AR TARGET SHEET

The following document was too large to scan as one unit, therefore, it has been broken down into sections.

EDMC#:	0069512
SECTION:	1 OF 2
DOCUMENT #:	F1207
TITLE:	Data Package

0069512

SAF-RC-051
100 & 300 Area Component of the RCBRA - Incremental Soil Sampling
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Jill Thomson	H0-23	____NB 4/25/06 INITIAL/DATE
Jeanette Duncan	H9-02	___NB 4/25/06 INITIAL/DATE

COMMENTS:

SDG _F1207___ SAF-RC-051

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: U Sediments

RECEIVED
MAY 04 2006
EDMC

RECEIVED
APR 2006

BIOASSAY REPORT
CHRONIC SCREENING BIOASSAYS
Conducted March 3 through April 7, 2006

Prepared for

ELR CONSULTING, INC.
WASHINGTON CLOSURE HANFORD
RICHLAND, WASHINGTON

Prepared by

CH2M HILL
2300 NW Walnut Boulevard
Corvallis, Oregon 97330

April 13, 2006
Lab I.D. Nos. B1538-01 thru 37
SDG Number B1538

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INTRODUCTION

CH2M HILL conducted 28-day chronic screening bioassay tests using the amphipod (*Hyalella azteca*) on sediment samples provided by the ELR Consulting for Washington Closure Hanford, Richland, Washington. The tests were conducted in two batches from March 3 through 31, 2006, and March 10 through April 7, 2006.

METHODS AND MATERIALS

TEST METHODS

The amphipod tests were performed according to: *Standard Test Method for Measuring the Toxicity of Sediment-Associated Contaminants with Freshwater Invertebrates*, ASTM E1706-05; and *Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates – Second Edition* (2000); EPA/600/R-99/064.

TEST ORGANISMS

The amphipods used in the sediment tests were obtained from Chesapeake Cultures, Nayes, Virginia, and were 7 to 8 days old (approx 1.8 to 2.0 mm in length) at test initiation. All organisms tested were fed and maintained during culturing, acclimation, and testing as prescribed by ASTM and EPA. The test organisms appeared vigorous and in good condition prior to testing.

OVERLYING WATER

The water used for test organism acclimation and as overlying water during the static testing for the amphipods was reconstituted moderately hard water with a total hardness of 80 to 100 mg/L as $CaCO_3$ and an alkalinity of 60 to 74 mg/L as $CaCO_3$.

TEST CONCENTRATIONS

The concentration tested in the *Hyalella azteca* tests was 100 percent sample sediment with Beaver Creek sediment as laboratory control.

The control and test samples were randomly assigned to test chambers to avoid spatial (light, temperature, feeding, etc) and observational bias during testing.

SAMPLE COLLECTION

Individual sediment samples used during the testing were collected between February 5 and 27, 2006. The samples were stored in the dark at 4°C until the initiation of the initiation of the tests. Chain of Custody for sample collection is provided in Appendix C.

SAMPLE CROSS-REFERENCE TABLES

Tables 1 and 2 provide a cross-reference of the sample numbers, sampling dates, and sampling locations as listed on the chain of custody forms. Also included is the associated Amphipod test sample identification (SDG) numbers and Analytical Lab SDG numbers as assigned by CH2M HILL Applied Sciences Laboratory.

Table 1
Sample Cross-Reference
For Tests Initiated on March 3, 2006

Sample Number	Sample Date	Sampling Location	Amphipod Test SDG	Analytical Lab SDG
J11143	2/5/2006	REF #16	B1538-01	F1162-01
J11146	2/8/2006	U-2	B1538-02	F1187-01
J11144	2/8/2006	300-2	B1538-03	F1187-02
J11145	2/8/2006	U-1	B1538-04	F1187-03
J116N1	2/9/2006	REF 12, SEDIMENT	B1538-05	F1192-01
J116N3	2/9/2006	REF 13, SEDIMENT	B1538-06	F1192-02
J112B7	2/12/2006	Cr 5, SEDIMENT	B1538-07	F1192-03
J116N2	2/9/2006	REF 12, SEDIMENT	B1538-08	F1192-04
J116M4	2/12/2006	Cr 9, SEDIMENT	B1538-09	F1192-05
J116N0	2/9/2006	REF14, SEDIMENT	B1538-10	F1192-06
J11731	2/9/2006	REF11, SEDIMENT FULL QC	B1538-11	F1192-07
J116M5	2/12/2006	Cr10, SEDIMENT	B1538-12	F1192-08
J116M8	2/12/2006	Cr 6, SEDIMENT FULL QC	B1538-13	F1192-09
J11752	2/13/2006	U 5, SEDIMENT	B1538-14	F1207-01
J11745	2/13/2006	U 6, SEDIMENT	B1538-15	F1207-02
J11750	2/13/2006	U 8, SEDIMENT	B1538-16	F1207-03
J11751	2/13/2006	U 3, SEDIMENT	B1538-17	F1207-04
J11753	2/13/2006	U 7, SEDIMENT	B1538-18	F1207-05
J11746	2/19/2006	U 4, SEDIMENT	B1538-19	F1239-01
J11747	2/19/2006	U 9, SEDIMENT	B1538-20	F1239-02

Table 2 Sample Cross-Reference For Tests Initiated on March 10, 2006				
Sample Number	**Sample Date**	**Sampling Location**	**Amphipod test SDG**	**Analytical Lab SDG**
J11748	2/19/2006	U 10, SEDIMENT	B1538-21	F1239-03
J11749	2/19/2006	U , SEDIMENT 300-1	B1538-22	F1239-04
J112B3	2/21/2006	Cr 1, SEDIMENT	B1538-23	F1242-01
J112B4	2/21/2006	Cr 2, SEDIMENT	B1538-24	F1242-02
J112B5	2/21/2006	Cr 3, SEDIMENT	B1538-25	F1242-03
J112B6	2/21/2006	Cr 4, SEDIMENT	B1538-26	F1242-04
J116M6	2/21/2006	Cr 7, SEDIMENT	B1538-27	F1242-05
J116M7	2/21/2006	Cr 8, SEDIMENT	B1538-28	F1242-06
J11734	2/21/2006	, SEDIMENT Cr #8	B1538-29	F1242-07
J116X2	2/27/2006	Sr 3, SEDIMENT	B1538-30	F1280-01
J116W9	2/27/2006	Sr 1, SEDIMENT FULL QC	B1538-31	F1280-02
J116X0	2/27/2006	Sr 5, SEDIMENT	B1538-32	F1280-03
J116X1	2/27/2006	Sr 4, SEDIMENT	B1538-33	F1280-04
J116X3	2/27/2006	Sr 2, SEDIMENT	B1538-34	F1280-05
J116X6	2/27/2006	Sr 6, SEDIMENT	B1538-35	F1280-06
J116W7	2/27/2006	Sr 9, SEDIMENT	B1538-36	F1280-07
J116W8	2/27/2006	Sr 10, SEDIMENT	B1538-37	F1280-08

SAMPLE PREPARATION

For the *Hyalella azteca* sediment bioassays, 100 g of sediment was placed in a test chamber, 175 ml of overlying water was then added and allowed to stand overnight prior to adding test organisms. Once the test was initiated (i.e., when organisms were added), the overlying water was carefully renewed twice daily at approximately 12 hours apart.

MONITORING OF BIOASSAYS

The amphipod tests were monitored at initiation and termination for dissolved oxygen, pH, conductivity, total hardness, alkalinity, ammonia, and temperature. During the tests, dissolved oxygen and pH were monitored every 3 days, conductivity was measured every 7 days and temperature was monitored every 24 hours within the test chambers. In addition, temperature was monitored in the water bath continuously throughout the testing period. Survival was determined at test termination and growth was measured by dry weight analysis.

DATA ANALYSIS

The effects measured during the amphipod chronic test included survival and growth (determined by mean dry weight per surviving organism) over the 28-day exposure period. The statistical analyses performed were those outlined in *Standard Test Method for Measuring the Toxicity of Sediment-Associated Contaminants with Freshwater Invertebrates*, ASTM E1706-05; and *Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates – Second Edition* (2000); EPA/600/R-99/064, using CETIS version 1.1.2. Equal variance t Two-Sample Test was used to compare the survival and growth data between the control and each sample treatment. When the assumptions of normality or homogeneity of variance necessary for Equal Variance t Two-Sample Test could not be met, Unequal Variance t Two-Sample Test or Mann-Whitney U test was used to analyze the data. All statistics were analyzed at the $p = 0.05$ level.

RESULTS AND DISCUSSION

CHRONIC BIOASSAYS

Table 3 summarizes the results of the amphipod tests initiated on March 3, 2006. The following provides a summary of the sample-specific statistical comparisons with the laboratory control:

- The results for samples J112B7, J116M4, and J116M8 indicated a statistically significant reduction in both the survival and growth endpoints.

- The results for samples J11143 and J116N3 indicated a statistically significant reduction in the survival endpoint and no statistically significant difference in the growth endpoint.

- The results for all other samples indicated no statistically significant reduction in either the survival or growth endpoints; these include samples J11146, J11144, J11145, J116N1, J116N2, J116N0, J11731, J116M5, J11752, J11745, J11750, J11751, J11753, J11746, and J11747.

Table 3:
Hyallela azteca Chronic Test Results for Washington Closure Hanford Initiated on March 3, 2006

E, significantly different from lab control by use of Equal Variance t Two-Sample Test

ns indicates a non statisticaly significant result; [5], indicates significant at alpha (p) = 0.05;

--, indicates no statistical test performed.

Lab ID:	Sample Number:	*Hyallela azteca* Survival Endpoint Percent Survival	Statistically significant difference when compared to Lab Control?	*Hyallela azteca* Growth Endpoint Growth per surviving organism (mg)	Statistically significant difference when compared to Lab Control?
Tests initiated on March 3, 2006					
Laboratory Control		92	--	0.155	--
B1538-01	J11143	66	E [5]	0.169	ns
B1538-02	J11146	90	ns	0.271	ns
B1538-03	J11144	86	ns	0.173	ns
B1538-04	J11145	86	ns	0.263	ns
B1538-05	J116N1	72	ns	0.196	ns
B1538-06	J116N3	78	E [5]	0.177	ns
B1538-07	J112B7	62	E [5]	0.097	E [5]
B1538-08	J116N2	78	ns	0.160	ns
B1538-09	J116M4	38	E [5]	0.101	E [5]
B1538-10	J116N0	84	ns	0.199	ns
B1538-11	J11731	90	ns	0.203	ns
B1538-12	J116M5	66	ns	0.145	ns
B1538-13	J116M8	48	E [5]	0.092	E [5]
B1538-14	J11752	86	ns	0.242	ns
B1538-15	J11745	92	ns	0.202	ns
B1538-16	J11750	96	ns	0.266	ns
B1538-17	J11751	86	ns	0.272	ns
B1538-18	J11753	76	ns	0.198	ns
B1538-19	J11746	84	ns	0.249	ns
B1538-20	J11747	90	ns	0.237	ns

Table 4 summarizes the results of the amphipod test initiated on March 10, 2006. The following provides a summary of the sample-specific statistical comparisons with the laboratory control:

- The results for samples J11749, J112B3, J112B4, J112B6, J116M6, J116M7, J11734, and J116W9 indicated a statistically significant reduction in both the survival and growth endpoints.

- The results for samples J11478 and J116X6 indicated a statistically significant reduction in the survival endpoint and no statistically significant difference in the growth endpoint.

- The results for sample J112B5 indicated a statistically significant reduction in the survival endpoint. Analysis of the growth endpoint could not be calculated due to no surviving test organisms in sample J112B5.

- The results for sample J116X3 indicated a statistically significant reduction in the growth endpoint and no statistically significant difference in the survival endpoint.

- The results for all other samples indicated no statistically significant reduction in either the survival or growth endpoints; these include samples J116X2, J116X0, J116X1, J116W7, and J116W8.

Daily mean test temperatures remained at 23±1°C, and instantaneous temperatures remained at 23±3°C, for the tests. The dissolved oxygen levels in the tests remained above the ASTM recommended minimum 2.5 mg/L throughout the test period. The tests proceeded without interruption or incidents that could have affected test results.

Table 4:
Hyallela azteca Chronic Test Results for Washington Closure Hanford Initiated on March 10, 2006

E, significantly different from lab control by use of Equal Variance t Two-Sample Test

ns indicates a non statisticaly significant result; [5], indicates significant at alpha (p) = 0.05;

--, indicates no statistical test performed. NA = data not available.

Lab ID:	Sample Number:	*Hyallela azteca* Survival Endpoint Percent Survival	Statistically significant difference when compared to Lab Control?	*Hyallela azteca* Growth Endpoint Growth per surviving organism (mg)	Statistically significant difference when compared to Lab Control?
Tests initiated on March 3, 2006					
Laboratory Control		96	--	0.182	--
B1538-21	J11478	2	E [5]	0.160	ns
B1538-22	J11749	62	E [5]	0.121	E [5]
B1538-23	J112B3	66	E [5]	0.113	E [5]
B1538-24	J112B4	52	E [5]	0.112	E [5]
B1538-25	J112B5	0	E [5]	NA	--
B1538-26	J112B6	12	E [5]	0.091	E [5]
B1538-27	J116M6	4	E [5]	0.085	E [5]
B1538-28	J116M7	4	E [5]	0.070	E [5]
B1538-29	J11734	14	E [5]	0.097	E [5]
B1538-30	J116X2	88	ns	0.207	ns
B1538-31	J116W9	16	E [5]	0.091	E [5]
B1538-32	J116X0	100	ns	0.251	ns
B1538-33	J116X1	94	ns	0.198	ns
B1538-34	J116X3	84	ns	0.130	E [5]
B1538-35	J116X6	76	E [5]	0.196	ns
B1538-36	J116W7	94	ns	0.250	ns
B1538-37	J116W8	98	ns	0.229	ns

B1538-25 growth data is not available due to no surviving test organisms.

REFERENCE TOXICANT TESTS

The data sheets for the reference toxicant tests are provided in Appendix B. The LC_{50} values, and Control Chart Limits are listed in Table 6 below. The test results indicate that the test organisms were within their respective sensitivity range based on EPA guidelines.

Table 6
Reference Toxicant Tests
(Cadmium µg/L)

Species	LC_{50}	Control Chart
Hyallela azteca (Amp 56)	3.62	3.58 to 8.52
Hyallela azteca (Amp 57)	4.84	3.46 to 8.34

CERTIFICATION STATEMENT

I certify that this data package is in compliance with the Statement of Work, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature:

APPENDIX A
RAW DATA SHEETS

CH2M HILL *TOXICITY TEST ORGANISM AND WATER QUALITY DATA* 3~~28~~-06 10 MS 4-7-06

Client: EIR Consulting — Test Initiation: Date 3-3-06 Time 1300 — Test Termination: Date 3-31-06 Time —

Contact: Emmett Richards 509-531-8774 — Technician: Winn, Stanaway, Johnson, Pittenger, Oldham, Muckey

Test Species/ID: Hyalella azteca / AMP 56 — /

Hyalella azteca / AMP 57 — /

Sample ID Number	Field ID	Collected Date	Collected Time	Total Residual Chlorine (mg/l) As Received	Total Residual Chlorine (mg/l) As Dechlor.	Ammonia NH_3-N mg/l	Hardness mg/l as $CaCO_3$	Alkalinity mg/l as $CaCO_3$
B1538	1-20 see report & COC			/		See excel sheet		
				/				
				/				
				/				
				/				
				/				
				/				
				/				
				/				
				/				
				/				
				/				

Test Species Information	ID# 56 Hyal AMP	ID# AMP 57	ID#	ID#
Age or Size	8 days	7 days		
	—	—		
Test Container Size	300	300		
Test Volume	100g sediment	100g sediment		
Feeding: Type	YCT 1ml	YCT 1ml		
Amount	per Beaker daily	per Beaker daily		
Aeration: Began	None	None		
Amount	—	—		
Dilution Water ID#	See below	See below		
Acclimation Period	3 days	3 days		
Test Location	#12	#12		
Condition of Survivors				
Size (mm)				
Loading Rate				
Comments				

Dilution Water Source	ID#	Hardness mg/l as $CaCO_3$	Alkalinity mg/l as $CaCO_3$
Reson MH	2609	96	66
Reson MH	2613	92	64
Reson MH	2621	86	64
Reson MH	2624	100	74
Reson MH	2625	90	70

Water Quality Meters Used/ID#

Dissolved Oxygen #2 pH 3 Temperature _____

Conductivity #1 Refractometer _____ Other _____

21

RANDOMIZATION SHEET

Client: W C Hanford **Test Start Date:** 3/1/2006

Laboratory ID:	Field ID:	Alternate ID:	Replicate ID:	Random Number	Test Chamber Number:
B1538-01	J11143	0	A	0.59517	45
B1538-01	J11143	0	B	0.07342	99
B1538-01	J11143	0	C	0.51139	51
B1538-01	J11143	0	D	0.13711	96
B1538-01	J11143	0	E	0.32982	76
B1538-02	J11146	0	A	0.58658	46
B1538-02	J11146	0	B	0.90618	9
B1538-02	J11146	0	C	0.65346	38
B1538-02	J11146	0	D	0.01570	105
B1538-02	J11146	0	E	0.31954	77
B1538-03	J11144	0	A	0.55917	48
B1538-03	J11144	0	B	0.44848	59
B1538-03	J11144	0	C	0.88181	14
B1538-03	J11144	0	D	0.85967	17
B1538-03	J11144	0	E	0.81671	23
B1538-04	J11145	0	A	0.99693	1
B1538-04	J11145	0	B	0.63658	40
B1538-04	J11145	0	C	0.95563	5
B1538-04	J11145	0	D	0.88305	13
B1538-04	J11145	0	E	0.31226	79
B1538-05	J116N1	0	A	0.85822	18
B1538-05	J116N1	0	B	0.51396	50
B1538-05	J116N1	0	C	0.76313	25
B1538-05	J116N1	0	D	0.35551	74
B1538-05	J116N1	0	E	0.63483	43
B1538-06	J116N3	0	A	0.13711	95
B1538-06	J116N3	0	B	0.46725	55
B1538-06	J116N3	0	C	0.75748	28
B1538-06	J116N3	0	D	0.75796	27
B1538-06	J116N3	0	E	0.14568	94
B1538-07	J112B7	0	A	0.38717	68
B1538-07	J112B7	0	B	0.91374	8
B1538-07	J112B7	0	C	0.78765	24
B1538-07	J112B7	0	D	0.98043	2
B1538-07	J112B7	0	E	0.82094	22
B1538-08	J116N2	0	A	0.70786	32
B1538-08	J116N2	0	B	0.88896	11
B1538-08	J116N2	0	C	0.46170	57
B1538-08	J116N2	0	D	0.08572	98
B1538-08	J116N2	0	E	0.87271	16
B1538-09	J116M4	0	A	0.85071	19
B1538-09	J116M4	0	B	0.29516	80
B1538-09	J116M4	0	C	0.23894	83
B1538-09	J116M4	0	D	0.97384	3
B1538-09	J116M4	0	E	0.31884	78
B1538-10	J116N0	0	A	0.83173	21
B1538-10	J116N0	0	B	0.16391	93
B1538-10	J116N0	0	C	0.39139	66
B1538-10	J116N0	0	D	0.43219	61
B1538-10	J116N0	0	E	0.06775	100
B1538-11	J11731	0	A	0.04141	104
B1538-11	J11731	0	B	0.63606	42
B1538-11	J11731	0	C	0.88833	12
B1538-11	J11731	0	D	0.49000	53
B1538-11	J11731	0	E	0.69702	34
B1538-12	J116M5	0	A	0.57522	47
B1538-12	J116M5	0	B	0.76259	26

RANDOMIZATION SHEET

Client: W C Hanford **Test Start Date:** 3/1/2006

Laboratory ID:	Field ID:	Alternate ID:	Replicate ID:	Random Number	Test Chamber Number:
B1538-12	J116M5	0	C	0.05297	103
B1538-12	J116M5	0	D	0.23174	86
B1538-12	J116M5	0	E	0.37224	70
B1538-13	J116M8	0	A	0.37187	71
B1538-13	J116M8	0	B	0.37854	69
B1538-13	J116M8	0	C	0.50121	52
B1538-13	J116M8	0	D	0.05955	102
B1538-13	J116M8	0	E	0.46613	56
B1538-14	J11752	0	A	0.71792	30
B1538-14	J11752	0	B	0.48443	54
B1538-14	J11752	0	C	0.18583	91
B1538-14	J11752	0	D	0.23383	85
B1538-14	J11752	0	E	0.90229	10
B1538-15	J11745	0	A	0.65921	37
B1538-15	J11745	0	B	0.93699	6
B1538-15	J11745	0	C	0.43748	60
B1538-15	J11745	0	D	0.38907	67
B1538-15	J11745	0	E	0.69843	33
B1538-16	J11750	0	A	0.45782	58
B1538-16	J11750	0	B	0.63614	41
B1538-16	J11750	0	C	0.67886	36
B1538-16	J11750	0	D	0.64743	39
B1538-16	J11750	0	E	0.84468	20
B1538-17	J11751	0	A	0.72372	29
B1538-17	J11751	0	B	0.41433	63
B1538-17	J11751	0	C	0.27614	82
B1538-17	J11751	0	D	0.96295	4
B1538-17	J11751	0	E	0.18896	90
B1538-18	J11753	0	A	0.20599	89
B1538-18	J11753	0	B	0.18353	92
B1538-18	J11753	0	C	0.37159	72
B1538-18	J11753	0	D	0.22469	87
B1538-18	J11753	0	E	0.91536	7
B1538-19	J11746	0	A	0.34461	75
B1538-19	J11746	0	B	0.41564	62
B1538-19	J11746	0	C	0.12147	97
B1538-19	J11746	0	D	0.70805	31
B1538-19	J11746	0	E	0.40302	65
B1538-20	J11747	0	A	0.23435	84
B1538-20	J11747	0	B	0.40688	64
B1538-20	J11747	0	C	0.28696	81
B1538-20	J11747	0	D	0.87729	15
B1538-20	J11747	0	E	0.53578	49
Sediment Control	Beaver Creek	Control	A	0.68453	35
Sediment Control	Beaver Creek	Control	B	0.20917	88
Sediment Control	Beaver Creek	Control	C	0.63142	44
Sediment Control	Beaver Creek	Control	D	0.06008	101
Sediment Control	Beaver Creek	Control	E	0.37151	73

TITRATION AND AMMONIA DATA

Client: Washington Closure Hanford — Species ID#: AMP 56

Sample Description: See Randomization Sheet. — Start Date: March 3, 2006

Laboratory ID	Hardness (mg/L as $CaCO_3$)		Alkalinity (mg/L as $CaCO_3$)		Ammonia (mg/L as NH_3-N)	
	Initial	Final	Initial	Final	Initial	Final
Sediment Control	98	98	84	74	0.35	0.05
B1538-01	156	104	80	74	0.51	0.06
B1538-02	130	160	92	124	0.27	0.31
B1538-03	102	100	78	70	0.34	0.09
B1538-04	112	106	92	70	0.30	0.06
B1538-05	128	110	88	70	0.26	0.10
B1538-06	118	104	92	76	0.29	0.14
B1538-07	124	106	82	72	0.23	0.03
B1538-08	116	156	84	116	0.22	0.10
B1538-09	130	104	80	70	0.23	0.06
B1538-10	128	104	112	76	0.21	0.08
B1538-11	118	102	86	74	0.33	0.04
B1538-12	122	102	86	72	0.26	0.05
B1538-13	126	112	80	70	0.27	0.05
B1538-14	122	100	82	76	0.30	0.09
B1538-15	116	104	88	74	0.30	0.07
B1538-16	116	106	82	76	0.24	0.08
B1538-17	118	102	84	74	0.20	0.00
B1538-18	106	108	86	72	0.26	0.09
B1538-19	116	104	80	84	0.24	0.07
B1538-20	118	110	88	78	0.25	0.07

Client: WASHINGTON CLOSURE, HANFORD

Sample Description: See Cross Reference Sheet batch Number B 1536 1-20

Test Species: Hyallela azteca

ID#: Amp 56

Beginning, Date: 3-3-06 Time: 1300

Ending, Date: 3-31-06 Time: 0700

	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9
AM change: Tech.	MS	0715	0715	MS	MS	DW	DW	DW	[illegible]	[illegible]
AM change: Time	0700	NJ	NJ	0720	0620	0700	0700	0700	0700	0705
PM change: Tech.	DW/RM	TP	TP	[illegible]	DW	[illegible]	MS	[illegible]	TP	TP
PM change: Time	1700	1730	1815	1720	1700	1830	1645	1715	1700	~~1715~~ 1640
Feeding: ✓ when done	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Beaker Number	Dissolved Oxygen (mg/l) 0	1	2	3	4	5	6	7	8	9	Temperature (°C) 0	1	2	3	4	5	6	7	8	9	pH 0	3	6	9	Conductivity (µmohs/cm) 0	7
1	7.5			5.3			7.7			7.4	23.4	21.7	22.8	23.3	23.1	22.6	22.0	21.8	21.6	21.4	7.4	7.2	7.1	7.0	312	300
18	8.1			6.5			7.6			7.4	23.5	22.0	22.7	23.4	22.9	22.4	21.9	22.1	21.9	21.6	7.7	7.6	7.3	7.1	311	312
19	8.3			6.8			7.7			7.6	23.5	22.0	23.0	23.4	22.9	22.7	21.8	22.0	21.8	20.6	7.8	7.7	7.4	7.0	306	310
21	7.9			6.7			7.7			7.9	23.6	22.1	23.0	23.4	22.7	22.6	22.1	21.9	22.0	21.9	7.6	7.6	7.4	7.1	315	318
29	7.9			6.5			7.7			7.9	23.5	22.0	23.0	23.4	22.8	23.0	21.8	22.1	22.4	21.7	7.7	7.5	7.3	7.0	316	318
30	7.8			6.7			7.5			7.6	23.4	22.0	23.0	23.4	22.9	22.7	21.9	22.3	22.2	22.0	7.7	7.4	7.3	6.9	327	318
32	8.0			6.8			7.6			7.1	23.6	22.1	23.0	23.4	22.7	22.6	22.0	21.7	22.0	21.8	7.8	7.5	7.4	7.0	316	313
35	8.0			6.8			7.3			6.9	23.6	22.1	23.1	23.5	22.9	22.6	21.8	21.9	21.6	21.4	7.6	7.5	7.4	7.4	380	328
37	7.8			6.7			7.5			6.7	23.5	22.2	23.0	23.4	22.8	22.9	22.2	22.3	21.9	21.4	7.6	7.4	7.1	7.2	327	320
45	7.5			6.3			7.1			6.6	23.6	22.1	23.1	23.5	22.9	23.1	21.9	22.0	22.2	21.4	7.5	7.4	7.2	7.2	316	312
46	8.0			6.8			7.4			7.4	23.5	22.0	23.0	23.4	22.7	22.5	21.8	22.0	21.0	22.0	7.7	7.4	7.2	7.2	323	322
47	8.1			6.9			7.3			7.2	23.7	22.3	23.0	23.6	23.2	22.8	22.0	22.0	21.6	22.0	7.7	7.5	7.4	7.3	311	314
48	8.0			6.7			7.3			7.6	23.8	22.2	23.0	23.6	23.3	22.6	22.1	21.9	21.6	22.1	7.6	7.5	7.3	7.3	308	312
58	7.8			6.3			7.2			7.9	23.8	22.2	23.0	23.5	23.0	22.4	22.2	22.2	22.4	21.9	7.6	7.4	7.3	7.4	334	322
68	8.2			6.8			7.3			6.9	23.7	22.1	23.1	23.3	23.3	22.5	22.1	21.8	21.9	21.7	7.7	7.5	7.4	7.3	309	310
71	8.0			6.7			7.1			7.0	24.0	22.1	23.2	23.4	23.4	22.9	21.9	22.0	21.6	21.6	7.7	7.6	7.3	7.1	322	312
75	7.8			6.5			7.0			6.6	23.9	22.0	23.1	23.5	23.2	22.8	22.0	22.1	22.4	22.0	7.3	7.3	7.2	7.1	333	332
84	7.8			6.3			7.1			6.4	23.8	22.2	23.4	23.5	23.4	22.5	22.2	22.3	21.4	21.5	7.5	7.4	7.2	7.0	320	319
89	7.8			6.5			7.2			6.6	23.6	22.1	23.4	23.4	23.4	22.6	22.1	22.1	21.0	21.5	7.7	7.5	7.3	6.9	316	316
95	7.9			6.5			7.3			6.9	23.7	22.1	23.3	23.6	23.5	22.9	22.3	22.0	21.0	21.5	7.6	7.5	7.3	6.9	320	324
104	8.0			6.9			7.2			7.0	23.8	22.0	23.3	23.6	23.5	23.2	22.0	21.9	21.5	21.4	7.8	7.6	7.4	7.0	326	315

* 079 test Chamber has living "Clam"

[illegible] WATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client: [illegible]

Sample Description: See Cross Reference Sheet batch Number B

Test Species: Hyallela azteca

ID#: Amp 56

Beginning, Date 3-3-06 Time 1300

Ending, Date 3-31-06 Time 0700 to

	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19
AM change: Tech.	MS	MS	DW	DW	DW	[illegible]	[illegible]	MS	DW	DW
AM change: Time	0640	0630	0700	0655	0645	0700	0650	0640	0710	0700
PM change: Tech.	NJ	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MS	[illegible]	[illegible]
PM change: Time	1650	1750	1745	1710	1730	1840	1745	1640	1700	1650
Feeding: ✓ when done	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Beaker Number	Dissolved Oxygen (mg/l)										Temperature (°C)										pH			Conductivity (µmohs/cm)
	10	11	12	13	14	15	16	17	18	19	10	11	12	13	14	15	16	17	18	19	12	15	18	14
1			8.3			7.8			7.9		23.2	24.1	22.7	23.5	22.8	22.1	22.0	22.1	22.6	23.3	7.2	7.2	7.3	287
18			8.1			7.7			7.8		23.2	23.9	22.5	23.3	22.6	22.3	22.4	22.3	22.5	23.5	7.2	7.1	7.2	284
19			8.2			7.7			7.9		23.1	23.9	22.5	23.8	22.5	22.7	22.6	22.4	22.8	23.6	7.2	7.0	7.2	284
21			8.2			7.6			7.6		23.3	23.8	22.4	23.4	22.8	22.4	22.1	22.1	22.7	23.5	7.2	7.0	7.2	290
29			8.2			7.7			7.8		23.2	23.9	22.5	23.3	23.0	22.7	22.6	22.0	22.6	23.7	7.2	7.0	7.2	292
30			8.3			7.7			7.7		23.4	23.8	22.7	23.3	22.9	23.2	22.6	22.5	22.9	23.6	7.2	7.0	7.2	290
32			8.2			7.6			7.6		23.5	23.9	22.5	23.1	22.9	22.8	22.6	22.6	22.7	24.0	7.2	7.1	7.2	286
35			8.3			7.9			7.7		23.7	24.1	22.6	23.6	22.8	23.0	23.0	22.6	22.8	23.7	7.4	7.2	7.3	285
37			8.1			7.9			7.6		23.8	24.1	22.5	23.3	22.6	22.7	22.7	22.6	23.1	23.4	7.2	7.1	7.1	290
45			8.2			8.0			7.5		23.8	23.9	22.5	23.5	22.9	23.3	23.1	23.2	22.8	23.6	7.2	7.0	7.1	284
46			8.1			8.0			7.5		23.8	24.1	22.3	23.9	23.1	23.1	22.9	22.9	23.0	24.1	7.2	7.0	7.1	290
47			8.3			7.9			7.5		23.7	24.2	22.6	23.6	22.8	23.1	22.9	22.7	23.1	24.0	7.3	7.1	7.2	285
48			8.2			7.9			7.6		23.8	24.1	22.5	23.8	23.1	23.2	22.9	23.1	22.9	23.7	7.3	7.1	7.2	284
58			8.2			7.9			7.6		23.9	24.1	22.6	24.0	23.2	23.1	23.0	23.0	23.4	23.9	7.2	7.0	7.2	289
68			8.1			7.8			7.5		23.8	24.3	22.7	23.7	23.1	23.2	23.1	23.1	23.2	24.2	7.3	7.1	7.2	285
71			8.1			7.8			7.6		23.7	24.2	22.6	23.5	22.9	23.4	23.1	23.0	22.9	24.3	7.3	7.1	7.2	282
75			8.0			7.9			7.4		23.9	24.0	22.5	23.9	23.3	23.2	23.2	23.2	23.5	24.0	7.2	7.0	7.2	310
84			8.2			8.1			7.4		23.9	24.2	22.7	23.7	23.4	23.1	23.6	23.1	23.2	23.9	7.2	7.1	7.2	293
89			8.2			8.0			7.4		23.9	24.3	22.6	24.1	23.2	23.4	23.7	23.5	23.2	24.2	7.2	7.1	7.2	287
95			8.0			8.0			7.5		24.0	24.3	22.4	23.8	23.0	23.6	23.4	23.3	23.4	24.0	7.2	7.1	7.2	295
104			8.0			8.0			7.4		24.1	24.4	22.5	24.0	23.4	23.2	23.3	23.4	23.6	24.4	7.3	7.2	7.2	286

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client

Sample Description: See Cross Reference Sheet batch Number B

Test Species: Hyallela azteca

ID#: 56

Amp 56

Beginning, Date 3-3-06 Time 1300

Ending, Date 3-31-06 Time 0700

AM change: Tech.	Day 20 MS	Day 21 MS/[illegible]	Day 22 [illegible]	Day 23 [illegible]	Day 24 MS	Day 25 MS/[illegible]	Day 26 [illegible]	Day 27 MS	Day 28 MS/
Time	Day 20 0700	Day 21 0700	Day 22 0700	Day 23 0700	Day 24 0700	Day 25 0700	Day 26 0700	Day 27 0700	Day 28 0640
PM change: Tech.	Day 20 [illegible]	Day 21 [illegible]	Day 22 [illegible]	Day 23 [illegible]	Day 24 NJ	Day 25 [illegible]	Day 26 NJ	Day 27 [illegible]
Time	Day 20 1655	Day 21 1725	Day 22 1715	Day 23 1730	Day 24 1640	Day 25 1700	Day 26 1640	Day 27 1715
Feeding: ✓ when done	Day 20 ✓	Day 21 ✓	Day 22 ✓	Day 23 ✓	Day 24 ✓	Day 25 ✓	Day 26 ✓	Day 27 ✓

Beaker Number	Dissolved Oxygen (mg/l)										Temperature (°C)										pH				Conductivity (µmohs/cm)	
	20	21	22	23	24	25	26	27	28		20	21	22	23	24	25	26	27	28		21	24	26	28	21	28
1		6.7			7.7		7.8		6.0		23.4	22.9	23.0	23.4	23.2	23.5	23.1	23.2	23.3		7.3	7.4	7.2	7.2	313	330
18		6.6			7.5		7.7		6.6		23.5	23.1	23.1	23.2	23.3	23.3	23.4	23.5	23.4		7.3	7.5	7.3	7.3	320	340
19		6.4			7.3		7.6		6.6		23.6	23.3	23.1	22.9	23.3	23.6	23.5	23.7	23.4		7.3	7.5	7.2	7.3	318	330
21		6.3			7.4		7.5		6.8		23.7	23.1	23.1	22.6	23.4	23.4	23.4	23.5	23.4		7.3	7.4	7.2	7.4	327	350
29		6.5			7.5		7.6		6.7		23.7	23.2	22.7	22.8	23.2	23.4	23.6	23.5	23.2		7.3	7.4	7.2	7.2	333	351
30		6.3			7.0		7.1		6.4		23.8	23.4	22.9	22.8	23.1	23.5	23.6	23.5	23.3		7.2	7.3	7.2	7.0	328	350
32		6.4			7.4		7.8		6.4		23.9	23.4	23.4	23.1	23.3	23.5	23.6	23.6	23.4		7.2	7.4	7.3	7.0	324	348
35		6.2			7.5		7.5		6.7		24.2	23.6	23.4	23.0	23.2	23.3	23.8	23.7	23.3		7.2	7.4	7.2	7.0	324	346
37		6.3			7.6		7.6		6.7		24.3	23.5	23.7	22.8	23.3	23.7	23.5	23.5	23.3		7.2	7.4	7.1	6.9	327	349
45		6.0			7.5		7.6		6.7		24.2	23.6	22.9	22.8	23.4	23.7	23.7	23.7	23.3		7.1	7.5	7.2	6.9	320	345
46		5.9			7.4		7.5		6.3		24.0	23.7	23.0	23.1	23.7	23.8	23.8	23.9	23.6		7.1	7.5	7.2	7.0	304	317
47		6.2			7.3		7.6		6.8		24.1	23.6	23.1	23.0	23.6	23.8	23.7	23.7	23.5		7.2	7.6	7.3	7.0	320	345
48		6.3			7.2		7.6		6.7		24.3	23.5	23.0	23.0	23.4	23.8	23.7	23.7	23.3		7.2	7.6	7.2	7.1	302	346
58		6.4			7.3		7.4		6.5		24.4	23.7	22.7	23.4	23.5	23.9	23.6	23.6	23.4		7.2	7.5	7.2	7.1	329	317
68		6.3			7.2		7.3		6.7		24.6	23.5	22.9	23.3	23.7	24.0	23.8	23.6	23.6		7.2	7.5	7.3	7.0	322	344
71		6.0			7.3		7.5		6.0		24.4	23.6	23.4	23.4	23.6	24.0	24.0	24.1	23.7		7.2	7.5	7.3	7.3	297	350
75		6.2			7.1		7.4		6.3		24.1	23.7	23.1	23.2	23.5	24.0	23.9	23.9	23.9		7.2	7.6	7.2	7.0	355	353
84		6.1			7.0		7.4		6.4		24.2	23.7	23.1	23.0	23.5	23.9	24.0	23.9	23.8		7.1	7.6	7.2	7.1	335	346
89		6.2			7.2		7.4		6.5		24.3	23.7	23.2	23.1	23.5	23.9	24.0	23.9	23.7		7.2	7.6	7.3	7.2	325	340
95		6.3			7.3		7.4		6.4		24.1	23.6	22.8	23.1	23.6	23.7	23.9	23.9	23.4		7.2	7.5	7.2	7.0	339	346
104		6.3			7.5		7.5		6.4		24.4	23.9	22.9	23.1	23.7	23.9	24.0	23.9	23.9		7.2	7.6	7.2	7.2	324	344

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client

Sample Description see randomization sheet. Batch number: B 1538 1-20

Test Species: Hyallela azteca ID#: AMP 56

Beginning, Date 3-3-06 Time 1300

Ending, Date 3-31-06 Time 1030

Test Initiation: Tech: Tech: BMDW Time: 1300

Test Termination: Tech: Tech: 3-31-06 Time: 1030

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
1	10	10	0	
2	10	10	0	
3	10	0	0	
4	10	10	0	
5	10	10	0	
6	10	10	0	
7	10	9	0	
8	10	7	0	
9	10	10	0	
10	10	10	0	
11	10	10	0	
12	10	8	0	
13	10	9	0	
14	10	9	0	
15	10	10	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
16	10	8	0	
17	10	10	0	
18	10	6	0	
19	10	7	1	
20	10	10	0	
21	10	10	0	
22	10	5	2	
23	10	9	0	
24	10	5	0	
25	10	8	0	
26	10	10	0	
27	10	8	0	
28	10	10	0	
29	10	10	0	
30	10	6	0	

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client _____ Beginning, Date 3-3-06 Time 1300

Sample Description see randomization sheet. Batch number: B ~~58~~ 1538 1-20 Ending, Date 3-31-06 Time 1200

Test Species: Hyallela azteca ID#: AMP 56

Test Initiation: Tech: Tech: BM/DW Time: 1300 Test Termination: Tech: Tech: BM Time: 1200

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
31	10	10	0	
32	10	8	0	
33	10	8	0	
34	10	10	0	
35	10	10	0	
36	10	10	0	
37	10	9	0	
38	10	9	0	
39	10	10	0	
40	10	6	0	
41	10	9	0	
42	10	9	0	
43	10	8	0	
44	10	9	0	
45	10	7	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
46	10	8	1	
47	10	7	0	
48	10	9	0	
49	10	10	0	
50	10	4	0	
51	10	9	0	
52	10	8	1	
53	10	BM ~~9~~ 10	0	
54	10	8	0	
55	10	7	0	"worms" present
56	10	4	0	
57	10	7	0	
58	10	9	0	
59	10	6	0	
60	10	10	0	

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client

Sample Description see randomization sheet. Batch number: B 1538- 1-20

Test Species: Hyallela azteca ID#: AMP 56

Beginning, Date 3-3-06 Time 1300

Ending, Date 3-31-06 Time 1200

Test Initiation: Tech: Tech: BM/DW Time: 1300

Test Termination: Tech: Tech: BM/DW/MS Time: 1200

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
61	10	10	0	
62	10	7	0	
63	10	6	0	
64	10	9	0	
65	10	9	0	
66	10	4	0	
67	10	9	0	
68	10	4	0	
69	10	7	0	
70	10	1	0	
71	10	3	2	
72	10	10	0	
73	10	8	0	
74	10	10	0	
75	10	10	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
76	10	9	0	
77	10	10	0	
78	10	3	0	all look poor
79	10	8	0	
80	10	6	0	
81	10	10	0	
82	10	9	0	
83	10	3	0	3 look poor
84	10	6	0	
85	10	10	0	
86	10	9	0	
87	10	9	0	
88	10	9	0	
89	10	6	0	
90	10	8	0	

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client

Sample Description see randomization sheet. Batch number: B 1538

Test Species: Hyallela azteca ID#: AMP 56

Beginning, Date 3-3-06 Time 1300

Ending, Date 3-31-06 Time 0700

Test Initiation: Tech: Tech: BMOW Time: 1300

Test Termination: Tech: Tech: MS Time: 0700

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
91	10	9	0	
92	10	4	0	Mayfly larvae found
93	10	10	0	
94	10	7	0	
95	10	7	0	
96	10	6	0	
97	10	6	0	
98	10	6	1	
99	10	2	0	lots of Lumbriculus worms in sample
100	10	8	0	
101	10	10	0	
102	10	2	1	Alive ones look poor
103	10	6	0	
104	10	8	0	
105	10	8	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:

103 Mayfly ~~Caddis~~ larvae

Hyallela GROWTH DATA

Client Hanford Species ID# AMP 56

Lab ID: see randomization sheet batch number: B1538 Start Date 3/3/2006

Sample Description:

Technician: BM dw

Date: 4/3/2006 1/17/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
1	9.91	6.77	10	10
2	8.23	6.82	10	10
3		6.82	0	0
4	9.10	6.73	10	10
5	9.43	6.75	10	10
6	9.50	6.79	10	10
7	8.49	6.74	9	9
8	7.41	6.73	7	7
9	9.92	6.75	10	10
10	9.52	6.78	10	10
11	7.42	5.86	10	10
12	8.34	6.79	8	8
13	9.06	6.83	9	9
14	8.56	6.88	9	9
15	8.81	6.66	10	10
16	8.12	6.82	8	8
17	8.31	6.75	10	10
18	7.83	6.69	6	6
19	5.98	5.41	7	7
20	9.41	6.84	10	10
21	8.71	6.80	10	10
22	7.09	6.84	5	5
23	8.56	6.87	9	9
24	6.91	6.42	5	5
25	8.08	6.66	8	8
26	8.20	6.83	10	10
27	8.71	6.71	8	8
28	8.08	6.81	10	10
29	9.69	6.78	10	10
30	8.43	6.67	6	6

weigh to 0.01 mg

Hyallela GROWTH DATA

Client: Hanford | Species ID#: AMP 56

Lab ID: see randomization sheet batch number: B1538 | Start Date: 3/3/2006

Sample Description:

Technician: BM dw

Date: 4/3/2006 1/17/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
31	9.75	6.86	10	10
32	7.85	6.82	8	8
33	8.63	6.78	8	8
34	8.25	6.77	10	10
35	8.44	6.81	10	10
36	9.27	6.78	10	10
37	8.40	6.82	9	9
38	8.87	6.67	9	9
39	9.58	6.77	10	10
40	8.17	6.75	6	6
41	9.33	6.78	9	9
42	8.65	6.76	9	9
43	8.08	6.82	8	8
44	7.96	6.73	9	9
45	8.06	6.79	7	7
46	8.52	6.13	8	8
47	7.80	6.81	7	7
48	8.55	6.77	9	9
49	8.77	6.80	10	10
50	7.79	6.77	4	4
51	8.20	6.71	9	9
52	7.49	6.78	8	8
53	8.56	6.04	10	10
54	8.20	6.79	8	8
55	7.36	6.85	7	7
56	7.18	6.78	4	4
57	7.82	6.81	7	7
58	9.09	6.74	9	9
59	7.53	6.72	6	6
60	8.41	6.19	10	10

weigh to 0.01 mg

Hyallela GROWTH DATA

Client Hanford Species ID# AMP 56

Lab ID: see randomization sheet batch number: B1538 Start Date 3/3/2006

Sample Description:

Technician: BM dw

Date: 4/3/2006 1/18/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
61	8.81	6.76	10	10
62	8.71	6.72	7	7
63	8.70	6.75	6	6
64	9.06	6.77	9	9
65	8.89	6.78	9	9
66	7.49	6.77	4	4
67	7.74	6.75	9	9
68	7.20	6.81	4	4
69	7.48	6.80	7	7
70	7.05	6.85	1	1
71	6.98	6.73	3	3
72	8.28	6.82	10	10
73	7.67	6.72	8	8
74	8.81	6.81	10	10
75	9.04	6.74	10	10
76	7.94	6.88	9	9
77	9.67	6.78	10	10
78	7.04	6.76	3	3
79	8.84	6.86	8	8
80	7.35	6.73	6	6
81	8.87	6.80	10	10
82	9.17	6.76	9	9
83	7.13	6.75	3	3
84	8.69	6.81	6	6
85	8.60	6.79	10	10
86	7.69	6.81	9	9
87	8.23	6.80	9	9
88	8.26	6.71	9	9
89	7.45	6.13	6	6
90	8.06	6.16	8	8

weigh to 0.01 mg

Hyallela GROWTH DATA

Client Hanford Species ID# AMP 56

Lab ID: see randomization sheet batch number: B1538 Start Date 3/3/2006

Sample Description:

Technician: BM dw

Date: 4/3/2006 1/18/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
91	9.25	6.67	9	9
92	7.80	6.72	4	4
93	7.23	5.03	10	10
94	8.24	6.79	7	7
95	8.47	6.86	7	7
96	7.74	6.89	6	6
97	8.06	6.82	6	6
98	8.09	6.85	6	6
99	7.36	6.88	2	2
100	8.53	6.92	8	8
101	8.68	6.84	10	10
102	7.11	6.93	2	2
103	7.74	6.84	6	6
104	8.55	6.85	8	8
105	8.54	6.89	8	8

weigh to 0.01 mg

CETIS Test Summary

Report Date: 03 Apr-06 11:05 AM
Test Link: 15-5042-6894/B153801hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	05-4144-8625	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	13-0602-3278	**Code:**	B1538-01	**Client:**	
Sample Date:	05 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	07 Feb-06	**Source:**	Hanford		
Sample Age:	26d 0h	**Station:**			

Comments: J11143

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
09-2037-2780	28d Mean Dry Weight	100	> 100	N/A	28.69%	Equal Variance t Two-Sample
18-5042-6778	28d Proportion Survived	< 100	100	N/A	23.44%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
18-5042-6778	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.16929	0.11778	0.24000	0.02071	0.04631	27.35%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.66000	0.20000	0.90000	0.12884	0.28810	43.65%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.18143	0.24000	0.16556	0.14167	0.11778

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.70000	0.20000	0.90000	0.60000	0.90000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	15-5042-6894	15-5042-6894	03 Apr-06 11:03 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	23.44%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	2.04021	1.85955	0.0378	0.2899	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.2529053	0.252905	1	4.16	0.07565	Non-Significant Effect
Error	0.4860712	0.060759	8			
Total	0.73897648	0.3136642	9			

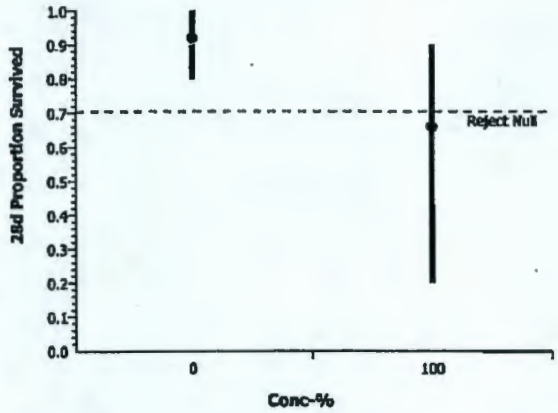
ANOVA Assumptions

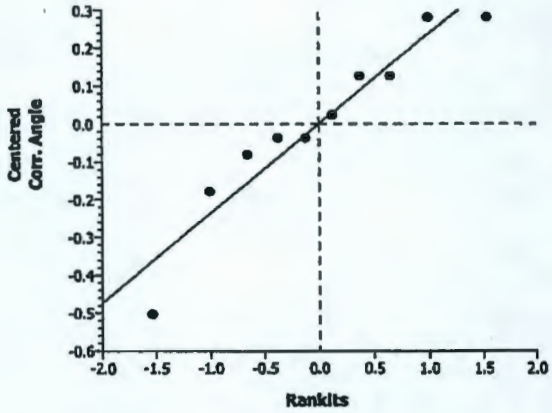
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	6.31165	23.15450	0.10200	Equal Variances
Distribution	Shapiro-Wilk W	0.92047		0.36086	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.66000	0.20000	0.90000	0.28810	0.96779	0.46365	1.24905	0.32388

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	15-5042-6894	15-5042-6894	03 Apr-06 11:03 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	28.69%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-0.6006	1.85955	0.7176	0.04445	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0005154	0.000515	1	0.36	0.56472	Non-Significant Effect
Error	0.0114295	0.001429	8			
Total	0.01194488	0.0019441	9			

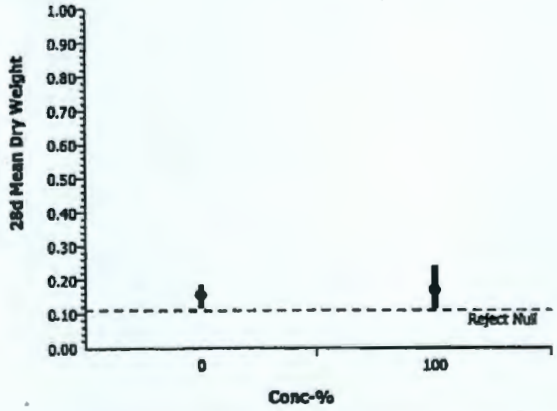
ANOVA Assumptions

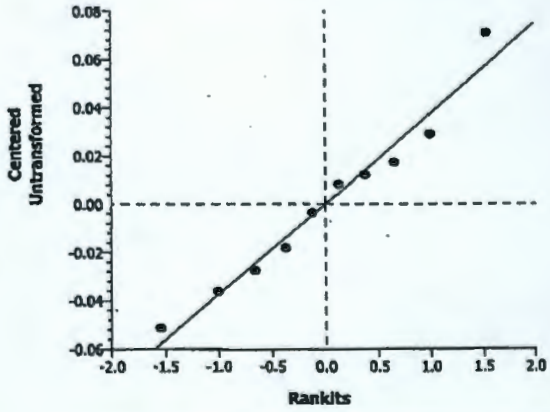
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.00789	23.15450	0.31139	Equal Variances
Distribution	Shapiro-Wilk W	0.97233		0.91160	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.16929	0.11778	0.24000	0.04631				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:17 AM
Test Link: 07-9085-4186/B153802hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	04-2067-0903	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	11-2839-4047	**Code:**	B1538-02	**Client:**	
Sample Date:	08 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	10 Feb-06	**Source:**	Hanford		
Sample Age:	23d 0h	**Station:**			

Comments: J11146

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
14-8348-2574	28d Mean Dry Weight	100	> 100	N/A	28.10%	Equal Variance t Two-Sample
12-0083-3267	28d Proportion Survived	100	> 100	N/A	11.96%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
12-0083-3267	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.27109	0.20625	0.31700	0.02013	0.04502	16.61%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.90000	0.80000	1.00000	0.04472	0.10000	11.11%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.29875	0.31700	0.24444	0.20625	0.28900

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.80000	1.00000	0.90000	0.80000	1.00000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	07-9085-4186	07-9085-4186	03 Apr-06 11:17 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	11.96%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.31778	1.85955	0.3794	0.16607	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0020135	0.002013	1	0.10	0.75879	Non-Significant Effect
Error	0.159512	0.019939	8			
Total	0.16152545	0.0219525	9			

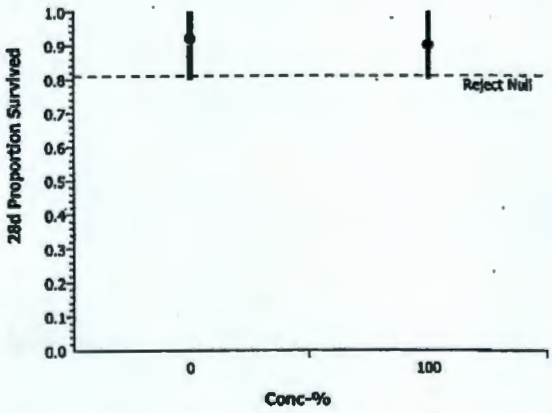
ANOVA Assumptions

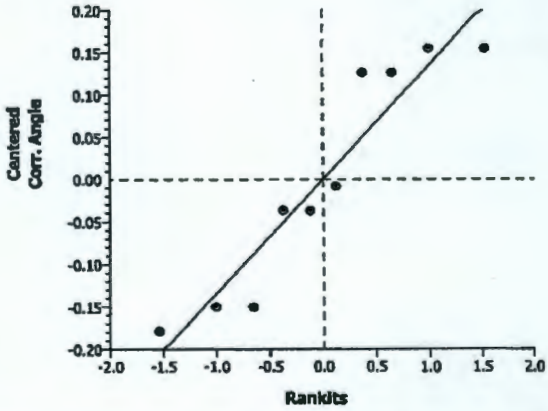
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.39943	23.15450	0.75260	Equal Variances
Distribution	Shapiro-Wilk W	0.86706		0.09235	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.90000	0.80000	1.00000	0.10000	1.25748	1.10715	1.41202	0.15251

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	07-9085-4186	07-9085-4186	03 Apr-06 11:17 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	28.10%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-4.9623	1.85955	0.9994	0.04353	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0337335	0.033734	1	24.62	0.00110	Significant Effect
Error	0.0109595	0.00137	8			
Total	0.04469304	0.0351034	9			

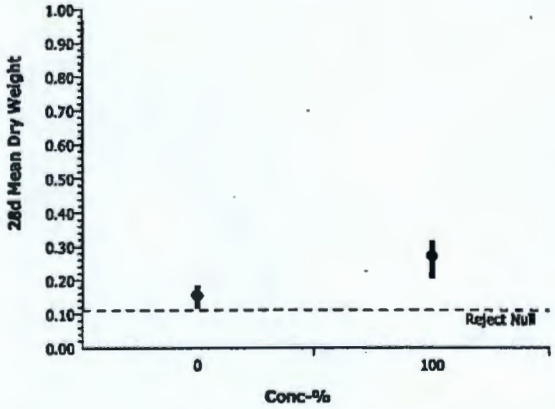
ANOVA Assumptions

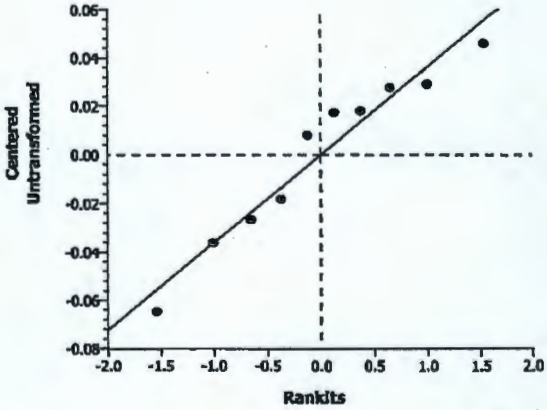
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.84309	23.15450	0.33577	Equal Variances
Distribution	Shapiro-Wilk W	0.93921		0.54424	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.27109	0.20625	0.31700	0.04502				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:20 AM
Test Link: 09-1540-9662/B153803hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M HILL**

Test No:	07-5505-4020	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	10-0636-9456	**Code:**	B1538-03	**Client:**	
Sample Date:	08 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	10 Feb-06	**Source:**	Hanford		
Sample Age:	23d 0h	**Station:**			

Comments: J11144

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
05-3038-6721	28d Mean Dry Weight	100	> 100	N/A	20.09%	Equal Variance t Two-Sample
03-6737-8936	28d Proportion Survived	100	> 100	N/A	14.35%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
03-6737-8936	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.17264	0.13500	0.19778	0.01173	0.02623	15.19%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.86000	0.60000	1.00000	0.06782	0.15166	17.63%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.19778	0.13500	0.18667	0.15600	0.18778

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.90000	0.60000	0.90000	1.00000	0.90000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	09-1540-9662	09-1540-9662	03 Apr-06 11:19 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	14.35%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.73775	1.85955	0.2409	0.19360	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0147488	0.014749	1	0.54	0.48174	Non-Significant Effect
Error	0.2167847	0.027098	8			
Total	0.23153355	0.0418469	9			

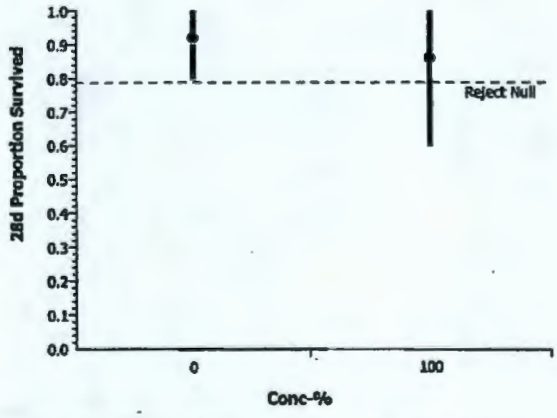
ANOVA Assumptions

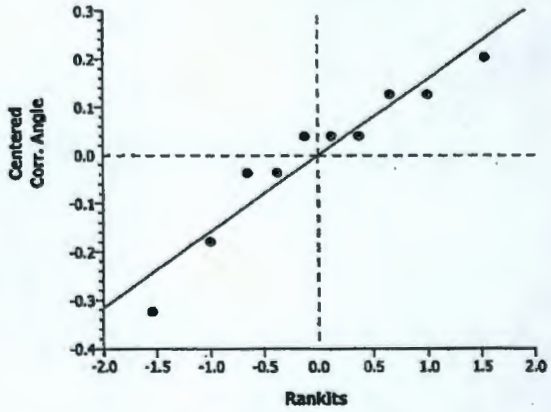
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.26095	23.15450	0.44889	Equal Variances
Distribution	Shapiro-Wilk W	0.91920		0.35033	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.86000	0.60000	1.00000	0.15166	1.20905	0.88608	1.41202	0.19385

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	09-1540-9662	09-1540-9662	03 Apr-06 11:19 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed.		100	>100	1	N/A	20.09%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-1.0585	1.85955	0.8396	0.03113	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0007847	0.000785	1	1.12	0.32075	Non-Significant Effect
Error	0.0056032	0.000700	8			
Total	0.00638792	0.0014851	9			

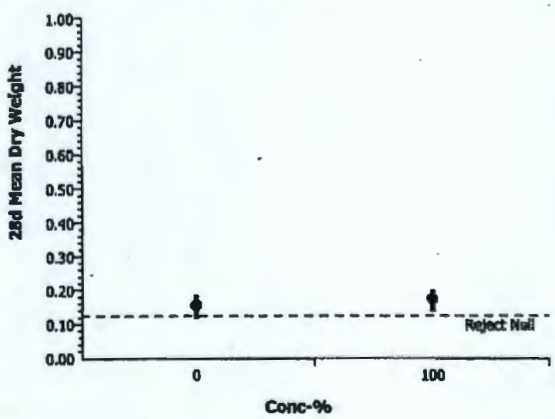
ANOVA Assumptions

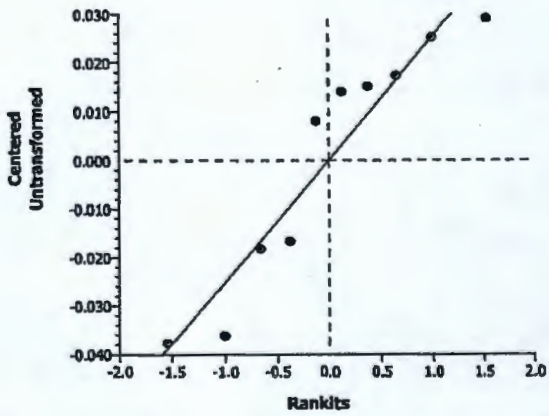
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.03645	23.15450	0.97316	Equal Variances
Distribution	Shapiro-Wilk W	0.87969		0.12944	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.17264	0.13500	0.19778	0.02623				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:21 AM
Test Link: 03-8597-0176/B153804hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	04-7256-1028	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	08-7504-1098	**Code:**	B1538-04	**Client:**	
Sample Date:	08 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	10 Feb-06	**Source:**	Hanford		
Sample Age:	23d 0h	**Station:**			

Comments: J11145

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
11-7637-2583	28d Mean Dry Weight	100	> 100	N/A	21.87%	Equal Variance t Two-Sample
10-8967-8632	28d Proportion Survived	100	> 100	N/A	16.20%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
10-8967-8632	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.26279	0.23667	0.31400	0.01377	0.03079	11.72%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.86000	0.60000	1.00000	0.07483	0.16733	19.46%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.31400	0.23667	0.26800	0.24778	0.24750

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		1.00000	0.60000	1.00000	0.90000	0.80000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	03-8597-0176	03-8597-0176	03 Apr-06 11:21 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	16.20%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.63056	1.85955	0.2730	0.21408	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0131746	0.013175	1	0.40	0.54591	Non-Significant Effect
Error	0.2650759	0.033134	8			
Total	0.27825049	0.0463091	9			

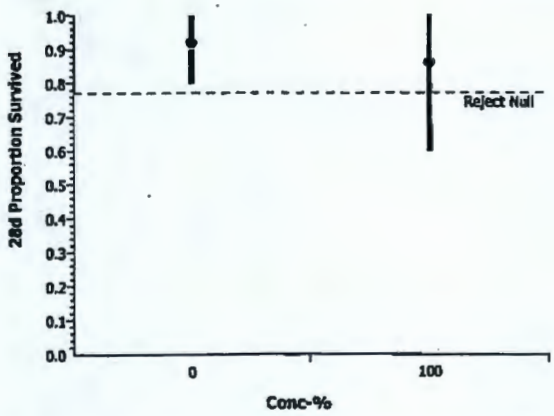
ANOVA Assumptions

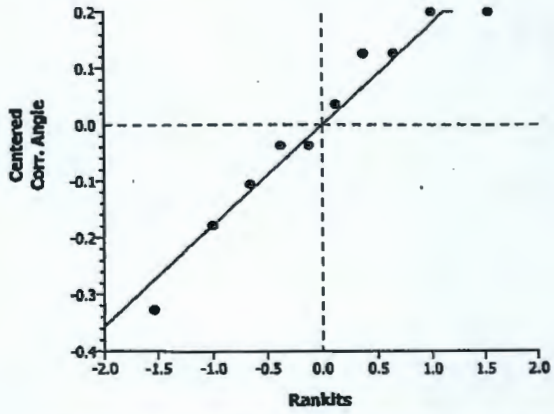
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.98736	23.15450	0.31428	Equal Variances
Distribution	Shapiro-Wilk W	0.93793		0.53025	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.86000	0.60000	1.00000	0.16733	1.21326	0.88608	1.41202	0.22282

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	03-8597-0176	03-8597-0176	03 Apr-06 11:21 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	21.87%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-5.9183	1.85955	0.9998	0.03389	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0290851	0.029085	1	35.03	0.00035	Significant Effect
Error	0.0066429	0.000830	8			
Total	0.03572799	0.0299154	9			

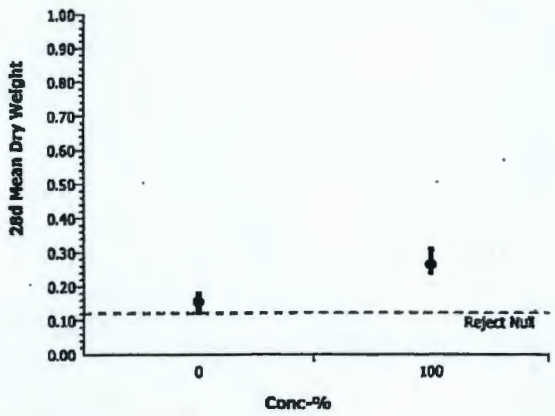
ANOVA Assumptions

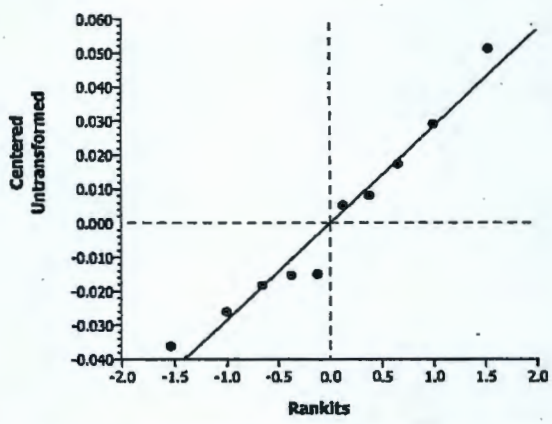
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.32942	23.15450	0.78929	Equal Variances
Distribution	Shapiro-Wilk W	0.95368		0.71208	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.26279	0.23667	0.31400	0.03079				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:27 AM
Test Link: 08-8552-2246/B153805hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	02-4306-3429	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	10-8372-1070	**Code:**	B1538-05	**Client:**	
Sample Date:	09 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	22d 0h	**Station:**			

Comments: J116N1

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
19-8792-0312	28d Mean Dry Weight	100	> 100	N/A	24.32%	Equal Variance t Two-Sample
02-6083-4326	28d Proportion Survived	100	> 100	N/A	19.63%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
02-6083-4326	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.19600	0.15750	0.25500	0.01637	0.03660	18.67%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.72000	0.40000	1.00000	0.10198	0.22804	31.67%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.19000	0.25500	0.17750	0.20000	0.15750

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.60000	0.40000	0.80000	1.00000	0.80000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	08-8552-2246	08-8552-2246	03 Apr-06 11:27 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	19.63%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	1.82716	1.85955	0.0525	0.25080	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.1518225	0.151823	1	3.34	0.10509	Non-Significant Effect
Error	0.3638079	0.045476	8			
Total	0.51563042	0.1972985	9			

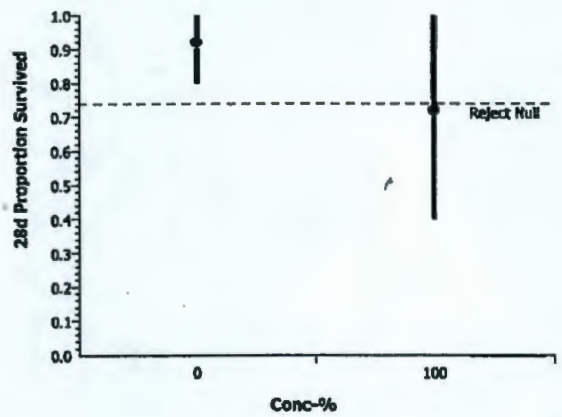
ANOVA Assumptions

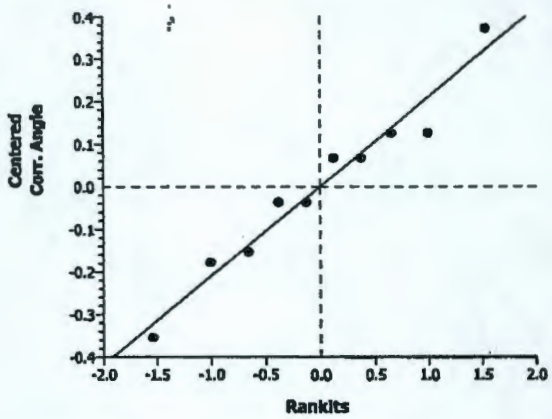
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	4.47252	23.15450	0.17594	Equal Variances
Distribution	Shapiro-Wilk W	0.97145		0.90394	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.72000	0.40000	1.00000	0.22804	1.03942	0.68472	1.41202	0.27264

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	08-8552-2246	08-8552-2246	03 Apr-06 11:27 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	24.32%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-2.0273	1.85955	0.9614	0.03767	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0042173	0.004217	1	4.11	0.07718	Non-Significant Effect
Error	0.0082093	0.001026	8			
Total	0.01242657	0.0052435	9			

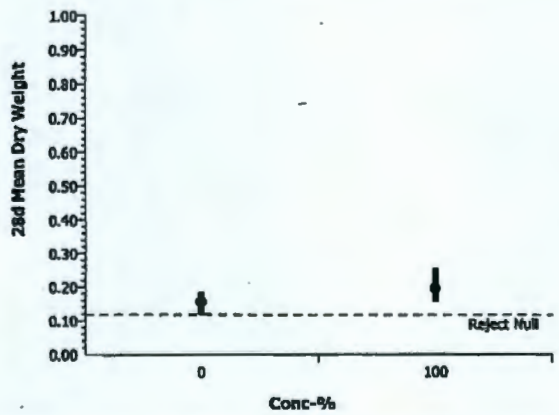
ANOVA Assumptions

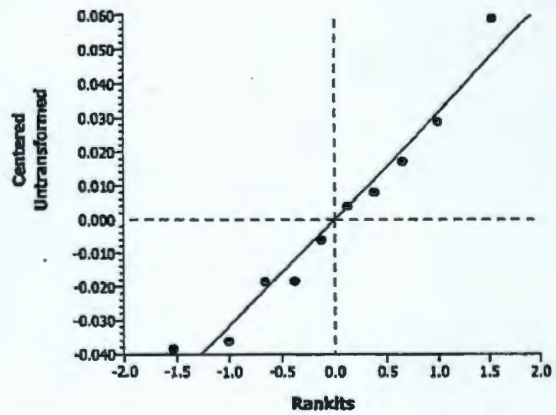
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.87867	23.15450	0.55637	Equal Variances
Distribution	Shapiro-Wilk W	0.95860		0.76974	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.19600	0.15750	0.25500	0.03660				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:42 PM
Test Link: 09-7530-6120/B153806hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	11-9504-7721	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	04-9468-8770	**Code:**	B1538-06	**Client:**	
Sample Date:	09 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	22d 0h	**Station:**			

Comments: J116N3

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
18-4841-1967	28d Mean Dry Weight	100	> 100	N/A	42.64%	Equal Variance t Two-Sample
05-9718-6909	28d Proportion Survived	< 100	100	N/A	13.65%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
05-9718-6909	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.17740	0.07286	0.25000	0.03346	0.07482	42.18%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.78000	0.70000	1.00000	0.05831	0.13038	16.72%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.23000	0.07286	0.12700	0.25000	0.20714

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.70000	0.70000	1.00000	0.80000	0.70000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	09-7530-6120	09-7530-6120	03 Apr-06 11:37 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	13.65%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	1.87603	1.85955	0.0487	0.18568	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0877291	0.087729	1	3.52	0.09750	Non-Significant Effect
Error	0.199414	0.024927	8			
Total	0.28714305	0.1126558	9			

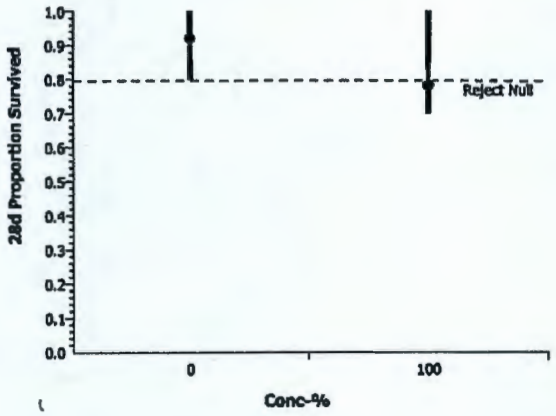
ANOVA Assumptions

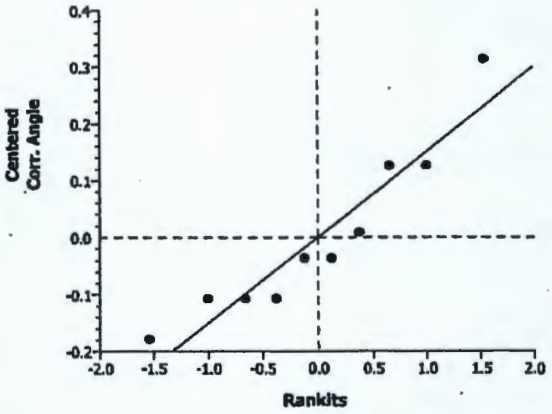
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.99965	23.15450	0.51862	Equal Variances
Distribution	Shapiro-Wilk W	0.89942		0.21588	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.78000	0.70000	1.00000	0.13038	1.09853	0.99116	1.41202	0.18230

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	09-7530-6120	09-7530-6120	03 Apr-06 11:37 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	42.64%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-0.6325	1.85955	0.7277	0.06606	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0012625	0.001263	1	0.40	0.54468	Non-Significant Effect
Error	0.0252433	0.003155	8			
Total	0.02650577	0.0044179	9			

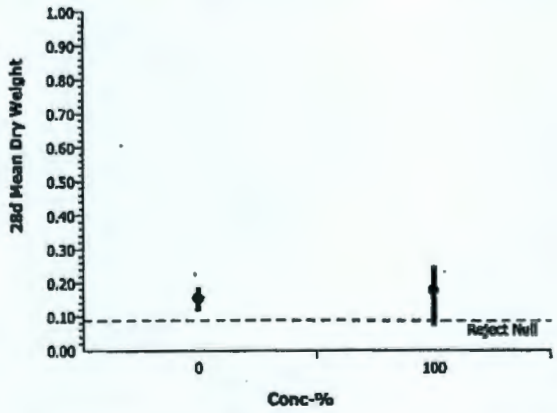
ANOVA Assumptions

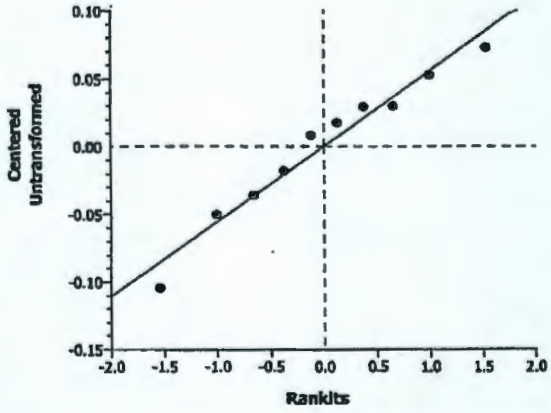
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	7.85185	23.15450	0.07081	Equal Variances
Distribution	Shapiro-Wilk W	0.96190		0.80730	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.17740	0.07286	0.25000	0.07482				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:39 AM
Test Link: 06-7721-7047/B153807hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	14-2440-8684	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	14-7330-4021	**Code:**	B1538-07	**Client:**	
Sample Date:	12 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	19d 0h	**Station:**			

Comments: J112B7

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
05-8563-0796	28d Mean Dry Weight	< 100	100	N/A	22.45%	Equal Variance t Two-Sample
14-1941-1551	28d Proportion Survived	< 100	100	N/A	20.94%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
14-1941-1551	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.09673	0.05000	0.14100	0.01440	0.03219	33.28%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.62000	0.40000	1.00000	0.10677	0.23875	38.51%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.09750	0.09714	0.09800	0.14100	0.05000

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.40000	0.70000	0.50000	1.00000	0.50000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	06-7721-7047	06-7721-7047	03 Apr-06 11:39 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	20.94%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	2.48994	1.85955	0.0188	0.26446	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.3134969	0.313497	1	6.20	0.03753	Significant Effect
Error	0.4045256	0.050566	8			
Total	0.7180225	0.3640626	9			

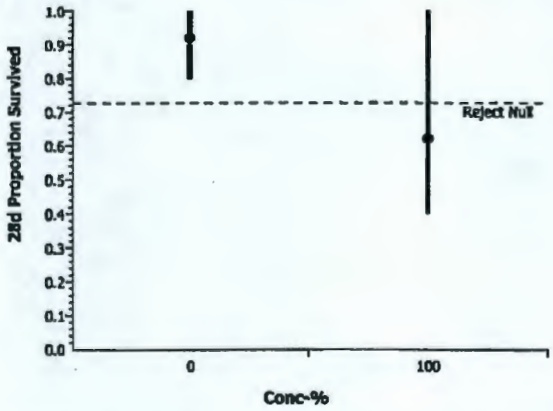
ANOVA Assumptions

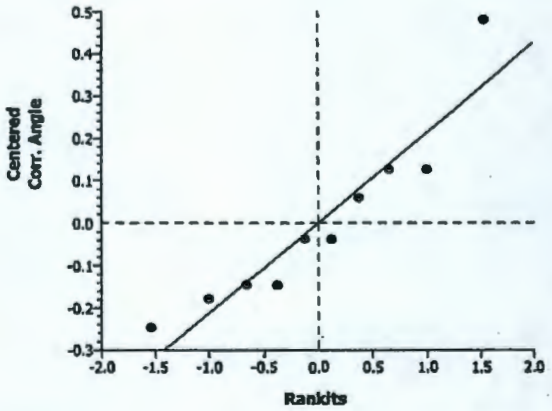
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	5.08501	23.15450	0.14429	Equal Variances
Distribution	Shapiro-Wilk W	0.89358		0.18600	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.62000	0.40000	1.00000	0.23875	0.93174	0.68472	1.41202	0.29071

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	06-7721-7047	06-7721-7047	03 Apr-06 11:39 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	22.45%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	3.11140	1.85955	0.0072	0.03478	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0084679	0.008468	1	9.68	0.01441	Significant Effect
Error	0.0069976	0.000875	8			
Total	0.01546553	0.0093426	9			

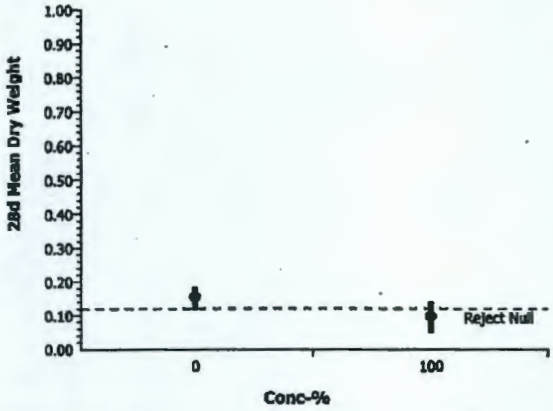
ANOVA Assumptions

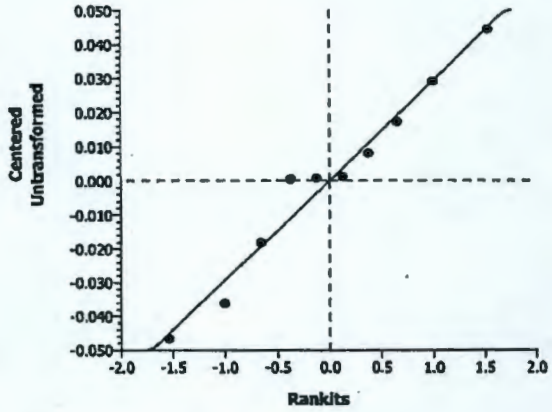
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.45381	23.15450	0.72575	Equal Variances
Distribution	Shapiro-Wilk W	0.96688		0.86050	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.09673	0.05000	0.14100	0.03219				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:42 AM
Test Link: 16-8970-9656/B153808hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	11-4608-1916	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	14-9948-4143	**Code:**	B1538-08	**Client:**	
Sample Date:	09 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	22d 0h	**Station:**			

Comments: J116N2

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
10-6556-0537	28d Mean Dry Weight	100	> 100	N/A	21.26%	Equal Variance t Two-Sample
06-0154-6964	28d Proportion Survived	100	> 100	N/A	14.54%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
06-0154-6964	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.15964	0.12875	0.20667	0.01308	0.02925	18.32%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.78000	0.60000	1.00000	0.06633	0.14832	19.02%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.12875	0.15600	0.14429	0.20667	0.16250

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.80000	1.00000	0.70000	0.60000	0.80000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	16-8970-9656	16-8970-9656	03 Apr-06 11:42 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	14.54%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	1.75913	1.85955	0.0583	0.19571	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0856967	0.085697	1	3.09	0.11660	Non-Significant Effect
Error	0.2215427	0.027693	8			
Total	0.30723938	0.1133896	9			

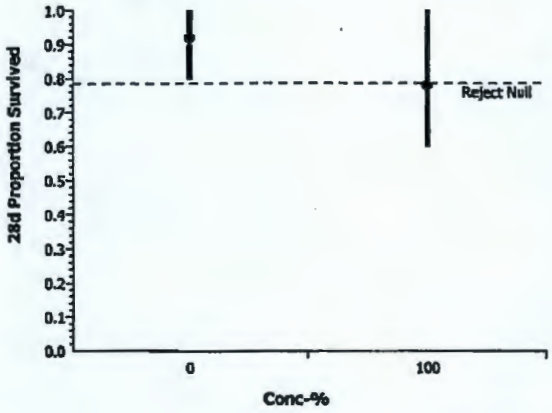
ANOVA Assumptions

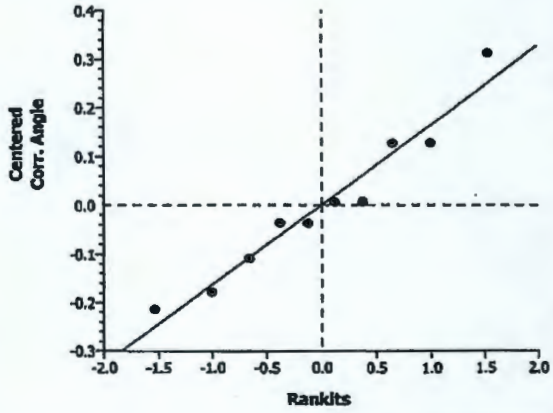
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.33252	23.15450	0.43218	Equal Variances
Distribution	Shapiro-Wilk W	0.95346		0.70953	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.78000	0.60000	1.00000	0.14832	1.10071	0.88608	1.41202	0.19689

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	16-8970-9656	16-8970-9656	03 Apr-06 11:42 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	21.26%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-0.2661	1.85955	0.6015	0.03294	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	5.552E-05	5.55E-05	1	0.07	0.79692	Non-Significant Effect
Error	0.0062746	0.000784	8			
Total	0.00633016	0.0008399	9			

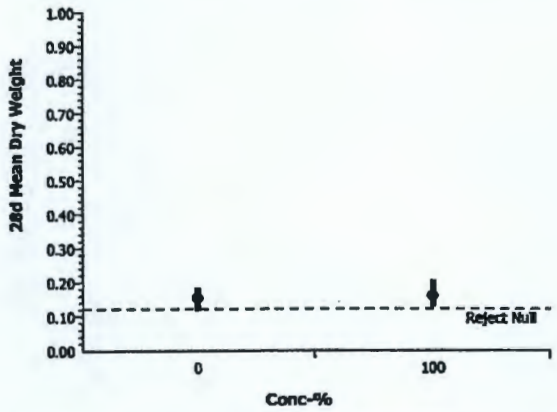
ANOVA Assumptions

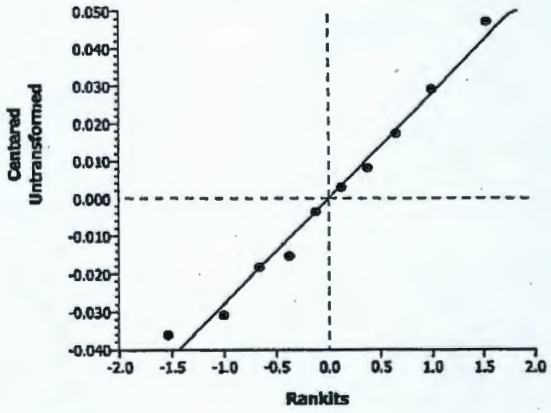
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.20028	23.15450	0.86384	Equal Variances
Distribution	Shapiro-Wilk W	0.97509		0.93361	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.15964	0.12875	0.20667	0.02925				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:49 AM
Test Link: 05-8367-4848/B153809hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	14-6106-2643	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	06-1149-3769	**Code:**	B1538-09	**Client:**	
Sample Date:	12 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	19d 0h	**Station:**			

Comments: J116M4

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
12-1261-1481	28d Mean Dry Weight	< 100	100	N/A	19.51%	Equal Variance t Two-Sample
10-1107-2830	28d Proportion Survived	< 100	100	N/A	23.53%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
10-1107-2830	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		4	0.10119	0.08143	0.12667	0.00960	0.01920	18.97%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.38000	0.00000	0.70000	0.12410	0.27749	73.02%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.08143	0.10333	0.12667	0.09333	

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.70000	0.60000	0.30000	0.00000	0.30000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	05-8367-4848	05-8367-4848	03 Apr-06 11:49 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	23.53%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	4.13561	1.85955	0.0016	0.29083	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	1.045862	1.045862	1	17.10	0.00327	Significant Effect
Error	0.4891987	0.06115	8			
Total	1.53506076	1.1070119	9			

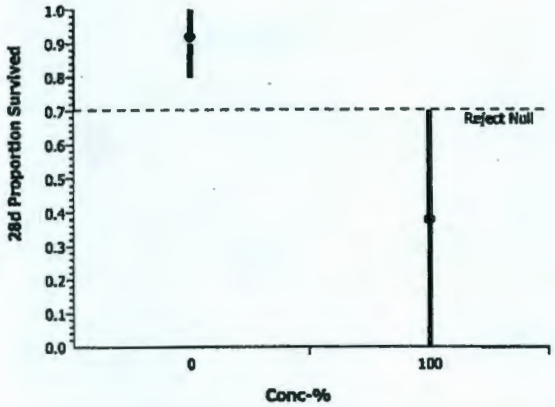
ANOVA Assumptions

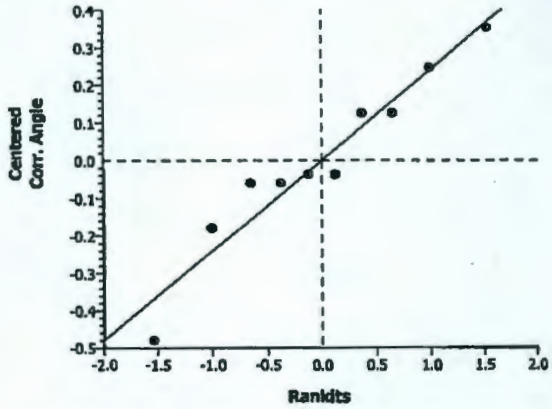
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	6.35869	23.15450	0.10076	Equal Variances
Distribution	Shapiro-Wilk W	0.94567		0.61769	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.38000	0.00000	0.70000	0.27749	0.63906	0.15878	0.99116	0.32508

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	05-8367-4848	05-8367-4848	03 Apr-06 11:49 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	19.51%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	3.36899	1.89458	0.0060	0.03022	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0064171	0.006417	1	11.35	0.01194	Significant Effect
Error	0.0039576	0.000565	7			
Total	0.01037476	0.0069825	8			

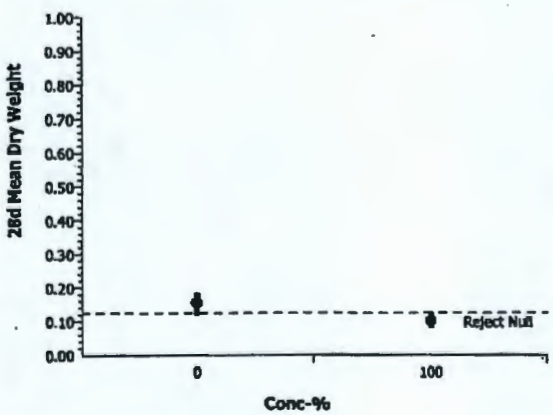
ANOVA Assumptions

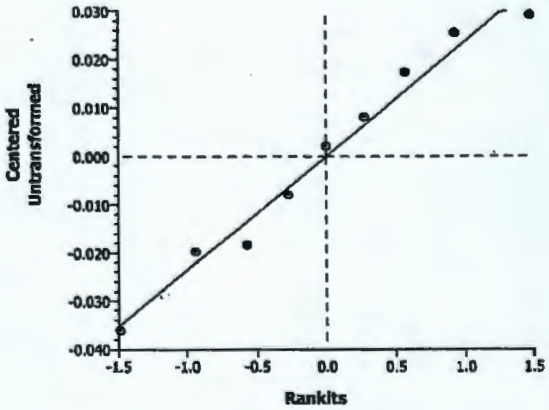
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.93401	46.19462	0.61473	Equal Variances
Distribution	Shapiro-Wilk W	0.96007		0.79906	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		4	0.10119	0.08143	0.12667	0.01920				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:50 AM
Test Link: 05-7535-5514/B153810hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	16-7955-2605	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	14-8361-9179	**Code:**	B1538-10	**Client:**	
Sample Date:	09 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	22d 0h	**Station:**			

Comments: J116N0

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
00-9983-6726	28d Mean Dry Weight	100	> 100	N/A	16.45%	Equal Variance t Two-Sample
12-5209-7390	28d Proportion Survived	100	> 100	N/A	23.12%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
12-5209-7390	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.19945	0.18000	0.22000	0.00673	0.01505	7.55%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.84000	0.40000	1.00000	0.11662	0.26077	31.04%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.19100	0.22000	0.18000	0.20500	0.20125

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		1.00000	1.00000	0.40000	1.00000	0.80000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	05-7535-5514	05-7535-5514	03 Apr-06 11:50 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	23.12%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.5207	1.85955	0.3083	0.28667	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0161087	0.016109	1	0.27	0.61668	Non-Significant Effect
Error	0.4753113	0.059414	8			
Total	0.49141999	0.0755226	9			

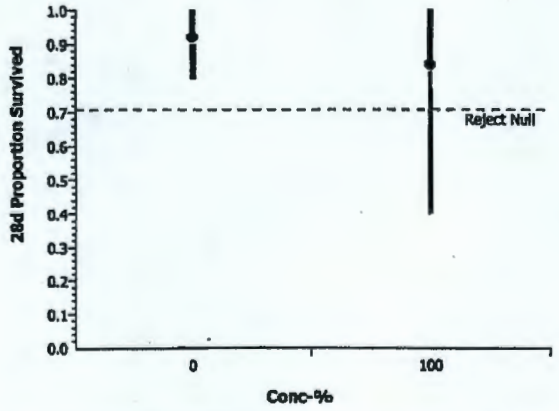
ANOVA Assumptions

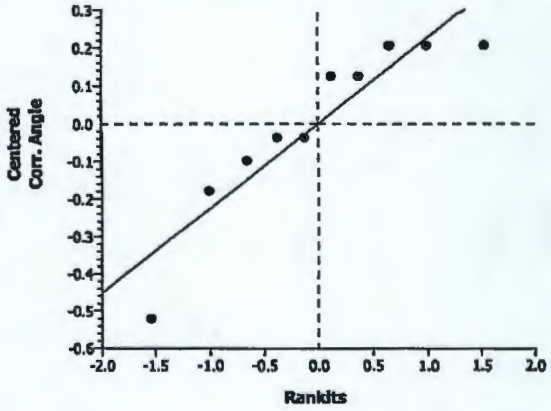
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	6.14979	23.15450	0.10643	Equal Variances
Distribution	Shapiro-Wilk W	0.85062		0.05908	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.84000	0.40000	1.00000	0.26077	1.20558	0.68472	1.41202	0.31970

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	05-7535-5514	05-7535-5514	03 Apr-06 11:50 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	16.45%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-3.2481	1.85955	0.9941	0.02549	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0049556	0.004956	1	10.55	0.01174	Significant Effect
Error	0.0037578	0.00047	8			
Total	0.00871337	0.0054253	9			

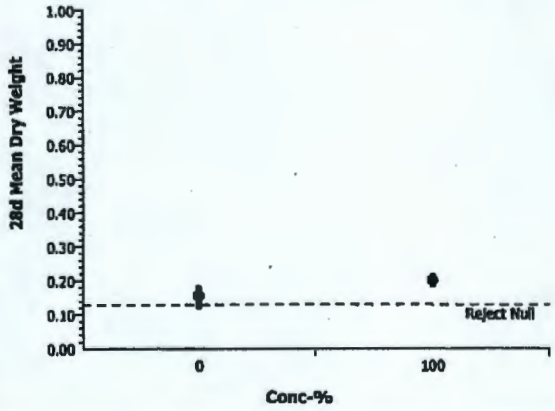
ANOVA Assumptions

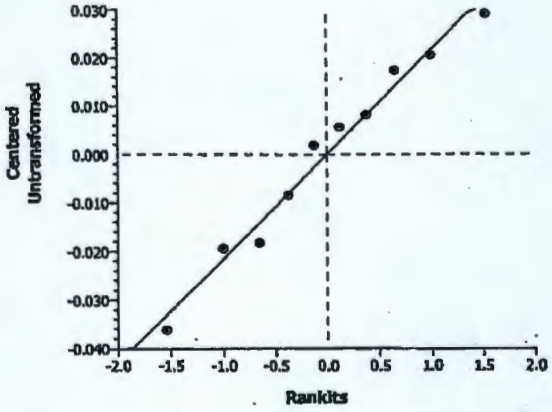
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.14745	23.15450	0.29274	Equal Variances
Distribution	Shapiro-Wilk W	0.97063		0.89665	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.19945	0.18000	0.22000	0.01505				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:51 AM
Test Link: 18-0960-7012/B153811hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	10-9096-9911	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	05-7554-7110	**Code:**	B1538-11	**Client:**	
Sample Date:	09 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	22d 0h	**Station:**			

Comments: J11731

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
13-5229-7724	28d Mean Dry Weight	100	> 100	N/A	24.75%	Equal Variance t Two-Sample
05-1177-2137	28d Proportion Survived	100	> 100	N/A	11.96%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
05-1177-2137	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.20325	0.14800	0.25200	0.01681	0.03758	18.49%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.90000	0.80000	1.00000	0.04472	0.10000	11.11%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.21250	0.21000	0.19375	0.25200	0.14800

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.80000	0.90000	0.80000	1.00000	1.00000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	18-0960-7012	18-0960-7012	03 Apr-06 11:51 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	11.96%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.31778	1.85955	0.3794	0.16607	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0020135	0.002013	1	0.10	0.75879	Non-Significant Effect
Error	0.159512	0.019939	8			
Total	0.16152545	0.0219525	9			

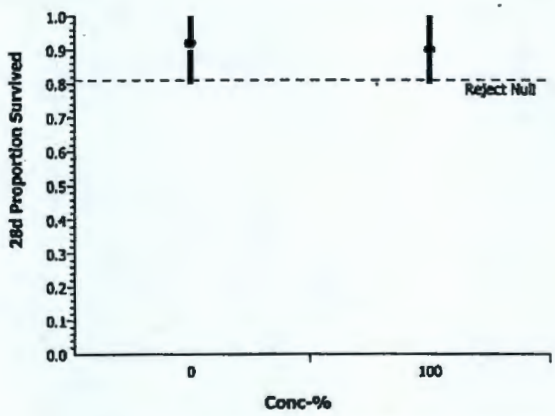
ANOVA Assumptions

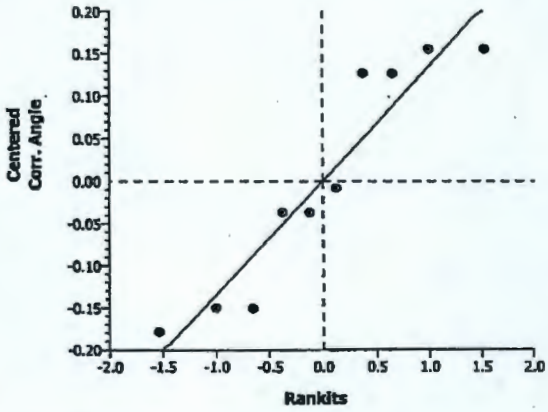
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.39943	23.15450	0.75260	Equal Variances
Distribution	Shapiro-Wilk W	0.86706		0.09235	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.90000	0.80000	1.00000	0.10000	1.25748	1.10715	1.41202	0.15251

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	18-0960-7012	18-0960-7012	03 Apr-06 11:51 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	24.75%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-2.3437	1.85955	0.9764	0.03834	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0058376	0.005838	1	5.49	0.04715	Significant Effect
Error	0.0085023	0.001063	8			
Total	0.01433985	0.0069004	9			

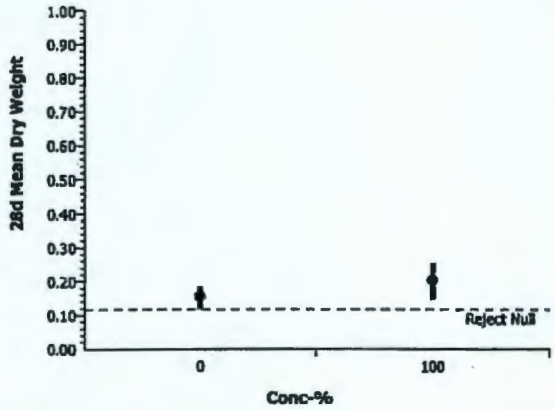
ANOVA Assumptions

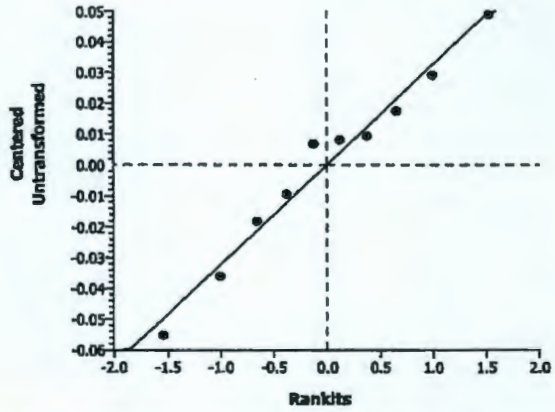
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.98142	23.15450	0.52407	Equal Variances
Distribution	Shapiro-Wilk W	0.97630		0.94232	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.20325	0.14800	0.25200	0.03758				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:53 AM
Test Link: 07-3986-6152/B153812hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	05-8853-3368	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	07-8236-0691	**Code:**	B1538-12	**Client:**	
Sample Date:	12 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	19d 0h	**Station:**			

Comments: J116M5

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
04-4298-5108	28d Mean Dry Weight	100	> 100	N/A	24.32%	Equal Variance t Two-Sample
10-7357-0662	28d Proportion Survived	100	> 100	N/A	31.03%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
10-7357-0662	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.14524	0.09778	0.20000	0.01637	0.03659	25.20%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.66000	0.10000	1.00000	0.15684	0.35071	53.14%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.14143	0.13700	0.15000	0.09778	0.20000

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.70000	1.00000	0.60000	0.90000	0.10000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	07-3986-6152	07-3986-6152	03 Apr-06 11:53 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1 .	N/A	31.03%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	1.60219	1.85955	0.0739	0.36426	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.2462471	0.246247	1	2.57	0.14778	Non-Significant Effect
Error	0.7674216	0.095928	8			
Total	1.01366873	0.3421748	9			

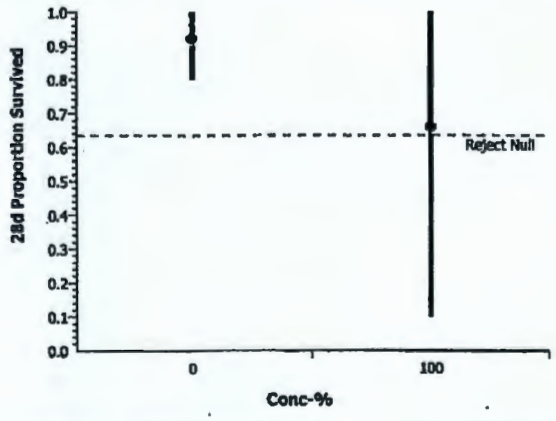
ANOVA Assumptions

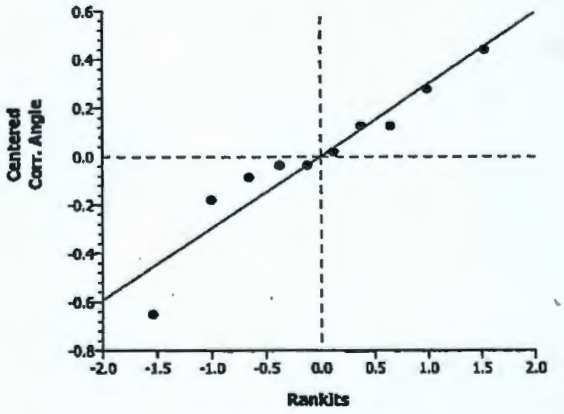
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	10.54382	23.15450	0.04242	Equal Variances
Distribution	Shapiro-Wilk W	0.92634		0.41284	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.66000	0.10000	1.00000	0.35071	0.97201	0.32175	1.41202	0.41861

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	07-3986-6152	07-3986-6152	03 Apr-06 11:53 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	24.32%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.47814	1.85955	0.3227	0.03767	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0002346	0.000235	1	0.23	0.64534	Non-Significant Effect
Error	0.0082082	0.001026	8			
Total	0.00844275	0.0012606	9			

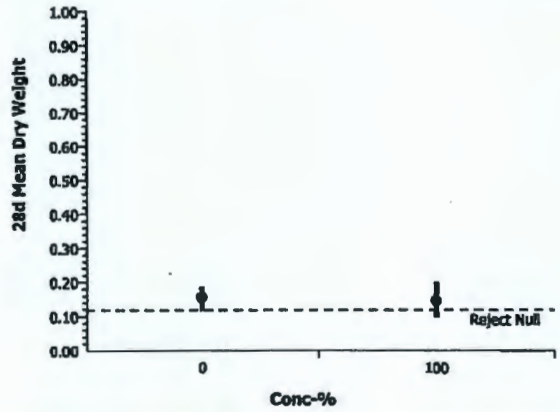
ANOVA Assumptions

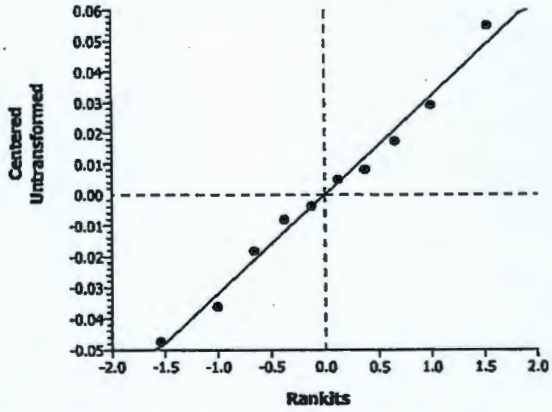
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.87830	23.15450	0.55649	Equal Variances
Distribution	Shapiro-Wilk W	0.98857		0.99476	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.14524	0.09778	0.20000	0.03659				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:54 AM
Test Link: 10-9051-1643/B153813hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	04-7058-7436	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	07-7208-3847	**Code:**	B1538-13	**Client:**	
Sample Date:	12 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	19d 0h	**Station:**			

Comments: J116M8

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
15-0716-5698	28d Mean Dry Weight	< 100	100	N/A	14.78%	Equal Variance t Two-Sample
07-1605-4415	28d Proportion Survived	< 100	100	N/A	19.71%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
07-1605-4415	28d Proportion Survived	Control Response	0.92	0.8.- NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.09185	0.08333	0.10000	0.00300	0.00671	7.30%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.48000	0.20000	0.80000	0.11576	0.25884	53.93%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.08333	0.09714	0.08875	0.09000	0.10000

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.30000	0.70000	0.80000	0.20000	0.40000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	10-9051-1643	10-9051-1643	03 Apr-06 11:54 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	19.71%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	3.84671	1.85955	0.0025	0.25166	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.6775404	0.677540	1	14.80	0.00490	Significant Effect
Error	0.3663079	0.045788	8			
Total	1.04384834	0.7233289	9			

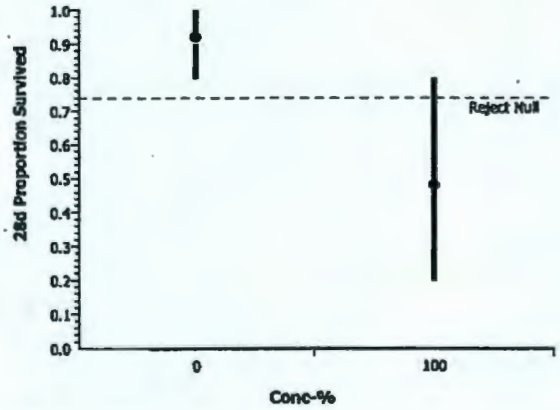
ANOVA Assumptions

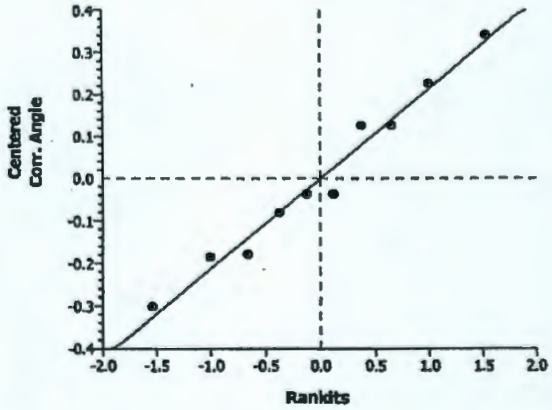
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	4.51013	23.15450	0.17371	Equal Variances
Distribution	Shapiro-Wilk W	0.96742		0.86593	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.48000	0.20000	0.80000	0.25884	0.76526	0.46365	1.10715	0.27378

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	10-9051-1643	10-9051-1643	03 Apr-06 11:54 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	14.78%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	5.12363	1.85955	0.0005	0.02289	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0099485	0.009949	1	26.25	0.00090	Significant Effect
Error	0.0030318	0.000379	8			
Total	0.01298027	0.0103275	9			

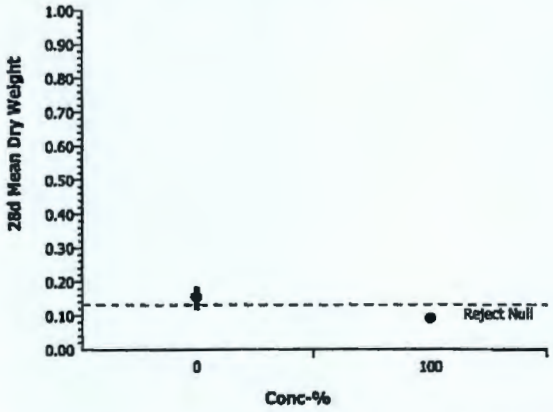
ANOVA Assumptions

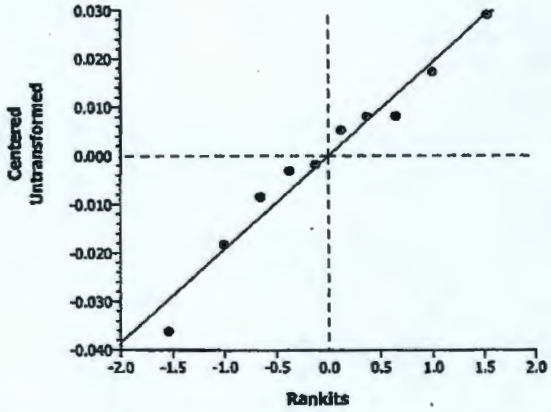
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	15.84299	23.15450	0.02031	Equal Variances
Distribution	Shapiro-Wilk W	0.97475		0.93103	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.09185	0.08333	0.10000	0.00671				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:11 PM
Test Link: 03-9071-6824/B153814hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	05-4024-8518	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	17-7674-4055	**Code:**	B1538-14	**Client:**	
Sample Date:	13 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	15 Feb-06	**Source:**	Hanford		
Sample Age:	18d 0h	**Station:**			

Comments: J11752

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
09-6950-3056	28d Mean Dry Weight	100	> 100	N/A	34.53%	Equal Variance t Two-Sample
06-9264-3537	28d Proportion Survived	100	> 100	N/A	16.20%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
06-9264-3537	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.24225	0.17625	0.29333	0.02617	0.05852	24.16%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.86000	0.60000	1.00000	0.07483	0.16733	19.46%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.29333	0.17625	0.28667	0.18100	0.27400

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.60000	0.80000	0.90000	1.00000	1.00000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	03-9071-6824	03-9071-6824	03 Apr-06 1:11 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	16.20%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.63056	1.85955	0.2730	0.21408	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0131746	0.013175	1	0.40	0.54591	Non-Significant Effect
Error	0.2650759	0.033134	8			
Total	0.27825049	0.0463091	9			

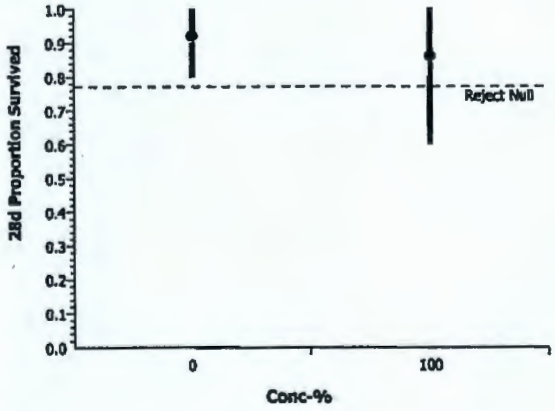
ANOVA Assumptions

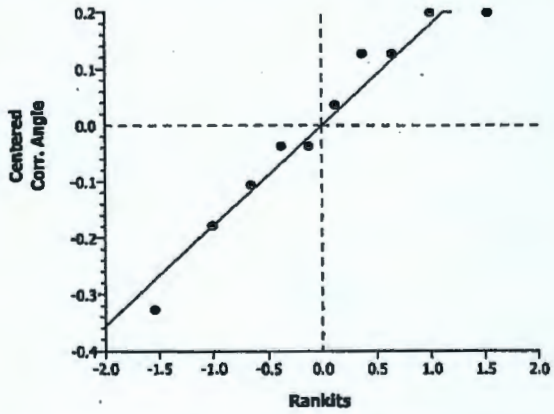
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.98736	23.15450	0.31428	Equal Variances
Distribution	Shapiro-Wilk W	0.93793		0.53025	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.86000	0.60000	1.00000	0.16733	1.21326	0.88608	1.41202	0.22282

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	03-9071-6824	03-9071-6824	03 Apr-06 1:11 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	34.53%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-3.0356	1.85955	0.9919	0.05349	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0190629	0.019063	1	9.21	0.01617	Significant Effect
Error	0.0165497	0.002069	8			
Total	0.03561266	0.0211316	9			

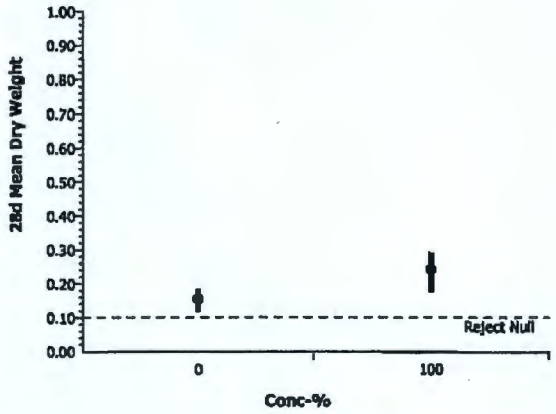
ANOVA Assumptions

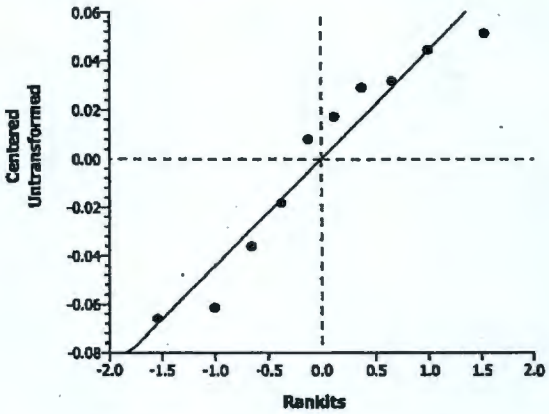
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	4.80336	23.15450	0.15769	Equal Variances
Distribution	Shapiro-Wilk W	0.90934		0.27648	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.24225	0.17625	0.29333	0.05852				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:13 PM
Test Link: 18-9187-0962/B153815hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	04-0661-8839	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	15-5914-3374	**Code:**	B1538-15	**Client:**	
Sample Date:	13 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	16 Feb-06	**Source:**	Hanford		
Sample Age:	18d 0h	**Station:**			

Comments: J11745

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
15-7631-5703	28d Mean Dry Weight	100	> 100	N/A	36.04%	Equal Variance t Two-Sample
02-4818-1490	28d Proportion Survived	100	> 100	N/A	10.74%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
02-4818-1490	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.20196	0.11000	0.27100	0.02755	0.06160	30.50%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.17556	0.27100	0.22200	0.11000	0.23125

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.90000	1.00000	1.00000	0.90000	0.80000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M HILL**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	18-9187-0962	18-9187-0962	03 Apr-06 1:12 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	10.74%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0	1.85955	0.5000	0.15162	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0	0	1	0.00	1.00000	Non-Significant Effect
Error	0.1329581	0.01662	8			
Total	0.13295805	0.0166198	9			

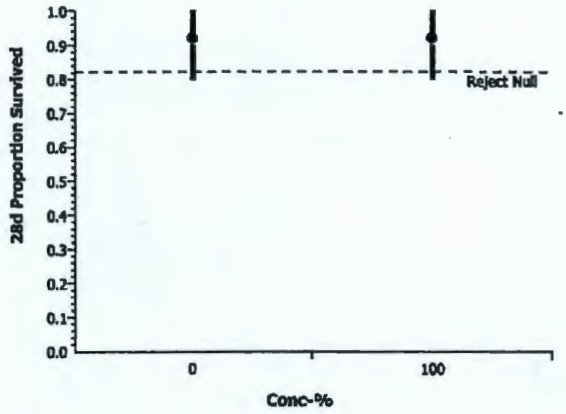
ANOVA Assumptions

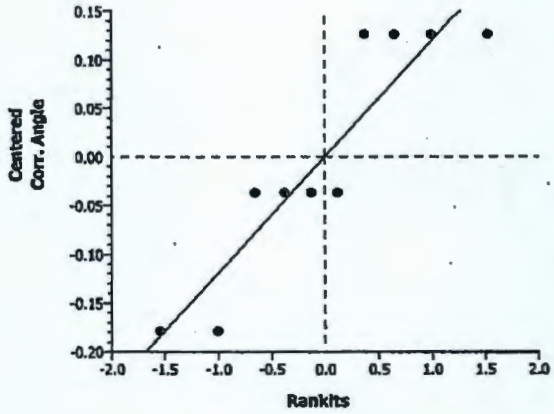
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.00000	23.15450	1.00000	Equal Variances
Distribution	Shapiro-Wilk W	0.81976		0.02518	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892

Graphics





CETIS Analysis Detail

Hyalleta 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	18-9187-0962	18-9187-0962	03 Apr-06 1:13 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	36.04%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-1.5664	1.85955	0.9221	0.05584	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0055303	0.005530	1	2.45	0.15589	Non-Significant Effect
Error	0.0180316	0.002254	8			
Total	0.02356195	0.0077843	9			

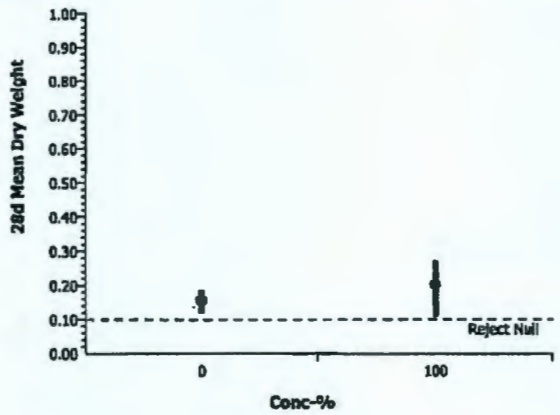
ANOVA Assumptions

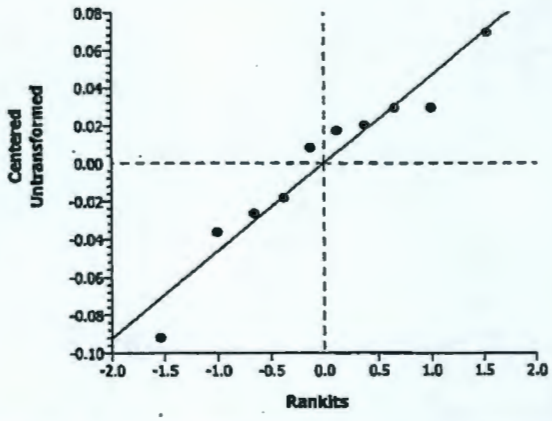
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	5.32300	23.15450	0.13425	Equal Variances
Distribution	Shapiro-Wilk W	0.94981		0.66628	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.20196	0.11000	0.27100	0.06160				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:21 PM
Test Link: 07-9636-6499/B153816hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	06-7076-9416	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	08-4620-2188	**Code:**	B1538-16	**Client:**	
Sample Date:	13 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	16 Feb-06	**Source:**	Hanford		
Sample Age:	18d 0h	**Station:**			

Comments: J11750

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
06-0854-1968	28d Mean Dry Weight	100	> 100	N/A	16.48%	Equal Variance t Two-Sample
19-4920-7982	28d Proportion Survived	100	> 100	N/A	9.00%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
19-4920-7982	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.26629	0.24900	0.28333	0.00678	0.01516	5.69%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.96000	0.90000	1.00000	0.02449	0.05477	5.71%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.26111	0.28333	0.24900	0.28100	0.25700

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.90000	0.90000	1.00000	1.00000	1.00000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	07-9636-6499	07-9636-6499	03 Apr-06 1:21 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	9.00%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-0.8695	1.85955	0.7950	0.13040	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0092944	0.009294	1	0.76	0.40990	Non-Significant Effect
Error	0.0983502	0.012294	8			
Total	0.10764464	0.0215882	9			

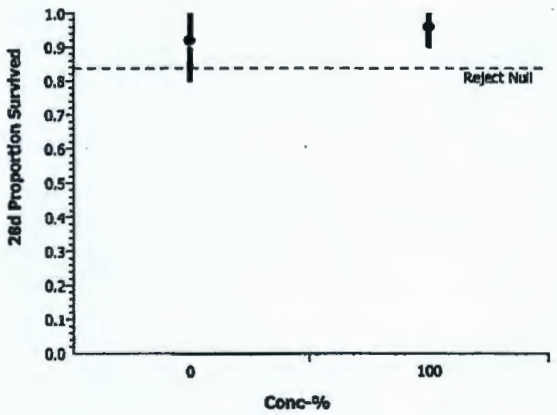
ANOVA Assumptions

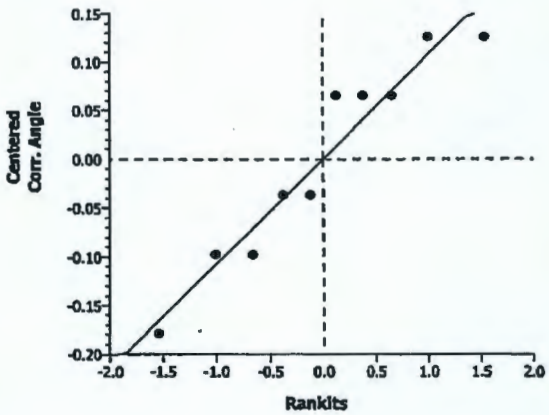
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.08587	23.15450	0.49396	Equal Variances
Distribution	Shapiro-Wilk W	0.91585		0.32364	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.96000	0.90000	1.00000	0.05477	1.34683	1.24905	1.41202	0.08926

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	07-9636-6499	07-9636-6499	03 Apr-06 1:21 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	16.48%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-8.1103	1.85955	1.0000	0.02553	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0310032	0.031003	1	65.78	0.00004	Significant Effect
Error	0.0037707	0.000471	8			
Total	0.03477391	0.0314746	9			

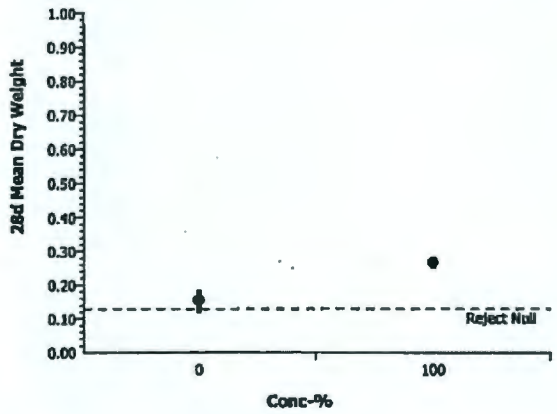
ANOVA Assumptions

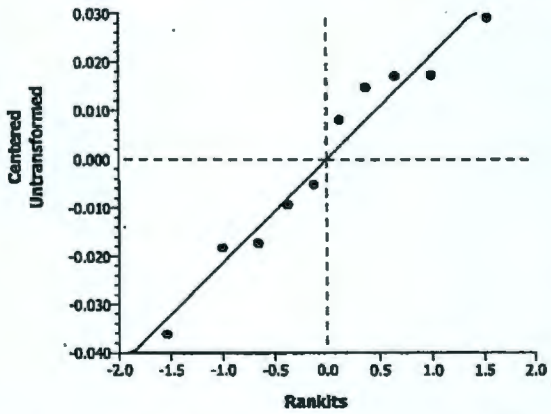
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.10335	23.15450	0.29845	Equal Variances
Distribution	Shapiro-Wilk W	0.95375		0.71294	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.26629	0.24900	0.28333	0.01516				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:23 PM
Test Link: 15-5218-8115/B153817hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	07-9913-7686	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	04-9993-8635	**Code:**	B1538-17	**Client:**	
Sample Date:	13 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	16 Feb-06	**Source:**	Hanford		
Sample Age:	18d 0h	**Station:**			

Comments: J11751

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
03-9229-7789	28d Mean Dry Weight	100	> 100	N/A	24.68%	Equal Variance t Two-Sample
12-1201-2816	28d Proportion Survived	100	> 100	N/A	16.20%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
12-1201-2816	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.27166	0.23700	0.32500	0.01674	0.03742	13.78%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.86000	0.60000	1.00000	0.07483	0.16733	19.46%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.29100	0.32500	0.26778	0.23700	0.23750

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		1.00000	0.60000	0.90000	1.00000	0.80000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	15-5218-8115	15-5218-8115	03 Apr-06 1:23 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	16.20%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.63056	1.85955	0.2730	0.21408	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0131746	0.013175	1	0.40	0.54591	Non-Significant Effect
Error	0.2650759	0.033134	8			
Total	0.27825049	0.0463091	9			

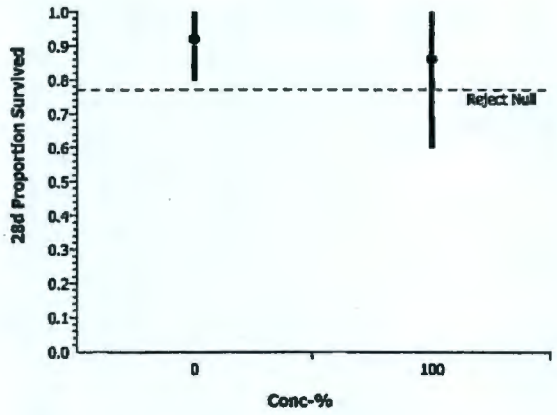
ANOVA Assumptions

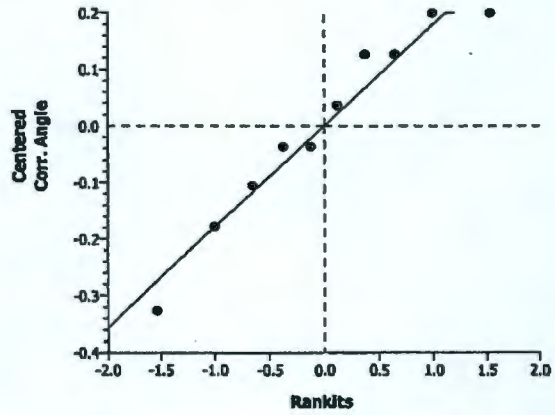
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.98736	23.15450	0.31428	Equal Variances
Distribution	Shapiro-Wilk W	0.93793		0.53025	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.86000	0.60000	1.00000	0.16733	1.21326	0.88608	1.41202	0.22282

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	15-5218-8115	15-5218-8115	03 Apr-06 1:23 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	24.68%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-5.6774	1.85955	0.9998	0.03823	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0340634	0.034063	1	32.23	0.00047	Significant Effect
Error	0.0084542	0.001057	8			
Total	0.04251765	0.0351202	9			

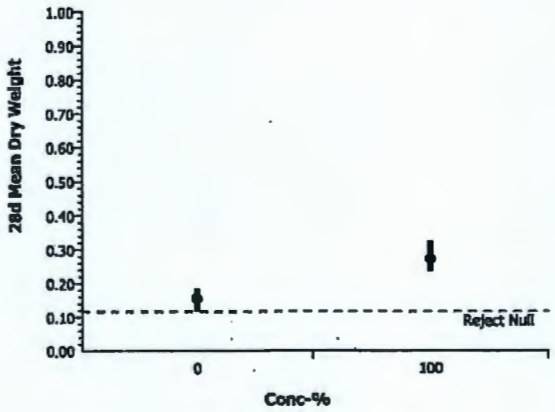
ANOVA Assumptions

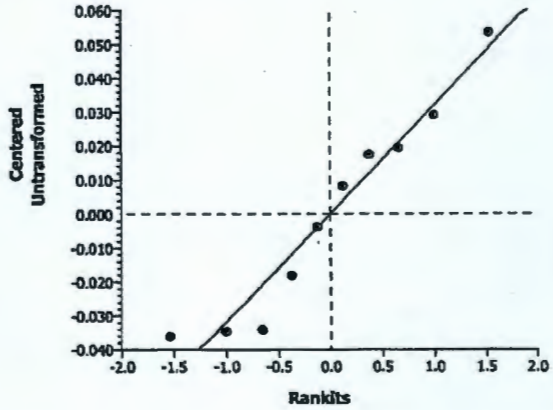
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.96457	23.15450	0.52917	Equal Variances
Distribution	Shapiro-Wilk W	0.92931		0.44111	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.27166	0.23700	0.32500	0.03742				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:24 PM
Test Link: 16-4806-3689/B153818hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	00-8319-1240	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	10-7892-3159	**Code:**	B1538-18	**Client:**	
Sample Date:	13 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	16 Feb-06	**Source:**	Hanford		
Sample Age:	18d 0h	**Station:**			

Comments: J11753

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
08-1993-6975	28d Mean Dry Weight	100	> 100	N/A	30.32%	Equal Variance t Two-Sample
13-8643-8444	28d Proportion Survived	100	> 100	N/A	21.63%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
13-8643-8444	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.19787	0.14600	0.27000	0.02226	0.04979	25.16%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.76000	0.40000	1.00000	0.11225	0.25100	33.03%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.22000	0.27000	0.14600	0.15889	0.19444

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.60000	0.40000	1.00000	0.90000	0.90000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	16-4806-3689	16-4806-3689	03 Apr-06 1:24 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	21.63%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	1.299	1.85955	0.1151	0.27152	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0899403	0.089940	1	1.69	0.23013	Non-Significant Effect
Error	0.4264106	0.053301	8			
Total	0.51635087	0.1432416	9			

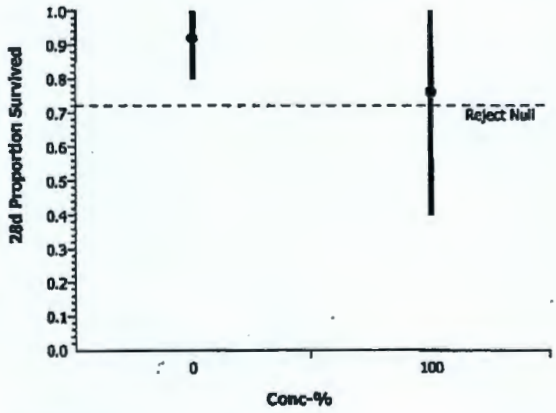
ANOVA Assumptions

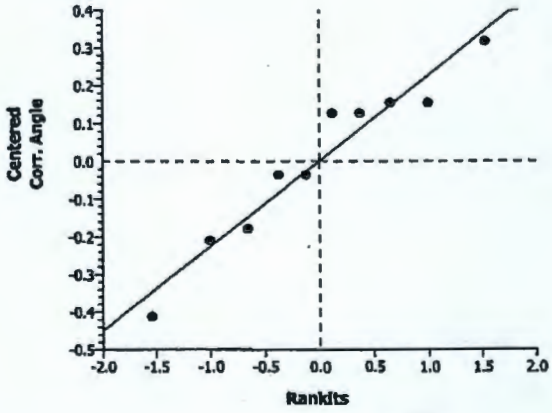
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	5.41421	23.15450	0.13068	Equal Variances
Distribution	Shapiro-Wilk W	0.94349		0.59249	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.76000	0.40000	1.00000	0.25100	1.09618	0.68472	1.41202	0.29997

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	16-4806-3689	16-4806-3689	03 Apr-06 1:24 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	30.32%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-1.6996	1.85955	0.9362	0.04698	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0046094	0.004609	1	2.89	0.12764	Non-Significant Effect
Error	0.0127660	0.001596	8			
Total	0.01737537	0.0062051	9			

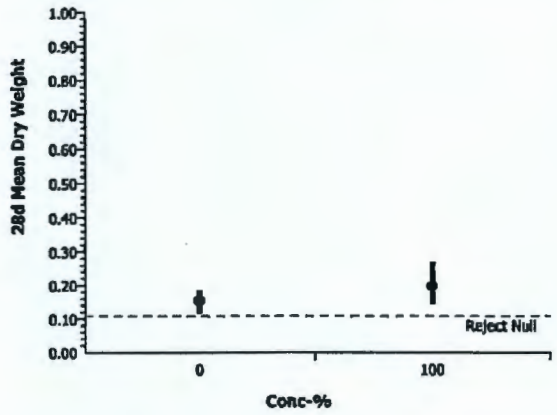
ANOVA Assumptions

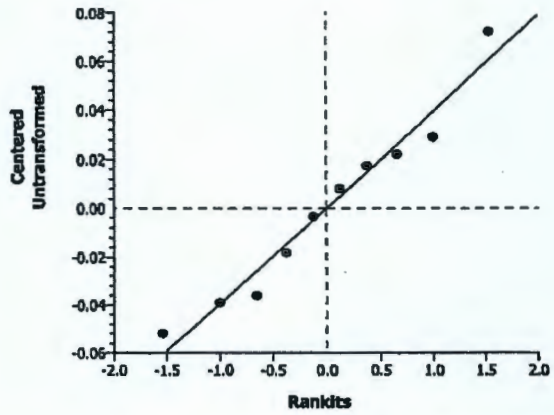
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.47655	23.15450	0.25482	Equal Variances
Distribution	Shapiro-Wilk W	0.96258		0.81487	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.19787	0.14600	0.27000	0.04979				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:26 PM
Test Link: 04-6974-1088/B153819hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	11-0180-6207	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	09-0498-8214	**Code:**	B1538-19	**Client:**	
Sample Date:	19 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	22 Feb-06	**Source:**	Hanford		
Sample Age:	12d 0h	**Station:**			

Comments: J11746

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
05-9913-7511	28d Mean Dry Weight	100	> 100	N/A	24.10%	Equal Variance t Two-Sample
14-7521-2699	28d Proportion Survived	100	> 100	N/A	17.47%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
14-7521-2699	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.24888	0.20667	0.28900	0.01614	0.03609	14.50%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.84000	0.60000	1.00000	0.08124	0.18166	21.63%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.23000	0.28429	0.20667	0.28900	0.23444

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		1.00000	0.70000	0.60000	1.00000	0.90000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	04-6974-1088	04-6974-1088	03 Apr-06 1:26 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	17.47%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.78155	1.85955	0.2285	0.22792	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0229403	0.022940	1	0.61	0.45699	Non-Significant Effect
Error	0.3004555	0.037557	8			
Total	0.32339588	0.0604973	9			

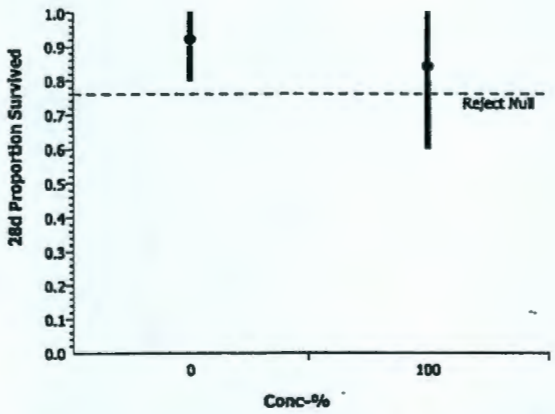
ANOVA Assumptions

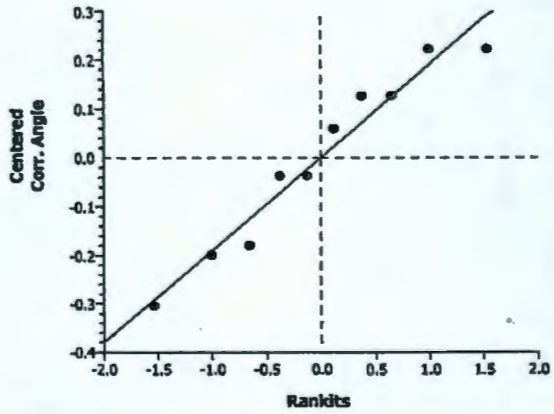
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.51955	23.15450	0.25041	Equal Variances
Distribution	Shapiro-Wilk W	0.93276		0.47556	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.84000	0.60000	1.00000	0.18166	1.19006	0.88608	1.41202	0.24186

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	04-6974-1088	04-6974-1088	03 Apr-06 1:26 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	24.10%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-4.6796	1.85955	0.9992	0.03733	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0220673	0.022067	1	21.90	0.00158	Significant Effect
Error	0.0080617	0.001008	8			
Total	0.03012899	0.023075	9			

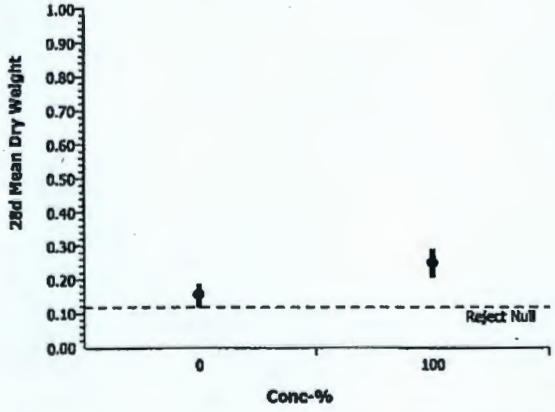
ANOVA Assumptions

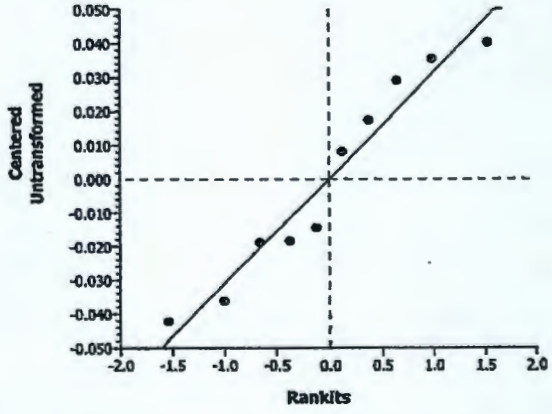
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.82694	23.15450	0.57373	Equal Variances
Distribution	Shapiro-Wilk W	0.92450		0.39606	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.24888	0.20667	0.28900	0.03609				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:27 PM
Test Link: 12-5478-1561/B153820hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	08-0778-1926	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	09-6338-6368	**Code:**	B1538-20	**Client:**	
Sample Date:	19 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	22 Feb-06	**Source:**	Hanford		
Sample Age:	12d 0h	**Station:**			

Comments: J11747

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
11-4178-9063	28d Mean Dry Weight	100	> 100	N/A	29.36%	Equal Variance t Two-Sample
17-8598-7966	28d Proportion Survived	100	> 100	N/A	16.55%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
17-8598-7966	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.23736	0.19700	0.31333	0.02135	0.04773	20.11%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.90000	0.60000	1.00000	0.07746	0.17321	19.25%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.31333	0.25444	0.20700	0.21500	0.19700

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.60000	0.90000	1.00000	1.00000	1.00000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	12-5478-1561	12-5478-1561	03 Apr-06 1:27 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	16.55%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.09915	1.85955	0.4617	0.21794	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0003376	0.000338	1	0.01	0.92346	Non-Significant Effect
Error	0.274731	0.034341	8			
Total	0.27506853	0.0346789	9			

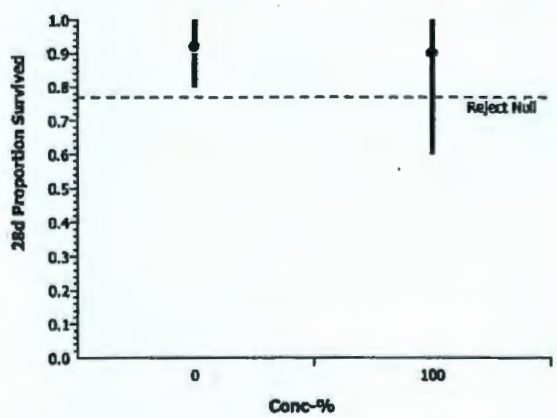
ANOVA Assumptions

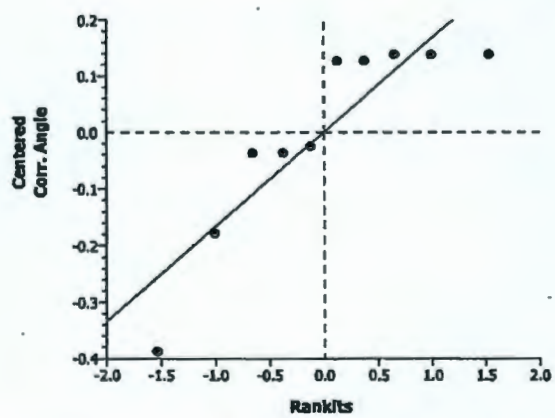
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.13260	23.15450	0.29465	Equal Variances
Distribution	Shapiro-Wilk W	0.80186		0.01527	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.90000	0.60000	1.00000	0.17321	1.27423	0.88608	1.41202	0.22817

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	12-5478-1561	12-5478-1561	03 Apr-06 1:27 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	29.36%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-3.3699	1.85955	0.9951	0.04549	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0169859	0.016986	1	11.36	0.00979	Significant Effect
Error	0.0119662	0.001496	8			
Total	0.02895204	0.0184816	9			

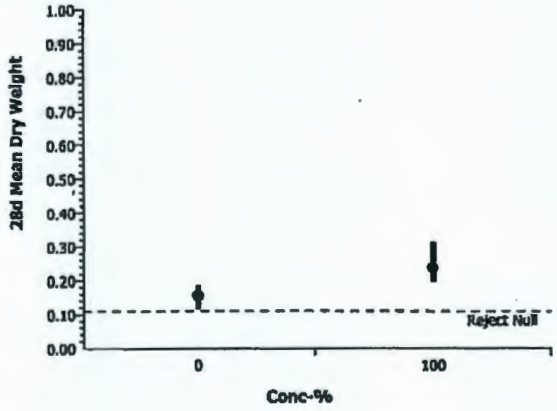
ANOVA Assumptions

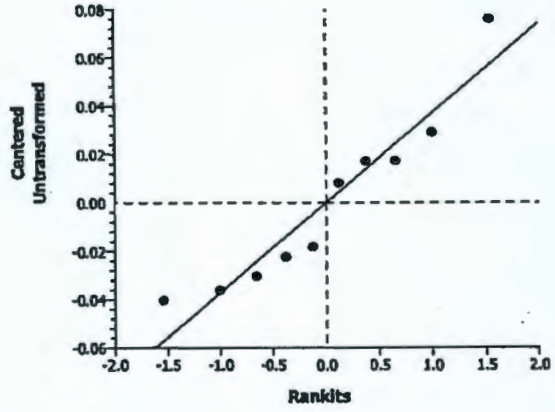
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.19609	23.15450	0.28663	Equal Variances
Distribution	Shapiro-Wilk W	0.90945		0.27726	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.23736	0.19700	0.31333	0.04773				

Graphics





RANDOMIZATION SHEET

Client: W C Hanford **Test Start Date:** 3/~~7~~10/2006

Laboratory ID:	Field ID:	Alternate ID:	Replicate ID:	Random Number	Test Chamber Number:
B1538-21	J11748	0	A	0.77722	120
B1538-21	J11748	0	B	0.80534	115
B1538-21	J11748	0	C	0.41510	153
B1538-21	J11748	0	D	0.66210	130
B1538-21	J11748	0	E	0.33968	162
B1538-22	J11749	0	A	0.11991	187
B1538-22	J11749	0	B	0.36409	159
B1538-22	J11749	0	C	0.14229	184
B1538-22	J11749	0	D	0.15949	178
B1538-22	J11749	0	E	0.67897	128
B1538-23	J112B3	0	A	0.67932	127
B1538-23	J112B3	0	B	0.14433	183
B1538-23	J112B3	0	C	0.77898	119
B1538-23	J112B3	0	D	0.26711	168
B1538-23	J112B3	0	E	0.38976	156
B1538-24	J112B4	0	A	0.15170	180
B1538-24	J112B4	0	B	0.21992	170
B1538-24	J112B4	0	C	0.04799	192
B1538-24	J112B4	0	D	0.29347	165
B1538-24	J112B4	0	E	0.18419	176
B1538-25	J112B5	0	A	0.44745	150
B1538-25	J112B5	0	B	0.60233	135
B1538-25	J112B5	0	C	0.68737	126
B1538-25	J112B5	0	D	0.86170	112
B1538-25	J112B5	0	E	0.60213	136
B1538-26	J112B6	0	A	0.03887	193
B1538-26	J112B6	0	B	0.53073	144
B1538-26	J112B6	0	C	0.18627	174
B1538-26	J112B6	0	D	0.26793	167
B1538-26	J112B6	0	E	0.57665	139
B1538-27	J116M6	0	A	0.14200	185
B1538-27	J116M6	0	B	0.18534	175
B1538-27	J116M6	0	C	0.21883	171
B1538-27	J116M6	0	D	0.65459	131
B1538-27	J116M6	0	E	0.15121	181
B1538-28	J116M7	0	A	0.02412	194
B1538-28	J116M7	0	B	0.29740	164
B1538-28	J116M7	0	C	0.15401	179
B1538-28	J116M7	0	D	0.37924	157
B1538-28	J116M7	0	E	0.78017	118
B1538-29	J11734	0	A	0.52356	145
B1538-29	J11734	0	B	0.20426	173
B1538-29	J11734	0	C	0.12353	186
B1538-29	J11734	0	D	0.16117	177
B1538-29	J11734	0	E	0.72065	123
B1538-30	J116X2	0	A	0.43347	151
B1538-30	J116X2	0	B	0.21529	172
B1538-30	J116X2	0	C	0.34574	161
B1538-30	J116X2	0	D	0.36633	158
B1538-30	J116X2	0	E	0.78884	117

RANDOMIZATION SHEET

Client: W C Hanford **Test Start Date:** 3/7/2006 10 d

Laboratory ID:	Field ID:	Alternate ID:	Replicate ID:	Random Number	Test Chamber Number:
B1538-31	J116W9	0	A	0.28754	166
B1538-31	J116W9	0	B	0.63973	132
B1538-31	J116W9	0	C	0.99013	107
B1538-31	J116W9	0	D	0.81927	113
B1538-31	J116W9	0	E	0.40286	154
B1538-32	J116X0	0	A	0.91056	111
B1538-32	J116X0	0	B	0.91093	110
B1538-32	J116X0	0	C	0.01986	195
B1538-32	J116X0	0	D	0.56546	141
B1538-32	J116X0	0	E	0.48624	148
B1538-33	J116X1	0	A	0.71173	124
B1538-33	J116X1	0	B	0.22590	169
B1538-33	J116X1	0	C	0.56171	142
B1538-33	J116X1	0	D	0.48425	149
B1538-33	J116X1	0	E	0.99508	106
B1538-34	J116X3	0	A	0.62470	133
B1538-34	J116X3	0	B	0.51133	146
B1538-34	J116X3	0	C	0.76548	121
B1538-34	J116X3	0	D	0.54237	143
B1538-34	J116X3	0	E	0.58468	138
B1538-35	J116X6	0	A	0.80880	114
B1538-35	J116X6	0	B	0.80234	116
B1538-35	J116X6	0	C	0.66472	129
B1538-35	J116X6	0	D	0.31860	163
B1538-35	J116X6	0	E	0.07865	189
B1538-36	J116W7	0	A	0.75143	122
B1538-36	J116W7	0	B	0.14785	182
B1538-36	J116W7	0	C	0.05140	191
B1538-36	J116W7	0	D	0.50906	147
B1538-36	J116W7	0	E	0.61211	134
B1538-37	J116W8	0	A	0.07126	190
B1538-37	J116W8	0	B	0.94188	108
B1538-37	J116W8	0	C	0.41682	152
B1538-37	J116W8	0	D	0.08615	188
B1538-37	J116W8	0	E	0.39196	155
Sediment Control	Beaver Creek	Control	A	0.36170	160
Sediment Control	Beaver Creek	Control	B	0.57601	140
Sediment Control	Beaver Creek	Control	C	0.59855	137
Sediment Control	Beaver Creek	Control	D	0.92017	109
Sediment Control	Beaver Creek	Control	E	0.68871	125

TITRATION AND AMMONIA DATA

Client: Washington Closure Hanford — Species ID#: AMP 57

Sample Description: See Randomization Sheet. — Start Date: March 10, 2006

Laboratory ID	Hardness (mg/L as $CaCO_3$)		Alkalinity (mg/L as $CaCO_3$)		Ammonia (mg/L as NH_3-N)	
	Initial	Final	Initial	Final	Initial	Final
Sediment Control	86	110	68	76	0.21	0.22
B1538-21	92	106	68	74	0.29	0.07
B1538-22	104	114	78	82	0.10	0.04
B1538-23	98	112	70	74	0.11	0.12
B1538-24	98	116	72	74	0.10	0.09
B1538-25	104	110	78	78	0.10	0.12
B1538-26	108	104	84	80	0.10	0.08
B1538-27	98	108	76	86	0.16	0.14
B1538-28	114	118	80	84	0.10	0.09
B1538-29	104	104	84	78	0.10	0.13
B1538-30	110	110	80	80	0.14	0.28
B1538-31	106	108	76	80	0.21	0.09
B1538-32	108	102	80	82	0.13	0.16
B1538-33	106	104	82	78	~~0.11~~ 0.13	0.18
B1538-34	102	116	74	76	0.12	0.09
B1538-35	134	112	110	~~78~~ 80MS	0.29	0.63
B1538-36	104	108	80	78	0.13	0.09
B1538-37	104	104	80	78	0.11	0.16

FRESHWATER FORCIPT TEST SURVIVAL AND WATER QUALITY DATA

Client: Washington Closure Hanford
Sample Description: See Cross Reference Sheet batch Number B
Test Species: Hyallela azteca
ID#: Amp 57

Beginning, Date: 3-10-06 Time: 1110
Ending, Date: 4-7-06 Time: 1200

	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9
AM change: Tech.	Bm	(illegible)	(illegible)	MS	MS	DW	DW	DW	(TP)	(TP)
AM change: Time	0730	0700	0705	0740	0700	0645	0710	0700	0700	0650
PM change: Tech.	Bm	(TP)	(TP)	NT	Bm	Bm	Bm	Bm	MN	MN
PM change: Time	1745	1780	1620	1650	1750	1745	1710	1720	1840	1745
Feeding: ✓ when done	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Beaker Number	Dissolved Oxygen (mg/l) 0	1	2	3	4	5	6	7	8	9	Temperature (°C) 0	1	2	3	4	5	6	7	8	9	pH 0	3	6	9	Conductivity (µmohs/cm) 0	7
111	7.7			7.6			7.7			7.8	23.6	22.6	21.9	23.6	23.6	22.7	23.6	22.6	22.6	22.9	7.2	7.2	7.2	6.9	293	294
114	6.5			6.3			6.8			6.9	23.2	22.4	21.9	23.7	23.6	22.4	23.5	22.9	22.9	22.9	7.1	7.3	7.1	6.8	325	316
120	8.1			7.4			7.4			7.5	23.5	22.5	22.0	23.7	23.9	22.3	23.8	22.5	23.0	23.3	7.4	7.4	7.3	7.1	289	284
122	7.7			7.6			7.4			7.2	23.3	22.1	22.1	24.9	23.9	22.4	24.1	22.6	23.4	22.8	7.4	7.4	7.3	7.1	298	292
124	7.7			7.3			7.4			7.2	23.5	22.0	21.9	23.9	24.0	22.4	23.6	22.8	23.2	23.3	7.2	7.3	7.2	7.0	297	299
127	7.9			7.6			7.4			7.2	23.2	22.4	21.8	23.8	23.9	22.5	23.7	23.0	23.4	23.3	7.3	7.3	7.3	7.1	291	284
133	7.9			7.5			7.4			7.2	23.5	21.9	22.0	23.7	23.9	22.3	23.5	22.6	23.4	23.2	7.6	7.4	7.3	7.2	296	286
145	8.0			7.5			7.3			7.2	23.5	21.9	22.4	23.6	24.0	22.5	23.8	22.7	23.5	23.7	7.7	7.4	7.3	7.1	280	299
150	7.9			7.6			7.5			7.5	23.5	21.8	22.1	23.9	24.1	22.4	24.0	22.6	23.4	23.7	7.8	7.5	7.5	7.3	279	303
151	7.6			7.2			7.2			7.3	23.7	22.0	21.7	23.4	24.0	22.4	24.1	22.9	23.4	23.4	7.2	7.4	7.2	7.1	295	295
160	7.6			7.2			7.1			7.2	23.4	21.6	21.4	23.6	24.2	22.5	23.8	23.0	23.5	23.8	7.5	7.4	7.4	7.3	366	324
166	8.0			7.5			7.4			7.5	23.9	22.4	21.5	23.7	24.1	22.6	24.1	23.3	23.6	23.5	7.7	7.4	7.4	7.3	299	287
180	7.9			7.5			7.3			7.5	23.7	22.0	21.6	24.0	24.1	22.5	24.1	22.9	23.5	23.8	7.4	7.3	7.3	7.2	288	281
185	7.8			7.3			7.1			7.2	23.7	21.7	21.6	24.1	24.0	22.7	24.0	23.2	23.5	23.7	7.2	7.2	7.3	7.1	307	297
187	7.7			7.0			7.2			7.3	23.9	21.9	22.0	24.0	24.3	22.4	23.9	23.4	23.6	23.6	7.5	7.3	7.3	7.2	316	298
190	7.8			6.9			7.1			7.1	23.8	22.0	22.1	24.0	24.1	22.6	24.1	23.2	23.4	23.4	7.5	7.3	7.3	7.2	297	291
193	7.6			7.4			7.1			7.1	23.9	22.1	22.1	24.2	24.1	22.6	24.0	23.5	23.3	23.4	7.6	7.4	7.4	7.3	307	302
194	7.8			7.3			7.2			7.3	23.8	22.1	21.7	24.1	24.2	22.6	23.7	23.0	23.3	23.5	7.7	7.3	7.5	7.3	296	300

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client _____ Beginning, Date 3-10-06 Time 1110

Sample Description See Cross Reference Sheet batch Number B Ending, Date 4-7-06 Time 1200

Test Species: Hyallela azteca

ID#: Amp 57

	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19
AM change: Tech.	MS	DW	DW	MS	TB/DW	DW	DW	MS	MS/TB	TB
Time	0640	0700	0700	0700	0700	0710	0700	0700	0700	0700
PM change: Tech.	Bm	Bm	Bm	DW	Bm	TB	TB	NJ	Bm	NJ
Time	1715	1700	1650	1655	1725	1725	1720	1640	1700	1640
Feeding: ✓ when done	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Beaker Number	Dissolved Oxygen (mg/l) 10	11	12	13	14	15	16	17	18	19	Temperature (°C) 10	11	12	13	14	15	16	17	18	19	pH 12	15	18	~~19~~	Conductivity (µmohs/cm) 14
111			7.4			6.8			5.9		22.8	22.6	23.2	23.4	22.8	23.0	22.9	23.2	23.5	23.6	7.2	7.3	7.0		320
114			7.4			5.3			6.2		23.0	22.5	23.0	23.3	23.2	23.1	23.0	23.3	23.7	23.8	7.0	7.0	7.0		340
120			7.5			6.0			6.5		22.8	22.4	23.0	23.4	23.6	22.9	23.0	23.2	23.5	24.0	7.1	7.1	7.2		318
122			7.4			6.1			6.0		23.0	22.7	23.3	23.4	23.6	22.7	22.7	23.4	23.8	23.8	7.1	7.2	7.0		334
124			7.3			6.3			6.2		22.8	22.7	23.2	23.5	23.5	23.7	22.9	23.6	23.7	24.0	7.1	7.1	7.1		335
127			7.5			5.9			6.2		23.0	22.7	23.5	23.6	23.7	23.2	23.2	23.7	23.8	23.9	7.2	7.2	7.1		320
133			7.5			6.2			7.0		23.0	23.1	23.4	23.7	23.8	23.0	23.1	23.8	24.0	24.0	7.3	7.3	7.2		319
145			7.4			6.7			7.1		23.1	22.9	23.5	23.2	23.6	22.7	22.8	23.9	24.0	24.0	7.2	7.2	7.2		331
150			7.4			6.0			7.1		22.6	22.8	23.2	23.4	23.8	22.9	22.6	24.0	23.8	24.0	7.5	7.5	7.3		348
151			7.3			6.3			4.9		22.7	22.6	23.4	23.5	23.6	22.6	23.4	23.8	24.0	23.9	6.9	6.9	7.0		333
160			7.4			5.0			6.3		22.8	22.7	23.4	23.6	23.8	23.0	23.1	23.9	23.9	24.0	7.6	7.5	7.5		352
166			7.5			5.8			6.7		23.0	23.0	23.7	23.4	23.5	23.4	23.3	23.4	24.0	24.0	7.3	7.3	7.3		323
180			7.4			6.2			6.7		22.9	22.5	23.8	23.2	23.7	23.4	23.1	23.8	24.0	24.0	7.2	7.2	7.2		328
185			7.4			6.4			5.8		23.2	23.1	24.0	23.9	23.8	23.2	23.4	23.7	23.9	23.9	7.1	7.0	7.0		333
187			7.5			6.0			6.2		23.4	22.9	24.1	24.0	23.6	23.6	22.9	24.1	24.0	24.0	7.2	7.2	7.2		344
190			7.2			6.2			6.4		23.3	22.8	23.6	23.8	23.5	23.9	22.9	24.2	23.9	24.0	7.5	7.4	7.3		331
193			7.4			6.0			6.2		22.9	23.0	24.0	23.9	23.8	23.6	23.0	24.3	24.0	24.0	7.4	7.3	7.2		336
194			7.4			6.0			6.0		22.9	23.4	24.3	23.9	23.9	23.1	23.0	24.0	24.1	24.0	7.4	7.3	7.3		337

Client _____ Beginning, Date 3-10-06 Time 1120

Sample Description See Cross Reference Sheet batch Number B Ending, Date 4-7-06 Time 1200

Test Species: Hyallela azteca

ID#: 57

Amp

AM change:	Tech.	Day 20	MS	Day 21	[illegible]	Day 22	Bm	Day 23	Bm	Day 24	MS	Day 25	MS	Day 26	DW	Day 27	DW	Day 28	DW
	Time	Day 20	0730	Day 21	0700	Day 22	0700	Day 23	0745	Day 24	0620	Day 25	0630	Day 26	0700	Day 27	0700	Day 28	0700
PM change:	Tech.	Day 20	Bm	Day 21	Bm	Day 22	NJ	Day 23	NJ	Day 24	Bm	Day 25	NJ	Day 26	NJ	Day 27	NJ		
	Time	Day 20	1715	Day 21	1710	Day 22	1655	Day 23	1645	Day 24	1645	Day 25	1615	Day 26	1620	Day 27	1635		
Feeding: ✓ when done		Day 20	✓	Day 21	✓	Day 22	✓	Day 23	✓	Day 24	✓	Day 25	✓	Day 26	✓	Day 27	✓		

Beaker Number	Dissolved Oxygen (mg/l)										Temperature (°C)										pH				Conductivity (µmohs/cm)	
	20	21	22	23	24	25	26	27	28		20	21	22	23	24	25	26	27	28		21	24	26	28	21	28
111		5.9			6.3		6.8		6.9		23.8	23.8	22.7	22.9	23.2	23.1	23.3	22.7	23.3		7.0	7.0	6.8	7.0	329	328
114		6.1			6.7		6.0		5.2		23.7	23.6	22.5	22.6	23.1	23.2	23.1	22.6	23.1		7.1	7.0	6.6	6.6	334	344
120		6.0			7.0		7.2		7.1		23.8	23.6	22.6	22.8	22.9	23.0	23.4	22.7	23.1		7.1	7.2	7.0	7.0	332	326
122		6.1			6.4		6.9		7.0		23.6	23.7	22.6	22.9	23.2	23.2	23.1	22.5	23.2		7.4	7.3	7.0	7.0	339	331
124		6.0			7.0		6.1		5.3		24.0	23.8	22.7	22.8	23.1	23.3	23.2	22.6	23.1		6.9	7.0	6.8	6.9	330	325
127		5.7			6.8		7.0		6.8		23.8	23.7	22.7	22.9	23.2	23.4	23.2	22.8	23.0		6.5	7.1	6.9	7.0	325	325
133		5.6			6.8		7.2		7.0		23.6	23.9	22.9	23.1	23.4	23.1	23.0	22.7	22.9		7.0	7.3	7.1	7.1	340	326
145		6.5			7.0		7.2		7.0		23.7	23.9	23.1	23.2	23.3	23.2	23.2	23.1	23.2		7.0	7.3	7.1	7.2	323	334
150		6.4			7.2		7.1		7.0		23.8	23.8	23.1	23.2	23.4	23.2	23.3	23.0	23.4		7.2	7.4	7.2	7.3	338	337
151		6.4			5.3		5.2		5.1		23.6	23.7	22.7	22.9	23.6	23.1	23.2	22.8	23.2		7.1	6.9	6.7	6.7	332	328
160		6.2			6.5		6.7		6.6		23.9	23.8	23.1	23.2	23.7	23.9	23.0	23.0	23.1		7.2	7.2	7.2	7.2	332	337
166		6.0			6.7		7.0		7.0		23.8	23.6	23.2	23.1	23.5	23.2	23.0	23.1	23.2		7.2	7.2	7.1	7.2	324	326
180		6.4			7.2		7.1		7.0		23.9	23.6	23.2	23.3	23.4	23.1	23.3	23.0	23.4		6.8	7.1	7.0	7.1	324	325
185		4.9			6.0		6.3		6.1		24.0	23.9	23.2	23.3	23.5	23.6	23.1	23.0	23.4		6.7	7.1	6.9	6.9	327	330
187		5.3			6.7		6.7		6.6		24.1	24.0	23.2	23.3	23.4	23.4	23.0	23.1	23.4		6.9	7.3	7.1	7.0	334	339
190		6.3			6.9		6.9		7.0		24.0	24.0	23.2	23.3	23.5	23.6	23.3	22.9	23.2		6.9	7.4	7.0	7.1	324	330
193		5.6			7.0		6.6		6.4		24.0	23.8	23.3	23.4	23.7	23.4	23.1	23.0	23.2		7.1	7.3	7.0	7.1	341	338
194		6.0			7.0		6.5		6.6		24.1	24.0	23.3	23.4	23.6	23.1	23.1	23.2	23.4		7.0	7.4	7.1	7.1	335	333

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client _____

Sample Description see randomization sheet. Batch number: B

Test Species: Hyallela azteca ID#: AMP 57

Beginning, Date 3-10-06 Time 1110

Ending, Date 4-7-06 Time 0730

Test Initiation: Tech: Tech: Bm Time: 1110

Test Termination: Tech: Tech: DW Time: 0730

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
106	10	10	0	
107	10	0	0	
108	10	10	0	
109	10	10	0	
110	10	10	0	
111	10	10	0	
112	10	0	0	
113	10	0	0	
114	10	7	2	
115	10	0	0	
116	10	9	0	
117	10	9	0	
118	10	0	0	
119	10	7	0	
120	10	0	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
121	10	10	0	
122	10	10	0	
123	10	3	0	
124	10	10	0	
125	10	10	0	
126	10	0	0	
127	10	3	0	
128	10	9	0	
129	10	9	0	
130	10	0	0	
131	10	0	0	
132	10	1	0	
133	10	7	1	
134	10	9	0	
135	10	0	0	

DAY Ø TARE WT: 1.15305 g (3-10-06 [illegible])

wt. w/20 organisms: 1.15491 g (3-13-06 [illegible]) = 0.093 mg/organism (average)

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client _____

Sample Description see randomization sheet. Batch number: B

Test Species: Hyallela azteca ID#: AMP 57

Beginning, Date 3-10-06 Time 1110

Ending, Date 4-7-06 Time 0730

Test Initiation: Tech: Tech: BW Time: 1110

Test Termination: Tech: Tech: MS Time: 0730

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
136	10	0	1	
137	10	10	0	
138	10	10	0	
139	10	1	0	
140	10	10	0	
141	10	10	0	
142	10	9	0	
143	10	5	0	
144	10	0	0	
145	10	3	2	look poor bodycondition
146	10	10	0	
147	10	9	0	
148	10	10	0	
149	10	9	0	
150	10	0	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
151	10	8 ~~9~~ BW	0	
152	10	10	0	
153	10	0	0	
154	10	2	0	
155	10	10	0	
156	10	5	~~0~~ 1 BW	
157	10	0	0	
158	10	9	0	
159	10	4	2	
160	10	8	0	
161	10	10	0	
162	10	1	0	
163	10	6	0	
164	10	1	0	
165	10	6	0	

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client

Sample Description see randomization sheet. Batch number: B

Test Species: Hyallcla aztcca ID#: AMP 57

Beginning, Date 3-10-06 Time 1110

Ending, Date 4-7-06 Time 1200

Test Initiation: Tech: Tech: Time: 1110

Test Termination: Tech: Tech: Time: 0820-1200

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
166	10	5	0	
167	10	1	1	
168	10	10	0	
169	10	9	0	
170	10	4	0	
171	10	2	1	LOTS of ORGANIC MATTER
172	10	8	0	
173	10	1	0	
174	10	2	0	
175	10	0	0	
176	10	0	0	
177	10	0	0	
178	10	7	0	
179	10	0	0	
180	10	7	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
181	10	0	0	
182	10	10	0	
183	10	8	0	
184	10	6	0	
185	10	0	0	
186	10	0	0	
187	10	5	0	
188	10	9	0	
189	10	7	0	
190	10	10/Bm	0	
191	10	9	0	
192	10	9	0	
193	10	2	0	
194	10	1	1	
195	10	10	0	

Hyallela GROWTH DATA

Client Hanford Species ID# AMP 57

Lab ID: see randomization sheet batch number: B Start Date 3/7/2006

Sample Description:

Technician: BM dw

Date: 4/10/2006 1/18/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
106	9.28	6.88	10	10
107		6.93	0	0
108	8.84	6.98	10	10
109	8.77	6.87	10	10
110	9.97	6.91	10	10
111	9.06	6.93	10	10
112		6.97	0	0
113		6.89	0	0
114	8.23	6.90	7	7
115		6.99	0	0
116	8.16	6.76	9	9
117	8.41	6.69	9	9
118		6.83	0	0
119	8.01	6.88	7	7
120		6.92	0	0
121	7.83	6.92	10	10
122	9.26	6.87	10	10
123	14.15	13.84	3	3
124	8.59	6.99	10	10
125	8.73	6.85	10	10
126		6.93	0	0
127	7.07	6.80	3	3
128	8.20	6.88	9	9
129	8.52	6.88	9	9
130		6.77	0	0
131	6.75	6.76	0	0
132	6.98	6.88	1	1
133	7.95	6.87	7	7
134	9.18	6.95	9	9
135		6.75	0	0

weigh to 0.01 mg

Hyallela GROWTH DATA

Client Hanford Species ID# AMP 57

Lab ID: see randomization sheet batch number: B Start Date 3/7/2006

Sample Description:

Technician: BM dw

Date: 4/10/2006 1/18/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
136	6.80	6.79	0	0
137	8.64	6.84	10	10
138	7.97	6.90	10	10
139	6.93	6.84	1	1
140	8.28	6.85	10	10
141	8.78	6.77	10	10
142	8.60	6.97	9	9
143	7.52	6.87	5	5
144	6.82	6.83	0	0
145	7.08	6.88	3	3
146	8.44	6.77	10	10
147	9.36	6.82	9	9
148	8.97	6.93	10	10
149	8.71	6.80	9	9
150	6.83	6.83	0	0
151	8.46	6.91	8	8
152	9.51	6.76	10	10
153		6.89	0	0
154	7.15	6.97	2	2
155	9.61	6.91	10	10
156	7.36	6.87	5	5
157		6.84	0	0
158	8.85	6.66	9	9
159	7.07	6.79	4	4
160	8.51	6.83	8	8
161	9.31	6.90	10	10
162	6.95	6.79	1	1
163	8.18	6.93	6	6
164	6.80	6.72	1	1
165	7.53	6.71	6	6

weigh to 0.01 mg

Hyallela GROWTH DATA

Client Hanford Species ID# AMP 57

Lab ID: see randomization sheet batch number: B Start Date 3/7/2006

Sample Description:

Technician: BM dw

Date: 4/10/2006 1/18/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
166	7.30	6.89	5	5
167	6.96	6.87	1	1
168	7.88	6.86	10	10
169	8.49	6.74	9	9
170	7.19	6.85	4	4
171	7.10	6.93	2	2
172	8.07	6.73	8	8
173	6.96	6.84	1	1
174	7.01	6.81	2	2
175	6.91	6.91	0	0
176	6.81	6.81	0	0
177	6.89	6.90	0	0
178	7.75	6.83	7	7
179	6.80	6.80	0	0
180	7.78	6.81	7	7
181	6.75	6.75	0	0
182	9.06	6.91	10	10
183	7.66	6.74	8	8
184	7.91	6.81	6	6
185	6.94	6.95	0	0
186	6.76	6.77	0	0
187	7.20	6.82	5	5
188	8.34	6.72	9	9
189	8.60	6.90	7	7
190	9.18	6.85	10	10
191	9.20	6.79	9	9
192	7.65	6.86	9	9
193	7.01	6.84	2	2
194	6.87	6.81	1	1
195	9.97	6.66	10	10

weigh to 0.01 mg

CETIS Test Summary

Report Date: 10 Apr-06 10:53 AM
Test Link: 08-9139-0844/B153821hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	04-4725-7754	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	10-1661-4162	**Code:**	B1538-21	**Client:**	
Sample Date:	19 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	19d 0h	**Station:**			

Comments: J11748

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
10-8334-3390	28d Mean Dry Weight	100	> 100	N/A	31.45%	Equal Variance t Two-Sample
16-4454-8254	28d Proportion Survived	< 100	100	N/A	7.97%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
16-4454-8254	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		1	0.16000	0.16000	0.16000			

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.02000	0.00000	0.10000	0.02000	0.04472	223.61

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000 ✓	0.14300 ✓	0.18000 ✓	0.19000 ✓	0.18800 ✓
100		0.16000 ✓				

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000 ✓	1.00000 ✓	1.00000 ✓	1.00000 ✓	1.00000 ✓
100		0.00000 ✓	0.00000 ✓	0.00000 ✓	0.00000 ✓	0.10000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	08-9139-0844	08-9139-0844	10 Apr-06 10:51 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	7.97%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	16.7731	1.85955	0.0000	0.12857	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	3.362077	3.362077	1	281.34	0.00000	Significant Effect
Error	0.0956028	0.011950	8			
Total	3.45767953	3.3740271	9			

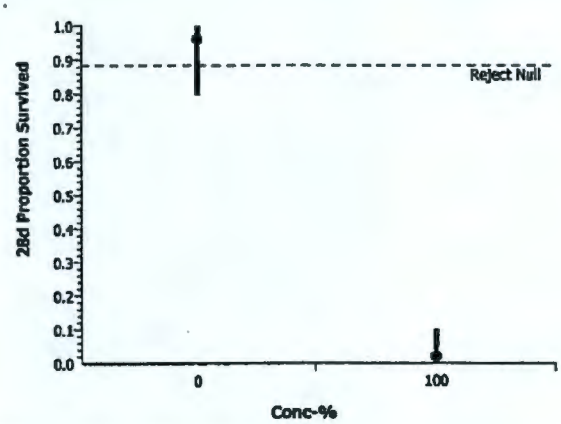
ANOVA Assumptions

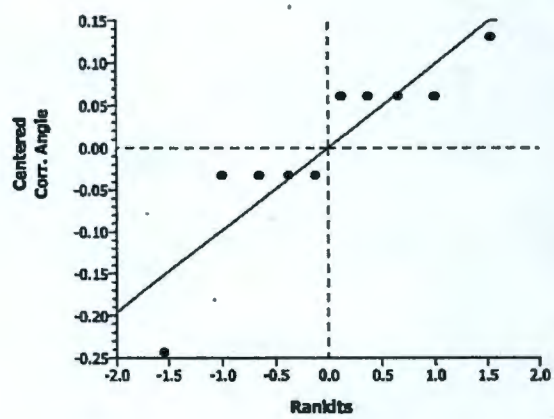
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.49949	23.15450	0.25245	Equal Variances
Distribution	Shapiro-Wilk W	0.82476		0.02893	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.02000	0.00000	0.10000	0.04472	0.19137	0.15878	0.32175	0.07288

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	08-9139-0844	08-9139-0844	10 Apr-06 10:53 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	31.45%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	0.82584	2.13185	0.2277	0.05731	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0004107	0.000411	1	0.68	0.45530	Non-Significant Effect
Error	0.0024088	0.000602	4			
Total	0.00281951	0.0010129	5			

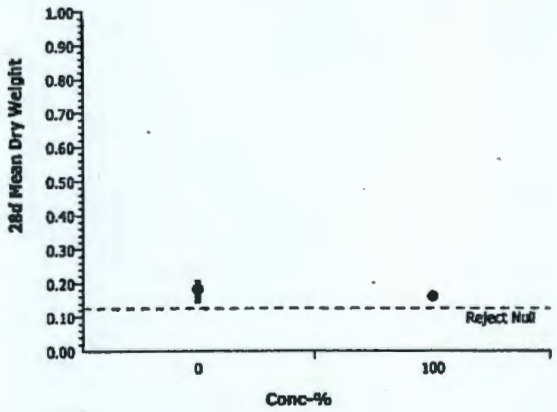
ANOVA Assumptions

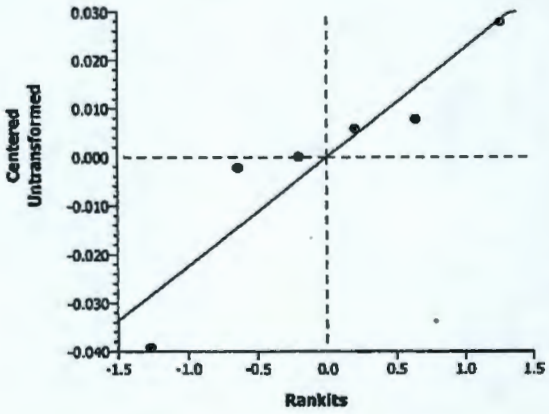
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Distribution	Shapiro-Wilk W	0.89371		0.33811	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		1	0.16000	0.16000	0.16000					

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 10:54 AM
Test Link: 17-7989-8220/B153822hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	08-3505-0742	Test Type:	Hyalella (42d)	Duration:	28d 0h
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalella azteca
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	Brine:			

Sample No:	02-7753-8486	Code:	B1538-22	Client:	
Sample Date:	19 Feb-06	Material:	Sediment	Project:	
Receive Date:		Source:	Hanford		
Sample Age:	19d 0h	Station:			

Comments: J11749

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
02-5049-1522	28d Mean Dry Weight	< 100	100	N/A	24.67%	Equal Variance t Two-Sample
08-8871-0335	28d Proportion Survived	< 100	100	N/A	14.15%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
08-8871-0335	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.12149	0.07000	0.18333	0.02154	0.04816	39.64%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.62000	0.40000	0.90000	0.08602	0.19235	31.02%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.07600	0.07000	0.18333	0.13143	0.14667

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.50000✓	0.40000✓	0.60000✓	0.70000✓	0.90000✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	17-7989-8220	17-7989-8220	10 Apr-06 10:54 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	14.15%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	3.77009	1.85955	0.0027	0.21296	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.4660488	0.466049	1	14.21	0.00546	Significant Effect
Error	0.2623126	0.032789	8			
Total	0.72836134	0.4988378	9			

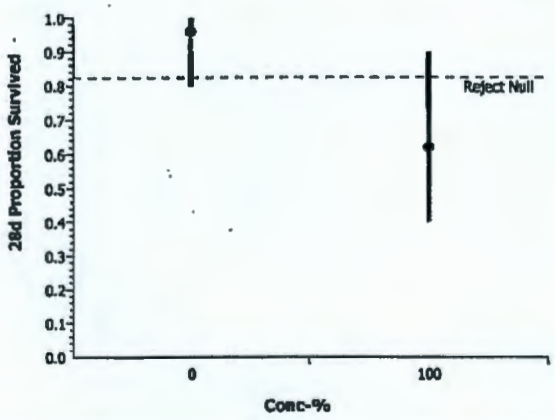
ANOVA Assumptions

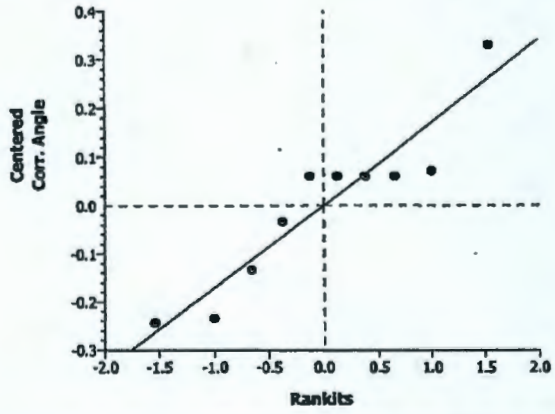
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.52783	23.15450	0.39100	Equal Variances
Distribution	Shapiro-Wilk W	0.89030		0.17091	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.62000	0.40000	0.90000	0.19235	0.91928	0.68472	1.24905	0.21677

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	17-7989-8220	17-7989-8220	10 Apr-06 10:54 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	24.67%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	2.51167	1.85955	0.0181	0.04495	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0092156	0.009216	1	6.31	0.03628	Significant Effect
Error	0.0116866	0.001461	8			
Total	0.02090217	0.0106764	9			

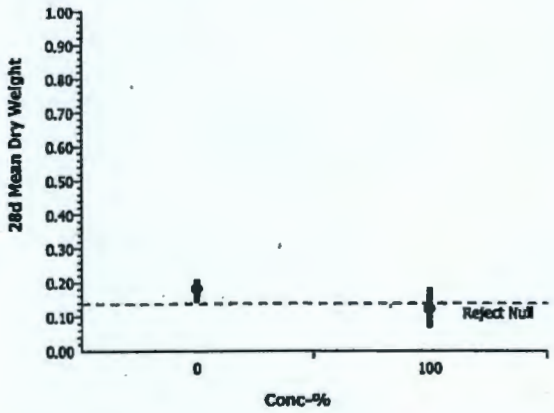
ANOVA Assumptions

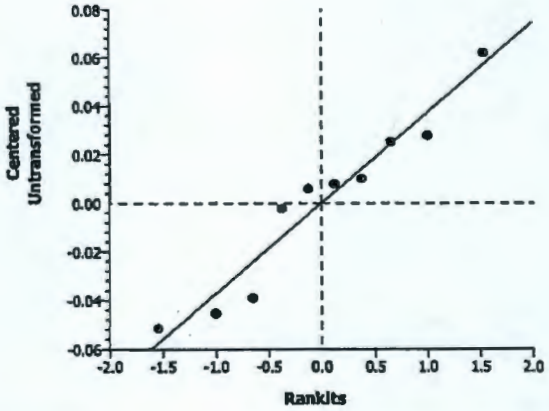
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.85162	23.15450	0.21988	Equal Variances
Distribution	Shapiro-Wilk W	0.93444		0.49298	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.12149	0.07000	0.18333	0.04816				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:00 AM
Test Link: 13-5362-0937/B153823hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	05-7988-0151	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	04-3752-9454	**Code:**	B1538-23	**Client:**	
Sample Date:	21 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	17d 0h	**Station:**			

Comments: J112B3

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
06-5035-5858	28d Mean Dry Weight	< 100	100	N/A	17.13%	Equal Variance t Two-Sample
03-3975-4503	28d Proportion Survived	< 100	100	N/A	20.34%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
03-3975-4503	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.11329	0.09000	0.16143	0.01270	0.02839	25.06%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.66000	0.30000	1.00000	0.12083	0.27019	40.94%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.09000	0.11500	0.16143	0.10200	0.09800

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.30000✓	0.80000✓	0.70000✓	1.00000✓	0.50000✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	13-5362-0937	13-5362-0937	10 Apr-06 11:00 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	20.34%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	2.4388	1.85955	0.0203	0.28667	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.3533851	0.353385	1	5.95	0.04064	Significant Effect
Error	0.4753213	0.059415	8			
Total	0.82870632	0.4128002	9			

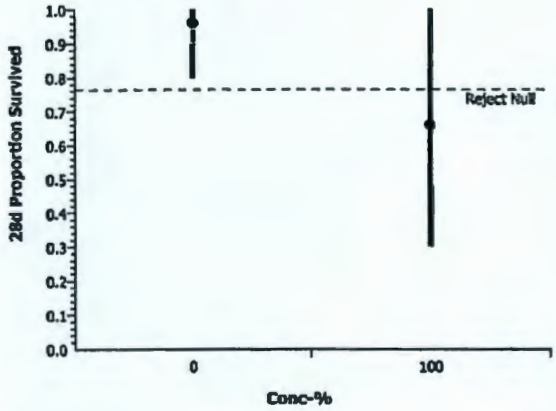
ANOVA Assumptions

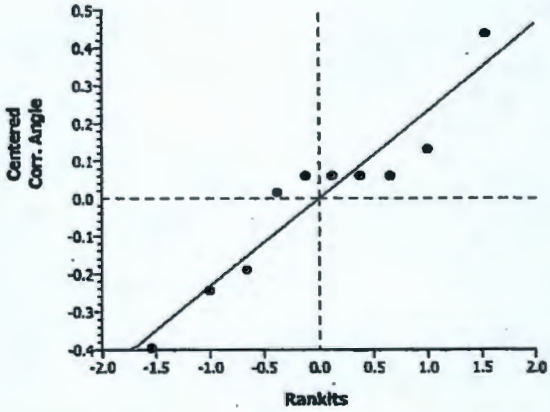
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	5.39257	23.15450	0.13151	Equal Variances
Distribution	Shapiro-Wilk W	0.91773		0.33842	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.66000	0.30000	1.00000	0.27019	0.97507	0.57964	1.41202	0.31661

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	13-5362-0937	13-5362-0937	10 Apr-06 11:00 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	17.13%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	4.10644	1.85955	0.0017	0.03121	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.011873	0.011873	1	16.86	0.00341	Significant Effect
Error	0.0056327	0.000704	8			
Total	0.01750567	0.0125770	9			

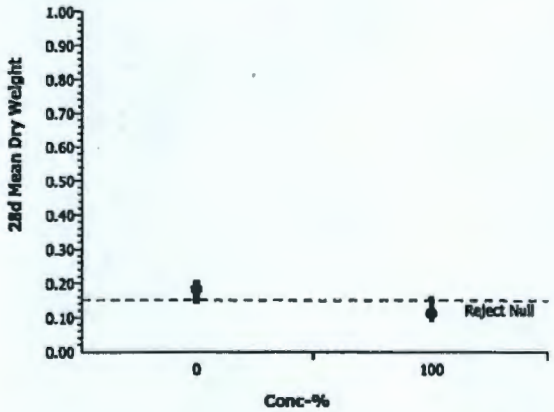
ANOVA Assumptions

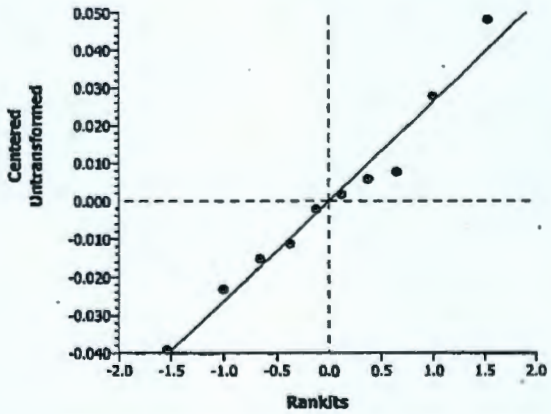
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.33839	23.15450	0.78445	Equal Variances
Distribution	Shapiro-Wilk W	0.97530		0.93519	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.11329	0.09000	0.16143	0.02839				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:02 AM
Test Link: 10-6234-7069/B153824hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	07-5026-1667	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	02-2128-7235	**Code:**	B1538-24	**Client:**	
Sample Date:	21 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	17d 0h	**Station:**			

Comments: J112B4

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
08-8041-3145	28d Mean Dry Weight	< 100	100	N/A	18.72%	Equal Variance t Two-Sample
12-8422-4010	28d Proportion Survived	< 100	100	N/A	26.97%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
12-8422-4010	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		4	0.11200	0.08500	0.13857	0.01480	0.02961	26.44%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.52000	0.00000	0.90000	0.15297	0.34205	65.78%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.13857	0.08500	0.08778	0.13667	

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.70000✓	0.40000✓	0.90000 ✓	0.60000✓	0.00000✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	10-6234-7069	10-6234-7069	10 Apr-06 11:02 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	26.97%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	2.88794	1.85955	0.0101	0.35871	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.7758644	0.775864	1	8.34	0.02026	Significant Effect
Error	0.7442173	0.093027	8			
Total	1.52008176	0.8688916	9			

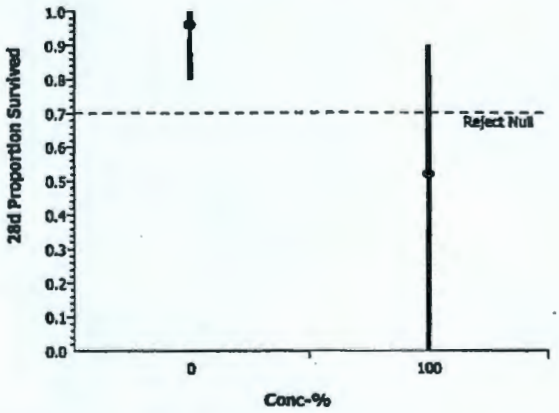
ANOVA Assumptions

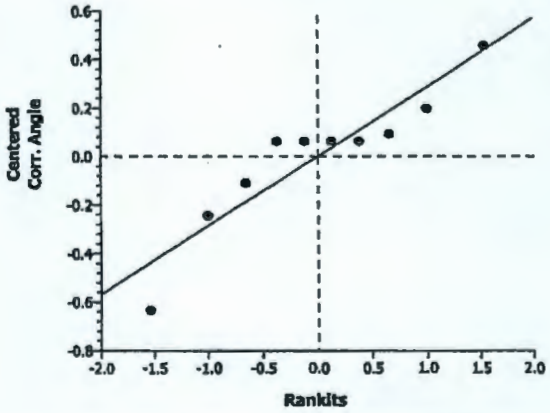
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	9.00893	23.15450	0.05590	Equal Variances
Distribution	Shapiro-Wilk W	0.88982		0.16879	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.52000	0.00000	0.90000	0.34205	0.79396	0.15878	1.24905	0.40923

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	10-6234-7069	10-6234-7069	10 Apr-06 11:02 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	18.72%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	3.90016	1.89458	0.0029	0.0341	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.01095	0.01095	1	15.21	0.00590	Significant Effect
Error	0.0050390	0.00072	7			
Total	0.01598897	0.0116698	8			

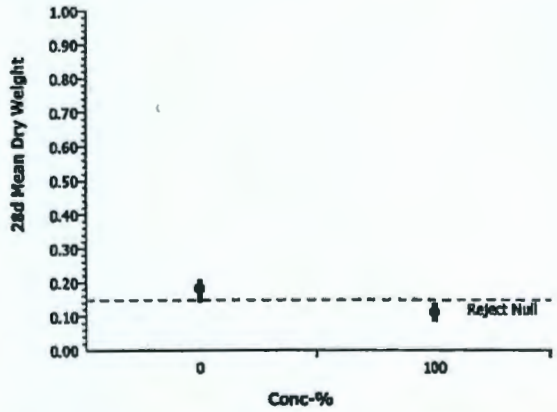
ANOVA Assumptions

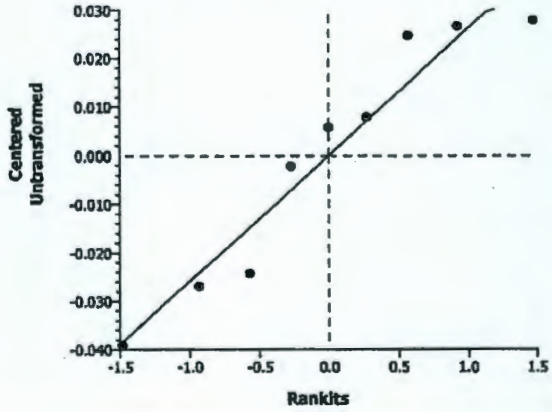
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.45588	24.25912	0.70497	Equal Variances
Distribution	Shapiro-Wilk W	0.90290		0.26932	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		4	0.11200	0.08500	0.13857	0.02961				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:05 AM
Test Link: 15-8101-9572/B153825hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	11-3184-5949	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	06-0275-8962	**Code:**	B1538-25	**Client:**	
Sample Date:	21 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	17d 0h	**Station:**			

Comments: J112B5

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
16-2217-9453	28d Proportion Survived	< 100	100	N/A	6.97%	Wilcoxon Rank Sum Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
16-2217-9453	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.00000	0.00000	0.00000	0.00000	0.00000	0.00%

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.00000✓	0.00000✓	0.00000✓	0.00000✓	0.00000✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	15-8101-9572	15-8101-9572	10 Apr-06 11:05 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Wilcoxon Rank Sum Two-Sample	C > T	Rank		<100	100		N/A	6.97%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	Ties	Decision(0.05)
Dilution Sediment		100	15		0.0040	0	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	3.553724	3.553724	1	382.35	0.00000	Significant Effect
Error	0.0743553	0.009294	8			
Total	3.62807959	3.5630187	9			

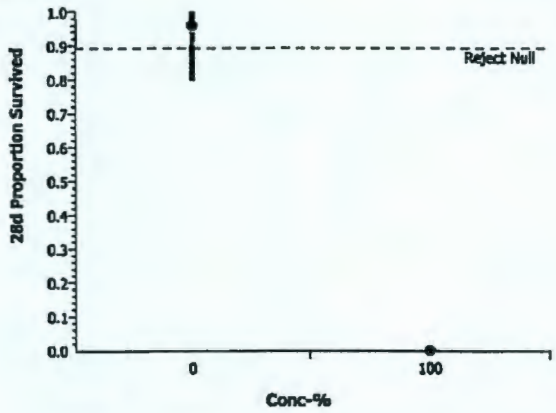
ANOVA Assumptions

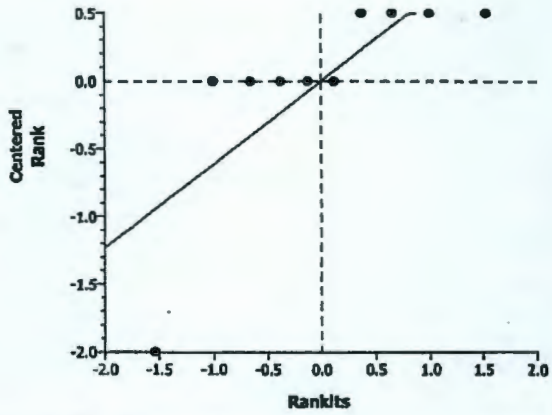
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Modified Levene	1.60000	11.25862	0.24150	Equal Variances
Distribution	Shapiro-Wilk W	0.62470		0.00011	Non-normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	8.00000	6.00000	8.50000	1.11803
100		5	0.00000	0.00000	0.00000	0.00000	3.00000	3.00000	3.00000	0.00000

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:06 AM
Test Link: 12-2006-0725/B153826hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	09-2390-8146	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	08-5209-4296	**Code:**	B1538-26	**Client:**	
Sample Date:	21 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	17d 0h	**Station:**			

Comments: J112B6

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
15-1862-7993	28d Mean Dry Weight	< 100	100	N/A	13.25%	Equal Variance t Two-Sample
15-0282-0531	28d Proportion Survived	< 100	100	N/A	9.76%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
15-0282-0531	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		4	0.09125	0.08500	0.10000	0.00315	0.00629	6.89%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.12000	0.00000	0.20000	0.03742	0.08367	69.72%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.08500	0.10000	0.09000	0.09000	

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.20000	0.00000	0.20000	0.10000	0.10000

CETIS Analysis Detail

Hyalleia 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	12-2006-0725	12-2006-0725	10 Apr-06 11:06 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	9.76%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	12.0887	1.85955	0.0000	0.15461	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	2.525702	2.525702	1	146.14	0.00000	Significant Effect
Error	0.1382645	0.017283	8			
Total	2.66396675	2.5429853	9			

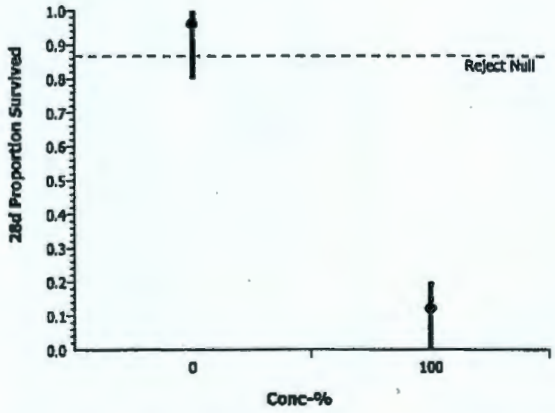
ANOVA Assumptions

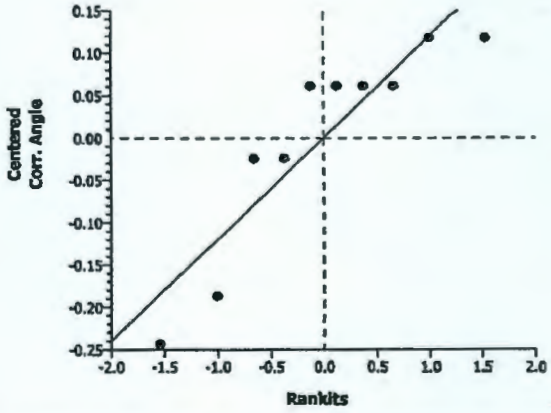
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.16345	23.15450	0.88689	Equal Variances
Distribution	Shapiro-Wilk W	0.81879		0.02450	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.12000	0.00000	0.20000	0.08367	0.34592	0.15878	0.46365	0.12640

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	12-2006-0725	12-2006-0725	10 Apr-06 11:06 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	13.25%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	7.13502	1.89458	0.0001	0.02415	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0183820	0.018382	1	50.91	0.00019	Significant Effect
Error	0.0025276	0.000361	7			
Total	0.02090957	0.0187431	8			

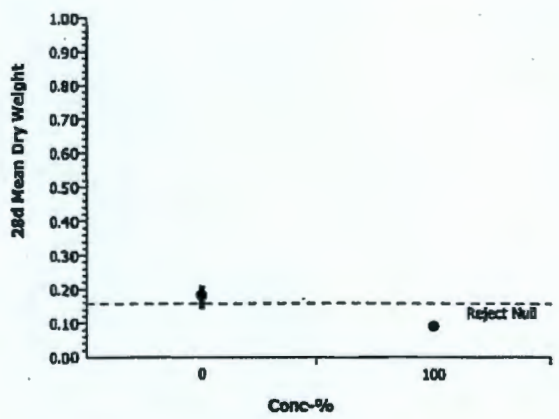
ANOVA Assumptions

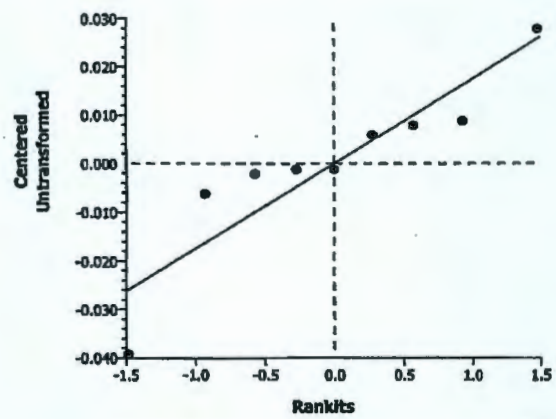
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	15.21319	46.19462	0.04948	Equal Variances
Distribution	Shapiro-Wilk W	0.87237		0.13034	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		4	0.09125	0.08500	0.10000	0.00629				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:08 AM
Test Link: 03-3032-0079/B153827hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	08-3754-8212	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	14-9751-8021	**Code:**	B1538-27	**Client:**	
Sample Date:	21 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	17d 0h	**Station:**			

Comments: J116M6

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
10-7037-4920	28d Mean Dry Weight	< 100	100	N/A	31.45%	Equal Variance t Two-Sample
05-6601-0929	28d Proportion Survived	< 100	100	N/A	10.17%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
05-6601-0929	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		1	0.08500	0.08500	0.08500			

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.04000	0.00000	0.20000	0.04000	0.08944	223.61

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.08500				

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.00000 ✓	0.00000 ✓	0.20000 ✓	0.00000 ✓	0.00000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	03-3032-0079	03-3032-0079	10 Apr-06 11:08 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	10.17%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	13.1195	1.85955	0.0000	0.16035	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	3.199537	3.199537	1	172.12	0.00000	Significant Effect
Error	0.1487106	0.018589	8			
Total	3.34824717	3.2181254	9			

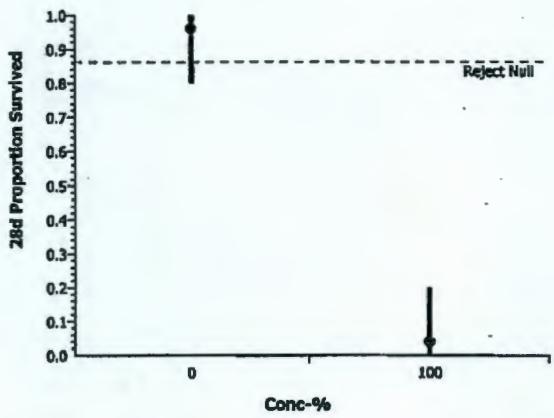
ANOVA Assumptions

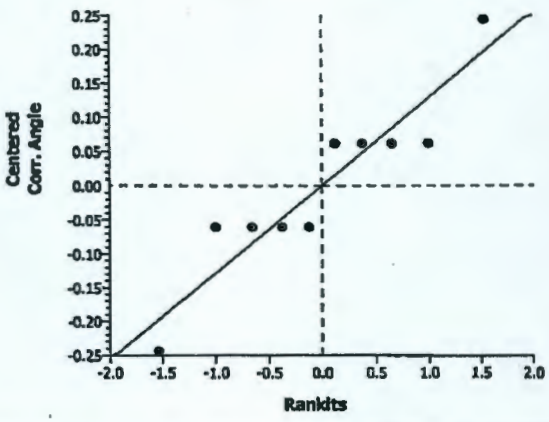
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.00000	23.15450	1.00000	Equal Variances
Distribution	Shapiro-Wilk W	0.90063		0.22264	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.04000	0.00000	0.20000	0.08944	0.21975	0.15878	0.46365	0.13634

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	03-3032-0079	03-3032-0079	10 Apr-06 11:08 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	31.45%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	3.61580	2.13185	0.0112	0.05731	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0078732	0.007873	1	13.07	0.02244	Significant Effect
Error	0.0024088	0.000602	4			
Total	0.01028200	0.0084754	5			

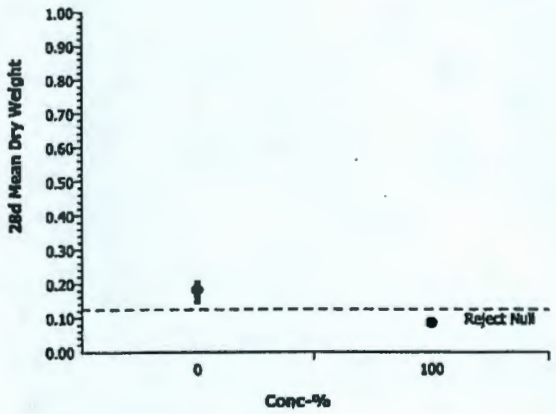
ANOVA Assumptions

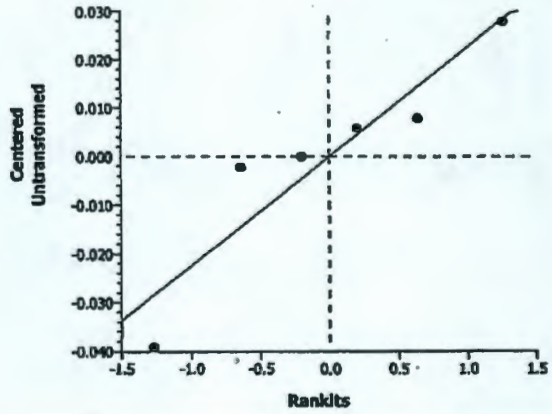
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Distribution	Shapiro-Wilk W	0.89371		0.33811	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		1	0.08500	0.08500	0.08500					

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:15 AM
Test Link: 04-1911-1052/B153828hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	14-7601-1535	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	16-5947-6775	**Code:**	B1538-28	**Client:**	
Sample Date:	21 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	17d 0h	**Station:**			

Comments: J116M7

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
11-0365-7894	28d Mean Dry Weight	< 100	100	N/A	21.14%	Equal Variance t Two-Sample
06-8965-4096	28d Proportion Survived	< 100	100	N/A	8.44%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
06-8965-4096	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		2	0.07000	0.06000	0.08000	0.01000	0.01414	20.20%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.04000	0.00000	0.10000	0.02449	0.05477	136.93

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.06000	0.08000			

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.10000 ✓	0.10000 ✓	0.00000 ✓	0.00000 ✓	0.00000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	04-1911-1052	04-1911-1052	10 Apr-06 11:15 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	8.44%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	15.4650	1.85955	0.0000	0.13552	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	3.175741	3.175741	1	239.17	0.00000	Significant Effect
Error	0.1062265	0.013278	8			
Total	3.2819677	3.1890195	9			

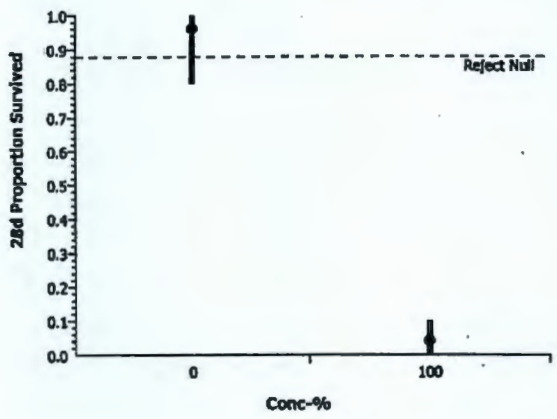
ANOVA Assumptions

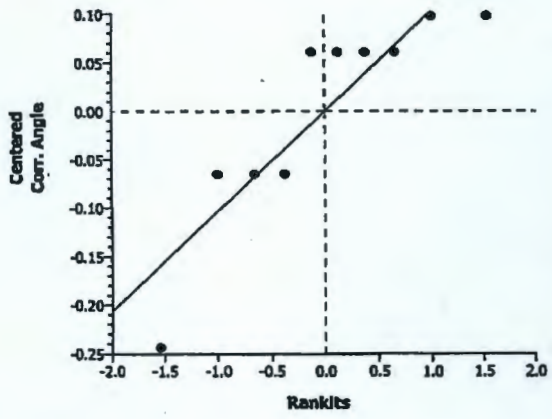
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.33299	23.15450	0.43208	Equal Variances
Distribution	Shapiro-Wilk W	0.80360		0.01604	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.04000	0.00000	0.10000	0.05477	0.22397	0.15878	0.32175	0.08926

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	04-1911-1052	04-1911-1052	10 Apr-06 11:15 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	21.14%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	5.87093	2.01505	0.0010	0.03851	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0179840	0.017984	1	34.47	0.00203	Significant Effect
Error	0.0026088	0.000522	5			
Total	0.02059282	0.0185058	6			

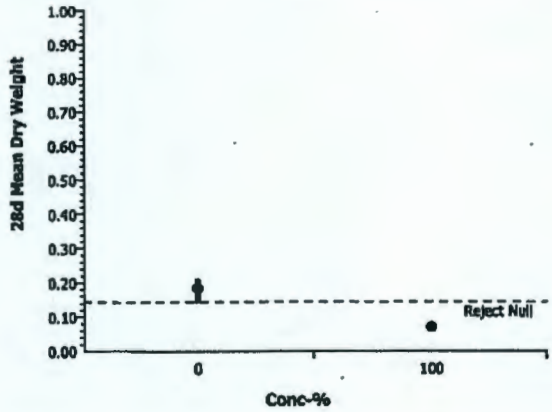
ANOVA Assumptions

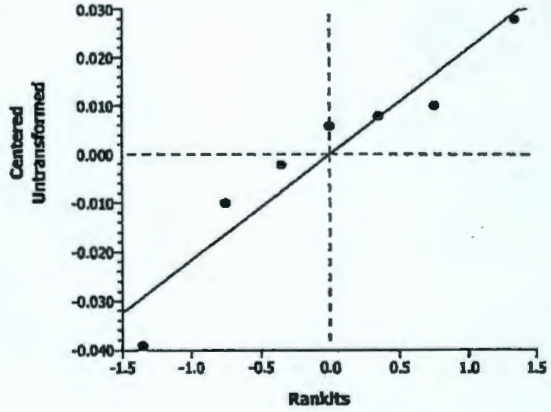
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.01087	22499.58000	0.80943	Equal Variances
Distribution	Shapiro-Wilk W	0.92862		0.53926	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		2	0.07000	0.06000	0.08000	0.01414				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:17 AM
Test Link: 02-3392-2622/B153829hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	11-2051-2293	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	07-8377-5462	**Code:**	B1538-29	**Client:**	
Sample Date:	21 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	17d 0h	**Station:**			

Comments: J11734

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
04-3426-0089	28d Mean Dry Weight	< 100	100	N/A	19.85%	Equal Variance t Two-Sample
14-0762-2720	28d Proportion Survived	< 100	100	N/A	13.86%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
14-0762-2720	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		3	0.09667	0.06667	0.12000	0.01575	0.02728	28.23%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.14000	0.00000	0.30000	0.06782	0.15166	108.33

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.06667	0.12000	0.10333		

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.30000 ✓	0.10000 ✓	0.00000 ✓	0.00000 ✓	0.30000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	02-3392-2622	02-3392-2622	10 Apr-06 11:17 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	13.86%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	8.80908	1.85955	0.0000	0.20926	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	2.456811	2.456811	1	77.60	0.00002	Significant Effect
Error	0.25328	0.03166	8			
Total	2.71009091	2.4884709	9			

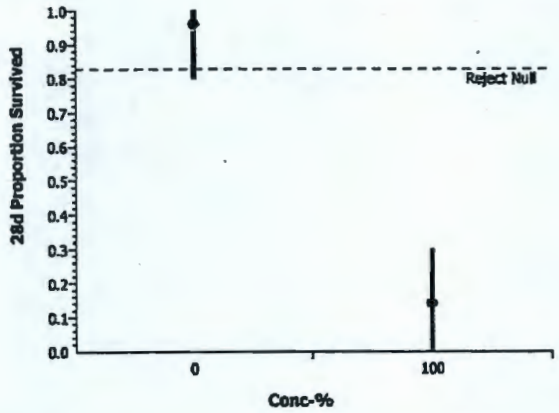
ANOVA Assumptions

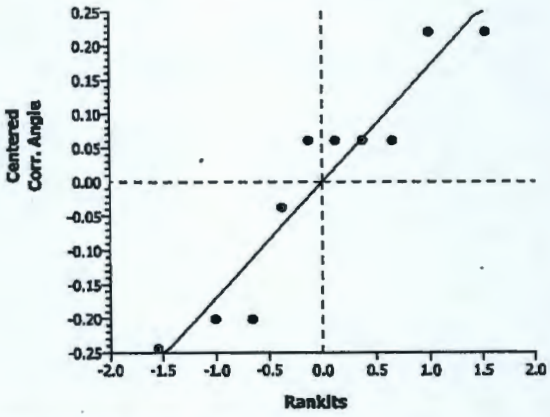
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.40635	23.15450	0.41590	Equal Variances
Distribution	Shapiro-Wilk W	0.88272		0.14020	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.14000	0.00000	0.30000	0.15166	0.35972	0.15878	0.57964	0.21150

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	02-3392-2622	02-3392-2622	10 Apr-06 11:17 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	19.85%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	4.59525	1.94318	0.0019	0.03617	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0137175	0.013717	1	21.12	0.00371	Significant Effect
Error	0.0038977	0.00065	6			
Total	0.01761514	0.0143671	7			

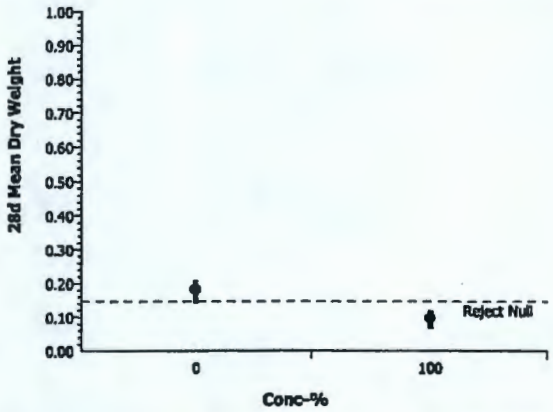
ANOVA Assumptions

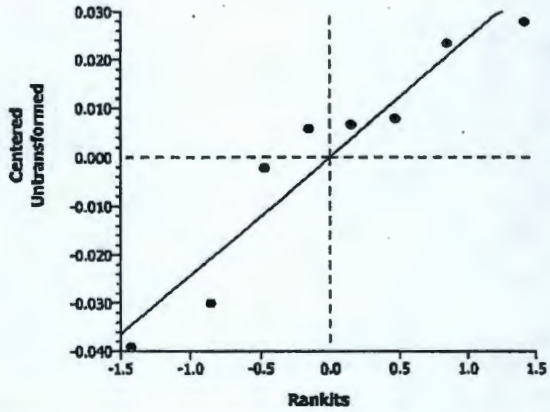
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.23620	26.28427	0.76387	Equal Variances
Distribution	Shapiro-Wilk W	0.89942		0.28551	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		3	0.09667	0.06667	0.12000	0.02728				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:18 AM
Test Link: 01-7602-9725/B153830hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	12-6135-1799	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	02-3574-7842	**Code:**	B1538-30	**Client:**	
Sample Date:	27 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	11d 0h	**Station:**			

Comments: J116X2

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
11-0194-0748	28d Mean Dry Weight	100	> 100	N/A	18.92%	Equal Variance t Two-Sample
18-9167-9932	28d Proportion Survived	100	> 100	N/A	9.76%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
18-9167-9932	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.20734	0.16750	0.24333	0.01494	0.03341	16.11%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.88000	0.80000	1.00000	0.03742	0.08367	9.51%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.19375	0.16750	0.24100	0.24333	0.19111

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.80000 ✓	0.80000 ✓	1.00000 ✓	0.90000 ✓	0.90000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	01-7602-9725	01-7602-9725	10 Apr-06 11:18 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	9.76%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	1.51735	1.85955	0.0838	0.15461	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0397919	0.039792	1	2.30	0.16765	Non-Significant Effect
Error	0.1382645	0.017283	8			
Total	0.17805639	0.0570749	9			

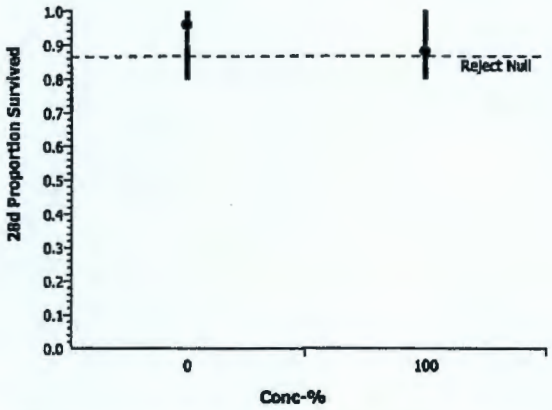
ANOVA Assumptions

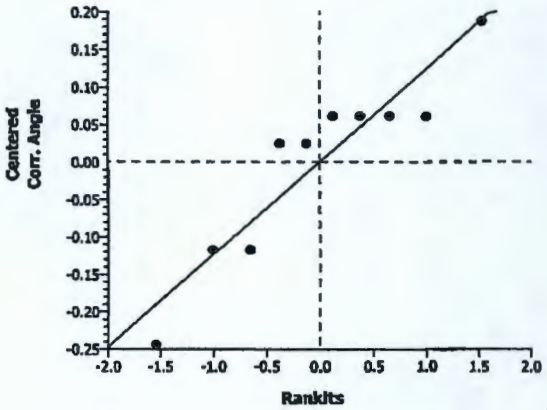
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.16345	23.15450	0.88689	Equal Variances
Distribution	Shapiro-Wilk W	0.88789		0.16054	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.88000	0.80000	1.00000	0.08367	1.22488	1.10715	1.41202	0.12640

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	01-7602-9725	01-7602-9725	10 Apr-06 11:18 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	18.92%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	-1.3561	1.85955	0.8940	0.03447	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0015799	0.00158	1	1.84	0.21209	Non-Significant Effect
Error	0.0068726	0.000859	8			
Total	0.00845253	0.002439	9			

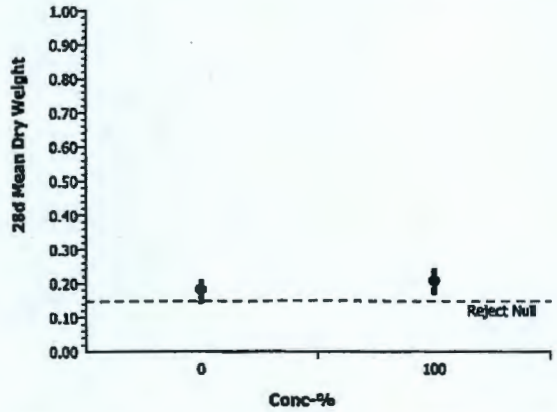
ANOVA Assumptions

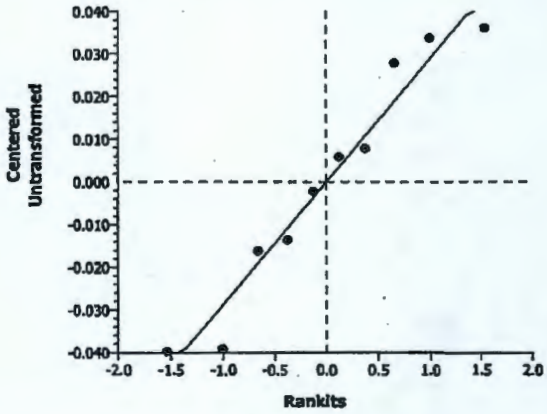
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.85313	23.15450	0.56485	Equal Variances
Distribution	Shapiro-Wilk W	0.92798		0.42834	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.20734	0.16750	0.24333	0.03341				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:22 AM
Test Link: 05-3200-4993/B153831hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	16-1303-6858	Test Type:	Hyalella (42d)	Duration:	28d 0h
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalella azteca
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	Brine:			

Sample No:	06-5599-6068	Code:	B1538-31	Client:	
Sample Date:	27 Feb-06	Material:	Sediment	Project:	
Receive Date:		Source:	Hanford		
Sample Age:	11d 0h	Station:			

Comments: J116W9

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
09-5439-4519	28d Mean Dry Weight	< 100	100	N/A	16.12%	Equal Variance t Two-Sample
06-6574-6851	28d Proportion Survived	< 100	100	N/A	16.75%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
06-6574-6851	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		3	0.09067	0.08200	0.10000	0.00521	0.00902	9.95%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.16000	0.00000	0.50000	0.09274	0.20736	129.60

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.08200	0.10000	0.09000		

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.50000✓	0.10000✓	0.00000✓	0.00000✓	0.20000✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	05-3200-4993	05-3200-4993	10 Apr-06 11:22 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	16.75%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	7.39035	1.85955	0.0000	0.24492	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	2.368629	2.368629	1	54.62	0.00008	Significant Effect
Error	0.3469422	0.043368	8			
Total	2.71557137	2.411997	9			

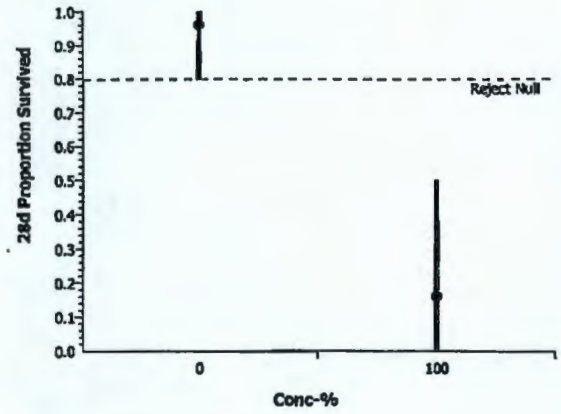
ANOVA Assumptions

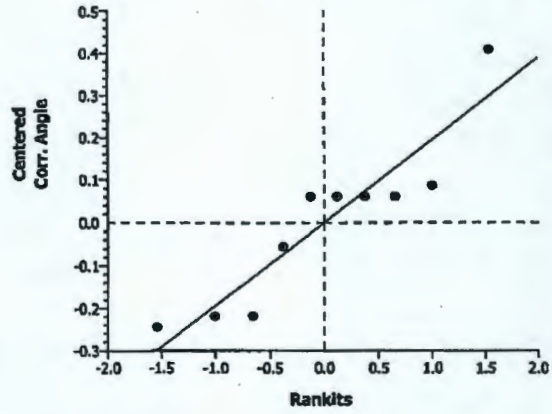
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.66600	23.15450	0.23621	Equal Variances
Distribution	Shapiro-Wilk W	0.86709		0.09243	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.16000	0.00000	0.50000	0.20736	0.37767	0.15878	0.78540	0.26105

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	05-3200-4993	05-3200-4993	10 Apr-06 11:22 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	16.12%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	6.05431	1.94318	0.0005	0.02938	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0157094	0.015709	1	36.65	0.00092	Significant Effect
Error	0.0025715	0.000429	6			
Total	0.01828087	0.016138	7			

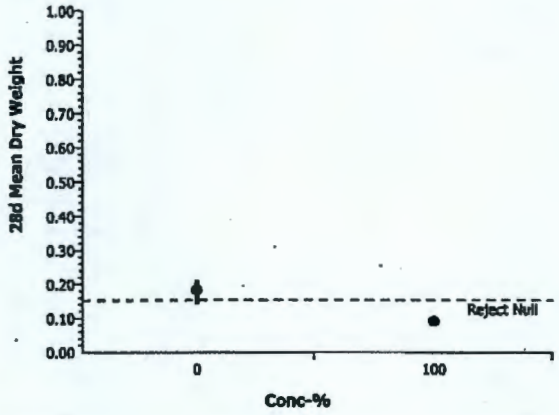
ANOVA Assumptions

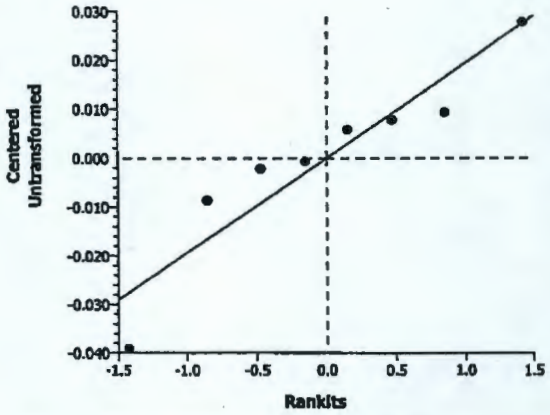
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	7.40425	199.24970	0.24503	Equal Variances
Distribution	Shapiro-Wilk W	0.90906		0.34748	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		3	0.09067	0.08200	0.10000	0.00902				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:23 AM
Test Link: 09-7284-1143/B153832hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	06-5231-4106	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	10-2090-3158	**Code:**	B1538-32	**Client:**	
Sample Date:	27 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	11d 0h	**Station:**			

Comments: J116X0

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
07-0218-0612	28d Mean Dry Weight	100	> 100	N/A	30.61%	Equal Variance t Two-Sample
10-8400-2966	28d Proportion Survived	100	> 100	N/A	6.97%	Wilcoxon Rank Sum Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
10-8400-2966	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.25100	0.20100	0.33100	0.02791	0.06241	24.86%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.21300	0.30600	0.33100	0.20100	0.20400

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		1.00000 ✓	1.00000 ✓	1.00000 ✓	1.00000 ✓	1.00000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	09-7284-1143	09-7284-1143	10 Apr-06 11:23 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Wilcoxon Rank Sum Two-Sample	C > T	Rank		100	>100	1	N/A	6.97%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	Ties	Decision(0.05)
Dilution Sediment		100	30		0.6548	4	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0092944	0.009294	1	1.00	0.34659	Non-Significant Effect
Error	0.0743553	0.009294	8			
Total	0.08364972	0.0185888	9			

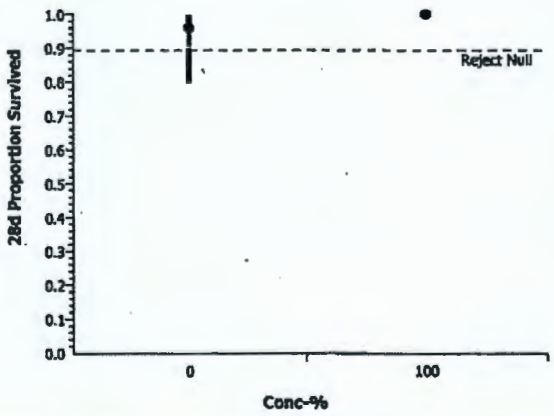
ANOVA Assumptions

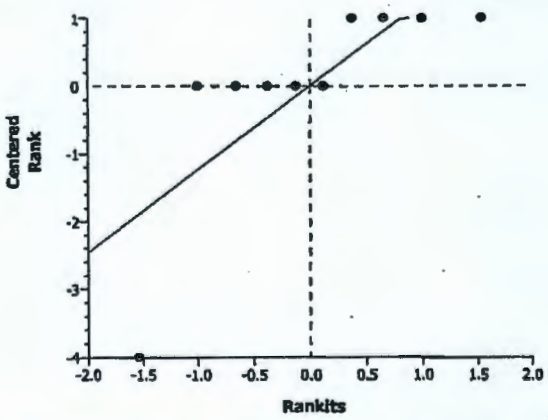
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Modified Levene	1.60000	11.25862	0.24150	Equal Variances
Distribution	Shapiro-Wilk W	0.62470		0.00011	Non-normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	5.00000	1.00000	6.00000	2.23607
100		5	1.00000	1.00000	1.00000	0.00000	6.00000	6.00000	6.00000	0.00000

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	09-7284-1143	09-7284-1143	10 Apr-06 11:23 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	30.61%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	-2.2942	1.85955	0.9745	0.05577	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0118336	0.011834	1	5.26	0.05093	Non-Significant Effect
Error	0.0179868	0.002248	8			
Total	0.02982042	0.014082	9			

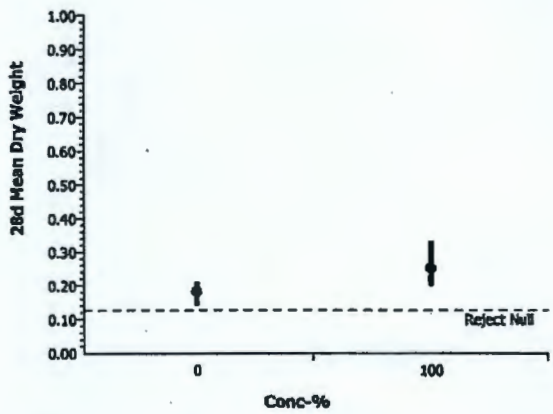
ANOVA Assumptions

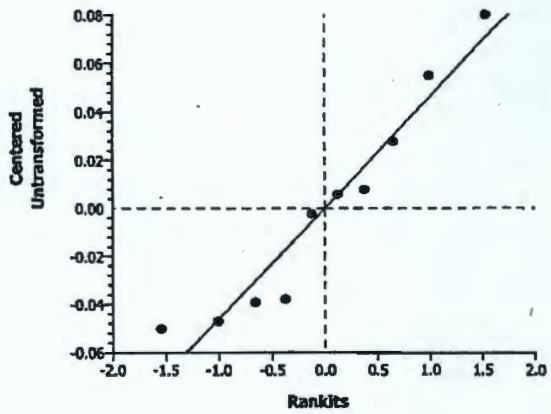
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	6.46711	23.15450	0.09800	Equal Variances
Distribution	Shapiro-Wilk W	0.91722		0.33433	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.25100	0.20100	0.33100	0.06241				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:25 AM
Test Link: 07-6908-9009/B153833hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	03-2484-1176	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	07-2556-8640	**Code:**	B1538-33	**Client:**	
Sample Date:	27 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	11d 0h	**Station:**			

Comments: J116X1

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
11-9944-6587	28d Mean Dry Weight	100	> 100	N/A	17.85%	Equal Variance t Two-Sample
03-6243-7501	28d Proportion Survived	100	> 100	N/A	8.44%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
03-6243-7501	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.19756	0.16000	0.24000	0.01361	0.03044	15.41%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.94000	0.90000	1.00000	0.02449	0.05477	5.83%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.16000	0.19444	0.18111	0.21222	0.24000

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		1.00000 ✓	0.90000 ✓	0.90000 ✓	0.90000 ✓	1.00000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	07-6908-9009	07-6908-9009	10 Apr-06 11:25 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	8.44%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	0.50507	1.85955	0.3136	0.13552	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0033872	0.003387	1	0.26	0.62713	Non-Significant Effect
Error	0.1062265	0.013278	8			
Total	0.10961371	0.0166655	9			

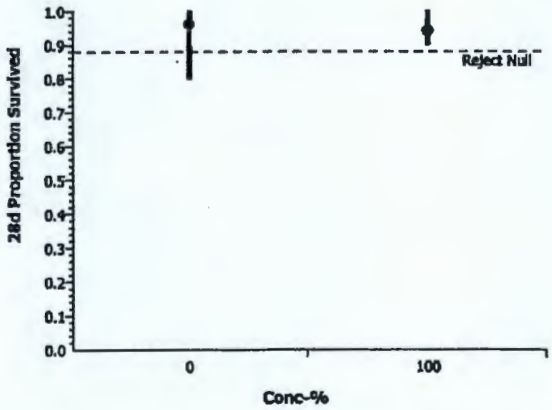
ANOVA Assumptions

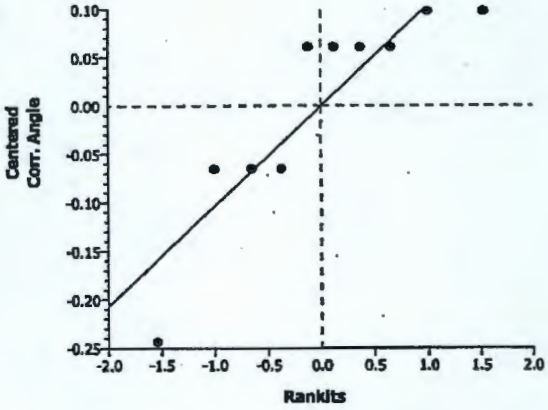
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.33299	23.15450	0.43208	Equal Variances
Distribution	Shapiro-Wilk W	0.80360		0.01604	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.94000	0.90000	1.00000	0.05477	1.31423	1.24905	1.41202	0.08926

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	07-6908-9009	07-6908-9009	10 Apr-06 11:25 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	17.85%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	-0.8781	1.85955	0.7973	0.03252	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0005895	0.000589	1	0.77	0.40548	Non-Significant Effect
Error	0.006116	0.000764	8			
Total	0.00670544	0.001354	9			

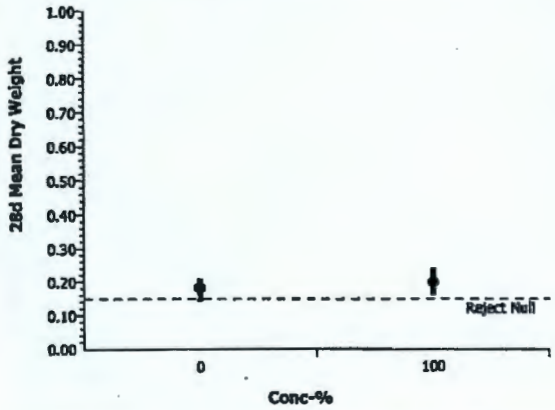
ANOVA Assumptions

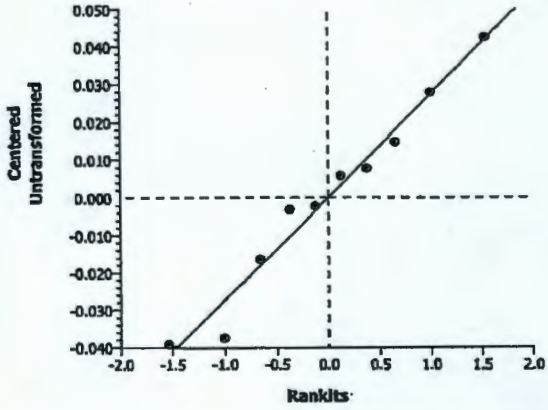
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.53900	23.15450	0.68635	Equal Variances
Distribution	Shapiro-Wilk W	0.96113		0.79872	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.19756	0.16000	0.24000	0.03044				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:29 AM
Test Link: 05-1276-0371/B153834hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	03-6512-6552	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	06-8119-3467	**Code:**	B1538-34	**Client:**	
Sample Date:	27 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	11d 0h	**Station:**			

Comments: J116X3

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
16-0552-1638	28d Mean Dry Weight	< 100	100	N/A	18.28%	Equal Variance t Two-Sample
10-6618-9985	28d Proportion Survived	100	> 100	N/A	18.97%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
10-6618-9985	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.12986	0.09100	0.16700	0.01416	0.03166	24.38%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.84000	0.50000	1.00000	0.10296	0.23022	27.41%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.15429 ✓	0.16700 ✓	0.09100 ✓	0.13000 ✓	0.10700 ✓

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.70000 ✓	1.00000 ✓	1.00000 ✓	0.50000 ✓	1.00000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	05-1276-0371	05-1276-0371	10 Apr-06 11:29 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	18.97%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	1.01923	1.85955	0.1690	0.27097	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.055147	0.055147	1	1.04	0.33792	Non-Significant Effect
Error	0.4246863	0.053086	8			
Total	0.47983326	0.1082328	9			

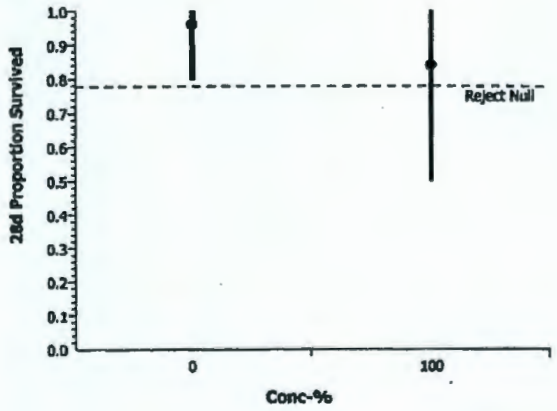
ANOVA Assumptions

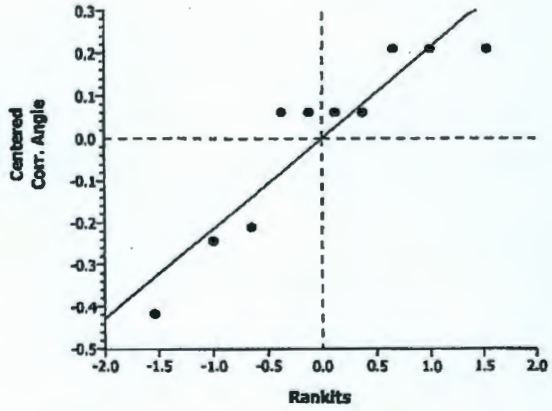
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	4.71158	23.15450	0.16246	Equal Variances
Distribution	Shapiro-Wilk W	0.84447		0.04991	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.84000	0.50000	1.00000	0.23022	1.20252	0.78540	1.41202	0.29594

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M HILL**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	05-1276-0371	05-1276-0371	10 Apr-06 11:29 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	18.28%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	2.92206	1.85955	0.0096	0.03331	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0068494	0.006849	1	8.54	0.01923	Significant Effect
Error	0.0064175	0.000802	8			
Total	0.01326694	0.0076516	9			

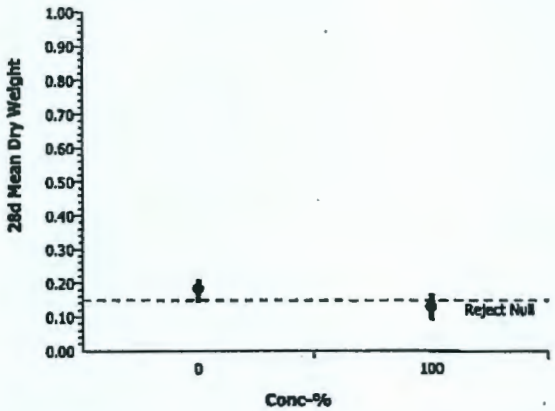
ANOVA Assumptions

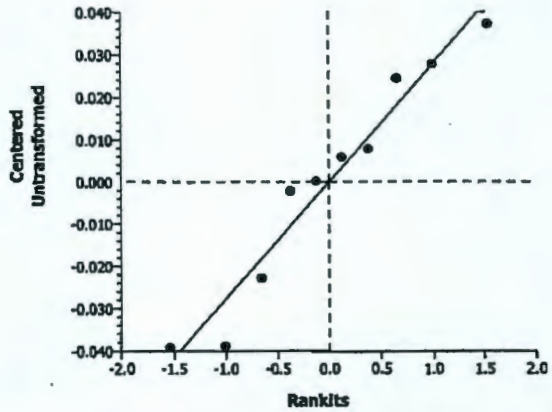
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.66418	23.15450	0.63380	Equal Variances
Distribution	Shapiro-Wilk W	0.93152		0.46298	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.12986	0.09100	0.16700	0.03166				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:30 AM
Test Link: 12-4877-4799/B153835hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	13-5874-1738	Test Type:	Hyalella (42d)	Duration:	28d 0h
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalella azteca
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	Brine:			

Sample No:	19-6365-0974	Code:	B1538-35	Client:	
Sample Date:	27 Feb-06	Material:	Sediment	Project:	
Receive Date:		Source:	Hanford		
Sample Age:	11d 0h	Station:			

Comments: J116X6

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
09-5055-5237	28d Mean Dry Weight	100	> 100	N/A	18.57%	Equal Variance t Two-Sample
08-8451-1189	28d Proportion Survived	< 100	100	N/A	11.51%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
08-8451-1189	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.19579	0.15556	0.24286	0.01451	0.03244	16.57%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.76000	0.60000	0.90000	0.06000	0.13416	17.65%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.19000	0.15556	0.18222	0.20833	0.24286

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.70000 ✓	0.90000 ✓	0.90000 ✓	0.60000 ✓	0.70000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	12-4877-4799	12-4877-4799	10 Apr-06 11:30 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	11.51%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	2.89040	1.85955	0.0101	0.17869	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.1928575	0.192858	1	8.35	0.02019	Significant Effect
Error	0.1846759	0.023084	8			
Total	0.37753342	0.215942	9			

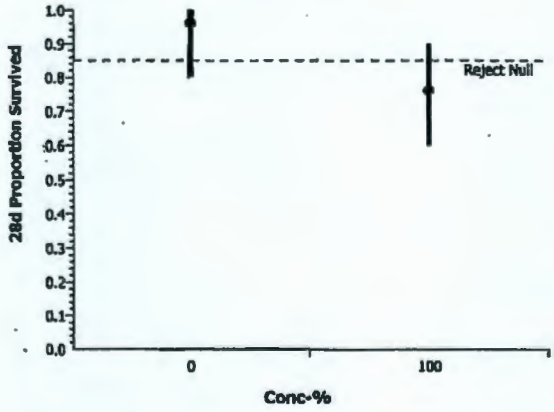
ANOVA Assumptions

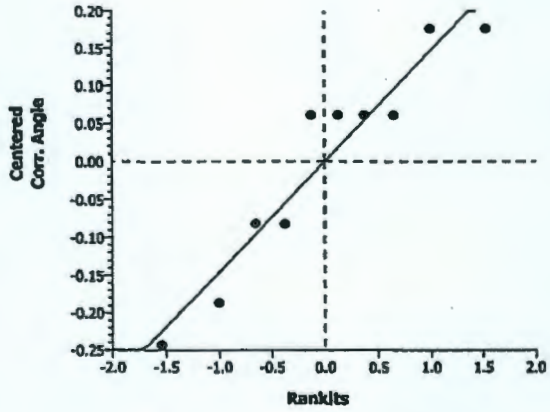
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.48370	23.15450	0.71157	Equal Variances
Distribution	Shapiro-Wilk W	0.90320		0.23746	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.76000	0.60000	0.90000	0.13416	1.07330	0.88608	1.24905	0.16607

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	12-4877-4799	12-4877-4799	10 Apr-06 11:30 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	18.57%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	-0.7473	1.85955	0.7619	0.03383	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.000462	0.000462	1	0.56	0.47627	Non-Significant Effect
Error	0.0066179	0.000827	8			
Total	0.00707985	0.0012892	9			

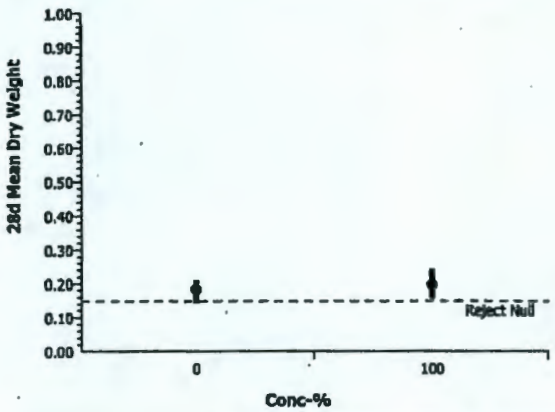
ANOVA Assumptions

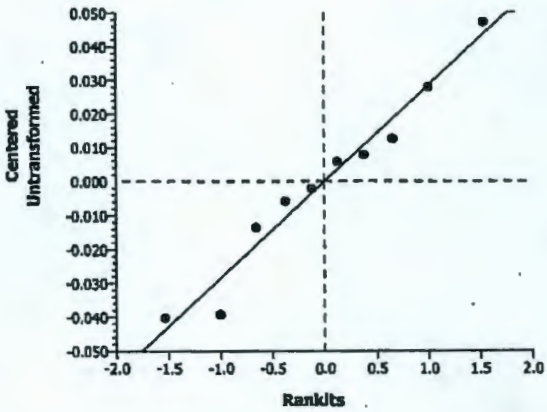
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.74737	23.15450	0.60202	Equal Variances
Distribution	Shapiro-Wilk W	0.96018		0.78788	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.19579	0.15556	0.24286	0.03244				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:31 AM
Test Link: 19-2440-1348/B153836hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	19-9159-0585	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	18-1334-9133	**Code:**	B1538-36	**Client:**	
Sample Date:	27 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	11d 0h	**Station:**			

Comments: J116W7

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
13-3182-1239	28d Mean Dry Weight	100	> 100	N/A	16.32%	Equal Variance t Two-Sample
12-3402-9408	28d Proportion Survived	100	> 100	N/A	8.44%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
12-3402-9408	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.25036	0.21500	0.28222	0.01163	0.02600	10.39%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.94000	0.90000	1.00000	0.02449	0.05477	5.83%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.23900	0.21500	0.26778	0.28222	0.24778

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		1.00000 ✓	1.00000 ✓	0.90000 ✓	0.90000 ✓	0.90000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	19-2440-1348	19-2440-1348	10 Apr-06 11:31 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	8.44%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	0.50507	1.85955	0.3136	0.13552	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0033872	0.003387	1	0.26	0.62713	Non-Significant Effect
Error	0.1062265	0.013278	8			
Total	0.10961371	0.0166655	9			

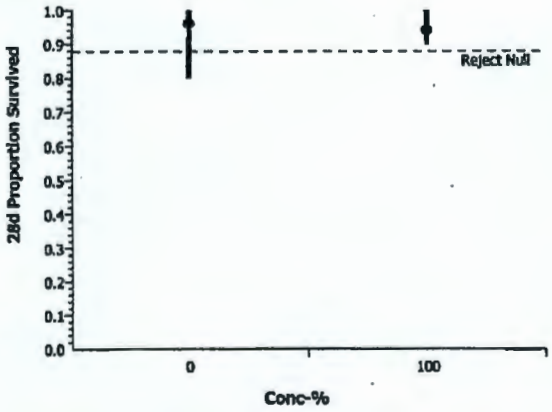
ANOVA Assumptions

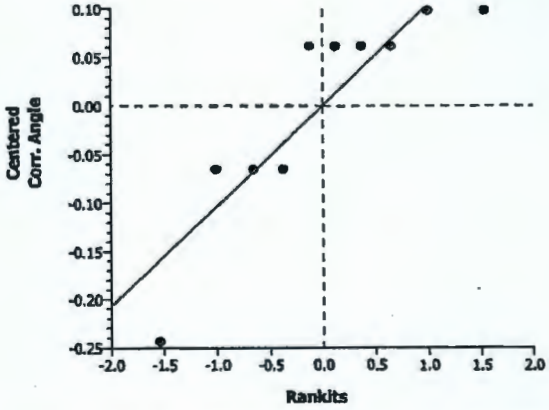
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.33299	23.15450	0.43208	Equal Variances
Distribution	Shapiro-Wilk W	0.80360		0.01604	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.94000	0.90000	1.00000	0.05477	1.31423	1.24905	1.41202	0.08926

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	19-2440-1348	19-2440-1348	10 Apr-06 11:31 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	16.32%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	-4.2625	1.85955	0.9986	0.02973	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.011613	0.011613	1	18.17	0.00275	Significant Effect
Error	0.0051134	0.000639	8			
Total	0.01672637	0.0122521	9			

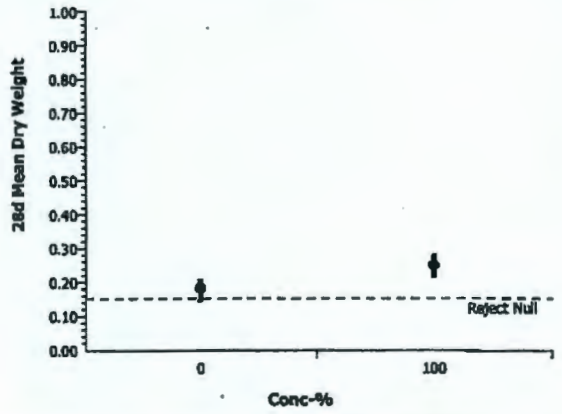
ANOVA Assumptions

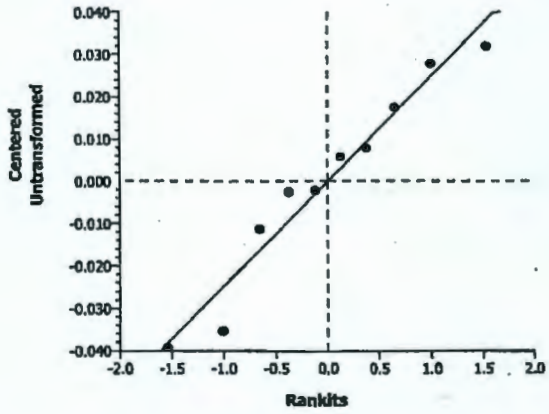
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.12280	23.15450	0.91332	Equal Variances
Distribution	Shapiro-Wilk W	0.93951		0.54758	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.25036	0.21500	0.28222	0.02600				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:33 AM
Test Link: 17-9952-9504/B153837hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	07-3152-6851	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	14-6448-6091	**Code:**	B1538-37	**Client:**	
Sample Date:	27 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	11d 0h	**Station:**			

Comments: J116W8

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
02-4594-7010	28d Mean Dry Weight	100	> 100	N/A	23.35%	Equal Variance t Two-Sample
07-8432-1576	28d Proportion Survived	100	> 100	N/A	7.97%	Wilcoxon Rank Sum Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
07-8432-1576	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.22880	0.18000	0.27500	0.02008	0.04490	19.62%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.98000	0.90000	1.00000	0.02000	0.04472	4.56%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.23300	0.18600	0.27500	0.18000	0.27000

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		1.00000 ✓	1.00000 ✓	1.00000 ✓	0.90000 ✓	1.00000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	17-9952-9504	17-9952-9504	10 Apr-06 11:32 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Wilcoxon Rank Sum Two-Sample	C > T	Rank		100	>100	1	N/A	7.97%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	Ties	Decision(0.05)
Dilution Sediment		100	28		0.5000	4	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0020135	0.002013	1	0.17	0.69223	Non-Significant Effect
Error	0.0956028	0.011950	8			
Total	0.09761624	0.0139638	9			

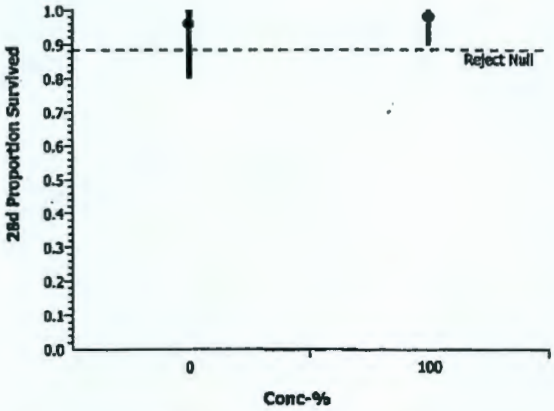
ANOVA Assumptions

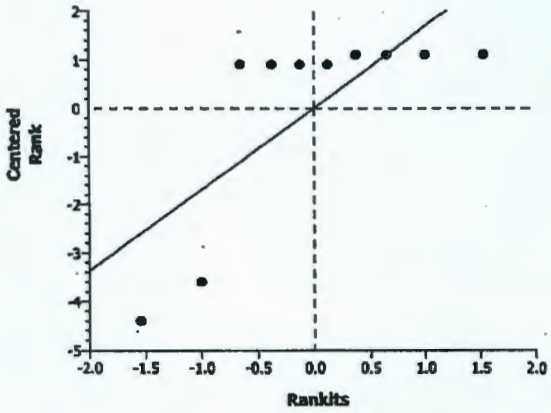
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.49949	23.15450	0.25245	Equal Variances
Distribution	Shapiro-Wilk W	0.64034		0.00017	Non-normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	5.40000	1.00000	6.50000	2.45967
100		5	0.98000	0.90000	1.00000	0.04472	5.60000	2.00000	6.50000	2.01246

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	17-9952-9504	17-9952-9504	10 Apr-06 11:33 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	23.35%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	-2.0365	1.85955	0.9620	0.04255	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0054289	0.005429	1	4.15	0.07608	Non-Significant Effect
Error	0.0104716	0.001309	8			
Total	0.0159005	0.0067379	9			

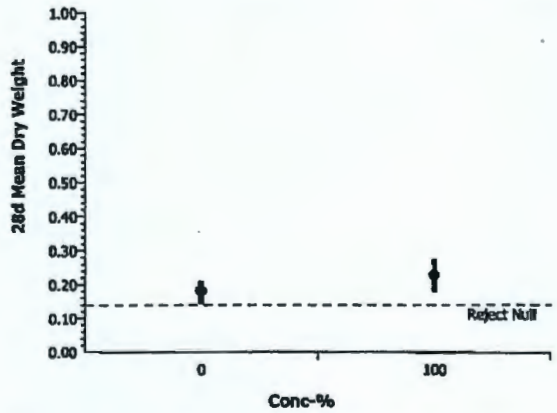
ANOVA Assumptions

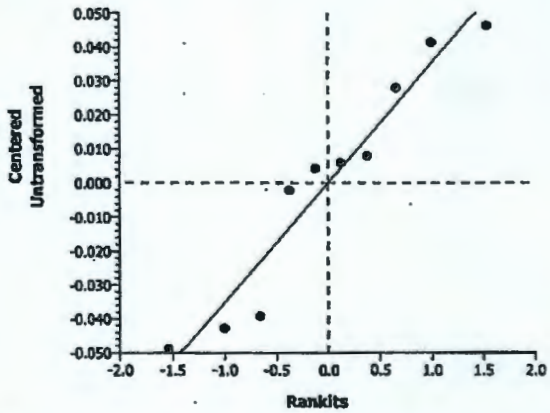
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.34722	23.15450	0.26880	Equal Variances
Distribution	Shapiro-Wilk W	0.91322		0.30383	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.22880	0.18000	0.27500	0.04490				

Graphics





APPENDIX B
REFERENCE TOXICANT DATA SHEETS

REFERENCE TOXICANT DATA SHEET

Client: QA/QC
Test Organism: Hyallela azteca
Source: Chesapeak Cultures
ID#: Amp. 56
Age: 7 days
Size: -
Loading: -

Reference Toxicant: Cd as $CdCl_2 \cdot 2.5\ H_2O$
Solvent: distilled H_2O Stock Solution: 1 ppm Cd
Reagent Log ID #: 1B031-01
*Dilution Water: Recon MH (FHM) ID#: 2605
Total Hardness as CaCO3: 88
Total Alkalinity as CaCO3: 64
Conductivity (µmhos/cm) / Salinity (ppt): 261
Temperature: 20 ± 1°C

Test Begin: Date 3-2-06 Time 1040
Test End: Date 3-4-06 Time 1600

	0 hr	24 hr	48 hr	72 hr	96 hr
Technician	[illegible]	Dm	TP		
Time	1040	1100	1600		

Toxicant Concen. µg/L Cd	Test Chamber Number	Number Surviving 0	24	48	72	96	Dissolved Oxygen mg/l 0	24	48	72	96	pH 0	24	48	72	96	Temperature °C 0	24	48	72	96	Cond. 0
Control		10	-	10			8.3	8.4	8.4			7.8	-	7.8			19.8	20.1				248
2		10	10	8			8.3	-	8.5			7.8	-	7.8			19.7	20.1				254
4		10	9	4			8.2	-	8.6			7.8	-	7.8			19.7	20.2				255
8		10	5	2			8.0	-	8.6			7.8	-	7.8			19.7	20.3				256
16		10	5	0			8.1	-	8.6			7.8	-	7.8			19.5	20.3				256
32		10	6	0			8.1	-	8.7			7.6	-	7.8			19.6	20.3				256

Test Acceptability Limits:	Survival in Controls: > or = 90%	For RBT (12°C): >6.0 and <10.8 All Others (at 20°C): > 4.0 and < 9.1	pH: > 6.0 and < 9.0	Temperature ± 1 °C

*Dilution Water Code
Recon. - reconstituted water
S - soft
MH - moderately hard
H - hard
Art Sea - Artificial Sea Water

48 h LC50 3.62
Cusum Chart Limits 3.58 to 8.52
Statistical Method Prob.

We verify this data is true and correct.
Task Manager: Doug Wilson
Project Manager: [illegible]
QA Officer: Ginger Collins

CETIS Test Summary

Report Date: 06 Mar-06 9:39 AM
Test Link: 01-7581-7320/rhaa056

Hyallela azteca 48-h Acute Survival Test — **CH2M Hill**

Test No:	07-5700-7546	**Test Type:**	Survival (48h)	**Duration:**	53h
Start Date:	02 Mar-06 10:40 AM	**Protocol:**		**Species:**	Hyalella azteca
Ending Date:	04 Mar-06 04:00 PM	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	02 Mar-06 10:40 AM	**Brine:**			

Sample No:	01-1207-1087	**Code:**	1B031-01	**Client:**	QA/QC
Sample Date:	20 Sep-05	**Material:**	Cadmium	**Project:**	
Receive Date:	20 Sep-05	**Source:**	Reference Toxicant		
Sample Age:	163d 10h	**Station:**	1g/L		

Point Estimate Summary

Analysis	Endpoint	% Effect	Conc-mg/L	95% LCL	95% UCL	Method
04-2914-8908	48h Proportion Survived	50	3.626116	2.203475	5.195412	Linear Regression

48h Proportion Survived Summary

Conc-mg/L	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Water	1	1.00000	1.00000	1.00000			
2		1	0.80000	0.80000	0.80000			
4		1	0.40000	0.40000	0.40000			
8		1	0.20000	0.20000	0.20000			
16		1	0.00000	0.00000	0.00000			0.00%
32		1	0.00000	0.00000	0.00000			0.00%

48h Proportion Survived Detail

Conc-mg/L	Control Type	Rep 1
0	Dilution Water	1.00000
2		0.80000
4		0.40000
8		0.20000
16		0.00000
32		0.00000

CETIS Analysis Detail

Hyallela azteca 48-h Acute Survival Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
48h Proportion Survived	Linear Regression	01-7581-7320	01-7581-7320	06 Mar-06 9:35 AM	CETISv1.1.2

Linear Regression Options

Model Function	Threshold Option	Threshold	Threshold Opt	Reweighted	Pooled Groups	Het Corr
Log-Normal [NED=A+B*log(X)]	Control Threshold	0	Yes	Yes	No	No

Regression Summary

Iters	Log Likelihood	Mu	Sigma	G	Chi-Sq	Critical	P-Value	Decision(0.05)
4	-17.14837	1.00630	0.31315	0.28132	0.64620	7.81473	0.88578	Non-Significant Heterogeneity

Point Estimates

% Effect	Conc-mg/L	95% LCL	95% UCL
50	3.626116	2.203475	5.195412

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Statistic	P-Value	Decision(0.05)
Slope	3.193375	0.8641639	1.499614	4.887136	3.695	0.03439	Significant
Intercept	3.213493	0.6019818	2.033609	4.393377	5.338	0.01285	Significant

Residual Analysis

Attribute	Method	Statistic	Critical	P-Value	Decision(0.05)
Distribution	Shapiro-Wilk W	0.9284734		0.58600	Normal Distribution

Data Summary

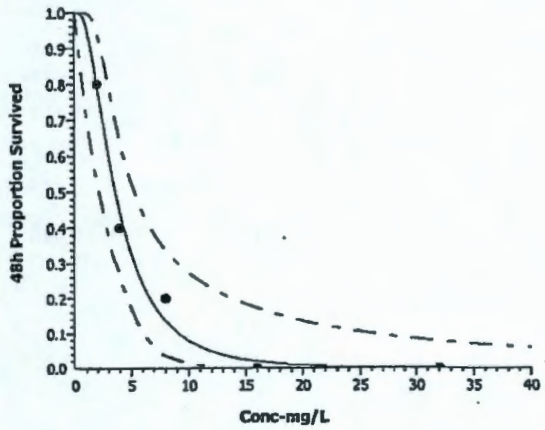
			Calculated Variate(A/B)						
Conc-mg/	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	1	1.00000	1.00000	1.00000			10	10
2		1	0.80000	0.80000	0.80000			8	10
4		1	0.40000	0.40000	0.40000			4	10
8		1	0.20000	0.20000	0.20000			2	10
16		1	0.00000	0.00000	0.00000			0	10
32		1	0.00000	0.00000	0.00000			0	10

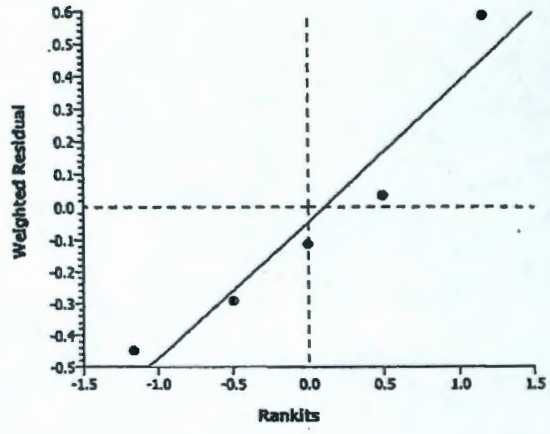
Data Detail

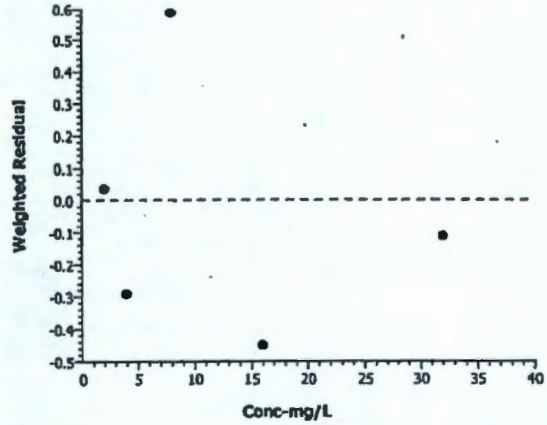
Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	1.00000									
2		0.80000									
4		0.40000									
8		0.20000									
16		0.00000									
32		0.00000									

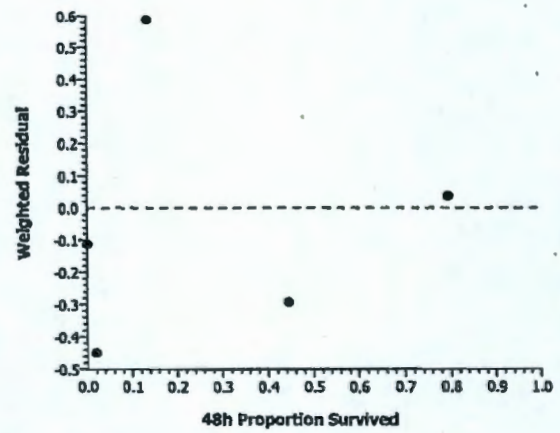
CETIS Analysis Detail

Graphics









REFERENCE TOXICANT DATA SHEET

Client: QA/QC
Test Organism: Hyalella azteca
Source: Chesapeake Cultures
ID#: Amp 57
Age: 4 days
Size: -
Loading: -

Reference Toxicant: Cd $CdCl_2 \cdot 2.5H_2O$
Solvent: distilled
Stock Solution: 13038-04
~~Reagent Log ID~~ #: 1 ppm ~~Cd~~ Cd
*Dilution Water: Recon MH (Rtne) ID#: 2609
Total Hardness as CaCO3: 96
Total Alkalinity as CaCO3: 66
Conductivity (µmhos/cm) / Salinity (ppt): 273
Temperature: 20±1°C

Test Begin: Date 3-7-06 Time 1350
Test End: Date 3-9-06 Time 1440

	0 hr	24 hr	48 hr	72 hr	96 hr
Technician	[illegible]	[illegible]	[illegible]		
Time	1350	0850	1440		

Toxicant Concen. (µg/L Cd)	Test Chamber Number	Number Surviving 0	24	48	72	96	Dissolved Oxygen mg/l 0	24	48	72	96	pH 0	24	48	72	96	Temperature °C 0	24	48	72	96	Cond. 0
CONTROL		8	8	8			8.2	8.4	8.2			8.3	8.4	8.1			21.0	20.2	20.1			283
2		10	10	9			8.4	8.4	8.3			8.3	8.4	8.1			21.0	20.2	20.1			278
4		10	9	7			8.5	8.4	8.4			8.2	8.4	8.1			21.0	20.3	20.0			278
8		10	10	2			8.5	8.5	8.5			8.1	8.4	8.0			21.0	20.3	20.0			276
16		10	6	0			8.5	8.4	8.5			8.0	8.4	7.9			21.0	20.1	20.1			274
32		10	3	0			8.5	8.5	8.5			8.0	8.3	7.9			21.0	20.2	20.1			269

Test Acceptability Limits:	Survival in Controls: > or = 90%	For RBT (12°C): >6.0 and <10.8 All Others (at 20°C): > 4.0 and < 9.1	pH: > 6.0 and < 9.0	Temperature ±1 °C

*Dilution Water Code
Recon. - reconstituted water
S - soft
MH - moderately hard
H - hard
ASW - Artificial Sea Water

42 h LC50 4.0

Cusum Chart Limits 3.5 to 8.3

Statistical Method Prob.

We verify this data is true and correct.

Task Manager [signature]

Project Manager [signature]

QA Officer [signature] for Jeff Schut

CETIS Test Summary

Report Date: 10 Mar-06 8:26 AM
Test Link: 04-1225-5904/rhaa057

Hyallela azteca 48-h Acute Survival Test — CH2M Hill

Test No:	15-2044-2609	**Test Type:**	Survival (48h)	**Duration:**	49h
Start Date:	07 Mar-06 01:50 PM	**Protocol:**		**Species:**	Hyalella azteca
Ending Date:	09 Mar-06 02:40 PM	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	07 Mar-06 01:50 PM	**Brine:**			

Sample No:	09-8569-0274	**Code:**	1B038-04	**Client:**	
Sample Date:	07 Mar-06	**Material:**	Cadmium	**Project:**	
Receive Date:		**Source:**	Reference Toxicant		
Sample Age:	14h	**Station:**			

Comments: Cd as CdCl2 x 2.5 H20

Point Estimate Summary

Analysis	Endpoint	% Effect	Conc-µg/L	95% LCL	95% UCL	Method
11-1794-6219	48h Proportion Survived	50	4.842365	3.422664	6.719178	Linear Regression

48h Proportion Survived Summary

Conc-µg/L	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Water	1	1.00000	1.00000	1.00000			
2		1	0.90000	0.90000	0.90000			
4		1	0.70000	0.70000	0.70000			
8		1	0.20000	0.20000	0.20000			
16		1	0.00000	0.00000	0.00000			0.00%
32		1	0.00000	0.00000	0.00000			0.00%

48h Proportion Survived Detail

Conc-µg/L	Control Type	Rep 1
0	Dilution Water	1.00000
2		0.90000
4		0.70000
8		0.20000
16		0.00000
32		0.00000

CETIS Analysis Detail

Hyallela azteca 48-h Acute Survival Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
48h Proportion Survived	Linear Regression	04-1225-5904	04-1225-5904	10 Mar-06 8:26 AM	CETISv1.1.2

Linear Regression Options

Model Function	Threshold Option	Threshold	Threshold Opt	Reweighted	Pooled Groups	Het Corr
Log-Normal [NED=A+B*log(X)]	Control Threshold	0	Yes	Yes	No	No

Regression Summary

Iters	Log Likelihood	Mu	Sigma	G	Chi-Sq	Critical	P-Value	Decision(0.05)
4	-14.77436	0.55966	0.24894	0.24019	0.66379	7.81473	0.88169	Non-Significant Heterogeneity

Point Estimates

% Effect	Conc-µg/L	95% LCL	95% UCL
50	4.842365	3.422664	6.719178

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Statistic	P-Value	Decision(0.05)
Slope	4.016983	1.004429	2.048303	5.985663	3.999	0.02802	Significant
Intercept	2.248136	0.7485508	0.780976	3.715295	3.003	0.05752	Not Significant

Residual Analysis

Attribute	Method	Statistic	Critical	P-Value	Decision(0.05)
Distribution	Shapiro-Wilk W	0.9421834		0.68141	Normal Distribution

Data Summary

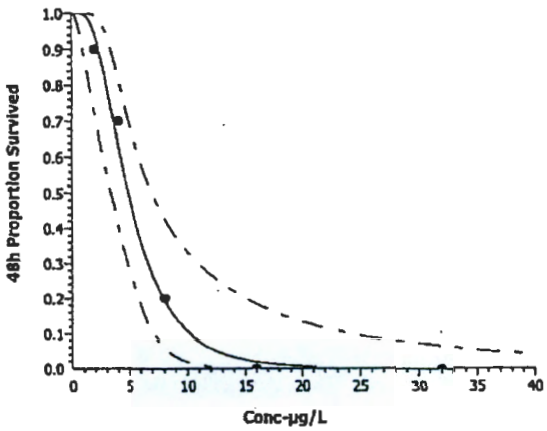
			Calculated Variate(A/B)						
Conc-µg/L	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	1	1.00000	1.00000	1.00000			8	8
2		1	0.90000	0.90000	0.90000			9	10
4		1	0.70000	0.70000	0.70000			7	10
8		1	0.20000	0.20000	0.20000			2	10
16		1	0.00000	0.00000	0.00000			0	10
32		1	0.00000	0.00000	0.00000			0	10

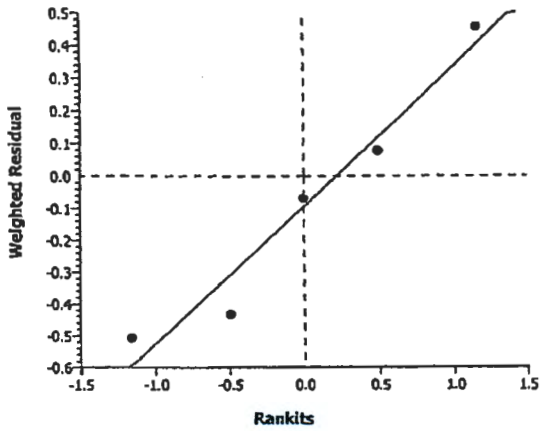
Data Detail

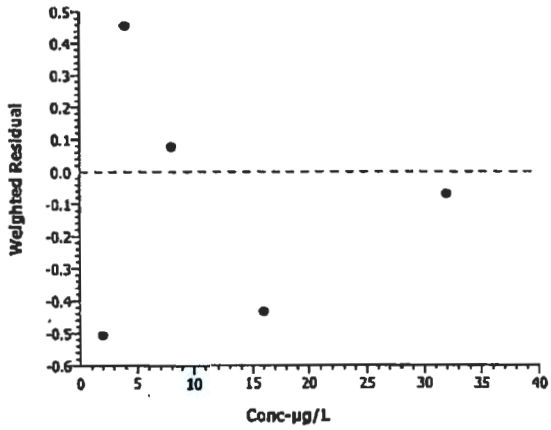
Conc-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	1.00000									
2		0.90000									
4		0.70000									
8		0.20000									
16		0.00000									
32		0.00000									

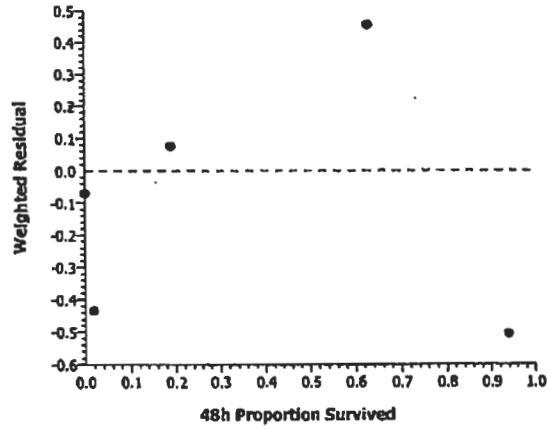
CETIS Analysis Detail

Graphics









APPENDIX C
CHAIN OF CUSTODY

F1162

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-6	Page 1 of 1

Collector: JE Bernhard	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 21 Days	Air Quality: ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: ~~300-1~~ ABF #16 SEB 2-5-06	SAF No.: RC-047	
Ice Chest No.: SHWS-336	Field Logbook No.: EL-1596 7 SEB 2-5-06	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	1	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11143	OTHER SOLID	02-05-06	1130	X	X	X							-1

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1400 02-05-06	EAS LOCKED STORAGE	1400 02-05-06
EAS LOCKED STORAGE	0745 02-06-06	RZ Steffler R.J. Steffler	0745 2-6-06
RZ Steffler R.J. Steffler	1500 2-6-06	Fed Ex	
FED EX		KMCKinley	2/7/06 1020

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

31533-01 for Hydride

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By: KMCKinley	Title	Date/Time: 2/7/06 1020
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-9	Page 1 of 1

Collector: JAMES BERNHARD	Company Contact: JOAN KESSNER; Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9N; Data Turnaround: 21 Days
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U-2	SAF No.: RC-047	Air Quality: [ ]
Ice Chest No.: AFS-04-050	Field Logbook No.: EL-15987 JEB 2-8-06; COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT	
Shipped To: CH2MHILL	Offsite Property No.: A060151	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	2 JEB 2-8-06	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11146	OTHER SOLID	2-8-06	1245	X	X	X							

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-8-06 1700	EAS LOCKED STORAGE	2-8-06 1700
JAMES BERNHARD	2-9-06 0715	RZ Stettler R.J. Stettler	2-9-06 0715
RZ Stettler R.J. Stettler	2-9-06 1500	Fed Ex	
Fed Ex		Beth Mulvey	2-10-06 1400

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1539-02 for Hydrolab
B1539-02 for outside / pack chain
COC seals intact

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-7	Page 1 of 1

Collector: JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 21 Days	Air Quality: [ ]	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 300-2		SAF No.: RC-047
Ice Chest No.: AFS-04-050	Field Logbook No.: EL-15987 JEB 2-8-06	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	2 JEB 2-8-06	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11144	OTHER SOLID	2-8-06	1430	X	X	X							

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1700 2-8-06	EAS LOCKED STORAGE	1700 2-8-06
JAMES BERNHARD	0715 2-9-06	RZ Stiffler	0715 2-9-06
RZ Stiffler	1500 2-9-06	Fed Ex	
Fed Ex		Brett Mulkey	1400 2-10-06

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-03 for Hyacinth
B1539-03 for Mustard / Pak Choi
COC seals intact on arrival

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-8	Page 1 of 1

Collector: SEB JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 21 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U-1		SAF No.: RC-047
Ice Chest No.: AFS-04-050	Field Logbook No.: EL-159B7 SEB 2-8-06	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	#2 SEB 2-8-06	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11145	OTHER SOLID	2-8-06	1130	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 1700 2-8-06	Received By/Stored In: EAS LOCKED STORAGE — Date/Time: 1700 2-8-06
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 0715 2-9-06	Received By/Stored In: RZ Stettler R.Z. Stettler — Date/Time: 0715 2-9-06
Relinquished By/Removed From: RZ Stettler R.Z. Stettler	Date/Time: 1500 2-9-06	Received By/Stored In: Fed Ex — Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time:	Received By/Stored In: Brett Mulkey — Date/Time: 1400 2-10-06
Relinquished By/Removed From	Date/Time	Received By/Stored In — Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In — Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

31538-04 for Hyalella
31539-04 for nitrogen / pak choi

COC seals intact on arrival

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx. Express

Ship Date: 09FEB06
ActWgt: 38 LB
System#: 5851986/INET2400
Account#: S *********

REF: A060151

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

PRIORITY OVERNIGHT

FRI
Deliver By:
10FEB06

TRK# 7918 5661 0690 FORM 0201

PDX AA

97339 -OR-US

86 CVOA

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From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx. Express

Ship Date: 09FEB06
ActWgt: 78 LB
System#: 5851986/INET2400
Account#: S *********

REF: A060151

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

PRIORITY OVERNIGHT

FRI
Deliver By:
10FEB06

TRK# 7918 5661 0680 FORM 0201

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From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx Express

Ship Date: 09FEB06
ActWgt: 55 LB
System#: 5851986/INET2400
Account#: S *********

REF: A060151

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

PRIORITY OVERNIGHT

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Deliver By:
10FEB06

TRK# 7918 5661 0705 FORM 0201

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