.04851		
C. Total	34	190.24267			

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB015**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	7.43802	1.0999	5.1850	9.691
BIN-COMP-T	5	9.40005	1.0999	7.1471	11.653
LA3-REF	5	8.97377	1.0999	6.7208	11.227
MCN2-COMP-T	5	7.09922	1.0999	4.8463	9.352
MCN3-COMP	5	7.99122	1.0999	5.7383	10.244
MCN4-COMP	5	8.52969	1.0999	6.2767	10.783
MCN5-COMP	5	8.72458	1.0999	6.4716	10.978

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	7.43802	2.48818	1.1127	4.3485	10.527
BIN-COMP-T	5	9.40005	3.05991	1.3684	5.6007	13.199
LA3-REF	5	8.97377	2.45350	1.0972	5.9273	12.020
MCN2-COMP-T	5	7.09922	1.66809	0.7460	5.0280	9.170
MCN3-COMP	5	7.99122	2.02039	0.9035	5.4826	10.500
MCN4-COMP	5	8.52969	2.52881	1.1309	5.3898	11.670
MCN5-COMP	5	8.72458	2.73979	1.2253	5.3227	12.126

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.73128	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-3.82	0.9997
LA3-REF	-4.25	1.0000
MCN5-COMP	-4	1.0000
MCN4-COMP	-3.8	0.9996
MCN3-COMP	-3.27	0.9714
BIME-COMP-T-M	-2.71	0.8270
MCN2-COMP-T	-2.37	0.6848

Positive values show pairs of means that are significantly different.



**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB015**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

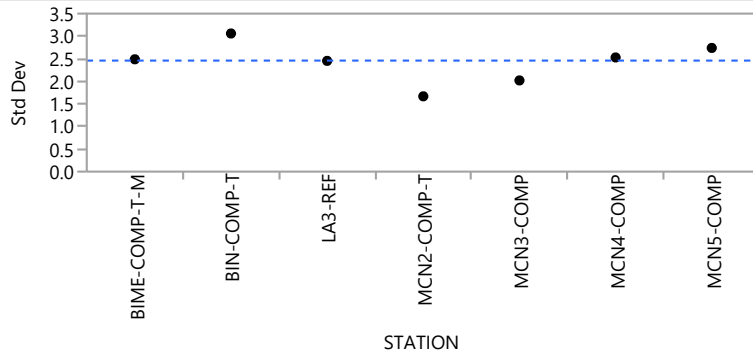
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	70.000	90.000	14.0000	-0.919
BIN-COMP-T	5	110.000	90.000	22.0000	0.919
LA3-REF	5	107.500	90.000	21.5000	0.801
MCN2-COMP-T	5	63.000	90.000	12.6000	-1.249
MCN3-COMP	5	86.000	90.000	17.2000	-0.165
MCN4-COMP	5	94.500	90.000	18.9000	0.189
MCN5-COMP	5	99.000	90.000	19.8000	0.401

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
3.7201	6	0.7145

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	
			to Mean	to Median
BIME-COMP-T-M	5	2.488177	2.073314	1.976620
BIN-COMP-T	5	3.059911	2.269603	2.265456
LA3-REF	5	2.453501	1.887014	1.614988
MCN2-COMP-T	5	1.668086	1.239574	1.102708
MCN3-COMP	5	2.020390	1.501610	1.410866
MCN4-COMP	5	2.528812	2.154059	1.945712
MCN5-COMP	5	2.739794	2.240059	2.095144

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.4485	6	28	0.8398
Brown-Forsythe	0.3139	6	28	0.9243
Levene	0.5926	6	28	0.7334
Bartlett	0.2694	6	.	0.9514

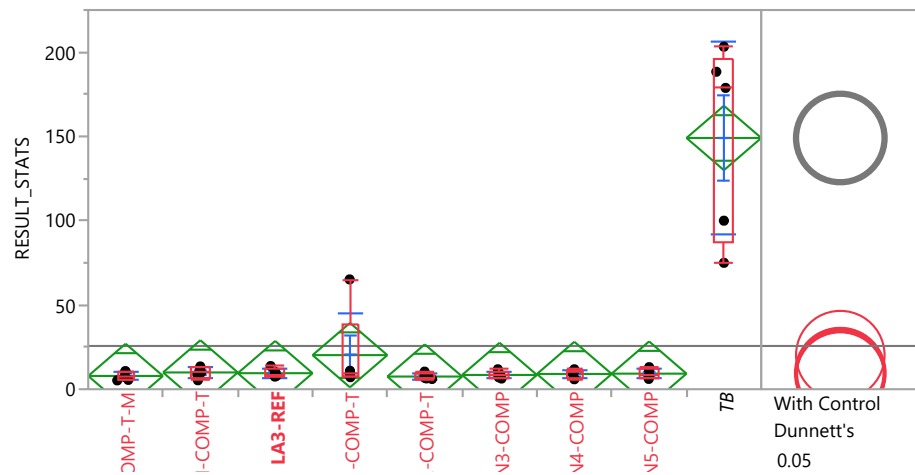
Warning: Small sample sizes. Use Caution.

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB015**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*		Alpha								
1.95996		0.05								
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL		
MCN5-COMP	MCN2-COMP-T	2.00000	1.914854	1.04447	0.2963	1.05714	-3.05294	6.322620		
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	2.42476	-4.93483	7.519230		
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	2.10718	-2.89859	7.736930		
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	0.95714	-3.15294	5.125720		
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.86014	-4.36789	5.935930		
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	1.04545	-4.17764	7.132830		
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	1.31376	-3.76203	5.125720		
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	1.03669	-3.96908	5.935930		
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.46250	-4.36670	5.663600		
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.44960	-4.46252	6.272690		
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.10877	-5.07579	4.466700		
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.09828	-4.20836	4.622170		
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.59293	-5.21250	4.837270		
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-1.48800	-6.65909	5.219710		
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.96172	-6.87679	3.629200		
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.60410	-6.16770	4.826100		
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-1.03840	-5.95052	5.669310		
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.91364	-6.26770	3.629200		
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-1.58330	-6.05000	3.553380		
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-2.38757	-6.70902	2.428050		
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-1.49652	-6.92672	2.315440		

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB018**



**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB018**

BIME-COMP-T-M  
BIN-COMP-T  
LA3-REF  
MCN1-COMP-T  
MCN2-COMP-T  
MCN3-COMP  
MCN4-COMP  
MCN5-COMP  
TB

STATION

**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	5.23636	5.23636	5.38741	7.36364	10.61965	10.7027	10.7027
BIN-COMP-T	5.31148	5.31148	6.96009	9.93104	12.9569	13.5	13.5
LA3-REF	7.47368	7.47368	7.73059	8.06818	12.0091	13.7419	13.7419
MCN1-COMP-T	7.14286	7.14286	7.66234	9.72973	38.0445	65.1515	65.1515
MCN2-COMP-T	6.08571	6.08571	6.243675	6.79787	9.165045	10.4412	10.4412
MCN3-COMP	6.33929	6.33929	6.719645	7.9875	10.45735	11.8333	11.8333
MCN4-COMP	5.91667	5.91667	6.18561	10.1429	11.34025	11.8333	11.8333
MCN5-COMP	6.11321	6.11321	6.656605	8.47059	12.2026	13.0909	13.0909
TB	75	75	87.5	178.788	195.799	203.226	203.226

**Oneway Anova**

**Summary of Fit**

Rsquare	0.843762
Adj Rsquare	0.809043
Root Mean Square Error	21.06597
Mean of Response	25.65689
Observations (or Sum Wgts)	45

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	8	86277.95	10784.7	24.3023	<.0001*
Error	36	15975.90	443.8		
C. Total	44	102253.85			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	7.876	9.4210	-11.2	26.98
BIN-COMP-T	5	9.953	9.4210	-9.2	29.06
LA3-REF	5	9.510	9.4210	-9.6	28.62
MCN1-COMP-T	5	20.229	9.4210	1.1	39.34
MCN2-COMP-T	5	7.523	9.4210	-11.6	26.63
MCN3-COMP	5	8.468	9.4210	-10.6	27.57
MCN4-COMP	5	9.039	9.4210	-10.1	28.15
MCN5-COMP	5	9.238	9.4210	-9.9	28.34
TB	5	149.077	9.4210	130.0	168.18

Std Error uses a pooled estimate of error variance

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB018**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	7.876	2.6345	1.178	4.60	11.15
BIN-COMP-T	5	9.953	3.2399	1.449	5.93	13.98
LA3-REF	5	9.510	2.6000	1.163	6.28	12.74
MCN1-COMP-T	5	20.229	25.1544	11.249	-11.00	51.46
MCN2-COMP-T	5	7.523	1.7677	0.791	5.33	9.72
MCN3-COMP	5	8.468	2.1410	0.957	5.81	11.13
MCN4-COMP	5	9.039	2.6798	1.198	5.71	12.37
MCN5-COMP	5	9.238	2.9010	1.297	5.64	12.84
TB	5	149.077	57.5650	25.744	77.60	220.55

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.78823	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	102.4	<.0001*
MCN1-COMP-T	-26.4	0.9580
BIN-COMP-T	-36.7	1.0000
LA3-REF	-37.1	1.0000
MCN5-COMP	-36.9	1.0000
MCN4-COMP	-36.7	1.0000
MCN3-COMP	-36.1	1.0000
BIME-COMP-T-M	-35.5	1.0000
MCN2-COMP-T	-35.2	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	77.000	115.000	15.4000	-1.354
BIN-COMP-T	5	123.000	115.000	24.6000	0.271
LA3-REF	5	117.500	115.000	23.5000	0.072
MCN1-COMP-T	5	128.000	115.000	25.6000	0.451
MCN2-COMP-T	5	67.000	115.000	13.4000	-1.716
MCN3-COMP	5	93.000	115.000	18.6000	-0.777
MCN4-COMP	5	104.500	115.000	20.9000	-0.361
MCN5-COMP	5	110.000	115.000	22.0000	-0.163
TB	5	215.000	115.000	43.0000	3.594

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB018**

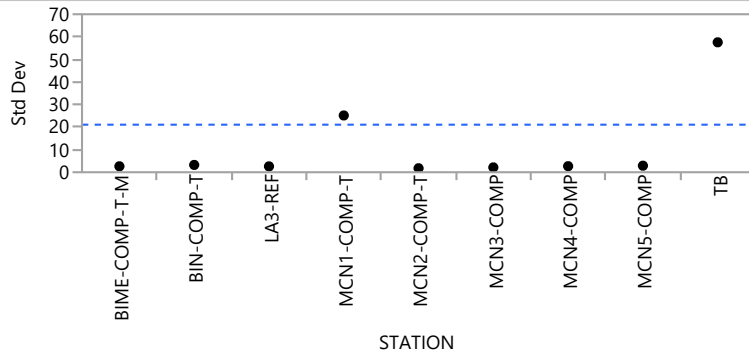
**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
16.9373	8	0.0308*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	2.63455	2.19528	2.09290
BIN-COMP-T	5	3.23991	2.40312	2.39872
LA3-REF	5	2.59998	1.99967	1.71140
MCN1-COMP-T	5	25.15442	17.96913	12.15286
MCN2-COMP-T	5	1.76768	1.31359	1.16855
MCN3-COMP	5	2.14098	1.59124	1.49508
MCN4-COMP	5	2.67977	2.28265	2.06186
MCN5-COMP	5	2.90097	2.37184	2.21840
TB	5	57.56498	49.26176	43.31960

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	6.6024	8	36	<.0001*
Brown-Forsythe	3.2065	8	36	0.0075*
Levene	22.1091	8	36	<.0001*
Bartlett	12.5111	8	.	<.0001*

Warning: Small sample sizes. Use Caution.

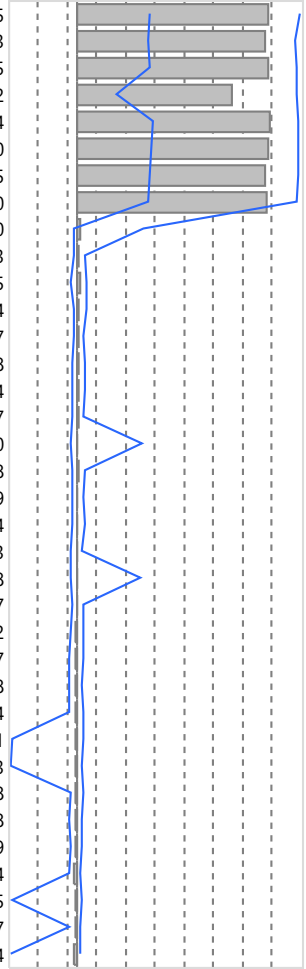
**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

q*	Alpha
1.95996	0.05

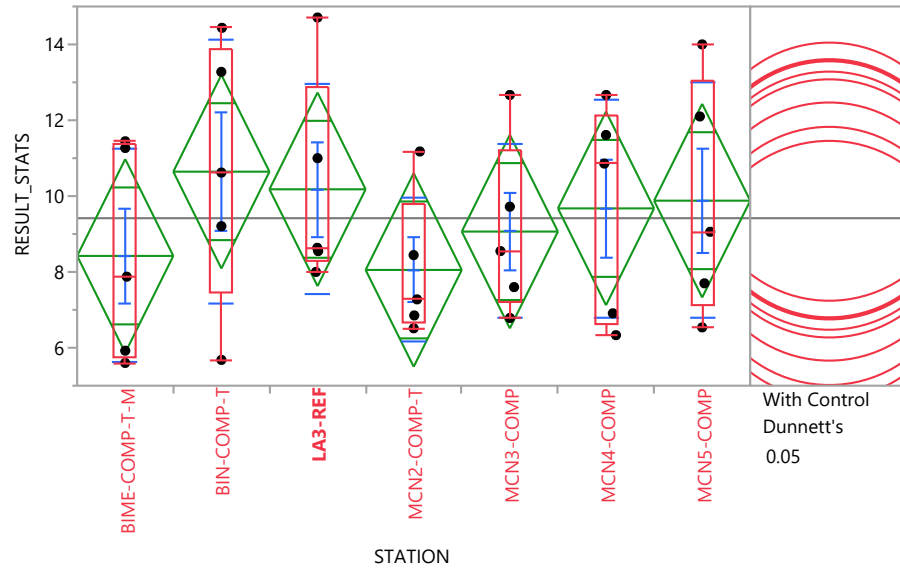
**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB018**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	171.424	64.4634	197.6875
TB	BIN-COMP-T	4.80000	1.914854	2.50672	0.0122*	168.857	62.5862	194.6173
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	170.720	64.7237	195.2385
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	138.075	34.8485	195.0442
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	171.990	67.1111	196.8244
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	170.801	65.9186	196.1260
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	168.645	64.1528	196.7715
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	170.317	63.6857	196.0260
MCN1-COMP-T	BIME-COMP-T-M	2.00000	1.914854	1.04447	0.2963	2.366	-3.3937	59.6130
MCN5-COMP	MCN2-COMP-T	2.00000	1.914854	1.04447	0.2963	1.114	-3.2412	6.6893
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	2.567	-5.2251	7.9615
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	2.237	-3.0629	8.2034
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	1.014	-3.3412	5.4317
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.916	-4.6199	6.2948
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	1.107	-4.4234	7.5524
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	1.392	-3.9867	5.4317
MCN1-COMP-T	LA3-REF	0.80000	1.914854	0.41779	0.6761	0.661	-5.5601	57.1640
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	1.103	-4.1973	6.2948
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.483	-4.6333	5.9909
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.467	-4.7340	6.6364
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.115	-5.3788	4.7333
MCN1-COMP-T	BIN-COMP-T	0.00000	1.914854	0.00000	1.0000	-0.201	-5.3182	56.5428
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.095	-4.4509	4.9027
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.621	-5.5125	5.1332
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-1.567	-7.0455	5.5357
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-1.019	-7.2874	3.8458
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.651	-6.5419	5.1034
MCN5-COMP	MCN1-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-1.030	-57.9515	4.9091
MCN4-COMP	MCN1-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-0.795	-58.6970	3.7043
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-1.100	-6.3006	6.0028
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-0.968	-6.6419	3.8458
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-1.667	-6.4000	3.7699
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-2.523	-7.0984	2.5774
MCN3-COMP	MCN1-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-1.742	-58.0515	3.6515
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-1.586	-7.3403	2.4537
MCN2-COMP-T	MCN1-COMP-T	-3.20000	1.914854	-1.67115	0.0947	-2.096	-58.7499	2.2594



**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB027**



Quantiles							
Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	5.6	5.6	5.76154	7.875	11.3571	11.4459	11.4459
BIN-COMP-T	5.68033	5.68033	7.443425	10.6207	13.8567	14.4375	14.4375
LA3-REF	8	8	8.275	8.63636	12.85485	14.7097	14.7097
MCN2-COMP-T	6.51429	6.51429	6.683375	7.2766	9.81047	11.1765	11.1765
MCN3-COMP	6.78571	6.78571	7.192855	8.55	11.19382	12.6667	12.6667
MCN4-COMP	6.33333	6.33333	6.62121	10.8571	12.1389	12.6667	12.6667
MCN5-COMP	6.53774	6.53774	7.11887	9.05882	13.05	14	14

**Oneway Anova**

**Summary of Fit**

Rsquare	0.109366
Adj Rsquare	-0.08148
Root Mean Square Error	2.787098
Mean of Response	9.41688
Observations (or Sum Wgts)	35

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	6	26.70819	4.45136	0.5730	0.7483
Error	28	217.50171	7.76792		
C. Total	34	244.20989			

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB027**

**Oneway Anova**

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	8.4225	1.2464	5.8693	10.976
BIN-COMP-T	5	10.6442	1.2464	8.0910	13.197
LA3-REF	5	10.1792	1.2464	7.6260	12.732
MCN2-COMP-T	5	8.0529	1.2464	5.4997	10.606
MCN3-COMP	5	9.0647	1.2464	6.5115	11.618
MCN4-COMP	5	9.6755	1.2464	7.1223	12.229
MCN5-COMP	5	9.8793	1.2464	7.3261	12.433

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	8.4225	2.81749	1.2600	4.9241	11.921
BIN-COMP-T	5	10.6442	3.46491	1.5496	6.3419	14.946
LA3-REF	5	10.1792	2.78311	1.2446	6.7235	13.635
MCN2-COMP-T	5	8.0529	1.89217	0.8462	5.7034	10.402
MCN3-COMP	5	9.0647	2.29178	1.0249	6.2190	11.910
MCN4-COMP	5	9.6755	2.86850	1.2828	6.1138	13.237
MCN5-COMP	5	9.8793	3.10243	1.3874	6.0271	13.731

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.73128	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
BIN-COMP-T	-4.35	0.9997
LA3-REF	-4.81	1.0000
MCN5-COMP	-4.51	1.0000
MCN4-COMP	-4.31	0.9996
MCN3-COMP	-3.7	0.9713
BIME-COMP-T-M	-3.06	0.8215
MCN2-COMP-T	-2.69	0.6840

Positive values show pairs of means that are significantly different.



**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB027**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

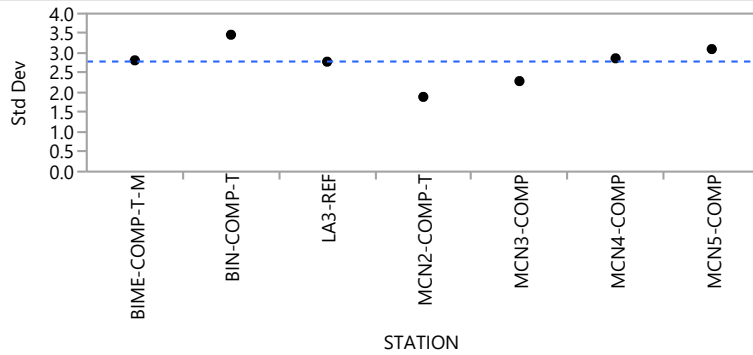
Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	70.000	90.000	14.0000	-0.919
BIN-COMP-T	5	110.000	90.000	22.0000	0.919
LA3-REF	5	107.500	90.000	21.5000	0.801
MCN2-COMP-T	5	63.000	90.000	12.6000	-1.249
MCN3-COMP	5	86.000	90.000	17.2000	-0.165
MCN4-COMP	5	94.500	90.000	18.9000	0.189
MCN5-COMP	5	99.000	90.000	19.8000	0.401

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
3.7201	6	0.7145

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif	MeanAbsDif
			to Mean	to Median
BIME-COMP-T-M	5	2.817485	2.347715	2.238224
BIN-COMP-T	5	3.464912	2.570008	2.565310
LA3-REF	5	2.783105	2.140510	1.831940
MCN2-COMP-T	5	1.892168	1.406090	1.250838
MCN3-COMP	5	2.291784	1.703318	1.600384
MCN4-COMP	5	2.868498	2.443403	2.207076
MCN5-COMP	5	3.102428	2.536550	2.372452

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	0.4454	6	28	0.8419
Brown-Forsythe	0.3119	6	28	0.9254
Levene	0.5896	6	28	0.7358
Bartlett	0.2677	6	.	0.9521

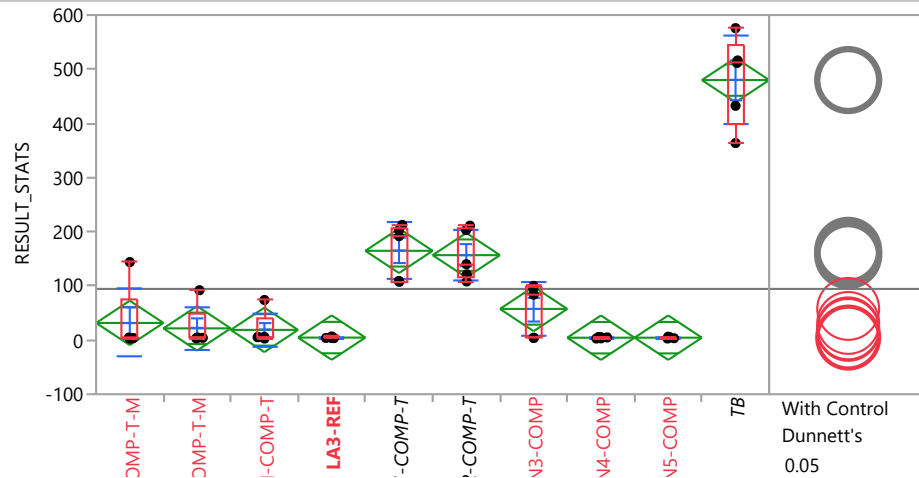
Warning: Small sample sizes. Use Caution.

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB027**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

		q*	Alpha								
		1.95996	0.05								
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL			
MCN5-COMP	MCN2-COMP-T	2.00000	1.914854	1.04447	0.2963	1.18571	-3.47650	7.147540			
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	2.74570	-5.58797	8.514420			
LA3-REF	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	2.40000	-3.26830	8.786620			
MCN3-COMP	MCN2-COMP-T	1.60000	1.914854	0.83557	0.4034	1.08571	-3.57650	5.814240			
MCN4-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	0.98601	-4.93497	6.743620			
MCN5-COMP	BIME-COMP-T-M	1.60000	1.914854	0.83557	0.4034	1.18382	-4.73056	8.076920			
MCN4-COMP	MCN2-COMP-T	1.20000	1.914854	0.62668	0.5309	1.49020	-4.26741	5.814240			
MCN3-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	1.18571	-4.48259	6.743620			
MCN5-COMP	MCN3-COMP	0.40000	1.914854	0.20889	0.8345	0.50882	-4.96670	6.400000			
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.48890	-5.07336	7.090910			
MCN4-COMP	MCN3-COMP	0.20000	1.909043	0.10476	0.9166	0.12338	-5.75761	5.066700			
MCN2-COMP-T	BIME-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.09180	-4.75401	5.253420			
LA3-REF	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-0.65652	-5.88750	5.503180			
MCN4-COMP	BIN-COMP-T	-0.40000	1.914854	-0.20889	0.8345	-1.66480	-7.52841	5.930770			
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-1.09091	-7.80061	4.116700			
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.70970	-7.00970	5.450000			
MCN5-COMP	BIN-COMP-T	-0.80000	1.914854	-0.41779	0.6761	-1.17590	-6.73816	6.419670			
MCN3-COMP	LA3-REF	-1.40000	1.909043	-0.73335	0.4633	-1.03636	-7.10970	4.116700			
MCN3-COMP	BIN-COMP-T	-1.60000	1.914854	-0.83557	0.4034	-1.77080	-6.83750	4.040600			
MCN2-COMP-T	BIN-COMP-T	-2.00000	1.914854	-1.04447	0.2963	-2.69223	-7.58504	2.764110			
MCN2-COMP-T	LA3-REF	-2.80000	1.914854	-1.46225	0.1437	-1.69754	-7.85724	2.626500			

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB028**



**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB028**

BIME-C  
BIMW-C  
BIN  
MCN1  
MCN2  
MCT  
MCT  
MCT

STATION

**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	2.61538	2.61538	2.80769	3.86364	74.2483	143.902	143.902
BIMW-COMP-T-M	3.20755	3.20755	3.56806	4.14634	48.29167	92	92
BIN-COMP-T	2.78689	2.78689	4.049695	5.86207	39.88754	73.913	73.913
LA3-REF	3.57895	3.57895	3.701975	3.86364	5.75085	6.58065	6.58065
MCN1-COMP-T	107.576	107.576	108.3335	191.837	207.6015	212.5	212.5
MCN2-COMP-T	108.197	108.197	114.737	140	207.026	211.111	211.111
MCN3-COMP	3.95349	3.95349	4.101745	83.9286	97.5	100	100
MCN4-COMP	2.83333	2.83333	2.96212	4.85714	5.430555	5.66667	5.66667
MCN5-COMP	2.88679	2.88679	3.143395	4	5.76234	6.18182	6.18182
TB	363.636	363.636	398.034	511.628	545.9435	575.758	575.758

**Oneway Anova**

**Summary of Fit**

Rsquare	0.923108
Adj Rsquare	0.905808
Root Mean Square Error	45.41431
Mean of Response	94.39499
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of		F Ratio	Prob > F
		Squares	Mean Square		
STATION	9	990417.3	110046	53.3569	<.0001*
Error	40	82498.4	2062		
C. Total	49	1072915.7			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	31.595	20.310	-9.5	72.64
BIMW-COMP-T-M	5	21.573	20.310	-19.5	62.62
BIN-COMP-T	5	18.747	20.310	-22.3	59.80
LA3-REF	5	4.554	20.310	-36.5	45.60
MCN1-COMP-T	5	164.741	20.310	123.7	205.79
MCN2-COMP-T	5	156.705	20.310	115.7	197.75
MCN3-COMP	5	57.426	20.310	16.4	98.47
MCN4-COMP	5	4.328	20.310	-36.7	45.38
MCN5-COMP	5	4.362	20.310	-36.7	45.41
TB	5	479.917	20.310	438.9	520.96

Std Error uses a pooled estimate of error variance

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB028**

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	31.595	62.7862	28.079	-46.4	109.55
BIMW-COMP-T-M	5	21.573	39.3729	17.608	-27.3	70.46
BIN-COMP-T	5	18.747	30.8648	13.803	-19.6	57.07
LA3-REF	5	4.554	1.2451	0.557	3.0	6.10
MCN1-COMP-T	5	164.741	52.0120	23.260	100.2	229.32
MCN2-COMP-T	5	156.705	47.3946	21.196	97.9	215.55
MCN3-COMP	5	57.426	49.0248	21.925	-3.4	118.30
MCN4-COMP	5	4.328	1.2833	0.574	2.7	5.92
MCN5-COMP	5	4.362	1.3699	0.613	2.7	6.06
TB	5	479.917	82.5810	36.931	377.4	582.45

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF

**Confidence Quantile**

d	Alpha
2.81175	0.05

**LSD Threshold Matrix**

Level	Abs(Dif)-	
	LSD	p-Value
TB	394.6	<.0001*
MCN1-COMP-T	79.43	<.0001*
MCN2-COMP-T	71.39	<.0001*
MCN3-COMP	-27.9	0.3548
BIME-COMP-T-M	-53.7	0.9284
BIMW-COMP-T-M	-63.7	0.9958
BIN-COMP-T	-66.6	0.9989
LA3-REF	-80.8	1.0000
MCN5-COMP	-80.6	1.0000
MCN4-COMP	-80.5	1.0000

Positive values show pairs of means that are significantly different.

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

Level	Count	Score Sum	Expected		
			Score	Score Mean	(Mean-Mean0)/Std0
BIME-COMP-T-M	5	76.500	127.500	15.3000	-1.633
BIMW-COMP-T-M	5	86.000	127.500	17.2000	-1.326
BIN-COMP-T	5	108.000	127.500	21.6000	-0.614
LA3-REF	5	80.500	127.500	16.1000	-1.504
MCN1-COMP-T	5	200.000	127.500	40.0000	2.328
MCN2-COMP-T	5	200.000	127.500	40.0000	2.328
MCN3-COMP	5	129.000	127.500	25.8000	0.032

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB028**

**Wilcoxon / Kruskal-Wallis Tests (Rank Sums)**

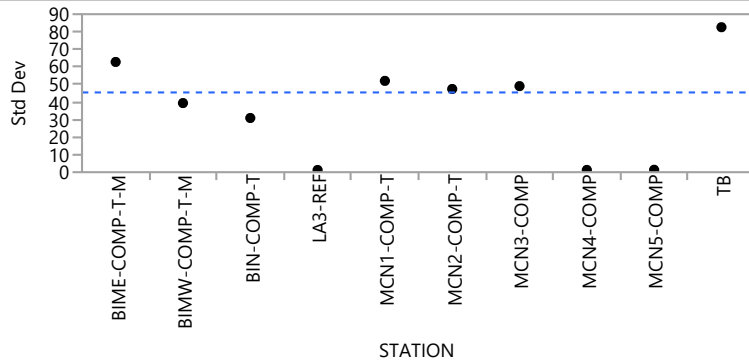
Level	Count	Score Sum	Expected Score	Score Mean	(Mean-Mean0)/Std0
MCN4-COMP	5	76.000	127.500	15.2000	-1.649
MCN5-COMP	5	79.000	127.500	15.8000	-1.552
TB	5	240.000	127.500	48.0000	3.622

**1-Way Test, ChiSquare Approximation**

ChiSquare	DF	Prob>ChiSq
33.0272	9	0.0001*

Small sample sizes. Refer to statistical tables for tests, rather than large-sample approximations.

**Tests that the Variances are Equal**



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
BIME-COMP-T-M	5	62.78616	44.92275	28.57624
BIMW-COMP-T-M	5	39.37295	28.17074	17.88944
BIN-COMP-T	5	30.86479	22.06628	14.33514
LA3-REF	5	1.24507	0.95759	0.81955
MCN1-COMP-T	5	52.01199	45.12632	39.70720
MCN2-COMP-T	5	47.39464	40.25664	36.91560
MCN3-COMP	5	49.02483	42.65974	37.35930
MCN4-COMP	5	1.28327	1.09310	0.98737
MCN5-COMP	5	1.36991	1.12004	1.04758
TB	5	82.58101	65.50608	59.16380

Test	F Ratio	DFNum	DFDen	Prob > F
O'Brien[.5]	1.5601	9	40	0.1609
Brown-Forsythe	1.4077	9	40	0.2175
Levene	5.8965	9	40	<.0001*
Bartlett	8.1559	9	.	<.0001*

Warning: Small sample sizes. Use Caution.

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB028**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

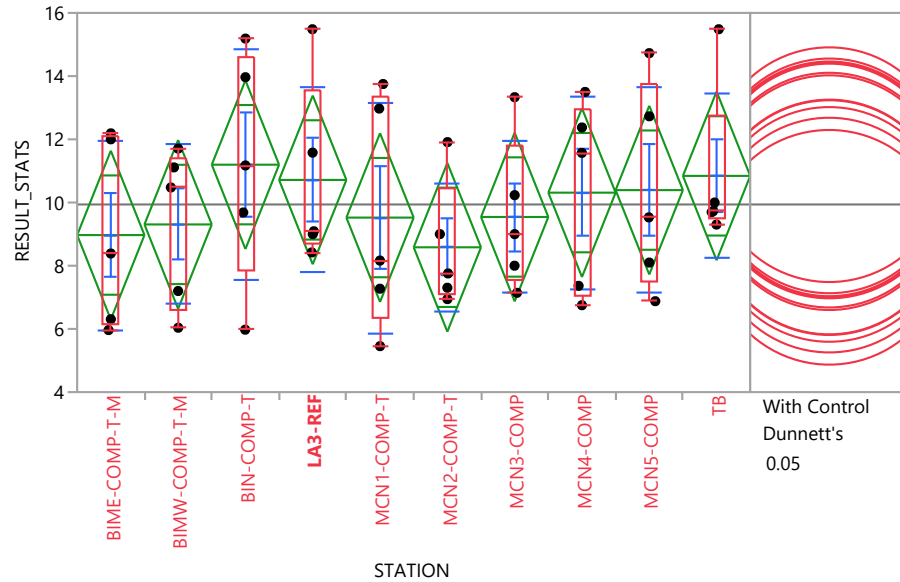
		q*	Alpha						
		1.95996	0.05						
Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL	
MCN1-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	120.500	17.091	208.571	
MCN1-COMP-T	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	138.587	35.178	207.188	
MCN1-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	187.973	102.510	208.675	
MCN2-COMP-T	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	119.111	29.277	207.182	
MCN2-COMP-T	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	134.138	47.364	205.799	
MCN2-COMP-T	LA3-REF	4.80000	1.914854	2.50672	0.0122*	136.136	103.276	207.286	
TB	BIME-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	431.856	288.530	572.758	
TB	BIMW-COMP-T-M	4.80000	1.914854	2.50672	0.0122*	483.758	340.432	571.829	
TB	BIN-COMP-T	4.80000	1.909043	2.51435	0.0119*	501.845	357.774	570.446	
TB	LA3-REF	4.80000	1.914854	2.50672	0.0122*	507.764	358.715	571.933	
TB	MCN1-COMP-T	4.80000	1.914854	2.50672	0.0122*	319.791	160.933	466.667	
TB	MCN2-COMP-T	4.80000	1.914854	2.50672	0.0122*	313.188	160.695	454.481	
TB	MCN3-COMP	4.80000	1.914854	2.50672	0.0122*	427.699	268.636	571.508	
TB	MCN4-COMP	4.80000	1.914854	2.50672	0.0122*	506.771	358.442	572.667	
TB	MCN5-COMP	4.80000	1.914854	2.50672	0.0122*	507.628	358.293	572.358	
MCN1-COMP-T	BIME-COMP-T-M	4.00000	1.914854	2.08893	0.0367*	106.476	-34.811	209.500	
MCN2-COMP-T	BIME-COMP-T-M	3.60000	1.914854	1.88004	0.0601	118.662	-22.625	208.111	
MCN3-COMP	LA3-REF	3.20000	1.914854	1.67115	0.0947	80.065	-2.331	96.175	
MCN3-COMP	BIMW-COMP-T-M	2.40000	1.914854	1.25336	0.2101	8.000	-87.750	96.071	
MCN3-COMP	BIME-COMP-T-M	2.00000	1.914854	1.04447	0.2963	1.635	-139.652	97.000	
BIN-COMP-T	BIME-COMP-T-M	1.60000	1.909043	0.83812	0.4020	1.449	-138.590	70.913	
MCN3-COMP	BIN-COMP-T	1.60000	1.909043	0.83812	0.4020	26.087	-69.663	94.688	
BIN-COMP-T	BIMW-COMP-T-M	1.20000	1.909043	0.62859	0.5296	1.279	-86.688	69.984	
BIMW-COMP-T-M	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.283	-139.973	89.000	
MCN4-COMP	BIME-COMP-T-M	0.80000	1.914854	0.41779	0.6761	0.263	-140.811	2.667	
LA3-REF	BIME-COMP-T-M	0.60000	1.909043	0.31429	0.7533	0.579	-140.077	3.581	
MCN5-COMP	BIME-COMP-T-M	0.40000	1.914854	0.20889	0.8345	0.271	-140.502	3.182	
MCN5-COMP	MCN4-COMP	0.40000	1.914854	0.20889	0.8345	0.148	-2.308	3.091	
MCN2-COMP-T	MCN1-COMP-T	0.00000	1.914854	0.00000	1.0000	0.238	-94.506	102.020	
MCN4-COMP	BIMW-COMP-T-M	0.00000	1.914854	0.00000	1.0000	-0.117	-88.909	1.987	
LA3-REF	BIMW-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.104	-88.175	2.652	
MCN4-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.488	-3.490	1.842	
MCN5-COMP	BIMW-COMP-T-M	-0.40000	1.914854	-0.20889	0.8345	-0.321	-88.600	2.253	
MCN5-COMP	LA3-REF	-0.40000	1.914854	-0.20889	0.8345	-0.399	-3.181	2.357	
MCN5-COMP	BIN-COMP-T	-1.20000	1.909043	-0.62859	0.5296	-1.862	-70.513	2.556	
LA3-REF	BIN-COMP-T	-1.60000	1.909043	-0.83812	0.4020	-1.488	-70.088	2.134	
MCN4-COMP	BIN-COMP-T	-2.40000	1.909043	-1.25717	0.2087	-1.005	-70.822	2.408	
MCN4-COMP	MCN3-COMP	-2.40000	1.914854	-1.25336	0.2101	-79.071	-96.909	1.417	
MCN5-COMP	MCN3-COMP	-2.80000	1.914854	-1.46225	0.1437	-79.929	-96.600	1.932	
MCN3-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-105.138	-208.250	-9.091	
MCN3-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-107.941	-206.861	-13.197	
MCN4-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-186.980	-209.409	-102.382	

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB028**

**Nonparametric Comparisons For Each Pair Using Wilcoxon Method**

Level	- Level	Score Mean Difference	Std Err Dif	Z	p-Value	Hodges-Lehmann	Lower CL	Upper CL
MCN4-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-135.143	-208.020	-103.003
MCN5-COMP	MCN1-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-187.837	-209.100	-102.233
MCN5-COMP	MCN2-COMP-T	-4.80000	1.914854	-2.50672	0.0122*	-136.000	-207.711	-102.854

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB029**



**Quantiles**

Level	Minimum	10%	25%	Median	75%	90%	Maximum
BIME-COMP-T-M	5.96364	5.96364	6.135665	8.38636	12.0946	12.1892	12.1892
BIMW-COMP-T-M	6.03774	6.03774	6.61887	10.4762	11.4092	11.7073	11.7073
BIN-COMP-T	5.97541	5.97541	7.830095	11.1724	14.5765	15.1875	15.1875
LA3-REF	8.42105	8.42105	8.710525	9.09091	13.5314	15.4839	15.4839
MCN1-COMP-T	5.45455	5.45455	6.36364	8.16327	13.3615	13.75	13.75
MCN2-COMP-T	6.94286	6.94286	7.12307	7.75532	10.4559	11.9118	11.9118
MCN3-COMP	7.14286	7.14286	7.57143	9	11.78295	13.3333	13.3333
MCN4-COMP	6.75	6.75	7.05682	11.5714	12.9375	13.5	13.5
MCN5-COMP	6.87736	6.87736	7.48868	9.52941	13.72795	14.7273	14.7273
TB	9.30233	9.30233	9.49965	9.72973	12.74195	15.4839	15.4839

**Oneway Analysis of RESULT\_STATS By STATION CHEM\_OUT=PCB029**

**Oneway Anova**

**Summary of Fit**

Rsquare	0.089468
Adj Rsquare	-0.1154
Root Mean Square Error	2.953553
Mean of Response	9.938216
Observations (or Sum Wgts)	50

**Analysis of Variance**

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
STATION	9	34.28649	3.80961	0.4367	0.9069
Error	40	348.93897	8.72347		
C. Total	49	383.22546			

**Means for Oneway Anova**

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
BIME-COMP-T-M	5	8.9694	1.3209	6.2998	11.639
BIMW-COMP-T-M	5	9.3065	1.3209	6.6369	11.976
BIN-COMP-T	5	11.1971	1.3209	8.5275	13.867
LA3-REF	5	10.7150	1.3209	8.0454	13.385
MCN1-COMP-T	5	9.5227	1.3209	6.8531	12.192
MCN2-COMP-T	5	8.5827	1.3209	5.9131	11.252
MCN3-COMP	5	9.5418	1.3209	6.8722	12.211
MCN4-COMP	5	10.3120	1.3209	7.6424	12.982
MCN5-COMP	5	10.3925	1.3209	7.7230	13.062
TB	5	10.8426	1.3209	8.1730	13.512

Std Error uses a pooled estimate of error variance

**Means and Std Deviations**

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
BIME-COMP-T-M	5	8.9694	3.00045	1.3418	5.2438	12.695
BIMW-COMP-T-M	5	9.3065	2.52541	1.1294	6.1708	12.442
BIN-COMP-T	5	11.1971	3.64490	1.6300	6.6714	15.723
LA3-REF	5	10.7150	2.92958	1.3101	7.0774	14.353
MCN1-COMP-T	5	9.5227	3.64811	1.6315	4.9930	14.052
MCN2-COMP-T	5	8.5827	2.01666	0.9019	6.0786	11.087
MCN3-COMP	5	9.5418	2.41238	1.0788	6.5464	12.537
MCN4-COMP	5	10.3120	3.05721	1.3672	6.5160	14.108
MCN5-COMP	5	10.3925	3.26361	1.4595	6.3402	14.445
TB	5	10.8426	2.60648	1.1657	7.6062	14.079

**Means Comparisons**

**Comparisons with a control using Dunnett's Method**

Control Group = LA3-REF