DATA EVALUATION RECORD

1. **CHEMICAL:** Amitraz. Shaughnessey Number: 106201.

2. **TEST MATERIAL:** BTS 27919 Technical; N-(2,4-dimethylphenyl) formamide (CA); CR Ref: CR19620/01/910303; 99.7% active ingredient; a white powder.

3. **STUDY TYPE:** Mollusc 96-Hour, Flow-Through Shell Deposition Study. Species Tested: Eastern Oyster (Crassostrea virginica Gmelin).

4. **CITATION:** K.A. Carr and G.S. Ward. 1991. BTS 27919: Acute Effect on New Shell Growth of the Eastern Oyster, Crassostrea virginica. Laboratory Project ID No. J9008022b. Performed by Toxikon Environmental Sciences, Jupiter, Florida. Submitted by NOR-AM Chemical Company, Pikeville, North Carolina. EPA MRID No. 421246-11.

5. **REVIEWED BY:**

Rosemary Graham Mora, M.S.
Associate Scientist
KBN Engineering and
Applied Sciences, Inc.

Signature: Rosemary Graham Mora
Date: 1/30/92

6. **APPROVED BY:**

Isabel C. Johnson, M.S.
Principal Scientist
KBN Engineering and
Applied Sciences, Inc.

Signature: Isabel C. Johnson
Date: 1/30/92

Henry T. Craven, M.S.
Supervisor, EEB/EFED
USEPA

Signature: Henry T. Craven
Date: 3/9/92

7. **CONCLUSIONS:** This study is not scientifically sound and does not fulfill the guideline requirements for a 96-hour flow-through mollusc shell deposition acute toxicity test. The control oysters demonstrated insufficient growth (1.59 mm new shell deposition). Flow rate to the test organisms was one-hundredth of the recommended rate and no supplemental food was provided. Based on the conditions of this study, the 96-hour EC_{50} value for eastern oysters exposed to BTS 27919 was >128 mg a.i./l mean measured concentrations. Therefore, BTS 27919 is classified as practically non-toxic to Crassostrea virginica. The NOEC was 128 mg a.i./l, since new shell growth was not affected at any test level when compared to the control.

8. **RECOMMENDATIONS:**

9. **BACKGROUND:** Data submitted to support conditional registration on cotton.

10. **DISCUSSION OF INDIVIDUAL TESTS:** N/A.

11. **MATERIALS AND METHODS:**

A. **Test Animals:** Eastern oysters (Crassostrea virginica) were obtained from Aquacultural Research Corporation, Dennis, Massachusetts. Upon receipt at the laboratory, 2-5 mm of the shell of the oysters was removed. The oysters were maintained at 24.5-26.7°C in a holding tank of the test system for approximately 24 hours prior to test initiation. New shell growth and good physical condition were exhibited by the test oysters prior to test initiation. The oysters had a mean umbo to distal valve edge length of 27.7 ±2.7 mm.

B. **Test System:** The test was conducted in a proportional diluter system. This system provided a flow rate of 520 ml of primary stock solution (highest nominal test concentration) per cycle to the test system. The solution was proportionally diluted to provide the four lower test concentrations. Approximately 220 ml per cycle (4.5 cycles/hour) were delivered to each test chamber. The glass test chambers (42 X 21.5 X 12.5 cm) were each equipped with a standpipe to regulate solution depth at 6 cm at a constant volume of 5.4 l. The flow-through volume of test solution was approximately 0.05 l/oyster/hour.

Test aquaria (one aquarium per test concentration and the control) were positioned in a water bath to stabilize water temperature. The test was conducted under fluorescent lighting (intensity of approximately 292-375 lux) on a 16-hour light and 8-hour dark photoperiod. No aeration was used.

The dilution water was natural unfiltered seawater collected from the Jupiter River. The seawater had a salinity of 27-30 parts per thousand (ppt).

The primary stock solution was prepared by combining 24.07 g of test material to a volume of 200 ml with unfiltered seawater which provided a 120 mg a.i./l concentration. This solution was stirred for 24 hours.

C. **Dosage:** 96-hour flow-through acute test. Based on a preliminary test, the nominal test concentrations of

BTS 27919 were 15.6, 26, 43, 72, and 120 mg a.i./l. A dilution water control was also included.

D. **Design:** Just prior to test initiation, 120 oysters demonstrating new shell growth were selected for the study and the new shell growth of each oyster was removed. The test was initiated when each chamber was impartially stocked with 20 oysters.

The survival of oysters and the test solutions were observed daily. The new shell growth of each oyster was measured at 96 hours.

Dissolved oxygen concentration and pH were measured daily in each chamber. Temperature was monitored hourly in the control. Salinity was measured daily in the control.

Analytical determination of BTS 27919 was performed on the middle and high test levels prior to test initiation and on the control and test concentrations on days 0 and 4 using gas chromatography.

E. **Statistics:** Analysis of variance (ANOVA) and Dunnett's procedure were used to determine the NOEC.

12. **REPORTED RESULTS:** Mean measured concentrations were 16.0, 19.2, 42.3, 75.1, and 128.0 mg a.i./l, based on analysis of test solutions at test initiation and test termination (Table 1, attached). The mean measured concentrations averaged 74-107% of nominal concentrations.

No mortality was observed in the control or test concentrations of 16.0, 19.2, and 75.1 mg a.i./l at test termination. Five percent mortality was observed in 42.3 and 128 mg a.i./l. Following 96 hours of exposure, the control oysters had a mean new shell growth of 1.59 mm. Mean new shell growth measurements at treatment levels 16-128 mg a.i./l were 1.98, 1.83, 1.56, 1.22, and 1.11 mm, respectively, which ranges from -30% to +24% change when compared to control oysters (Table 3, attached). The 96-hour EC_{50} was >128 mg a.i./l mean measured concentration. New shell growth was not significantly ($p<0.05$) different from the control (Table 2, attached). Therefore, the NOEC was 128 mg a.i./l, the highest concentration tested.

During the test period, the pH was 7.5-8.1, the dissolved oxygen concentration was $\geq$4.0 mg/l, the temperature was 24.2-28.0°C and the salinity was 27-31 ppt.

13. **STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES:** No conclusions, other than those presented above, were made by the author.

A Compliance with Good Laboratory Practice Standards statement was included in the report, indicating that the study was conducted in accordance with the EPA Good Laboratory Practice Regulations. This statement was signed by of the study director and the representatives of the study sponsor. Protocol deviations were included and copies are attached.

A Quality Assurance Statement was also included and was signed by the quality assurance manager of the performing laboratory.

14. **REVIEWER'S DISCUSSION AND INTERPRETATION OF STUDY RESULTS:**

A. **Test Procedure:** The test procedures were generally in accordance with protocols recommended by the Guidelines, but deviated from the guidelines as follows:

Control oysters demonstrated insufficient growth (i.e., 1.59 mm new shell deposition) by test termination. A minimum of 2 mm of shell deposition is required. It is important to note that the 2 lowest chemical test concentrations had higher shell deposition than the control (1.98 and 1.83 mm).

In this study, the flow rate of the test solution was 0.05 l/oyster/hour at all test levels and the control and no supplementary diet was provided. According to protocols recommended by the SEP (APHA, 1981 and EPA, 1976) each oyster should receive a minimum of 5 l of "once-through" flow through test solution per hour.

The salinity of the dilution water varied more than 6% of the mean salinity within the study period. The SEP recommends that the dilution water be of constant quality.

The SEP recommends that oysters should be introduced into test system, then the toxicant is injected into the system. The report indicates that exposure was initiated by placing the oysters in each aquarium.

The test organisms were not held at test conditions for 48 hours as required by the SEP.

B. **Statistical Analysis:** The NOEC was determined using ANOVA with Bonferroni's test. New shell growth was not significantly ($p<0.5$) reduced at any test level when compared to that of the control. These results were the same as those of the authors..

C. **Discussion/Results:** The study is not scientifically sound and does not meet the guideline requirements for a 96-hour mollusc shell deposition acute toxicity test. The deviations from test protocol (Section 14A) may have altered the test results. The oysters exposed to control conditions did not exhibit sufficient shell deposition as required by emendments to the guidelines (2 mm minimum). This may have been caused by the reduced flow rate through the system. Recommended protocols require 5 l of water/oyster/hour; the actual calculated flow rate was 0.05 l/oyster/hour. This is one-hundredth of the recommended flow rate. Supplemental food was not provided.

A preliminary statistical analysis shows that the two highest test concentrations (75.1 and 128 mg/l) display significantly reduced growth when compared to the lowest test concentration (16 mg/l) which had 1.98 mm of new shell deposition at test termination (printout, attached). Assuming that adequate growth could be obtained in the control with the recommended flow rate, the EC_{50} for this test material could be determined to be lower than reported in this study.

Based on the conditions of this study, the 96-hour EC_{50} value of BTS 27919 was >128 mg a.i./l mean measured concentration. Therefore, BTS 27919 is classified as practically non-toxic to Crassostrea virginica. The NOEC was 128 mg a.i./l since new shell growth was not affected at any test level when compared to the control.

D. **Adequacy of the Study:**

(1) **Classification:** Invalid.

(2) **Rationale:** Flow to the test organisms was less than recommended and no supplemental diet was provided. Control oysters demonstrated insufficient growth.

(3) **Repairability:** No.

15. **COMPLETION OF ONE-LINER:** Yes, January 24, 1992.

AMITRAZ: GROWTH OF EXPOSED EASTERN OYSTERS
File: 42124611.oys Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	10.179	2.036	4.005
Within (Error)	112	56.930	0.508	
Total	117	67.109		

Critical F value = 2.37 (0.05,5,60)
Since F > Critical F REJECT Ho:All groups equal

AMITRAZ: GROWTH OF EXPOSED EASTERN OYSTERS
File: 42124611.oys Transform: NO TRANSFORMATION

BONFERRONI T-TEST - TABLE 1 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	CONTROL	1.585	1.585		
2	16 mg/l	1.975	1.975	-1.730	
3	19.2 mg/l	1.830	1.830	-1.087	
4	42.3 mg/l	1.642	1.642	-0.250	
5	75.1 mg/l	1.225	1.225	1.597	
6	128 mg/l	1.168	1.168	1.824	

Bonferroni T table value = 2.36 (1 Tailed Value, P=0.05, df=110,5)

AMITRAZ: GROWTH OF EXPOSED EASTERN OYSTERS
File: 42124611.oys Transform: NO TRANSFORMATION

BONFERRONI T-TEST - TABLE 2 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	CONTROL	20			
2	16 mg/l	20	0.532	33.6	-0.390
3	19.2 mg/l	20	0.532	33.6	-0.245
4	42.3 mg/l	19	0.539	34.0	-0.057
5	75.1 mg/l	20	0.532	33.6	0.360
6	128 mg/l	19	0.539	34.0	0.417

TITLE: AMITRAZ: GROWTH OF EXPOSED EASTERN OYSTERS
FILE: 42124611.oys
TRANSFORM: NO TRANSFORMATION NUMBER OF GROUPS: 6

GRP	IDENTIFICATION	REP	VALUE	TRANS VALUE
1	CONTROL	1	3.9000	3.9000
1	CONTROL	2	1.9000	1.9000
1	CONTROL	3	2.1000	2.1000
1	CONTROL	4	1.1000	1.1000
1	CONTROL	5	1.8000	1.8000
1	CONTROL	6	1.2000	1.2000
1	CONTROL	7	1.8000	1.8000
1	CONTROL	8	0.9000	0.9000
1	CONTROL	9	1.6000	1.6000
1	CONTROL	10	1.7000	1.7000
1	CONTROL	11	1.7000	1.7000
1	CONTROL	12	1.1000	1.1000
1	CONTROL	13	1.2000	1.2000
1	CONTROL	14	2.5000	2.5000
1	CONTROL	15	1.7000	1.7000
1	CONTROL	16	1.6000	1.6000
1	CONTROL	17	0.0000	0.0000
1	CONTROL	18	1.2000	1.2000
1	CONTROL	19	1.2000	1.2000
1	CONTROL	20	1.5000	1.5000
2	16 mg/l	1	2.1000	2.1000
2	16 mg/l	2	1.9000	1.9000
2	16 mg/l	3	2.6000	2.6000
2	16 mg/l	4	2.3000	2.3000
2	16 mg/l	5	2.2000	2.2000
2	16 mg/l	6	1.6000	1.6000
2	16 mg/l	7	1.0000	1.0000
2	16 mg/l	8	2.1000	2.1000
2	16 mg/l	9	1.5000	1.5000
2	16 mg/l	10	2.6000	2.6000
2	16 mg/l	11	1.0000	1.0000
2	16 mg/l	12	1.4000	1.4000
2	16 mg/l	13	2.1000	2.1000
2	16 mg/l	14	2.3000	2.3000
2	16 mg/l	15	3.4000	3.4000
2	16 mg/l	16	2.6000	2.6000
2	16 mg/l	17	1.8000	1.8000
2	16 mg/l	18	1.8000	1.8000
2	16 mg/l	19	1.6000	1.6000
2	16 mg/l	20	1.6000	1.6000
3	19.2 mg/l	1	2.7000	2.7000
3	19.2 mg/l	2	2.3000	2.3000
3	19.2 mg/l	3	1.9000	1.9000
3	19.2 mg/l	4	2.6000	2.6000
3	19.2 mg/l	5	3.0000	3.0000
3	19.2 mg/l	6	0.0000	0.0000
3	19.2 mg/l	7	1.0000	1.0000
3	19.2 mg/l	8	2.7000	2.7000
3	19.2 mg/l	9	1.2000	1.2000
3	19.2 mg/l	10	1.3000	1.3000

3	19.2 mg/l	11	1.4000	1.4000
3	19.2 mg/l	12	3.2000	3.2000
3	19.2 mg/l	13	1.4000	1.4000
3	19.2 mg/l	14	1.2000	1.2000
3	19.2 mg/l	15	1.1000	1.1000
3	19.2 mg/l	16	1.8000	1.8000
3	19.2 mg/l	17	1.6000	1.6000
3	19.2 mg/l	18	2.2000	2.2000
3	19.2 mg/l	19	1.8000	1.8000
3	19.2 mg/l	20	2.2000	2.2000
4	42.3 mg/l	1	0.0000	0.0000
4	42.3 mg/l	2	1.1000	1.1000
4	42.3 mg/l	3	2.8000	2.8000
4	42.3 mg/l	4	1.9000	1.9000
4	42.3 mg/l	5	1.5000	1.5000
4	42.3 mg/l	6	1.4000	1.4000
4	42.3 mg/l	7	1.9000	1.9000
4	42.3 mg/l	8	2.6000	2.6000
4	42.3 mg/l	9	1.9000	1.9000
4	42.3 mg/l	10	2.1000	2.1000
4	42.3 mg/l	11	2.3000	2.3000
4	42.3 mg/l	12	2.4000	2.4000
4	42.3 mg/l	13	0.0000	0.0000
4	42.3 mg/l	14	1.9000	1.9000
4	42.3 mg/l	15	1.4000	1.4000
4	42.3 mg/l	16	0.7000	0.7000
4	42.3 mg/l	17	1.6000	1.6000
4	42.3 mg/l	18	1.7000	1.7000
4	42.3 mg/l	19	2.0000	2.0000
5	75.1 mg/l	1	1.5000	1.5000
5	75.1 mg/l	2	1.2000	1.2000
5	75.1 mg/l	3	1.7000	1.7000
5	75.1 mg/l	4	1.5000	1.5000
5	75.1 mg/l	5	1.9000	1.9000
5	75.1 mg/l	6	0.7000	0.7000
5	75.1 mg/l	7	1.7000	1.7000
5	75.1 mg/l	8	1.0000	1.0000
5	75.1 mg/l	9	0.7000	0.7000
5	75.1 mg/l	10	1.2000	1.2000
5	75.1 mg/l	11	1.5000	1.5000
5	75.1 mg/l	12	0.0000	0.0000
5	75.1 mg/l	13	0.0000	0.0000
5	75.1 mg/l	14	1.1000	1.1000
5	75.1 mg/l	15	1.4000	1.4000
5	75.1 mg/l	16	0.9000	0.9000
5	75.1 mg/l	17	0.9000	0.9000
5	75.1 mg/l	18	1.8000	1.8000
5	75.1 mg/l	19	2.1000	2.1000
5	75.1 mg/l	20	1.7000	1.7000
6	128 mg/l	1	2.0000	2.0000
6	128 mg/l	2	0.9000	0.9000
6	128 mg/l	3	1.7000	1.7000
6	128 mg/l	4	1.5000	1.5000
6	128 mg/l	5	1.1000	1.1000
6	128 mg/l	6	0.0000	0.0000
6	128 mg/l	7	0.7000	0.7000
6	128 mg/l	8	2.7000	2.7000
6	128 mg/l	9	1.8000	1.8000
6	128 mg/l	10	0.0000	0.0000
6	128 mg/l	11	0.0000	0.0000

6	128 mg/l	12	0.0000	0.0000
6	128 mg/l	13	1.3000	1.3000
6	128 mg/l	14	1.4000	1.4000
6	128 mg/l	15	0.8000	0.8000
6	128 mg/l	16	1.8000	1.8000
6	128 mg/l	17	1.0000	1.0000
6	128 mg/l	18	1.7000	1.7000
6	128 mg/l	19	1.8000	1.8000

PRELIMINARY STUDY

AMITRAZ: GROWTH OF EXPOSED EASTERN OYSTERS
File: try.oys Transform: NO TRANSFORMATION

FOUR HIGHER TEST CONC. COMPARED TO THE LOWEST.

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	4	10.176	2.544	5.123
Within (Error)	93	46.184	0.497	
Total	97	56.360		

Critical F value = 2.53 (0.05,4,60)
Since F > Critical F REJECT Ho:All groups equal

AMITRAZ: GROWTH OF EXPOSED EASTERN OYSTERS
File: try.oys Transform: NO TRANSFORMATION

BONFERRONI T-TEST - TABLE 1 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	16 mg/l	1.975	1.975		
2	128 mg/l	1.168	1.168	3.573	*
3	19.2 mg/l	1.830	1.830	0.651	
4	42.3 mg/l	1.642	1.642	1.475	
5	75.1 mg/l	1.225	1.225	3.366	*

Bonferroni T table value = 2.28 (1 Tailed Value, P=0.05, df=90,4)

AMITRAZ: GROWTH OF EXPOSED EASTERN OYSTERS
File: try.oys Transform: NO TRANSFORMATION

BONFERRONI T-TEST - TABLE 2 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	16 mg/l	20			
2	128 mg/l	19	0.515	26.1	0.807
3	19.2 mg/l	20	0.508	25.7	0.145
4	42.3 mg/l	19	0.515	26.1	0.333
5	75.1 mg/l	20	0.508	25.7	0.750

TITLE: AMITRAZ: GROWTH OF EXPOSED EASTERN OYSTERS
FILE: try.oys
TRANSFORM: NO TRANSFORMATION NUMBER OF GROUPS: 5

GRP	IDENTIFICATION	REP	VALUE	TRANS VALUE
1	16 mg/l	1	2.1000	2.1000
1	16 mg/l	2	1.9000	1.9000
1	16 mg/l	3	2.6000	2.6000
1	16 mg/l	4	2.3000	2.3000
1	16 mg/l	5	2.2000	2.2000
1	16 mg/l	6	1.6000	1.6000
1	16 mg/l	7	1.0000	1.0000
1	16 mg/l	8	2.1000	2.1000
1	16 mg/l	9	1.5000	1.5000
1	16 mg/l	10	2.6000	2.6000
1	16 mg/l	11	1.0000	1.0000
1	16 mg/l	12	1.4000	1.4000
1	16 mg/l	13	2.1000	2.1000
1	16 mg/l	14	2.3000	2.3000
1	16 mg/l	15	3.4000	3.4000
1	16 mg/l	16	2.6000	2.6000
1	16 mg/l	17	1.8000	1.8000
1	16 mg/l	18	1.8000	1.8000
1	16 mg/l	19	1.6000	1.6000
1	16 mg/l	20	1.6000	1.6000
2	128 mg/l	1	2.0000	2.0000
2	128 mg/l	2	0.9000	0.9000
2	128 mg/l	3	1.7000	1.7000
2	128 mg/l	4	1.5000	1.5000
2	128 mg/l	5	1.1000	1.1000
2	128 mg/l	6	0.0000	0.0000
2	128 mg/l	7	0.7000	0.7000
2	128 mg/l	8	2.7000	2.7000
2	128 mg/l	9	1.8000	1.8000
2	128 mg/l	10	0.0000	0.0000
2	128 mg/l	11	0.0000	0.0000
2	128 mg/l	12	0.0000	0.0000
2	128 mg/l	13	1.3000	1.3000
2	128 mg/l	14	1.4000	1.4000
2	128 mg/l	15	0.8000	0.8000
2	128 mg/l	16	1.8000	1.8000
2	128 mg/l	17	1.0000	1.0000
2	128 mg/l	18	1.7000	1.7000
2	128 mg/l	19	1.8000	1.8000
3	19.2 mg/l	1	2.7000	2.7000
3	19.2 mg/l	2	2.3000	2.3000
3	19.2 mg/l	3	1.9000	1.9000
3	19.2 mg/l	4	2.6000	2.6000
3	19.2 mg/l	5	3.0000	3.0000
3	19.2 mg/l	6	0.0000	0.0000
3	19.2 mg/l	7	1.0000	1.0000
3	19.2 mg/l	8	2.7000	2.7000
3	19.2 mg/l	9	1.2000	1.2000
3	19.2 mg/l	10	1.3000	1.3000
3	19.2 mg/l	11	1.4000	1.4000

3	19.2 mg/l	12	3.2000	3.2000
3	19.2 mg/l	13	1.4000	1.4000
3	19.2 mg/l	14	1.2000	1.2000
3	19.2 mg/l	15	1.1000	1.1000
3	19.2 mg/l	16	1.8000	1.8000
3	19.2 mg/l	17	1.6000	1.6000
3	19.2 mg/l	18	2.2000	2.2000
3	19.2 mg/l	19	1.8000	1.8000
3	19.2 mg/l	20	2.2000	2.2000
4	42.3 mg/l	1	0.0000	0.0000
4	42.3 mg/l	2	1.1000	1.1000
4	42.3 mg/l	3	2.8000	2.8000
4	42.3 mg/l	4	1.9000	1.9000
4	42.3 mg/l	5	1.5000	1.5000
4	42.3 mg/l	6	1.4000	1.4000
4	42.3 mg/l	7	1.9000	1.9000
4	42.3 mg/l	8	2.6000	2.6000
4	42.3 mg/l	9	1.9000	1.9000
4	42.3 mg/l	10	2.1000	2.1000
4	42.3 mg/l	11	2.3000	2.3000
4	42.3 mg/l	12	2.4000	2.4000
4	42.3 mg/l	13	0.0000	0.0000
4	42.3 mg/l	14	1.9000	1.9000
4	42.3 mg/l	15	1.4000	1.4000
4	42.3 mg/l	16	0.7000	0.7000
4	42.3 mg/l	17	1.6000	1.6000
4	42.3 mg/l	18	1.7000	1.7000
4	42.3 mg/l	19	2.0000	2.0000
5	75.1 mg/l	1	1.5000	1.5000
5	75.1 mg/l	2	1.2000	1.2000
5	75.1 mg/l	3	1.7000	1.7000
5	75.1 mg/l	4	1.5000	1.5000
5	75.1 mg/l	5	1.9000	1.9000
5	75.1 mg/l	6	0.7000	0.7000
5	75.1 mg/l	7	1.7000	1.7000
5	75.1 mg/l	8	1.0000	1.0000
5	75.1 mg/l	9	0.7000	0.7000
5	75.1 mg/l	10	1.2000	1.2000
5	75.1 mg/l	11	1.5000	1.5000
5	75.1 mg/l	12	0.0000	0.0000
5	75.1 mg/l	13	0.0000	0.0000
5	75.1 mg/l	14	1.1000	1.1000
5	75.1 mg/l	15	1.4000	1.4000
5	75.1 mg/l	16	0.9000	0.9000
5	75.1 mg/l	17	0.9000	0.9000
5	75.1 mg/l	18	1.8000	1.8000
5	75.1 mg/l	19	2.1000	2.1000
5	75.1 mg/l	20	1.7000	1.7000