

## AR TARGET SHEET

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

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TITLE: Data Package



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

Prepared for

**ELR CONSULTING, INC.**  
**WASHINGTON CLOSURE HANFORD**  
**RICHLAND, WASHINGTON**

Prepared by

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**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, Naves, 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<sub>3</sub> and an alkalinity of 60 to 74 mg/L as CaCO<sub>3</sub>.

### 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.

<b>Sample Number</b>	<b>Sample Date</b>	<b>Sampling Location</b>	<b>Amphipod Test SDG</b>	<b>Analytical Lab SDG</b>
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 *Hyaella 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:  
Hyallolela 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 statistically significant result; <sup>5</sup>, indicates significant at alpha (p) = 0.05;  
 -, indicates no statistical test performed.

Lab ID: Sample Number:	<i>Hyallolela azteca</i> Survival Endpoint  Percent Survival	Statistically significant difference when compared to Lab Control?	<i>Hyallolela azteca</i> Growth Endpoint  Growth per surviving organism (mg)	Statistically significant difference when compared to Lab Control?
<b>Tests initiated on March 3, 2006</b>				
Laboratory Control	92	-	0.155	--
B1538-01 J11143	66	E <sup>5</sup>	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 <sup>5</sup>	0.177	ns
B1538-07 J112B7	62	E <sup>5</sup>	0.097	E <sup>5</sup>
B1538-08 J116N2	78	ns	0.160	ns
B1538-09 J116M4	38	E <sup>5</sup>	0.101	E <sup>5</sup>
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 <sup>5</sup>	0.092	E <sup>5</sup>
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  $23\pm 1^{\circ}\text{C}$ , and instantaneous temperatures remained at  $23\pm 3^{\circ}\text{C}$ , 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:  
Hyalella 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 statistically significant result; <sup>5</sup>, indicates significant at alpha (p) = 0.05;  
 --, indicates no statistical test performed. NA = data not available.

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

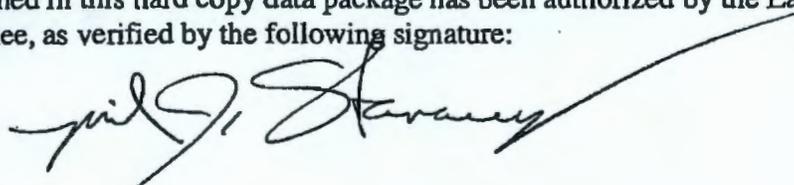
## REFERENCE TOXICANT TESTS

The data sheets for the reference toxicant tests are provided in Appendix B. The LC<sub>50</sub> 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.

<b>Species</b>	<b>LC<sub>50</sub></b>	<b>Control Chart</b>
<i>Hyallela azteca</i> (Amp 56)	3.62	3.58 to 8.52
<i>Hyallela azteca</i> (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**

**CHM HILL TOXICITY TEST ORGANISM AND WATER QUALITY DATA**

10 MS  
3-18-06

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 cystica 1 AMP 56 / Hyalella cystica 1 AMP 57

Sample Information				Test Species Information			ID# 56	ID#	ID#	ID#	
Sample ID Number	Field ID	Collected		Total Residual Chlorine (mg/l)	Ammonia (NH <sub>3</sub> -N mg/l)	Hardness (mg/l as CaCO <sub>3</sub> )	Alkalinity (mg/l as CaCO <sub>3</sub> )	Hyale AMP	AMP 57		
		Date	Time	As Received / Dechlor.				Age or Size			
B1538	1-20 see report	ec	oc	/	see exp sheet			8 days	7 days		
				/				300	300		
				/				100g sediment	100g sediment		
				/				YCT 1ml	YCT 1ml		
				/				per Beaker daily	per Beaker daily		
				/				Aeration: Began	None	None	
				/				Amount	—	—	
				/				Dilution Water ID#	see below	see below	
				/				Accimation 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 <sub>3</sub> )	Alkalinity (mg/l as CaCO <sub>3</sub> )					
Keweenaw M.H.				2609	96	66					
Keweenaw M.H.				2613	92	64	Water Quality Meters Used/ID#				
Keweenaw M.H.				2621	86	64	Dissolved Oxygen #2 pH 3 Temperature				
Keweenaw M.H.				2624	100	74	Conductivity #1 Refractometer Other				
Keweenaw M.H.				2625	90	70					

**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



**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 <sub>3</sub> )		Alkalinity (mg/L as CaCO <sub>3</sub> )		Ammonia (mg/L as NH <sub>3</sub> -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 WASINGTON CLOSURE HAMPSHIRE  
 Sample Description See Cross Reference Sheet batch Number B 1538 1-20  
 Test Species: AM change: Tech. Day 0 MS Day 1 0715 Day 2 0715 Day 3 MS Day 4 MS Day 5 DW Day 6 DW Day 7 DW Day 8 @ Day 9 @  
Hyallolela azteca Time Day 0 0700 Day 1 NS Day 2 NS Day 3 0720 Day 4 0720 Day 5 0700 Day 6 0700 Day 7 0700 Day 8 0700 Day 9 0705  
 ID#: 56 PM change: Tech. Day 0 N/A Day 1 P Day 2 P Day 3 B Day 4 DW Day 5 B Day 6 MS Day 7 B Day 8 P Day 9 P  
 Amp 56 Time Day 0 1700 Day 1 1730 Day 2 1815 Day 3 1720 Day 4 1700 Day 5 1830 Day 6 1645 Day 7 1745 Day 8 1700 Day 9 1700  
 Feeding:  when done Day 0  Day 1  Day 2  Day 3  Day 4  Day 5  Day 6  Day 7  Day 8  Day 9

Beginning Date 3-3-06 Time 1300  
 Ending Date 3-31-06 Time 0700

Beaker Number	Dissolved Oxygen (mg/l)									Temperature (°C)									pH				Conductivity (µmhos/cm)			
	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	3	6	9	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			6.4			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			6.4			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	22.4	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			7.4	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	22.6	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	23.1	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 was living "blank"

Client

Beginning, Date 3-3-06 Time 1300

Sample Description See Cross Reference Sheet batch Number B

Ending, Date 3-31-06 Time 0700 to

Test Species: Hyallolela azteca AM change: Tech. Day 10 MS Day 11 MS Day 12 DW Day 13 DW Day 14 DW Day 15 DW Day 16 DW Day 17 MS Day 18 DW Day 19 DW  
 Time Day 10 0640 Day 11 0630 Day 12 0700 Day 13 0655 Day 14 0645 Day 15 0700 Day 16 0650 Day 17 0640 Day 18 0710 Day 19 0700

ID#: 56 PM change: Tech. Day 10 NS Day 11 NS Day 12 NS Day 13 NS Day 14 NS Day 15 NS Day 16 NS Day 17 NS Day 18 NS Day 19 NS  
 Amp 56 Time Day 10 1650 Day 11 1750 Day 12 1745 Day 13 1700 Day 14 1730 Day 15 1840 Day 16 1745 Day 17 1640 Day 18 1700 Day 19 1650  
 Feeding:  when done Day 10  Day 11  Day 12  Day 13  Day 14  Day 15  Day 16  Day 17  Day 18  Day 19

Beaker Number	Dissolved Oxygen (mg/l)									Temperature (°C)									pH			Conductivity (µmhos/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		23.4	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		23.4	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	

Client \_\_\_\_\_  
 Sample Description See Cross Reference Sheet batch Number B  
 Test Species: AM change: Tech. Day 20 MS Day 21 MS Day 22 Q Day 23 Q Day 24 MS Day 25 MS Day 26 TP Day 27 MS Day 28 MS  
 Hyallela azteca 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  
 ID#: \_\_\_\_\_ PM change: Tech. Day 20 Q Day 21 Q Day 22 Q Day 23 Q Day 24 NJ Day 25 Q Day 26 NJ Day 27 Q  
 Amp 56 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

Beginning Date 3-3-06 Time 1300  
 Ending Date 3-31-06 Time 0700

Beaker Number	Dissolved Oxygen (mg/l)										Temperature (°C)								pH				Conductivity (µmhos/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
18		6.6			7.5		7.9		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		7.0		6.4		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	23.8	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	23.8	23.9	23.6	23.6	23.4		7.2	7.5	7.2	7.1	329	317
68		6.3			7.2		7.5		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	23.7	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	23.4	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	23.4	24.0	23.4	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	23.4		7.2	7.6	7.2	7.2	324	344





Client \_\_\_\_\_ Beginning, Date 3-3-06 Time 1300  
 Sample Description see randomization sheet. Batch number: B 1538-1-20 Ending, Date 3-31-06 Time 1200  
 Test Species: Hyallolela azteca ID#: AMP 66  
 Test Initiation: Tech: BW/DW Time: 1300 Test Termination: Tech: BW/DW/MS Time: 1200

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

Comments:

Beaker Number	Start Count	# alive found	# dead found
	0	10	10
76	10	9	0
77	10	10	0
78	10	3	0
79	10	8	0
80	10	6	0
81	10	10	0
82	10	9	0
83	10	3	0
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

Comments:

*all look poor*

*3 look poor*



## Hyallella 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

## Hyallolela 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

### Hyalloella 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

Hyalalella 42-d Survival, Growth, and Reproduction Sediment Test							CH2M Hill	
Test No:	05-4144-8625	Test Type:	Hyalalella (42d)	Duration:	28d 0h			
Start Date:	03 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalalella azteca			
Ending Date:	31 Mar-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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		
<b>28d Proportion Survived Detail</b>								
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

Comparisons: Page 1 of 2  
 Report Date: 03 Apr-06 11:05 AM  
 Analysis: 18-5042-6778/B153801hac

**Hyallolella 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**

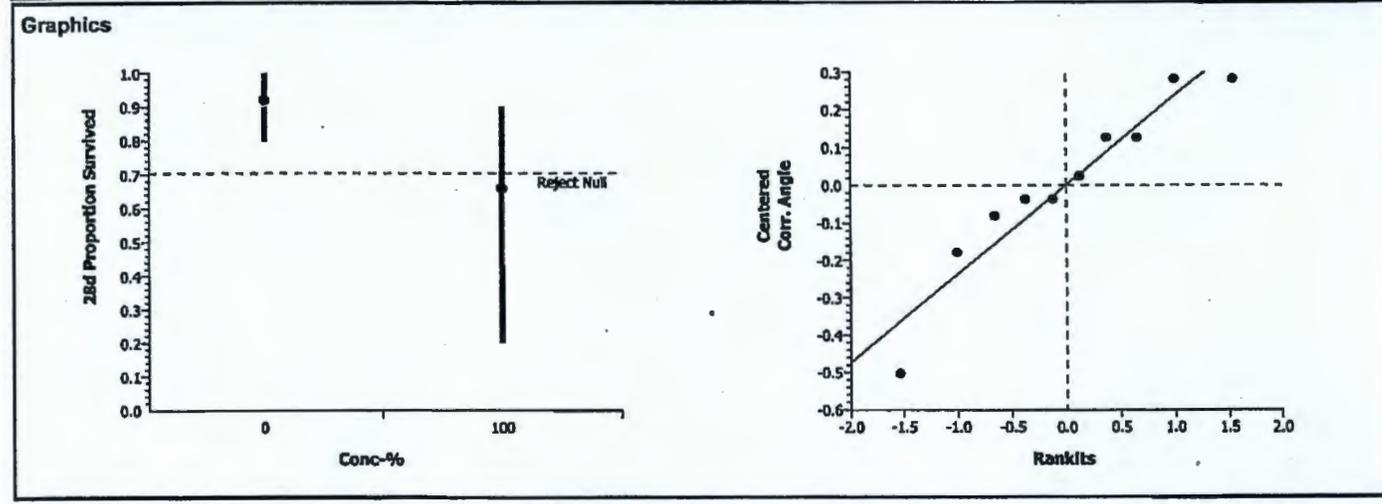
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.2529053	0.252905	1	4.16	0.07565	Non-Significant Effect
Error	0.4860712	0.060759	8			
Total	0.73897648	0.3136642	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 11:05 AM  
 Analysis: 09-2037-2780/B153801hac

**Hyallolella 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**

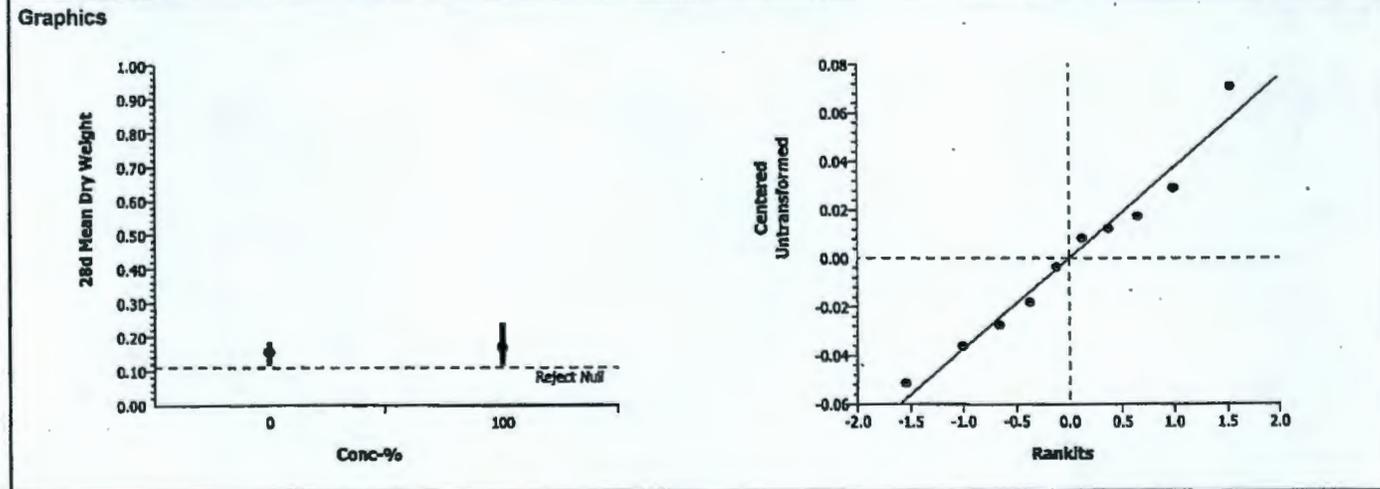
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0005154	0.000515	1	0.36	0.56472	Non-Significant Effect
Error	0.0114295	0.001429	8			
Total	0.01194488	0.0019441	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

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

Hyallella 42-d Survival, Growth, and Reproduction Sediment Test							CH2M HILL	
Test No:	04-2067-0903	Test Type:	Hyallella (42d)	Duration:	28d 0h			
Start Date:	03 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyallella azteca			
Ending Date:	31 Mar-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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		
<b>28d Proportion Survived Detail</b>								
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**

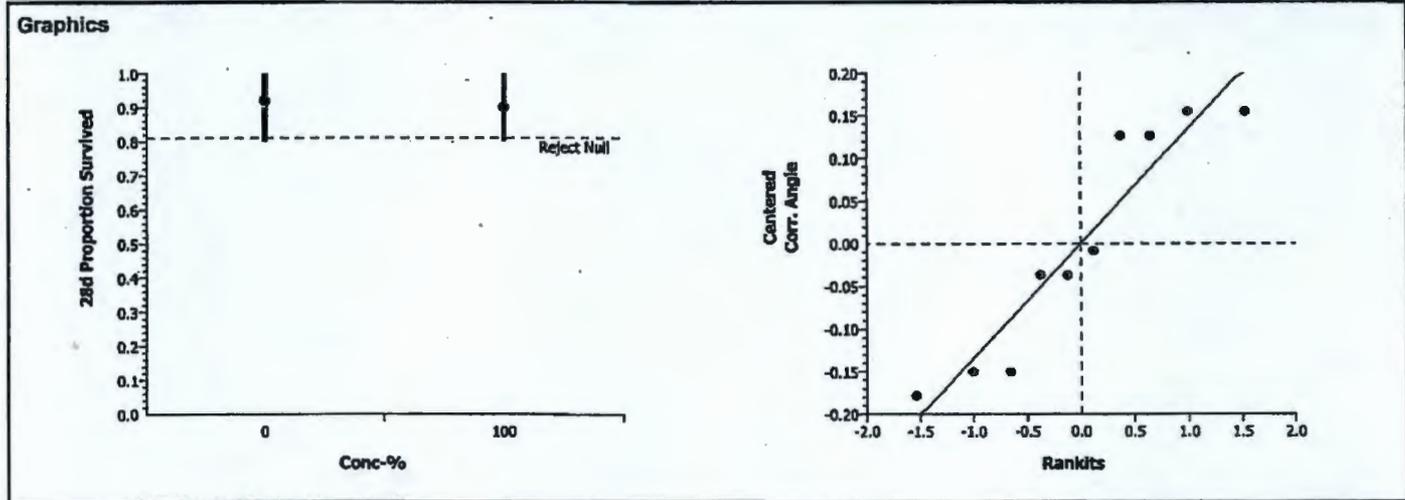
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0020135	0.002013	1	0.10	0.75879	Non-Significant Effect
Error	0.159512	0.019939	8			
Total	0.16152545	0.0219525	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 11:17 AM  
 Analysis: 14-8348-2574/B153802hac

**Hyalalella 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**

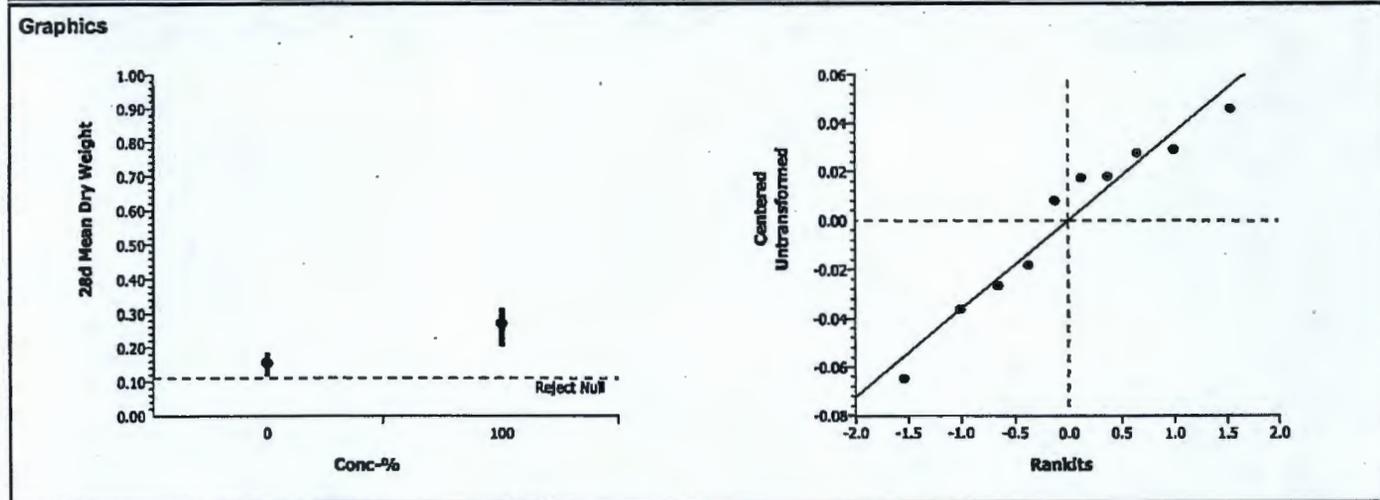
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0337335	0.033734	1	24.62	0.00110	Significant Effect
Error	0.0109595	0.00137	8			
Total	0.04469304	0.0351034	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

Report Date: 03 Apr-06 11:20 AM

Test Link: 09-1540-9662/B153803hac

Hyallella 42-d Survival, Growth, and Reproduction Sediment Test							CH2M HILL	
Test No:	07-5505-4020	Test Type:	Hyallella (42d)	Duration:	28d 0h			
Start Date:	03 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyallella azteca			
Ending Date:	31 Mar-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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	0.15168	17.63%
<b>28d Mean Dry Weight Detail</b>								
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		
<b>28d Proportion Survived Detail</b>								
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

Comparisons: Page 1 of 2  
 Report Date: 03 Apr-06 11:20 AM  
 Analysis: 03-6737-8936/B153803hac

**Hyalalela 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**

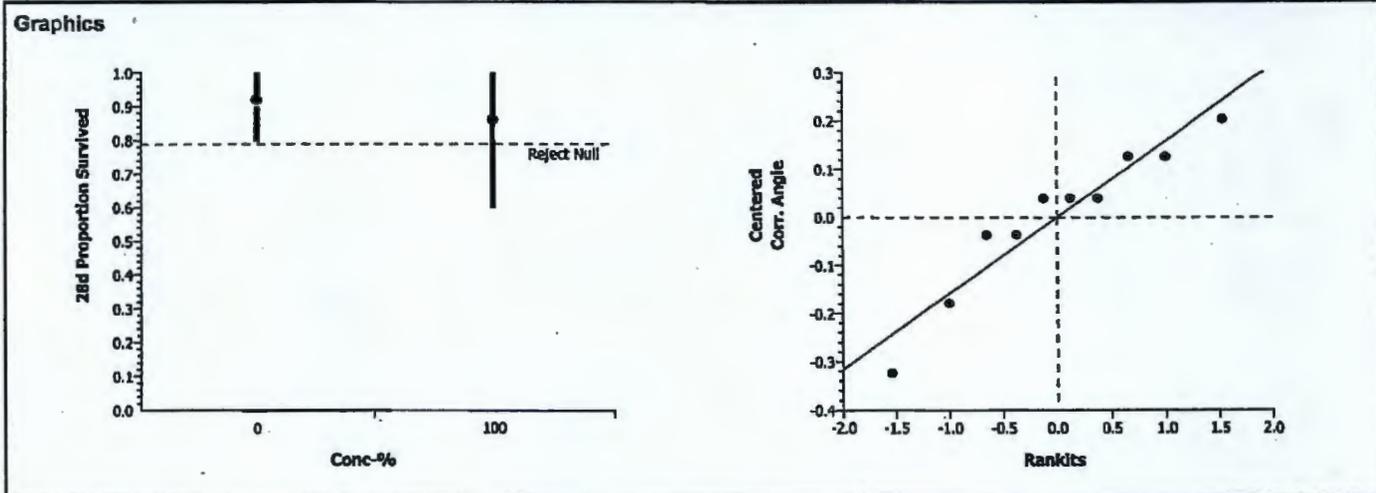
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0147488	0.014749	1	0.54	0.48174	Non-Significant Effect
Error	0.2167847	0.027098	8			
Total	0.23153355	0.0418469	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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	0.80000	1.00000	0.15166	1.20905	0.88608	1.41202	0.19385



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 11:20 AM  
 Analysis: 05-3038-6721/B153803hac

**Hyalalella 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**

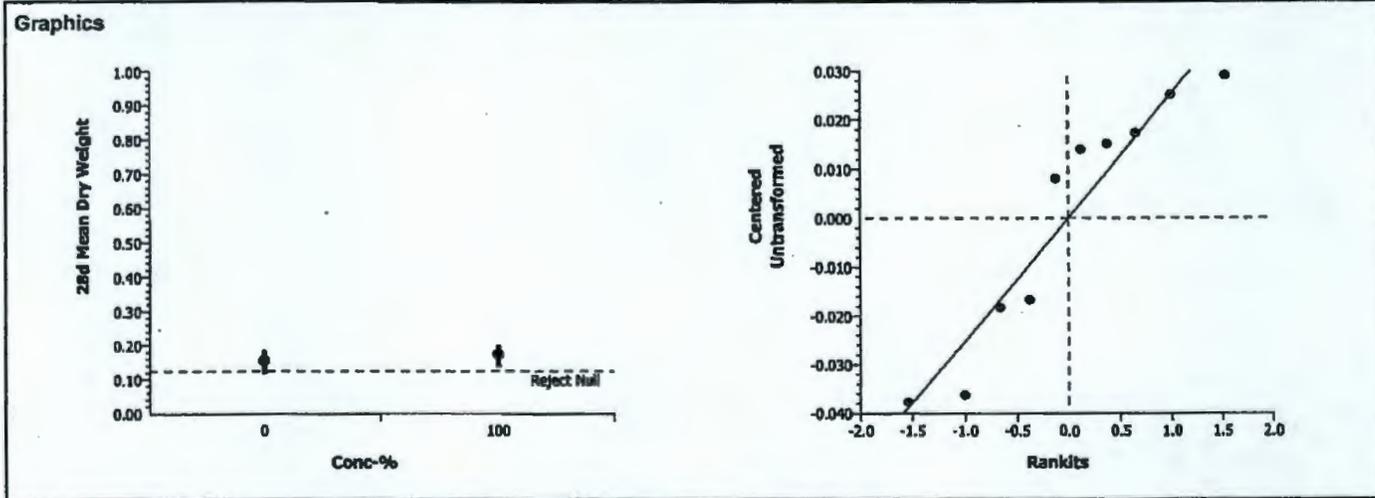
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0007847	0.000785	1	1.12	0.32075	Non-Significant Effect
Error	0.0056032	0.000700	8			
Total	0.00638792	0.0014851	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

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

Hyalella 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:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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		
<b>28d Proportion Survived Detail</b>								
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

**Hyalalella 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**

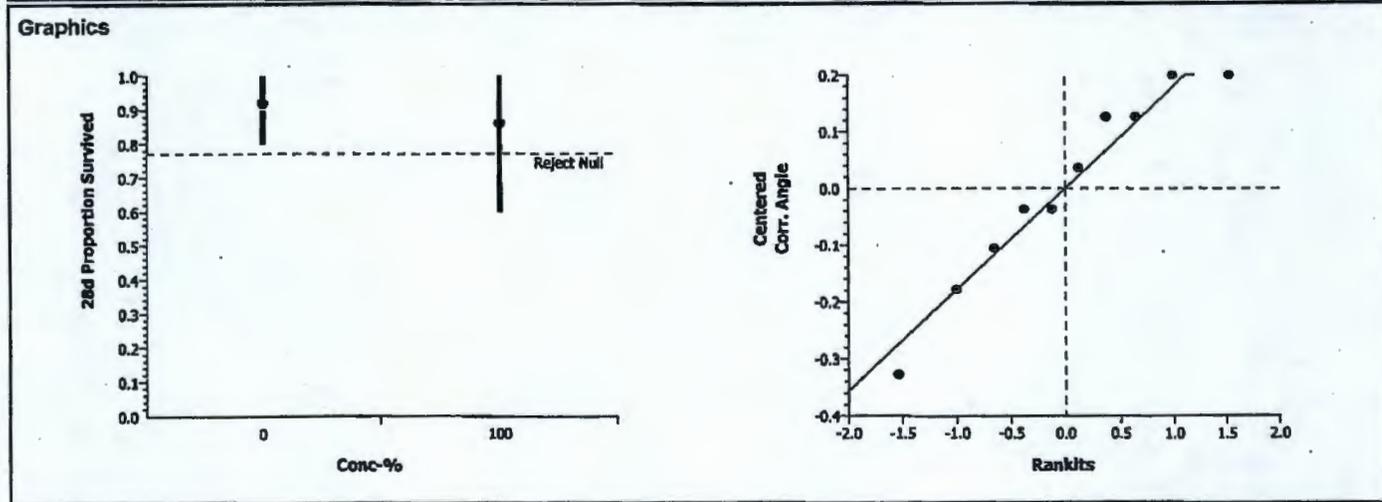
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0131746	0.013175	1	0.40	0.54591	Non-Significant Effect
Error	0.2650759	0.033134	8			
Total	0.27825049	0.0463091	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

**Hyalloela 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**

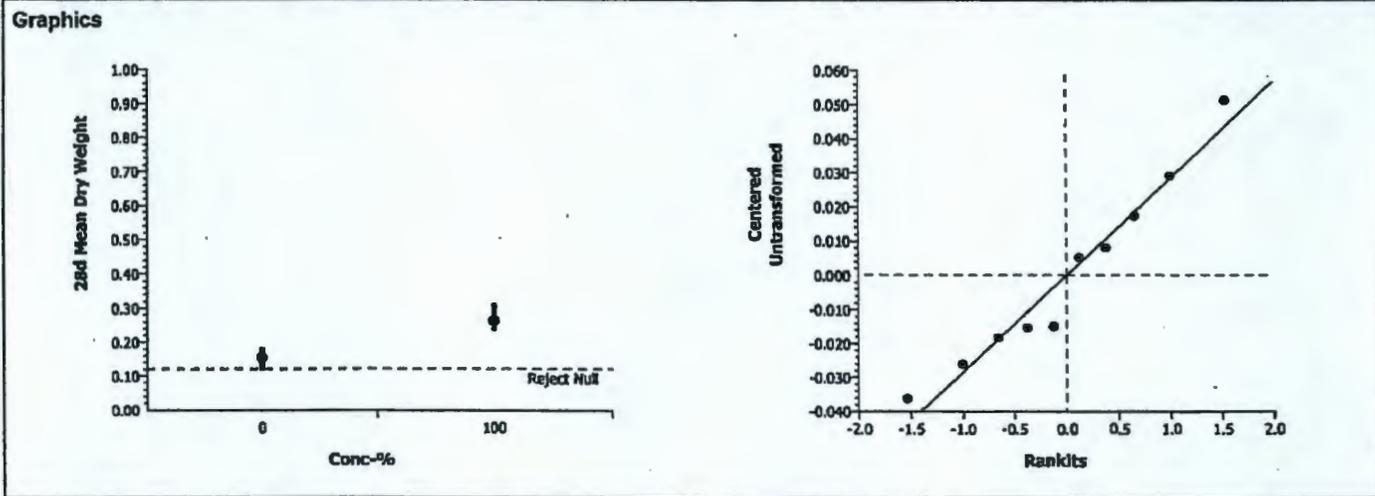
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0290851	0.029085	1	35.03	0.00035	Significant Effect
Error	0.0066429	0.000830	8			
Total	0.03572799	0.0299154	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



# CETIS Test Summary

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

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

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

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

**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

Comparisons: Page 1 of 2  
 Report Date: 03 Apr-06 11:27 AM  
 Analysis: 02-6083-4326/B153805hac

**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**

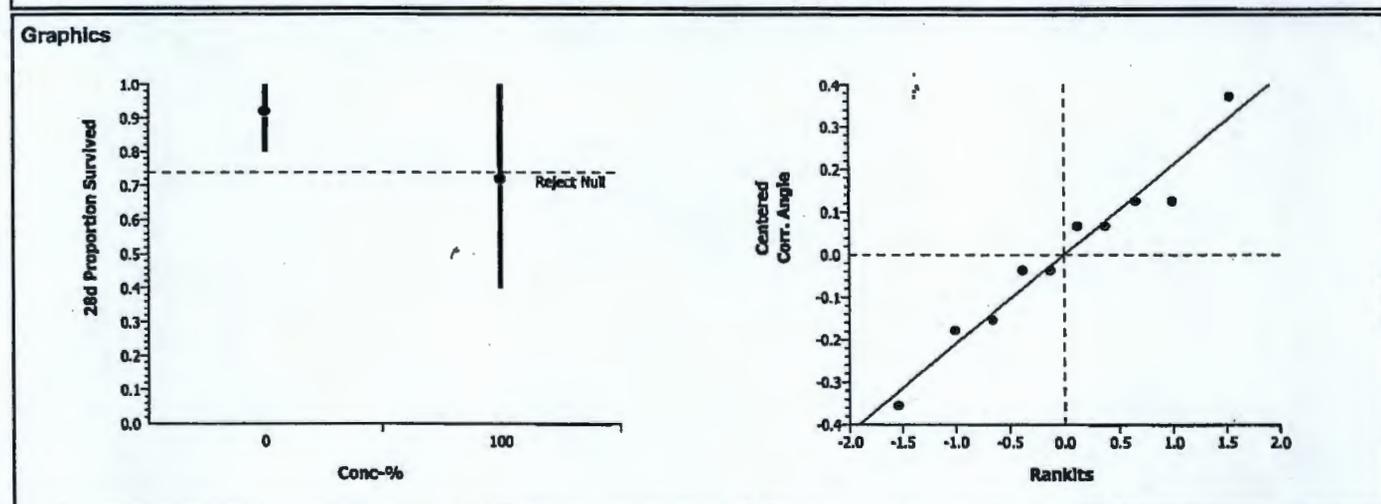
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.1518225	0.151823	1	3.34	0.10509	Non-Significant Effect
Error	0.3638079	0.045476	8			
Total	0.51563042	0.1972985	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 11:27 AM  
 Analysis: 19-8792-0312/B153805hac

## Hyalalela 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

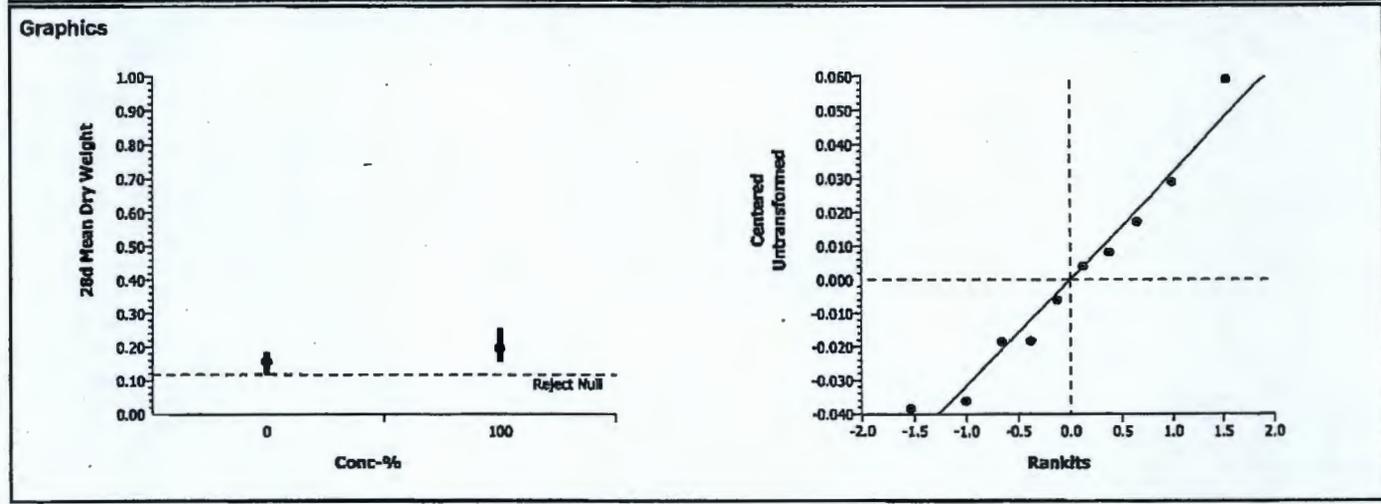
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	24.32%

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											
Conc-%	Control Type	Count	Original Data				Transformed Data				
			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					



## CETIS Test Summary

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

Hyalella 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:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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		
<b>28d Proportion Survived Detail</b>								
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

**Hyalella 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**

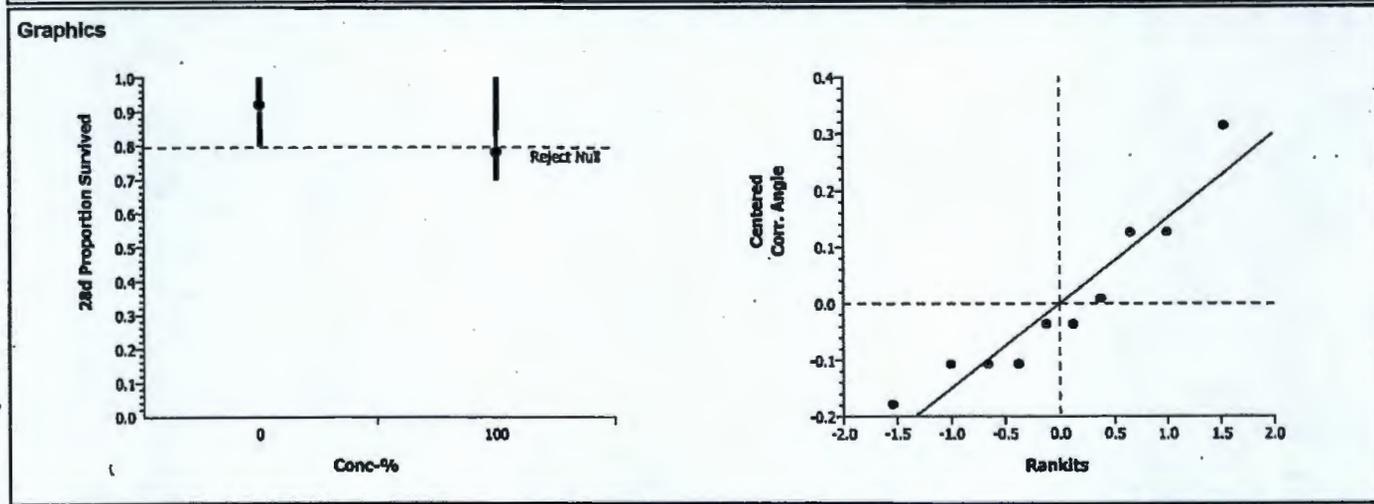
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0877291	0.087729	1	3.52	0.09750	Non-Significant Effect
Error	0.199414	0.024927	8			
Total	0.28714305	0.1126558	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 1:42 PM  
 Analysis: 18-4841-1967/B153806hac

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

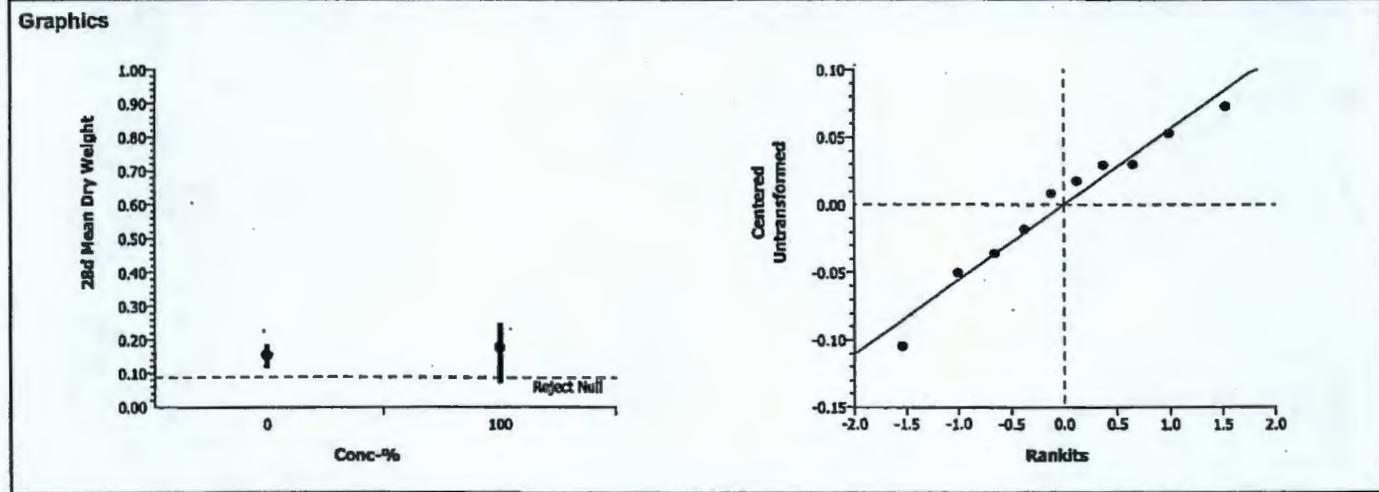
Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version			
28d Mean Dry Weight	Comparison	09-7530-6120	09-7530-6120	03 Apr-06 11:37 AM	CETISv1.1.2			
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	42.64%

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				



## CETIS Test Summary

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

Hyallella 42-d Survival, Growth, and Reproduction Sediment Test							CH2M Hill		
Test No:	14-2440-8684	Test Type:	Hyallella (42d)	Duration:	28d 0h				
Start Date:	03 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyallella azteca				
Ending Date:	31 Mar-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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

**Hyalalella 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**

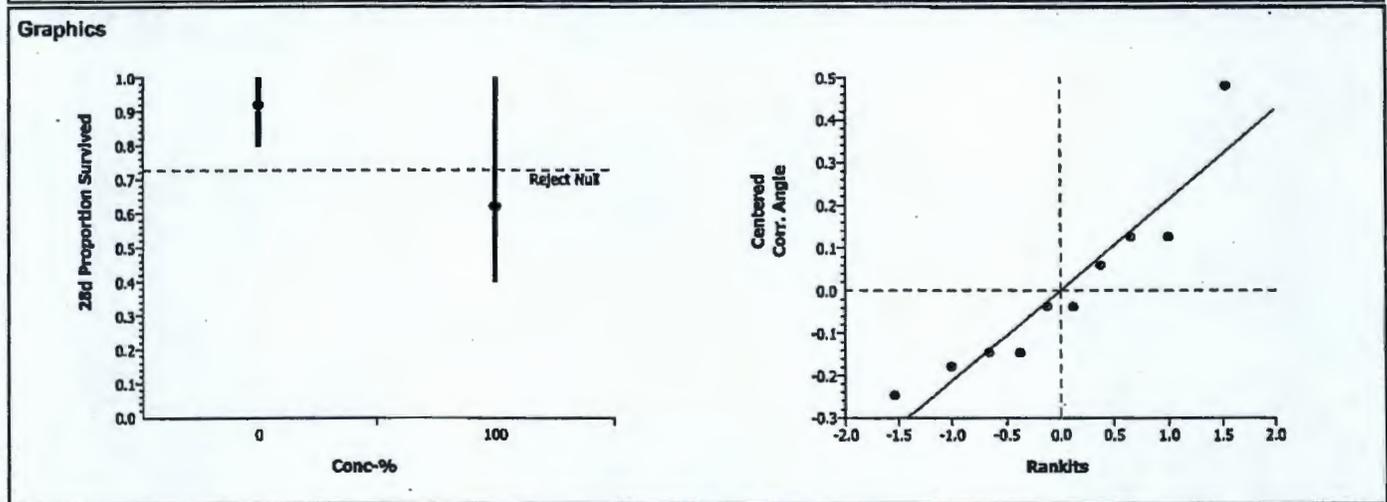
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.3134969	0.313497	1	6.20	0.03753	Significant Effect
Error	0.4045256	0.050566	8			
Total	0.7180225	0.3640626	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 11:39 AM  
 Analysis: 05-8563-0796/B153807hac

**Hyallolela 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**

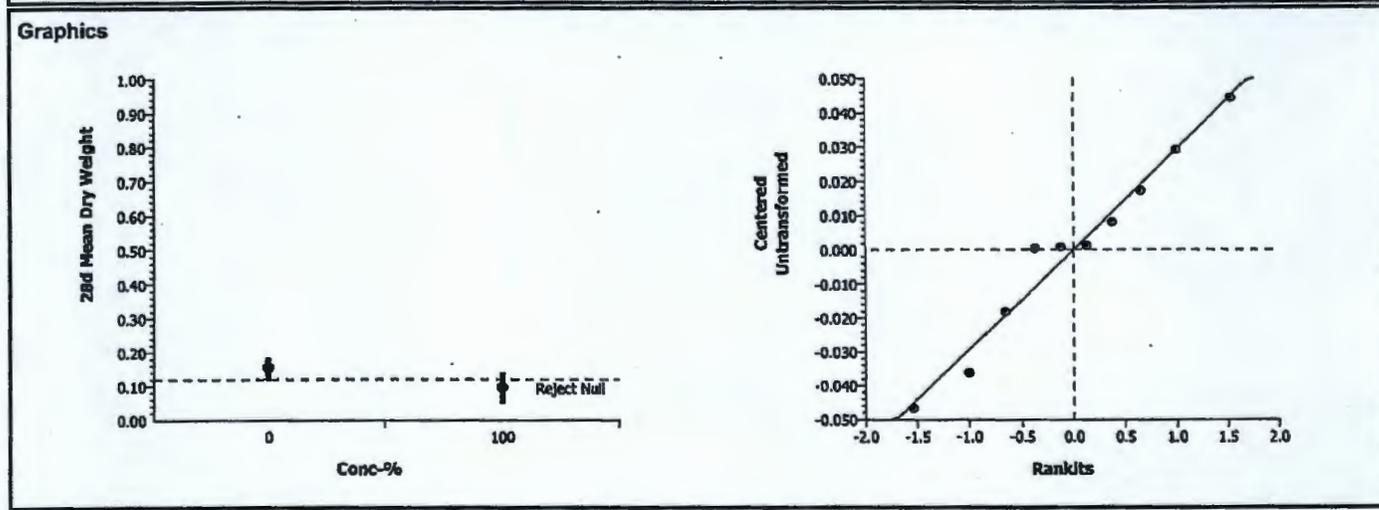
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0084679	0.008468	1	9.68	0.01441	Significant Effect
Error	0.0069976	0.000875	8			
Total	0.01546553	0.0093426	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



Report Date: 03 Apr-06 11:42 AM

Test Link: 16-8970-9656/B153808hac

## CETIS Test Summary

Hyalella 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:	Chesapeake Cultures, Naves, 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

Comparisons: Page 1 of 2  
 Report Date: 03 Apr-06 11:42 AM  
 Analysis: 06-0154-6964/B153808hac

**Hyalalella 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**

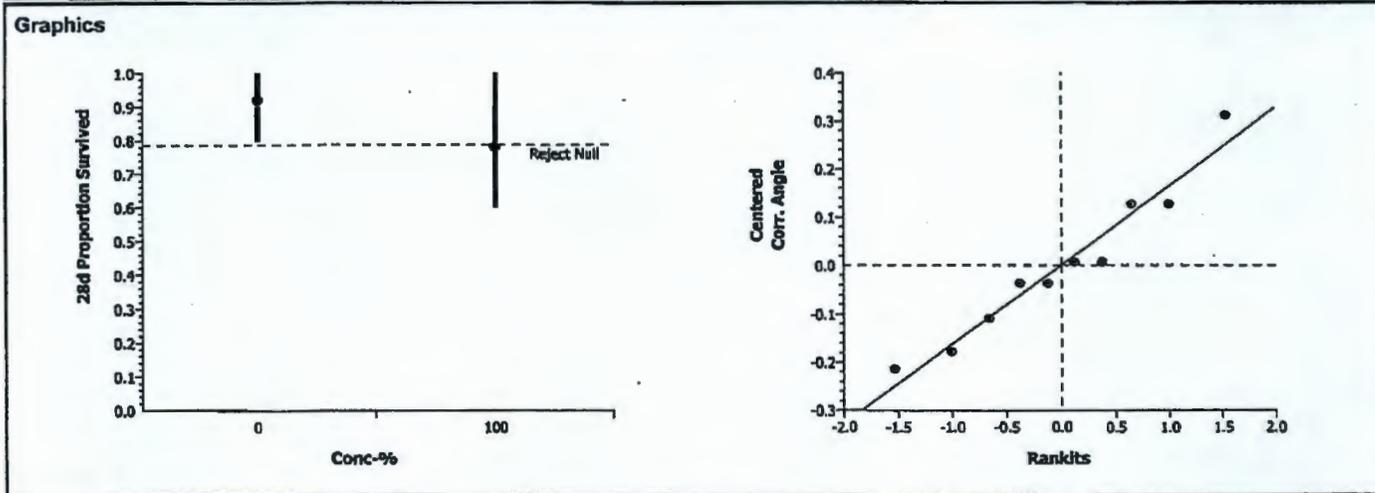
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0856967	0.085697	1	3.09	0.11660	Non-Significant Effect
Error	0.2215427	0.027693	8			
Total	0.30723938	0.1133896	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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





## CETIS Test Summary

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

Hyalloella 42-d Survival, Growth, and Reproduction Sediment Test							CH2M Hill		
<b>Test No:</b>	14-6106-2643	<b>Test Type:</b>	Hyalloella (42d)		<b>Duration:</b>	28d 0h			
<b>Start Date:</b>	03 Mar-06	<b>Protocol:</b>	EPA/600/R-99/064 (2000)		<b>Species:</b>	Hyalloella azteca			
<b>Ending Date:</b>	31 Mar-06	<b>Dil Water:</b>			<b>Source:</b>	Chesapeake Cultures, Naves, Virginia			
<b>Setup Date:</b>	03 Mar-06 12:00 AM	<b>Brine:</b>							
<b>Sample No:</b>	06-1149-3769	<b>Code:</b>	B1538-09		<b>Client:</b>				
<b>Sample Date:</b>	12 Feb-06	<b>Material:</b>	Sediment		<b>Project:</b>				
<b>Receive Date:</b>	14 Feb-06	<b>Source:</b>	Hanford						
<b>Sample Age:</b>	19d 0h	<b>Station:</b>							
<b>Comments:</b>	J116M4								
<b>Comparison Summary</b>									
<b>Analysis</b>	<b>Endpoint</b>	<b>NOEL</b>	<b>LOEL</b>	<b>ChV</b>	<b>PMSD</b>	<b>Method</b>			
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			
<b>Test Acceptability</b>									
<b>Analysis</b>	<b>Endpoint</b>	<b>Attribute</b>	<b>Statistic</b>	<b>TAC Range</b>	<b>Overlap</b>	<b>Decision</b>			
10-1107-2830	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria			
<b>28d Mean Dry Weight Summary</b>									
<b>Conc-%</b>	<b>Control Type</b>	<b>Reps</b>	<b>Mean</b>	<b>Minimum</b>	<b>Maximum</b>	<b>SE</b>	<b>SD</b>	<b>CV</b>	
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%	
<b>28d Proportion Survived Summary</b>									
<b>Conc-%</b>	<b>Control Type</b>	<b>Reps</b>	<b>Mean</b>	<b>Minimum</b>	<b>Maximum</b>	<b>SE</b>	<b>SD</b>	<b>CV</b>	
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%	
<b>28d Mean Dry Weight Detail</b>									
<b>Conc-%</b>	<b>Control Type</b>	<b>Rep 1</b>	<b>Rep 2</b>	<b>Rep 3</b>	<b>Rep 4</b>	<b>Rep 5</b>			
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875			
100		0.08143	0.10333	0.12667	0.09333				
<b>28d Proportion Survived Detail</b>									
<b>Conc-%</b>	<b>Control Type</b>	<b>Rep 1</b>	<b>Rep 2</b>	<b>Rep 3</b>	<b>Rep 4</b>	<b>Rep 5</b>			
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

Comparisons: Page 1 of 2  
 Report Date: 03 Apr-06 11:49 AM  
 Analysis: 10-1107-2830/B153809hac

## Hyallolela 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

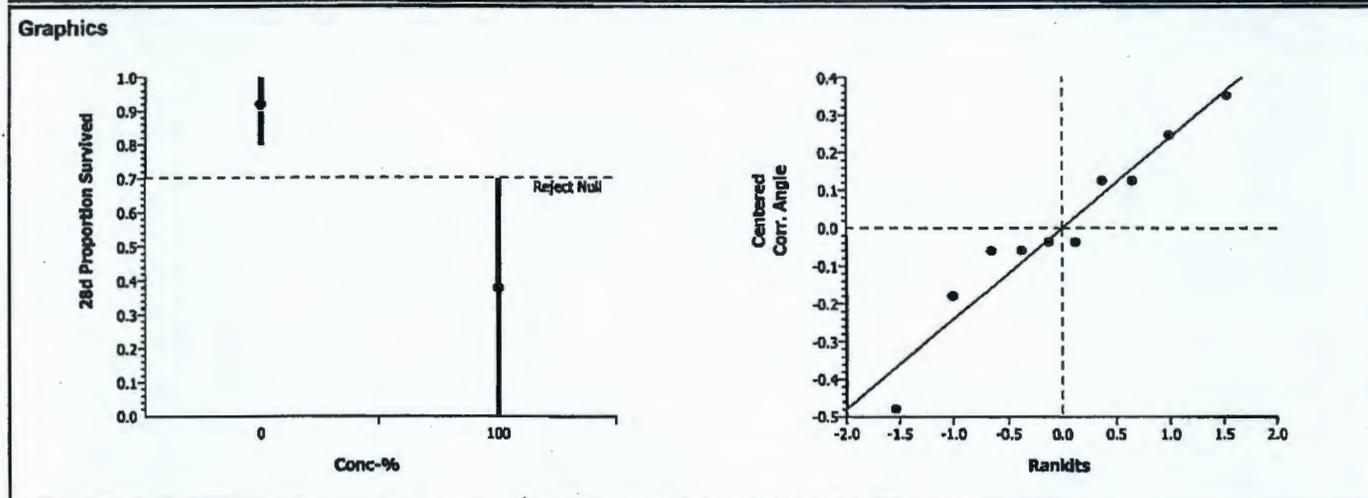
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	23.53%

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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 11:49 AM  
 Analysis: 12-1261-1481/B153809hac

## Hyalloella 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

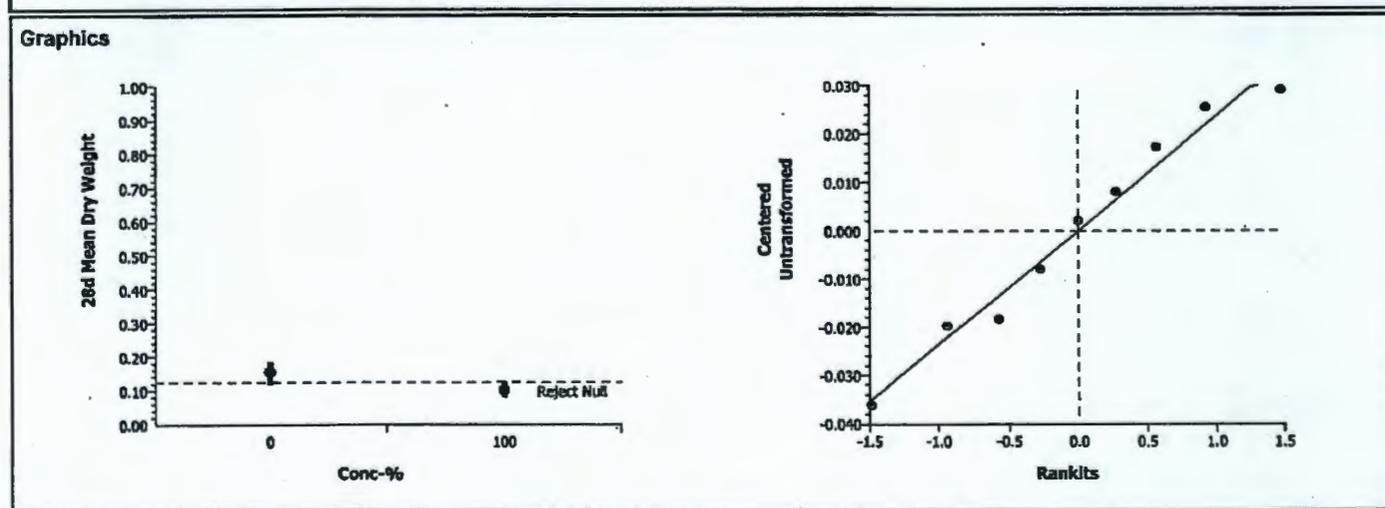
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	19.51%

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				



Report Date: 03 Apr-06 11:50 AM

Test Link: 05-7535-5514/B153810hac

## CETIS Test Summary

Hyalella 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:	Chesapeake Cultures, Naves, 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

**Hyallolela 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

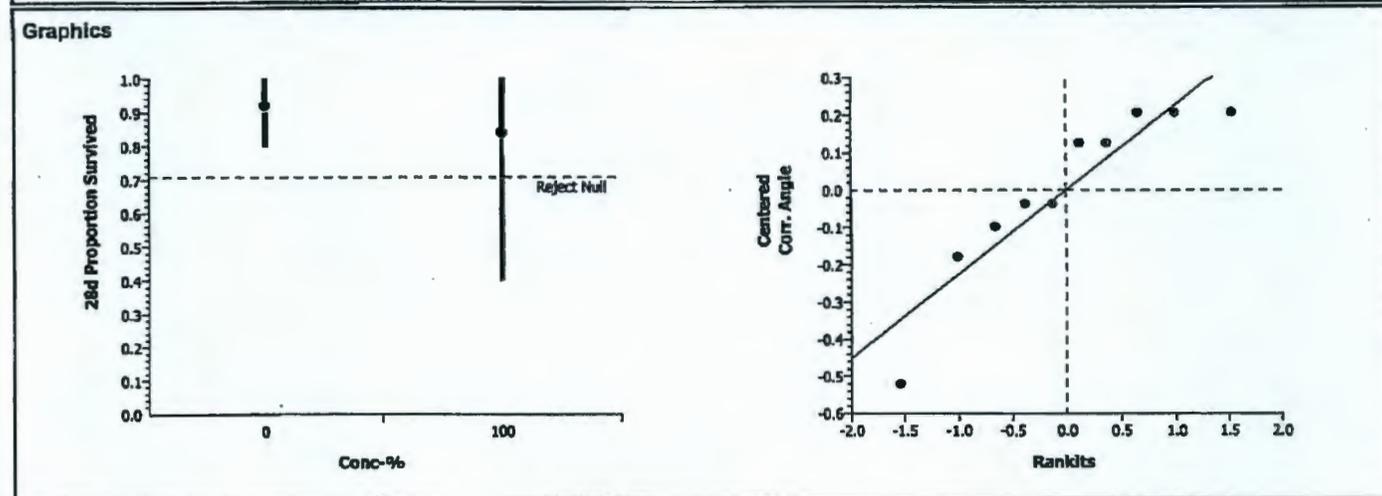
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	23.12%

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	0.28077	1.20558	0.68472	1.41202	0.31970



# CETIS Analysis Detail

**Hyalella 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**

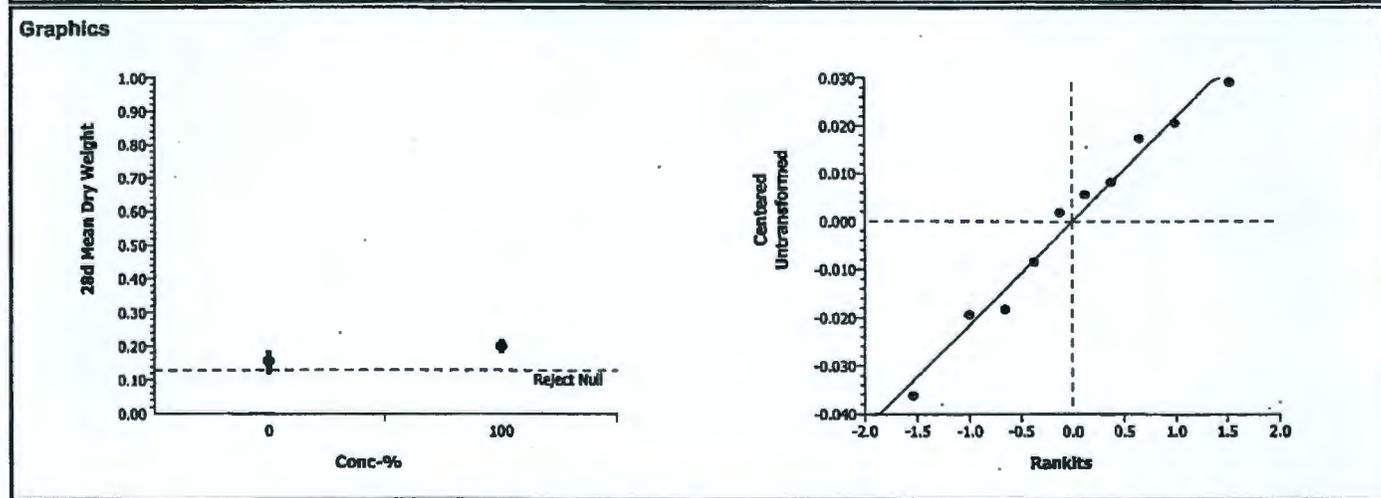
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0049556	0.004956	1	10.55	0.01174	Significant Effect
Error	0.0037578	0.00047	8			
Total	0.00871337	0.0054253	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## 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:	Hyallela (42d)	Duration:	28d 0h			
Start Date:	03 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyallela azteca			
Ending Date:	31 Mar-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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

**Hyalalella 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

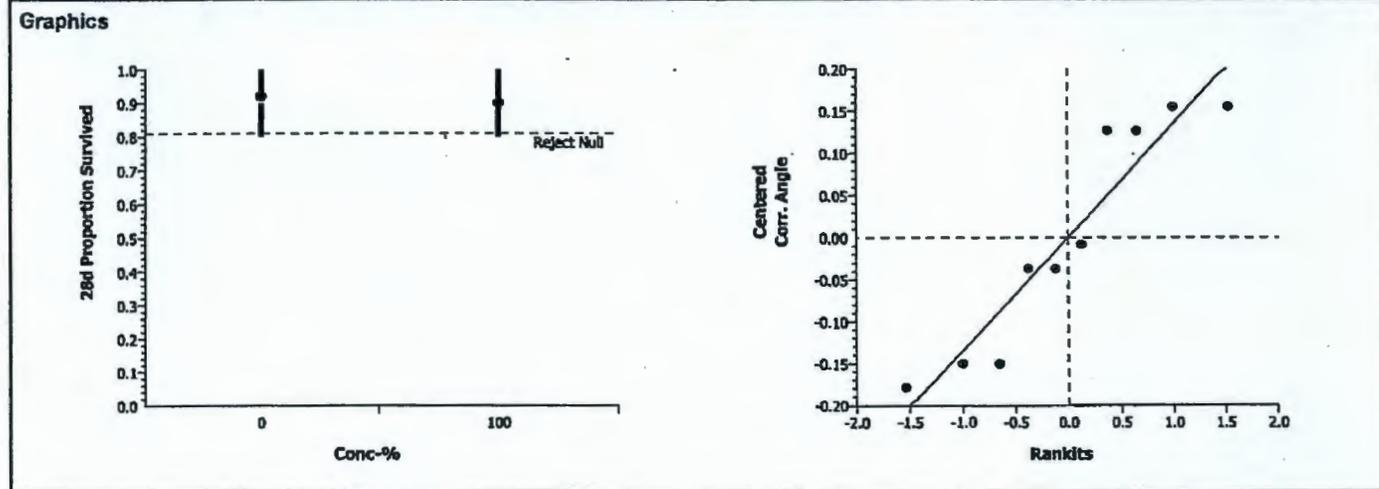
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	11.96%

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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 11:51 AM  
 Analysis: 13-5229-7724/B153811hac

**Hyalloela 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**

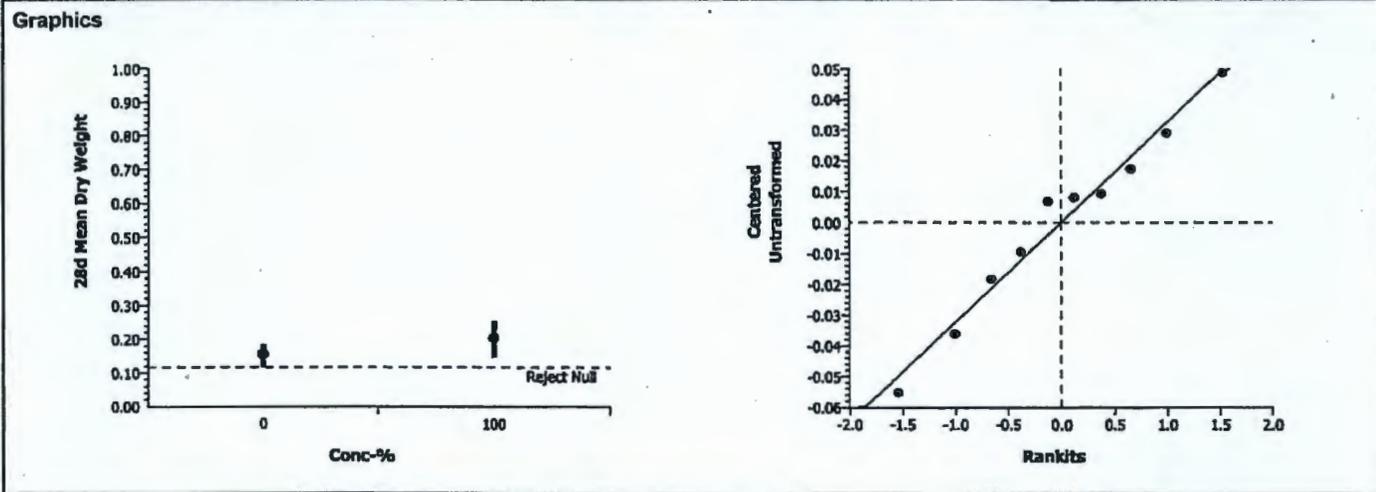
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0058376	0.005838	1	5.49	0.04715	Significant Effect
Error	0.0085023	0.001063	8			
Total	0.01433985	0.0069004	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



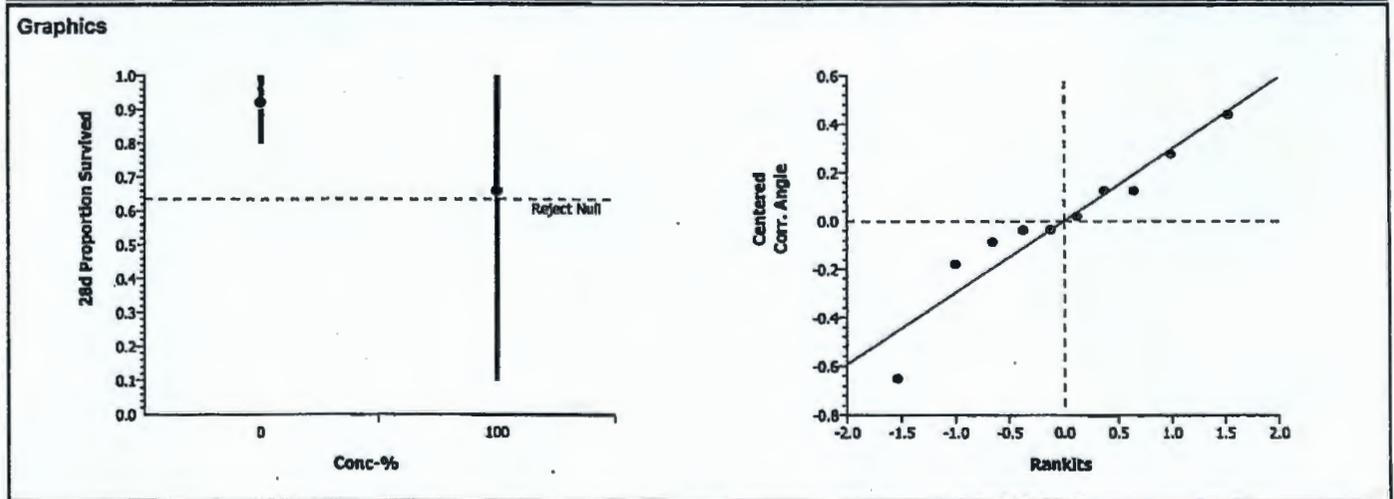
## CETIS Test Summary

Hyalella 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:	Chesapeake Cultures, Naves, 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

Comparisons: Page 1 of 2  
 Report Date: 03 Apr-06 11:53 AM  
 Analysis: 10-7357-0662/B153812hac

Hyalalela 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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 11:53 AM  
 Analysis: 04-4298-5108/B153812hac

**Hyalalella 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**

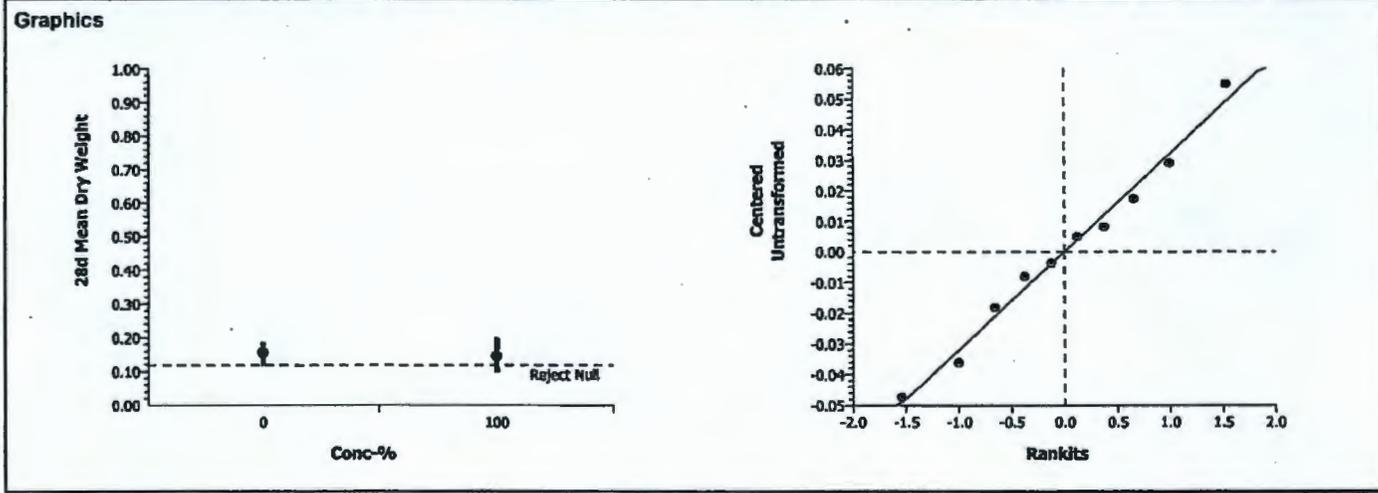
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0002346	0.000235	1	0.23	0.64534	Non-Significant Effect
Error	0.0082082	0.001026	8			
Total	0.00844275	0.0012606	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

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

Hyalloella 42-d Survival, Growth, and Reproduction Sediment Test							CH2M Hill	
Test No:	04-7058-7436	Test Type:	Hyalloella (42d)	Duration:	28d 0h			
Start Date:	03 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalloella azteca			
Ending Date:	31 Mar-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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

Comparisons: Page 1 of 2  
 Report Date: 03 Apr-06 11:54 AM  
 Analysis: 07-1605-4415/B153813hac

## Hyalalella 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

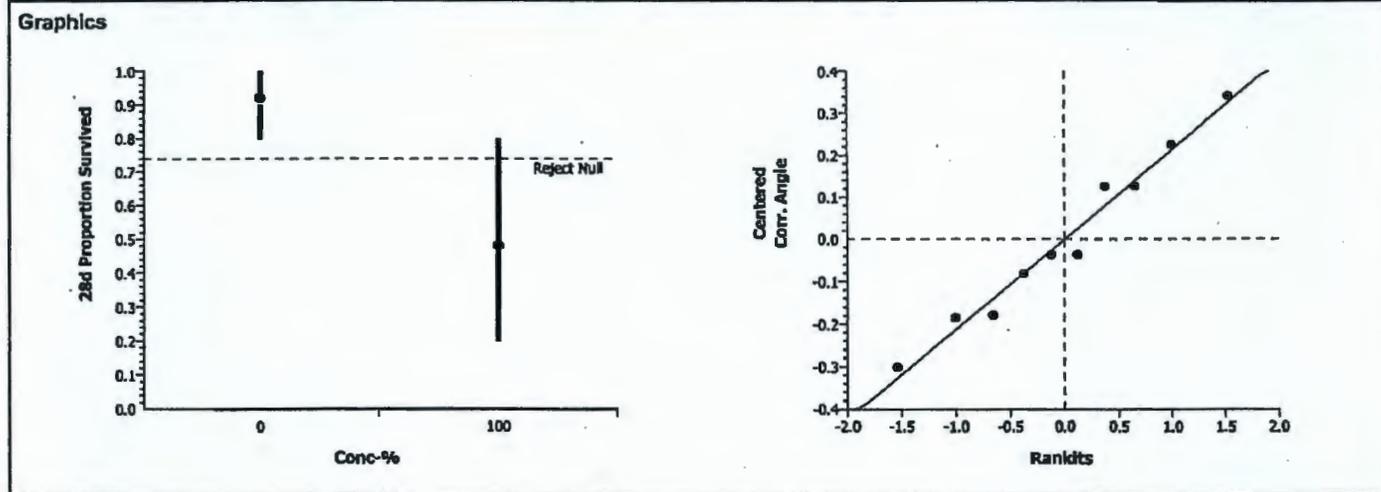
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	19.71%

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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 11:54 AM  
 Analysis: 15-0716-5698/B153813hac

**Hyalalella 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**

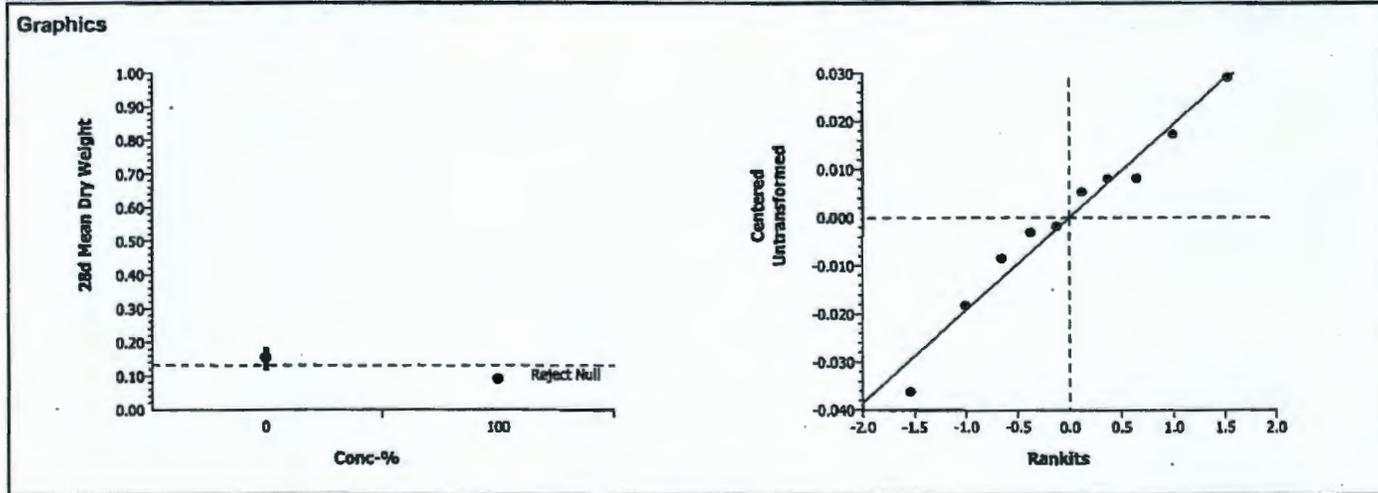
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0099485	0.009949	1	26.25	0.00090	Significant Effect
Error	0.0030318	0.000379	8			
Total	0.01298027	0.0103275	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

Hyalella 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:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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		
<b>28d Proportion Survived Detail</b>								
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

Comparisons: Page 1 of 2  
 Report Date: 03 Apr-06 1:11 PM  
 Analysis: 06-9264-3537/B153814hac

## Hyallella 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

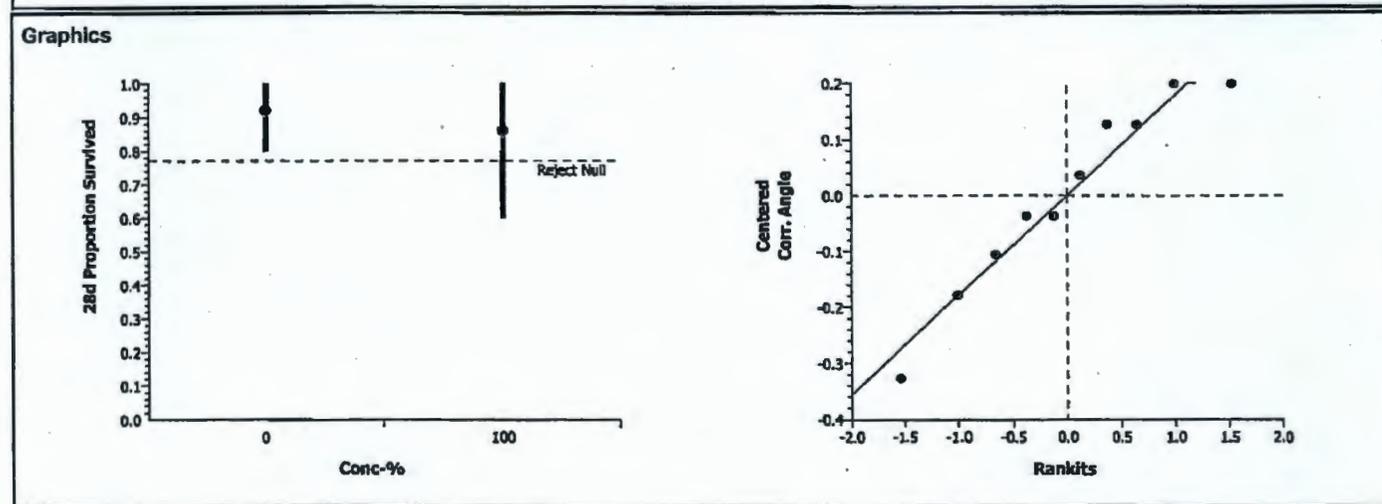
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	16.20%

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	

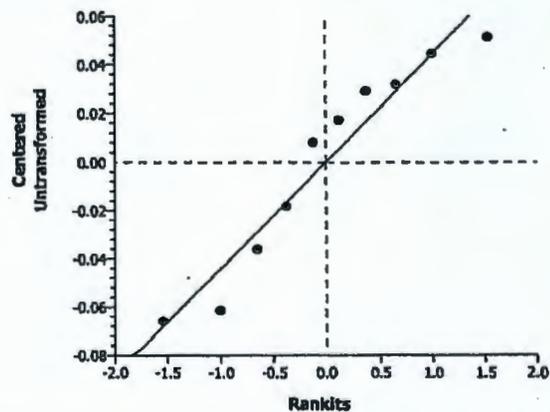
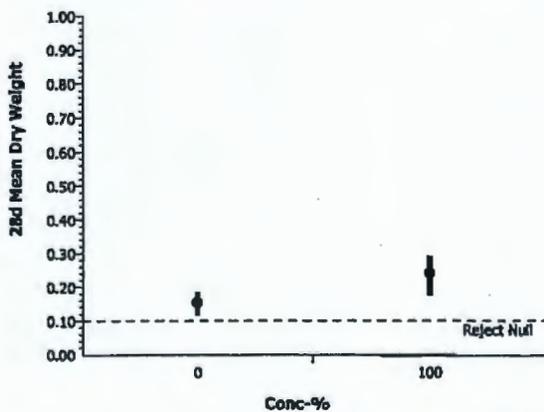


# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 1:11 PM  
 Analysis: 09-6950-3056/B153814hac

Hyallella 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

Hyallea 42-d Survival, Growth, and Reproduction Sediment Test							CH2M Hill	
Test No:	04-0661-8839	Test Type:	Hyallea (42d)	Duration:	28d 0h			
Start Date:	03 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyallea azteca			
Ending Date:	31 Mar-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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		
<b>28d Proportion Survived Detail</b>								
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

Comparisons: Page 1 of 2  
 Report Date: 03 Apr-06 1:13 PM  
 Analysis: 02-4818-1490/B153815hac

**Hyalalea 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**

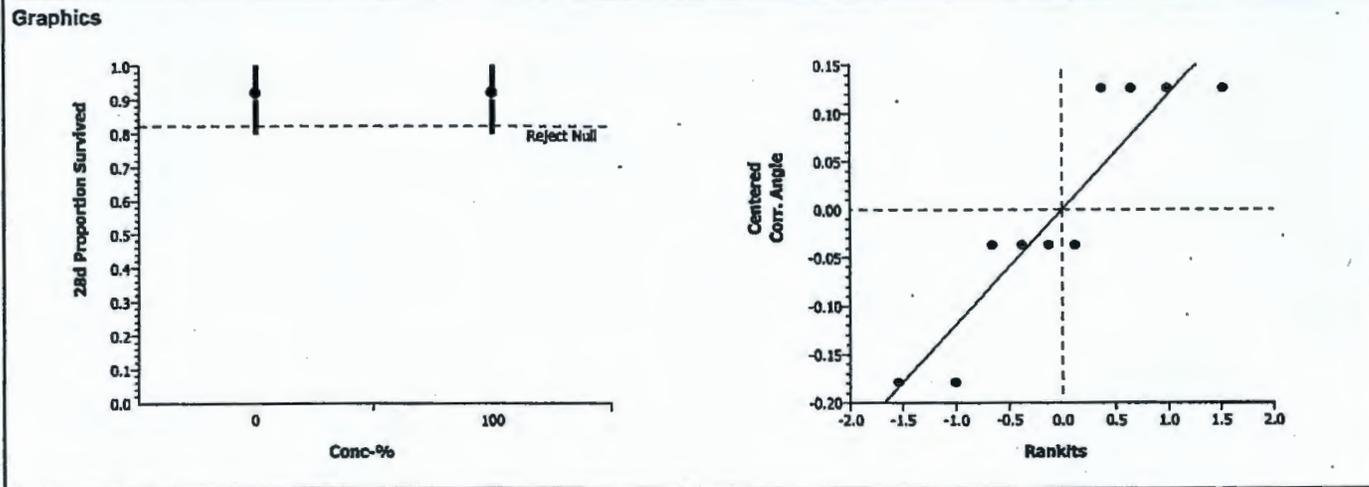
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0	0	1	0.00	1.00000	Non-Significant Effect
Error	0.1329581	0.01662	8			
Total	0.13295805	0.0166198	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

**Hyalalella 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**

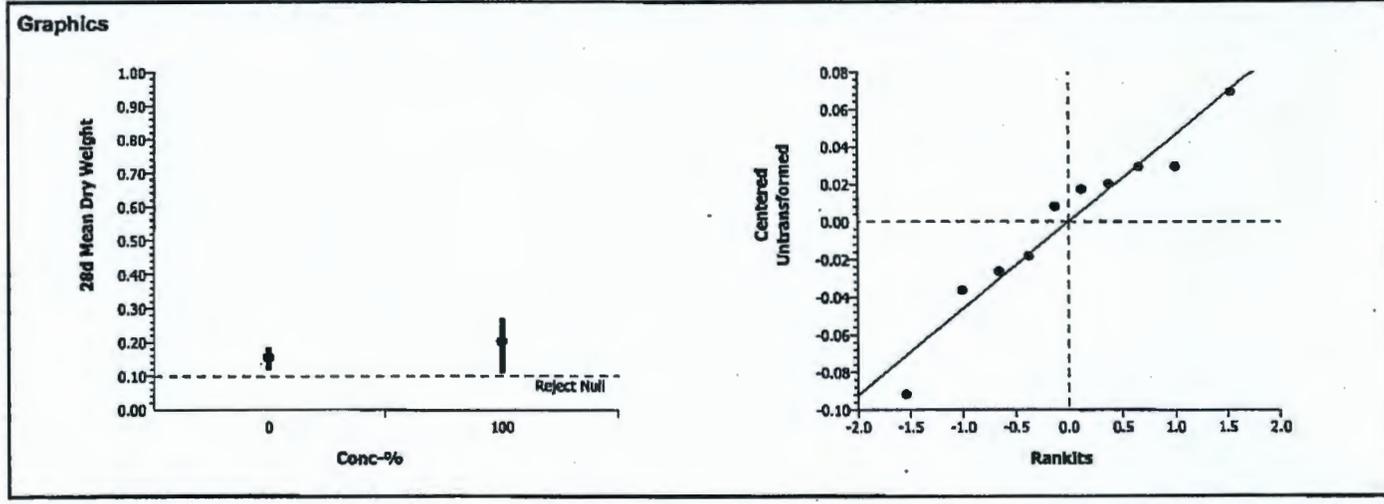
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0055303	0.005530	1	2.45	0.15589	Non-Significant Effect
Error	0.0180316	0.002254	8			
Total	0.02356195	0.0077843	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

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

Hyalella 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:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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		
<b>28d Proportion Survived Detail</b>								
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

Comparisons: Page 1 of 2  
 Report Date: 03 Apr-06 1:21 PM  
 Analysis: 19-4920-7982/B153816hac

**Hyallella 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**

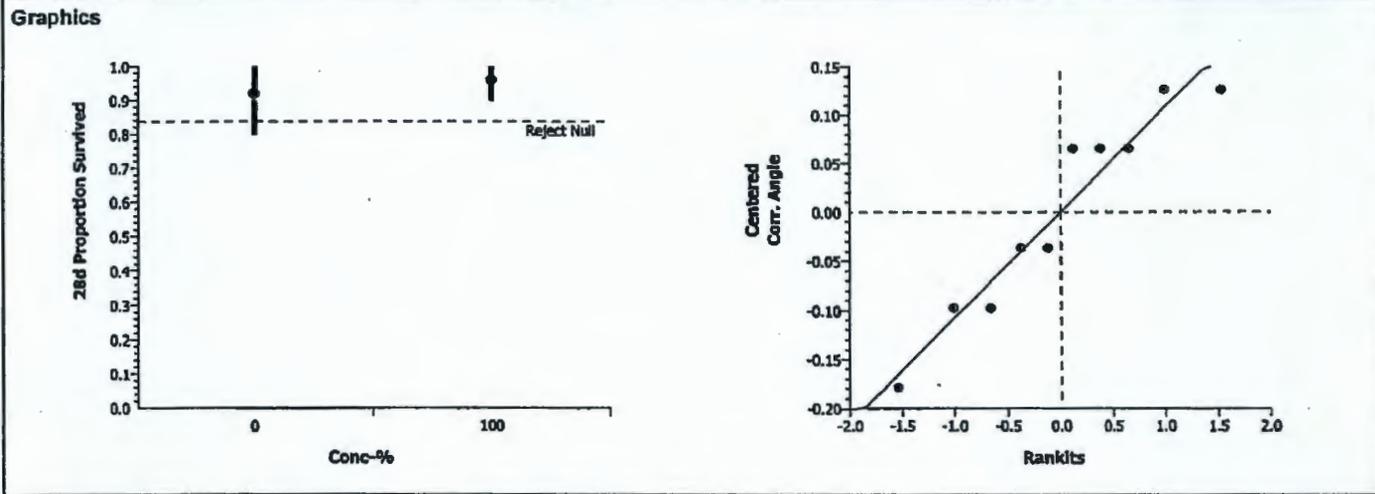
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0092944	0.009294	1	0.76	0.40990	Non-Significant Effect
Error	0.0983502	0.012294	8			
Total	0.10764464	0.0215882	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 1:21 PM  
 Analysis: 06-0854-1968/B153816hac

**Hyalloella 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**

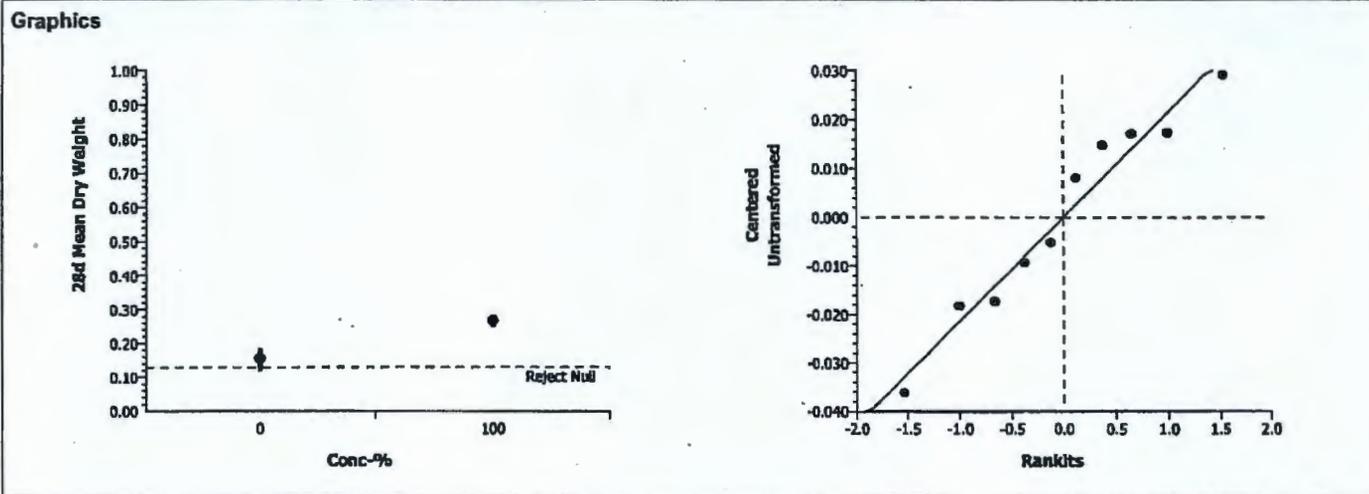
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0310032	0.031003	1	65.78	0.00004	Significant Effect
Error	0.0037707	0.000471	8			
Total	0.03477391	0.0314746	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

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

Hyallella 42-d Survival, Growth, and Reproduction Sediment Test							CH2M Hill	
Test No:	07-9913-7686	Test Type:	Hyallella (42d)	Duration:	28d 0h			
Start Date:	03 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyallella azteca			
Ending Date:	31 Mar-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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		
<b>28d Proportion Survived Detail</b>								
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

**Hyalalella 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**

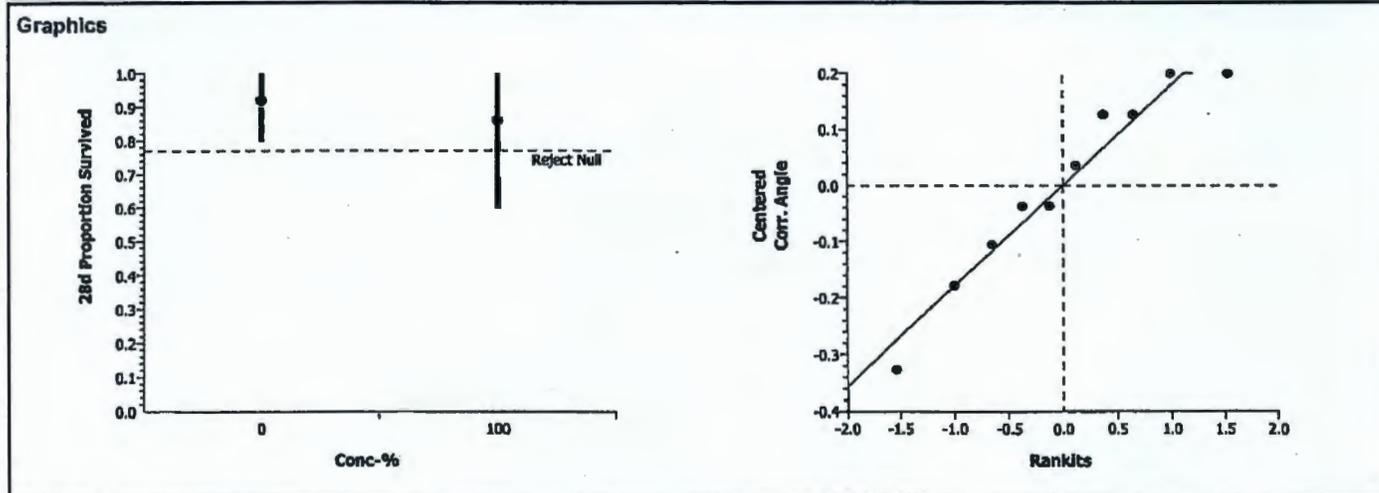
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0131746	0.013175	1	0.40	0.54591	Non-Significant Effect
Error	0.2650759	0.033134	8			
Total	0.27825049	0.0463091	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 1:23 PM  
 Analysis: 03-9229-7789/B153817hac

## Hyallolella 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

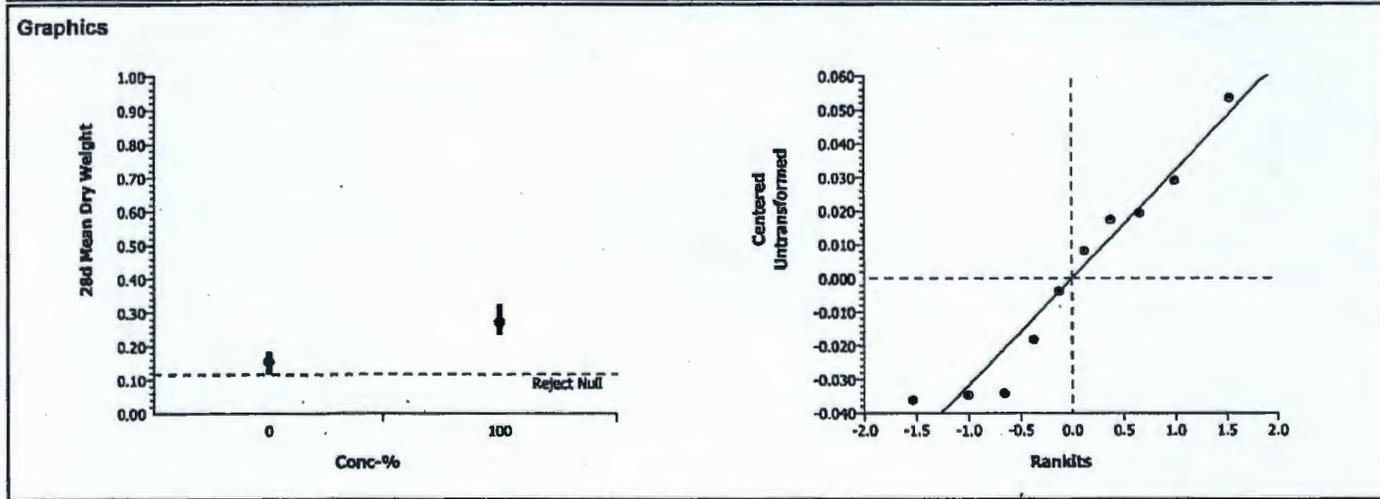
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	24.68%

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				



## CETIS Test Summary

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

Hyallella 42-d Survival, Growth, and Reproduction Sediment Test							CH2M Hill	
Test No:	00-8319-1240	Test Type:	Hyallella (42d)	Duration:	28d 0h			
Start Date:	03 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyallella azteca			
Ending Date:	31 Mar-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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		
<b>28d Proportion Survived Detail</b>								
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

Comparisons: Page 1 of 2  
 Report Date: 03 Apr-06 1:24 PM  
 Analysis: 13-8643-8444/B153818hac

**Hyallella 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**

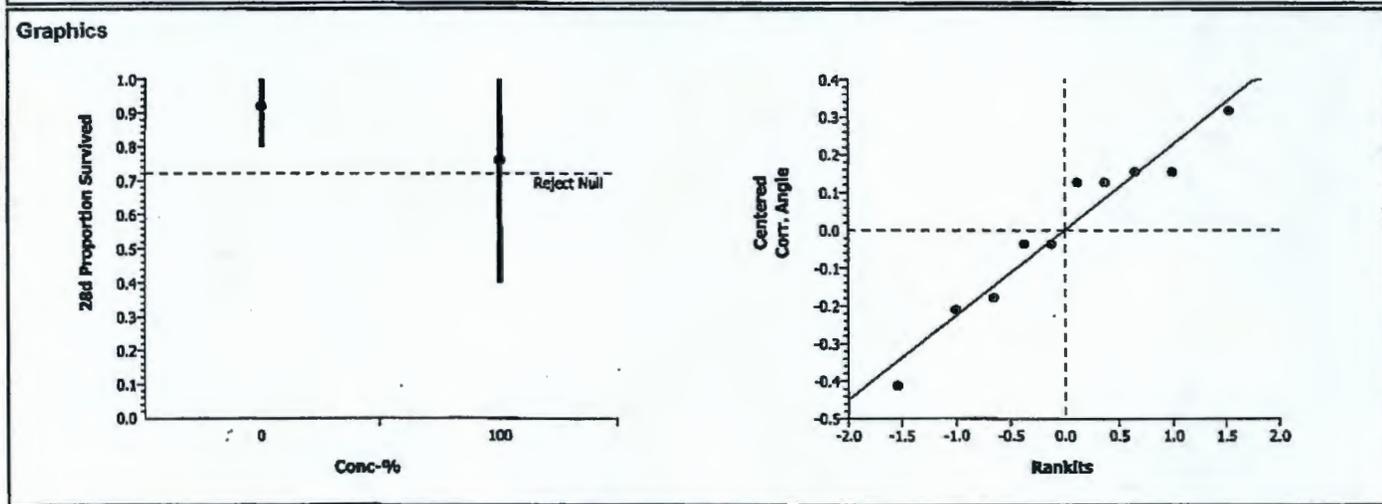
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0899403	0.089940	1	1.69	0.23013	Non-Significant Effect
Error	0.4264106	0.053301	8			
Total	0.51635087	0.1432416	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 1:24 PM  
 Analysis: 08-1993-6975/B153818hac

**Hyalalela 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**

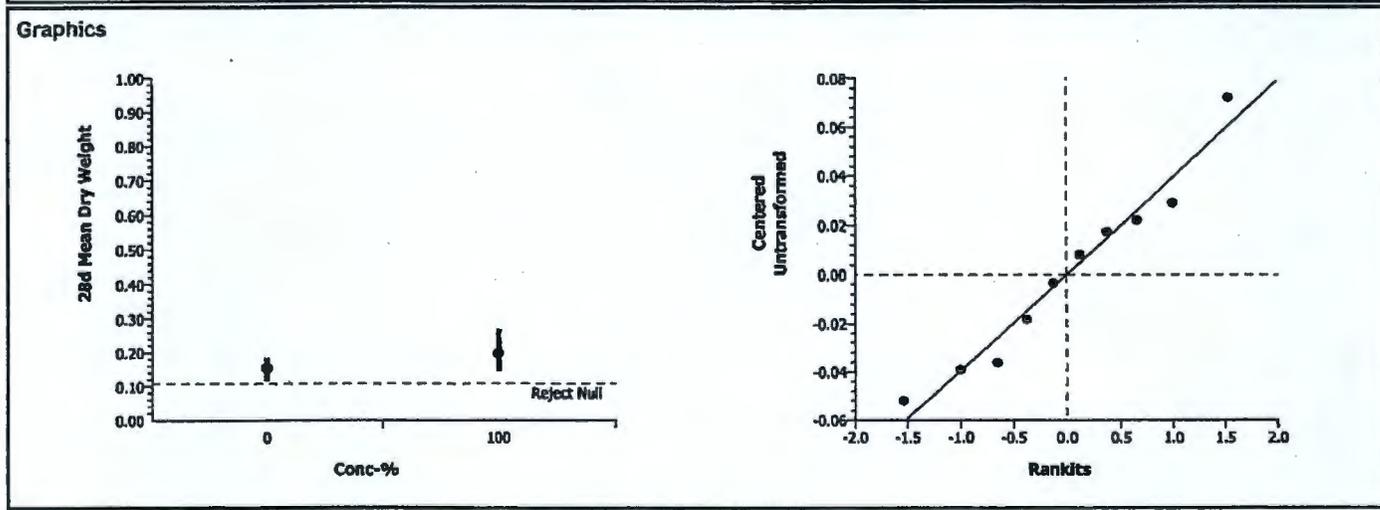
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0046094	0.004609	1	2.89	0.12764	Non-Significant Effect
Error	0.0127660	0.001596	8			
Total	0.01737537	0.0062051	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

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

Hyallea 42-d Survival, Growth, and Reproduction Sediment Test							CH2M HILL	
Test No:	11-0180-6207	Test Type:	Hyallea (42d)	Duration:	28d 0h			
Start Date:	03 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyallea azteca			
Ending Date:	31 Mar-06	DII Water:		Source:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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		
<b>28d Proportion Survived Detail</b>								
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

Comparisons: Page 1 of 2  
 Report Date: 03 Apr-06 1:26 PM  
 Analysis: 14-7521-2699/B153819hac

**Hyalalella 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**

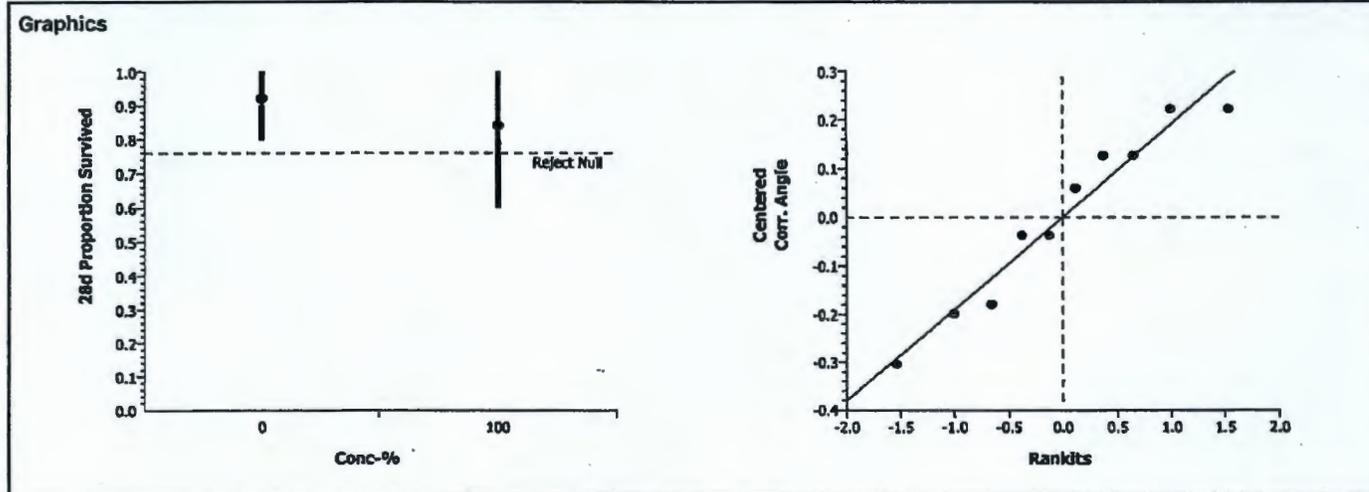
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0229403	0.022940	1	0.61	0.45699	Non-Significant Effect
Error	0.3004555	0.037557	8			
Total	0.32339588	0.0604973	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 1:26 PM  
 Analysis: 05-9913-7511/B153819hac

**Hyallolella 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**

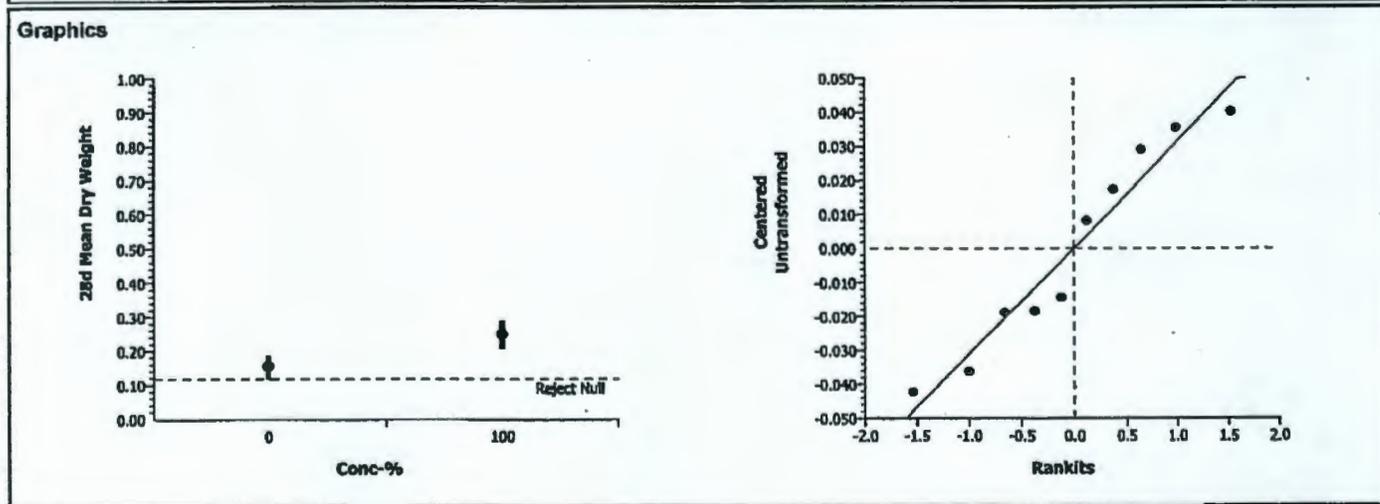
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0220673	0.022067	1	21.90	0.00158	Significant Effect
Error	0.0080617	0.001008	8			
Total	0.03012899	0.023075	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



# CETIS Test Summary

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

Hyalella 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:	Chesapeake Cultures, Naves, 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

**Hyalalea 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**

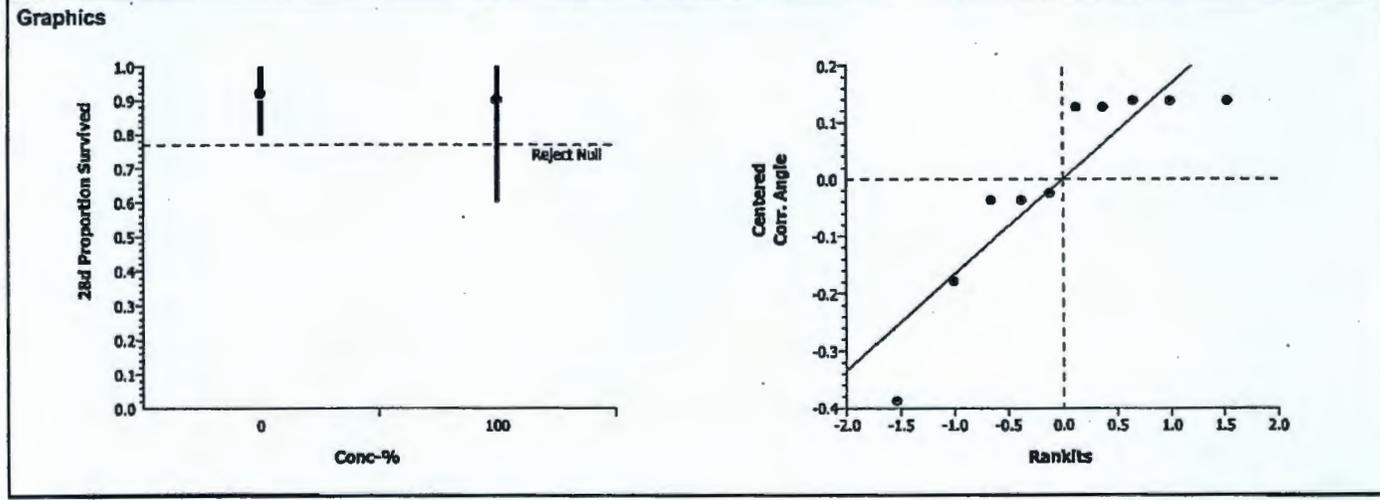
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0003376	0.000338	1	0.01	0.92346	Non-Significant Effect
Error	0.274731	0.034341	8			
Total	0.27506853	0.0346789	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 03 Apr-06 1:27 PM  
 Analysis: 11-4178-9063/B153820hac

**Hyallella 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**

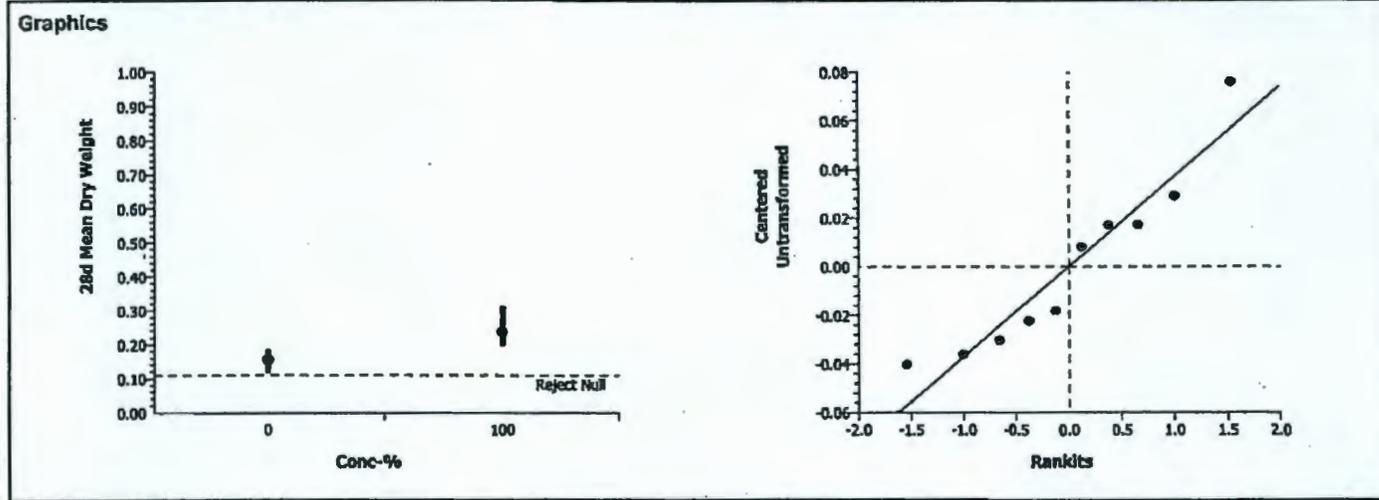
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0169859	0.016986	1	11.36	0.00979	Significant Effect
Error	0.0119662	0.001496	8			
Total	0.02895204	0.0184816	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



**RANDOMIZATION SHEET**

**Client:** W C Hanford

**Test Start Date:** 10<sup>th</sup>  
3/7/2006

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	0.72085	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



**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 <sub>3</sub> )		Alkalinity (mg/L as CaCO <sub>3</sub> )		Ammonia (mg/L as NH <sub>3</sub> -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	<del>0.13</del> 0.13	0.18
B1538-34	102	116	74	76	0.12	0.09
B1538-35	134	112	110	<sup>80ms</sup> <del>78</del>	0.29	0.63
B1538-36	104	108	80	78	0.13	0.09
B1538-37	104	104	80	78	0.11	0.16













### 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

### Hyallolella 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

## Hyalella 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, Naves, 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

Comparisons: Page 1 of 2  
 Report Date: 10 Apr-06 10:53 AM  
 Analysis: 16-4454-8254/B153821hac

**Hyalalela 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**

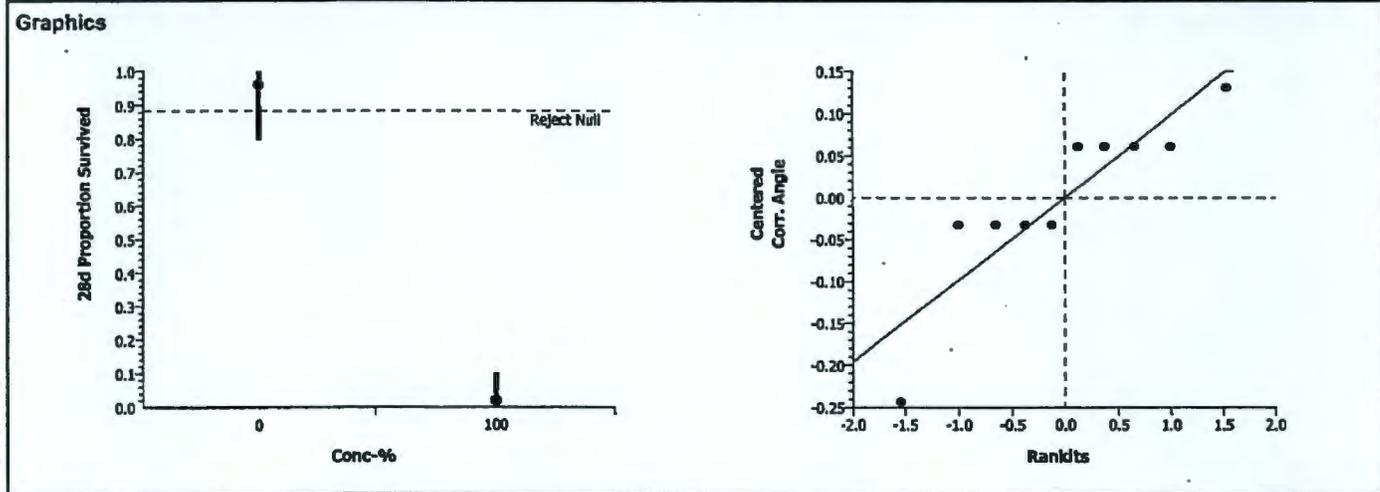
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	3.362077	3.362077	1	281.34	0.00000	Significant Effect
Error	0.0956028	0.011950	8			
Total	3.45767953	3.3740271	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 10 Apr-06 10:53 AM  
 Analysis: 10-8334-3390/B153821hac

## Hyalloella 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

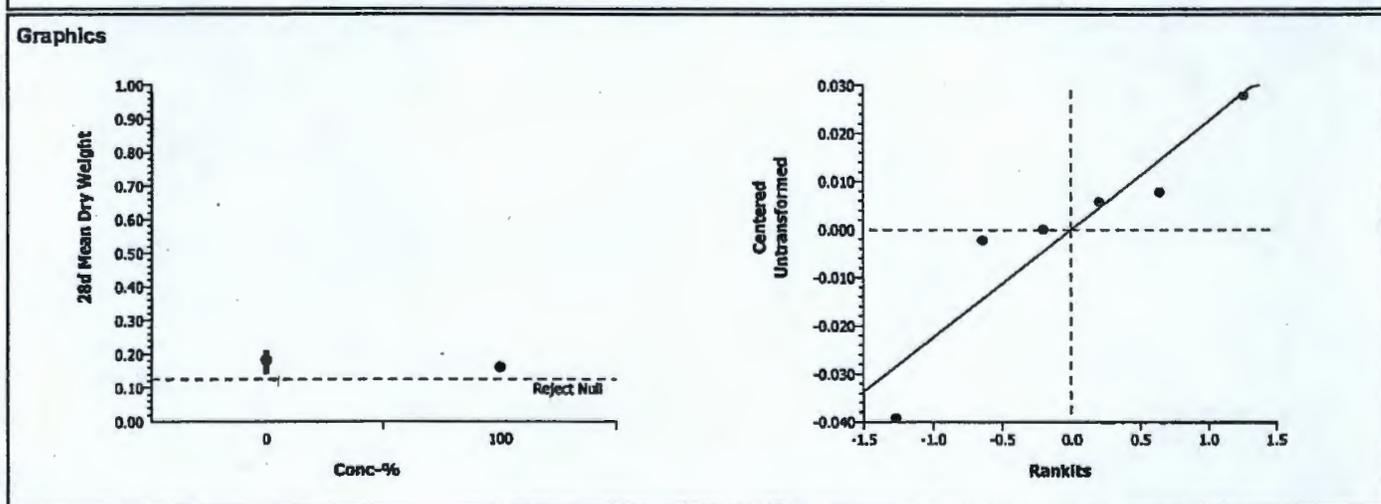
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	31.45%

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					



## CETIS Test Summary

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

Hyallella 42-d Survival, Growth, and Reproduction Sediment Test							CH2M Hill	
Test No:	08-3505-0742	Test Type:	Hyallella (42d)	Duration:	28d 0h			
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyallella azteca			
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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

Comparisons: Page 1 of 2  
 Report Date: 10 Apr-06 10:54 AM  
 Analysis: 08-8871-0335/B153822hac

## Hyallella 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

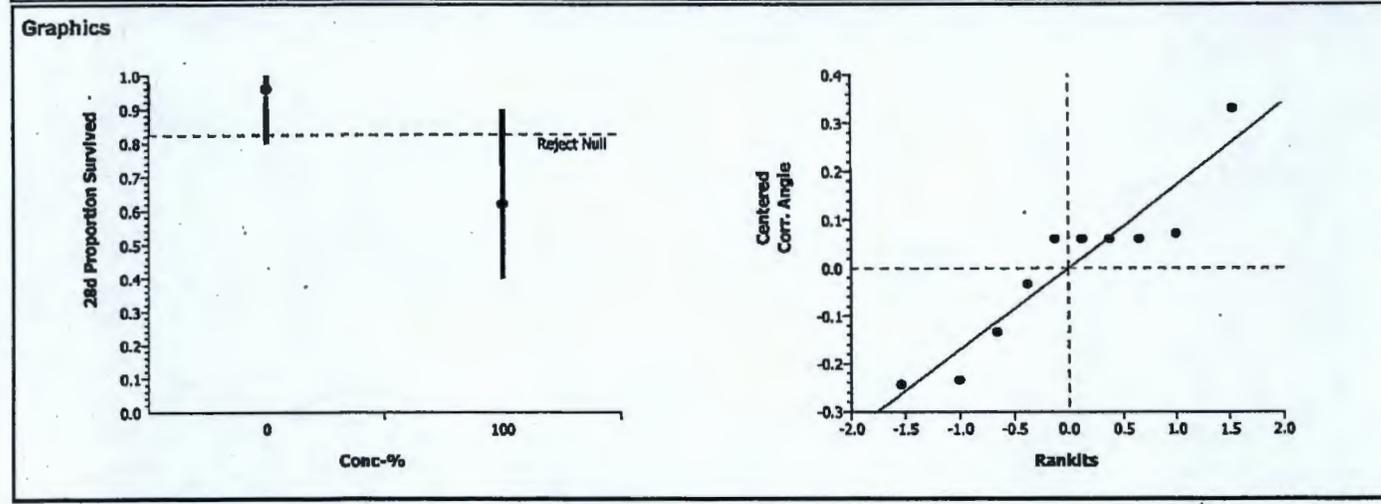
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	14.15%

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



# CETIS Analysis Detail

Hyalella 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			

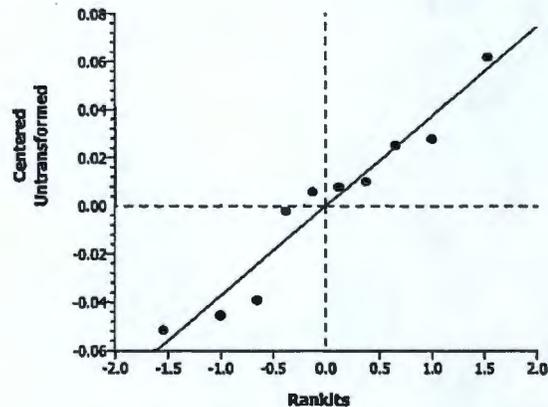
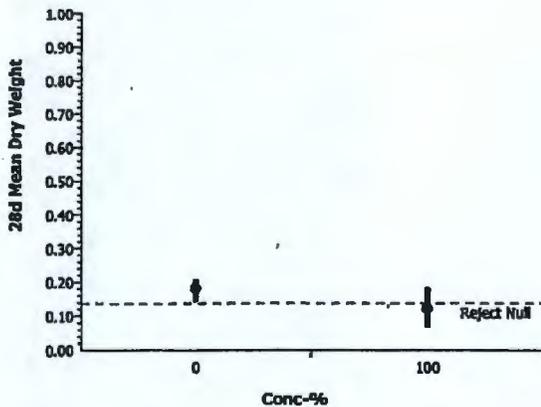
### ANOVA Assumptions

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

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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

Hyalella 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:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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		
<b>28d Proportion Survived Detail</b>								
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

**Hyalalela 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**

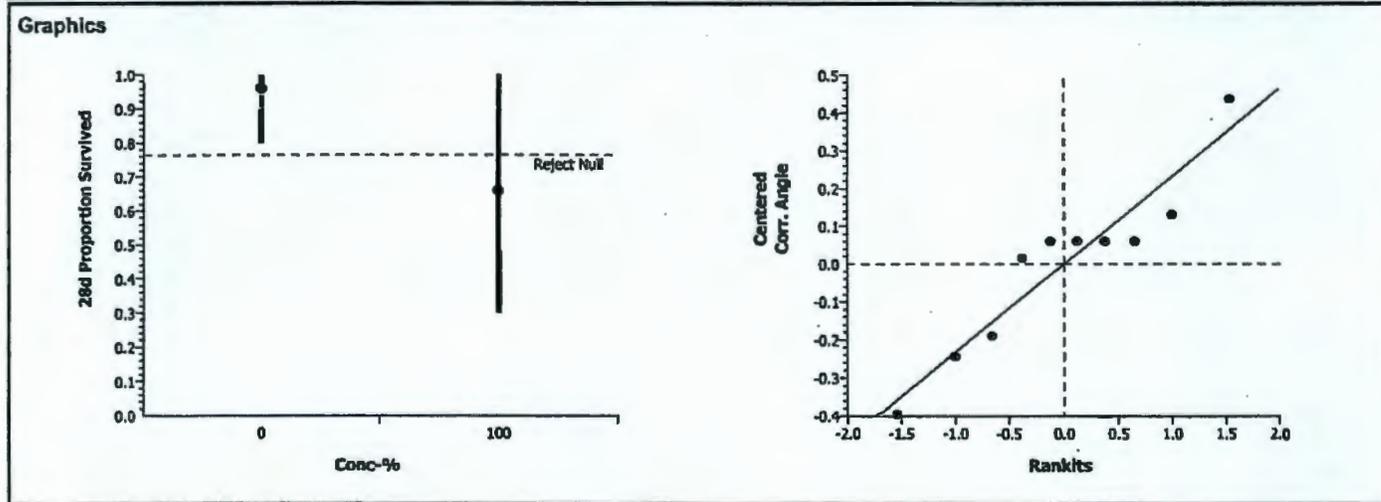
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.3533851	0.353385	1	5.95	0.04064	Significant Effect
Error	0.4753213	0.059415	8			
Total	0.82870632	0.4128002	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 10 Apr-06 11:00 AM  
 Analysis: 06-5035-5858/B153823hac

**Hyalalella 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**

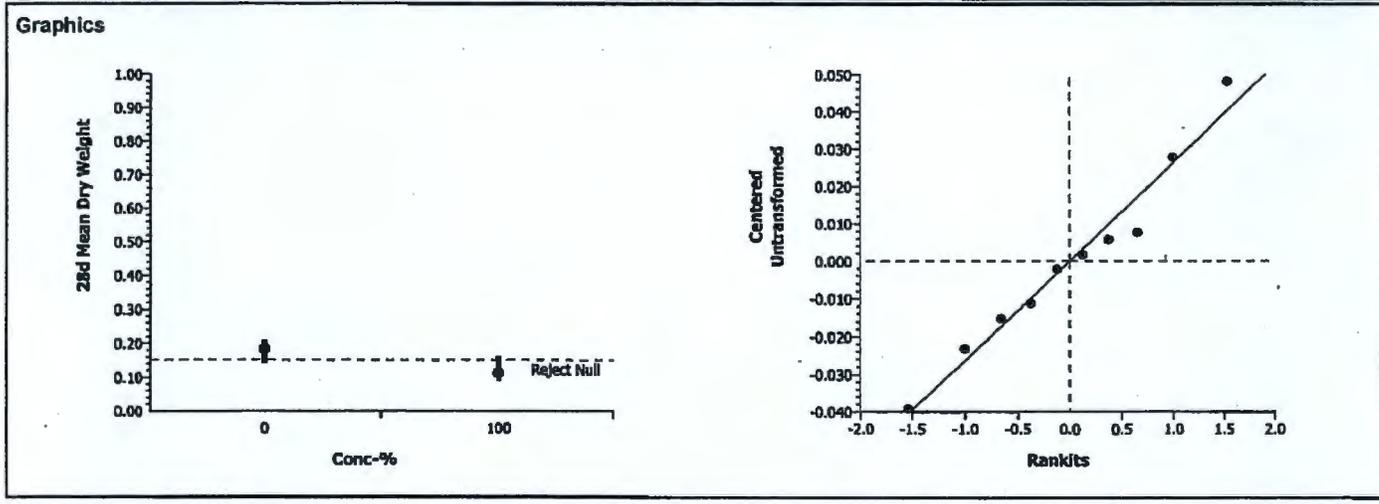
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.011873	0.011873	1	16.86	0.00341	Significant Effect
Error	0.0056327	0.000704	8			
Total	0.01750567	0.0125770	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

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

Hyalella 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, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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			
<b>28d Proportion Survived Detail</b>								
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 Test Summary

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

Hyallea 42-d Survival, Growth, and Reproduction Sediment Test							CH2M Hill	
Test No:	11-3184-5949	Test Type:	Hyallea (42d)	Duration:	28d 0h			
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyallea azteca			
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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

**Hyalalella 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**

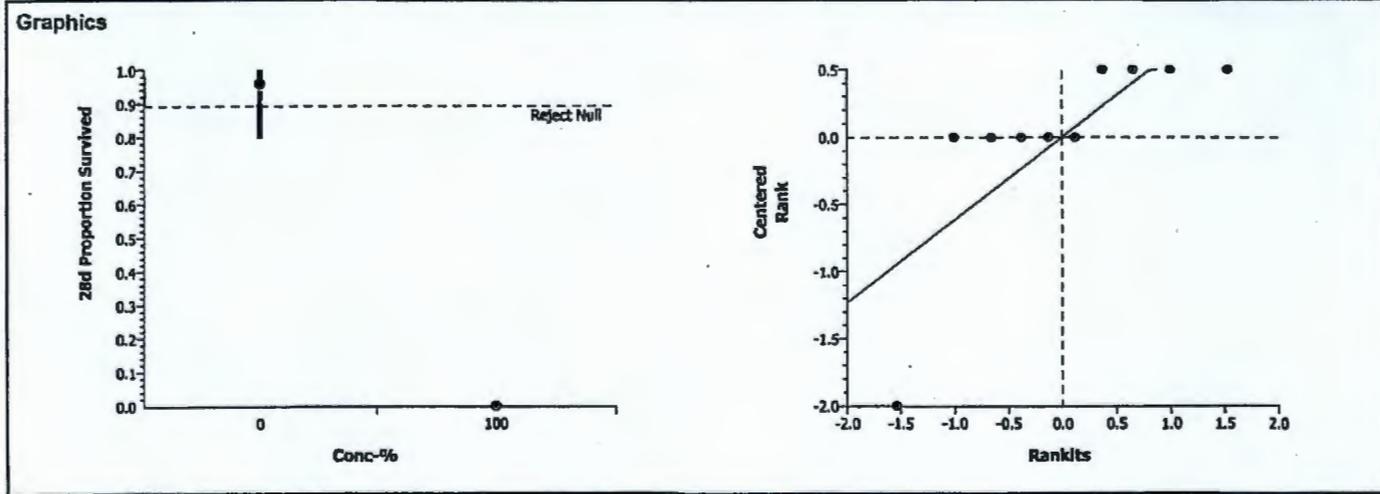
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	3.553724	3.553724	1	382.35	0.00000	Significant Effect
Error	0.0743553	0.009294	8			
Total	3.62807959	3.5630187	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Test Summary

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

Hyallella 42-d Survival, Growth, and Reproduction Sediment Test							CH2M HILL	
Test No:	09-2390-8146	Test Type:	Hyallella (42d)	Duration:	28d 0h			
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyallella azteca			
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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			
<b>28d Proportion Survived Detail</b>								
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

Comparisons: Page 1 of 2  
 Report Date: 10 Apr-06 11:06 AM  
 Analysis: 15-0282-0531/B153826hac

**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	12-2006-0725	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**

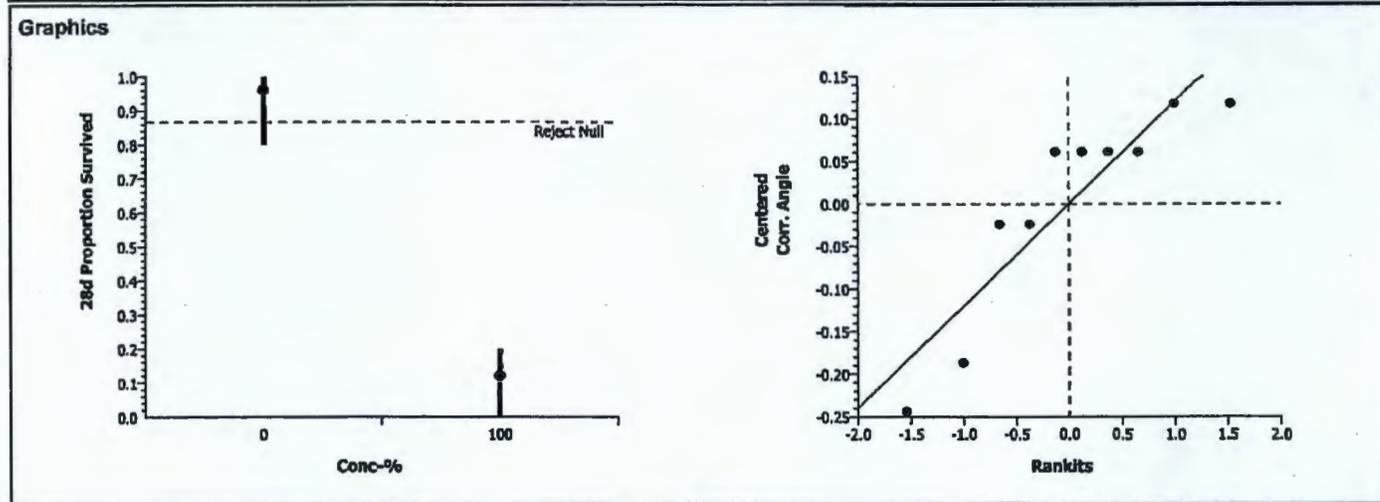
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	2.525702	2.525702	1	146.14	0.00000	Significant Effect
Error	0.1382645	0.017283	8			
Total	2.66396675	2.5429853	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 10 Apr-06 11:06 AM  
 Analysis: 15-1862-7993/B153826hac

**Hyallolella 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**

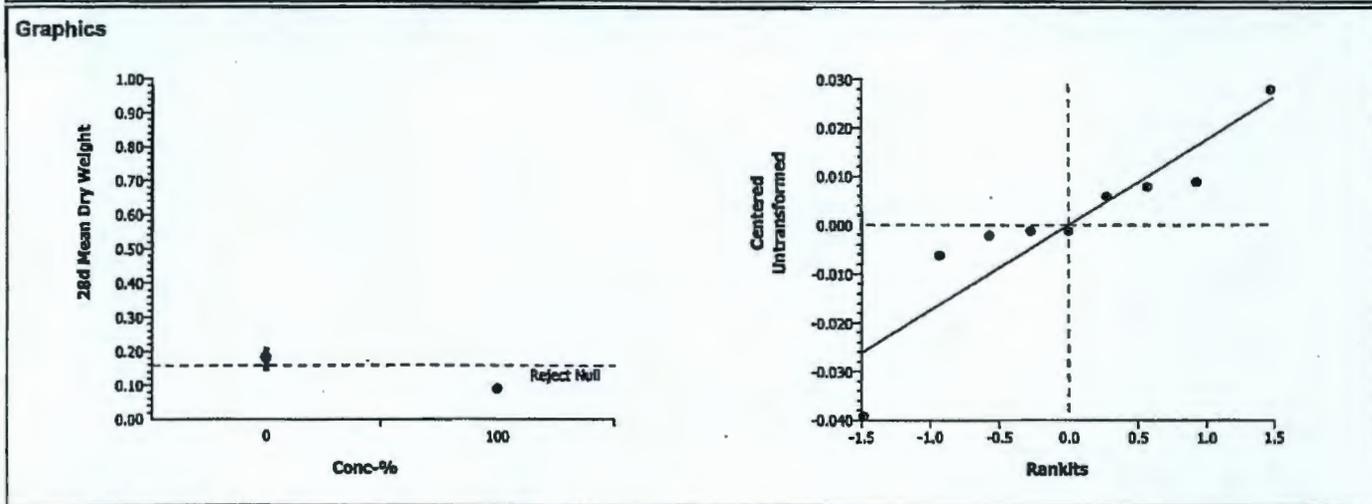
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0183820	0.018382	1	50.91	0.00019	Significant Effect
Error	0.0025276	0.000361	7			
Total	0.02090957	0.0187431	8			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

Report Date: 10 Apr-06 11:08 AM

Test Link: 03-3032-0079/B153827hac

Hyalalella 42-d Survival, Growth, and Reproduction Sediment Test							CH2M Hill		
Test No:	08-3754-8212	Test Type:	Hyalalella (42d)	Duration:	28d 0h				
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalalella azteca				
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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								
<b>Comparison Summary</b>									
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			
<b>Test Acceptability</b>									
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			
<b>28d Mean Dry Weight Summary</b>									
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				
<b>28d Proportion Survived Summary</b>									
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	
<b>28d Mean Dry Weight Detail</b>									
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							
<b>28d Proportion Survived Detail</b>									
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

Comparisons: Page 2 of 2  
 Report Date: 10 Apr-06 11:08 AM  
 Analysis: 10-7037-4920/B153827hac

**Hyalalela 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**

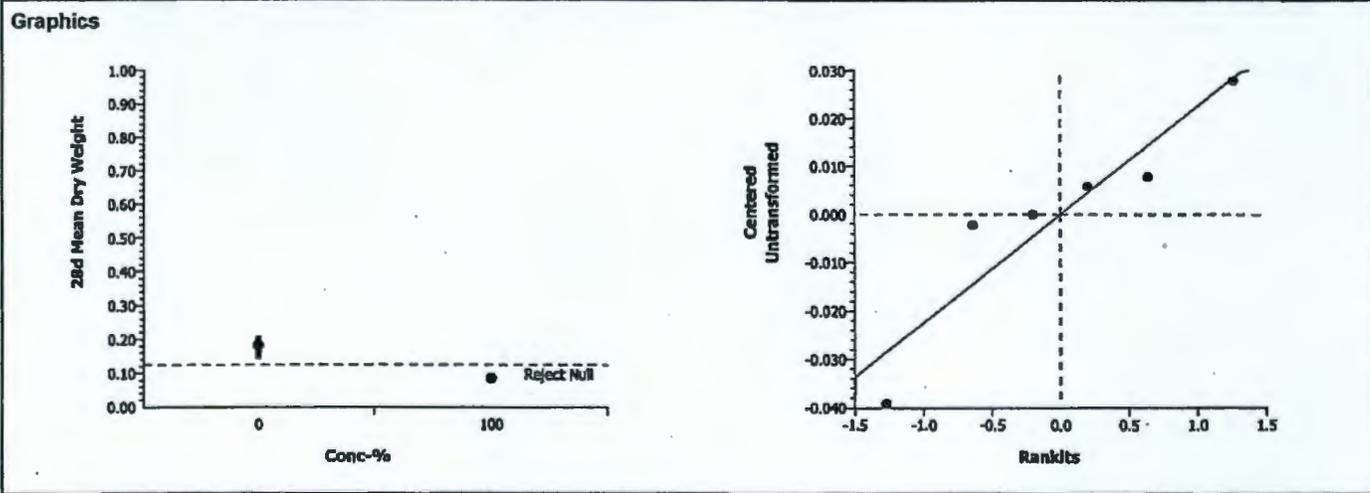
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0078732	0.007873	1	13.07	0.02244	Significant Effect
Error	0.0024088	0.000602	4			
Total	0.01028200	0.0084754	5			

**ANOVA Assumptions**

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

**Data Summary**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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					



## CETIS Test Summary

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

Hyallella 42-d Survival, Growth, and Reproduction Sediment Test							CH2M Hill	
Test No:	14-7601-1535	Test Type:	Hyallella (42d)	Duration:	28d 0h			
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyallella azteca			
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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
<b>28d Mean Dry Weight Detail</b>								
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					
<b>28d Proportion Survived Detail</b>								
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

Comparisons: Page 1 of 2  
 Report Date: 10 Apr-06 11:15 AM  
 Analysis: 06-8965-4096/B153828hac

**Hyallella 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**

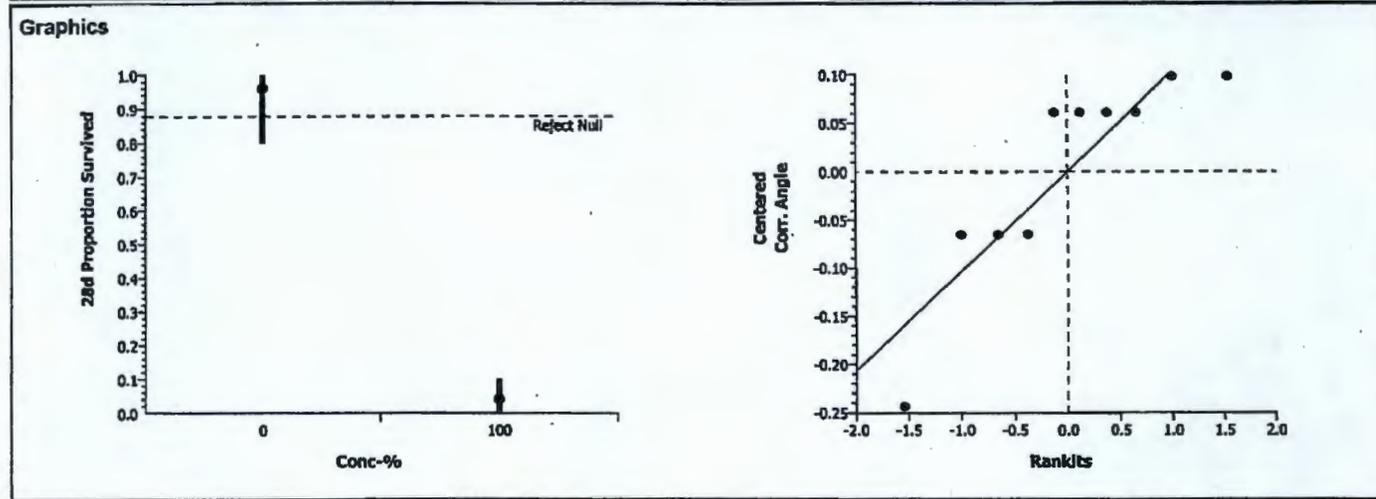
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	3.175741	3.175741	1	239.17	0.00000	Significant Effect
Error	0.1062265	0.013278	8			
Total	3.2819677	3.1890195	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 10 Apr-06 11:15 AM  
 Analysis: 11-0365-7894/B153828hac

**Hyalalella 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**

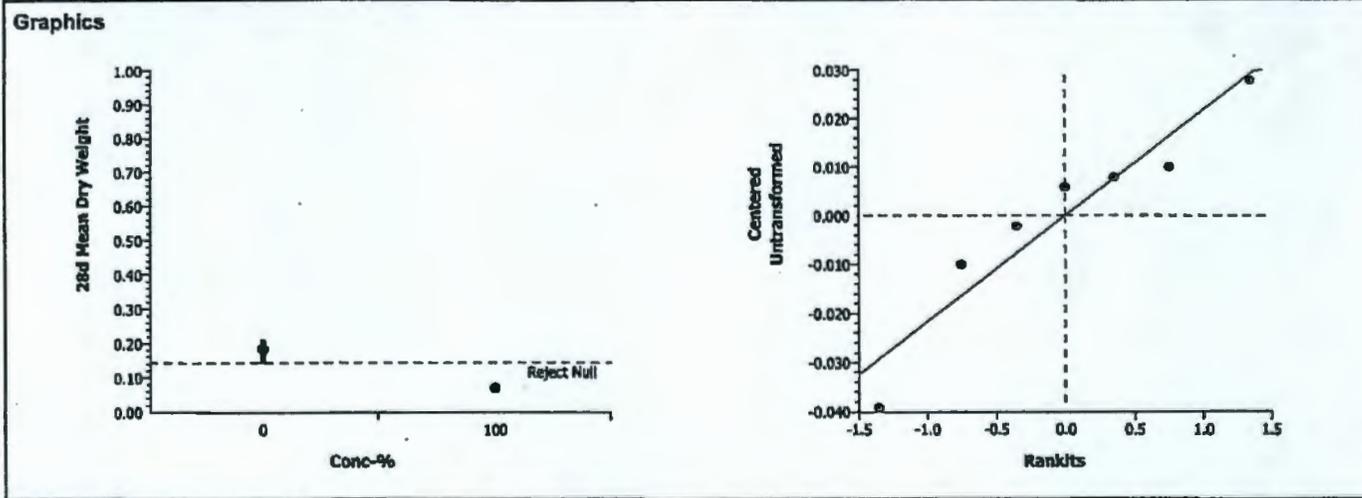
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0179840	0.017984	1	34.47	0.00203	Significant Effect
Error	0.0026088	0.000522	5			
Total	0.02059282	0.0185058	6			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

Report Date:

10 Apr-06 11:17 AM

Test Link:

02-3392-2622/B153829hac

## Hyalella 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, Naves, 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

Comparisons: Page 1 of 2  
 Report Date: 10 Apr-06 11:17 AM  
 Analysis: 14-0762-2720/B153829hac

**Hyalalela 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**

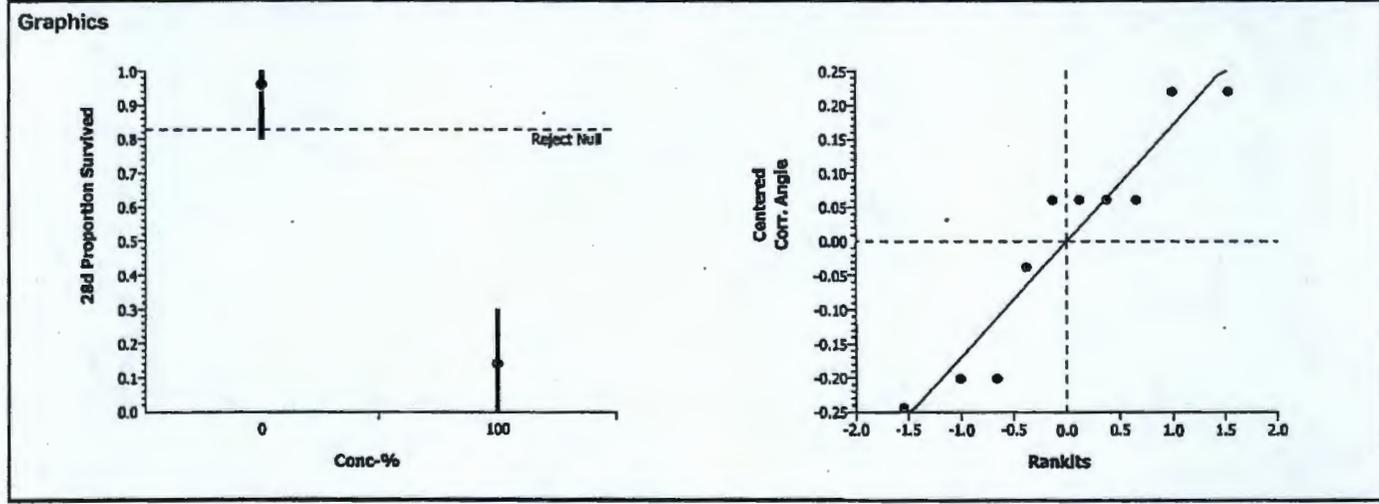
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	2.456811	2.456811	1	77.60	0.00002	Significant Effect
Error	0.25328	0.03166	8			
Total	2.71009091	2.4884709	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 10 Apr-06 11:17 AM  
 Analysis: 04-3426-0089/B153829hac

## Hyalalela 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

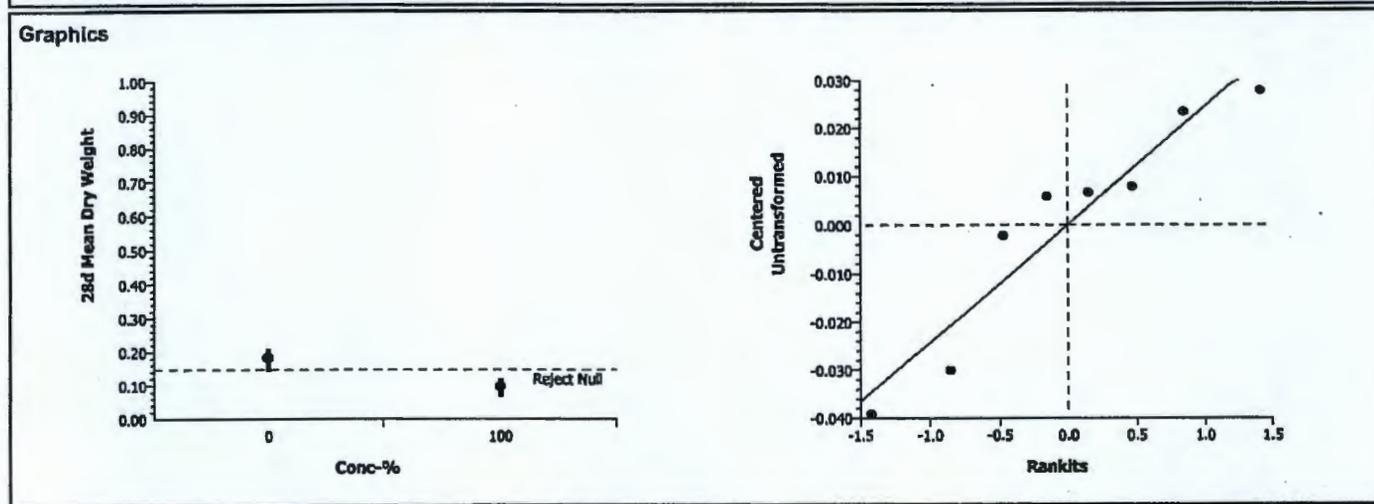
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	19.85%

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				



## CETIS Test Summary

Report Date:

10 Apr-06 11:18 AM

Test Link:

01-7602-9725/B153830hac

## Hyalella 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:	Chesapeake Cultures, Naves, 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	0.18750	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

Comparisons: Page 1 of 2  
 Report Date: 10 Apr-06 11:18 AM  
 Analysis: 18-9167-9932/B153830hac

**Hyalalella 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**

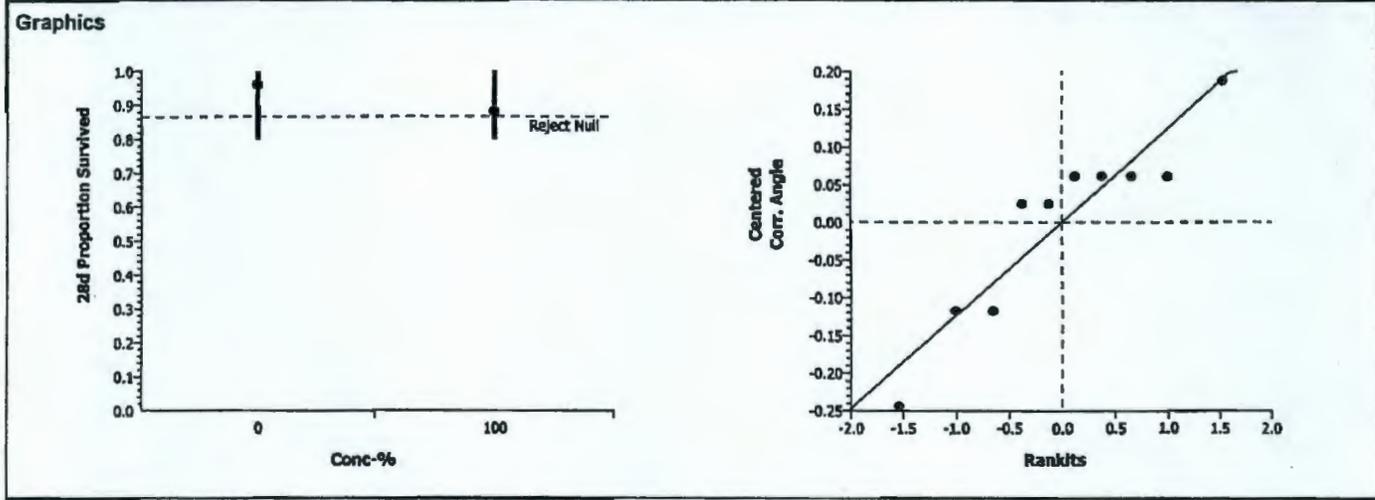
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0397919	0.039792	1	2.30	0.16765	Non-Significant Effect
Error	0.1382645	0.017283	8			
Total	0.17805639	0.0570749	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

**Hyallella 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

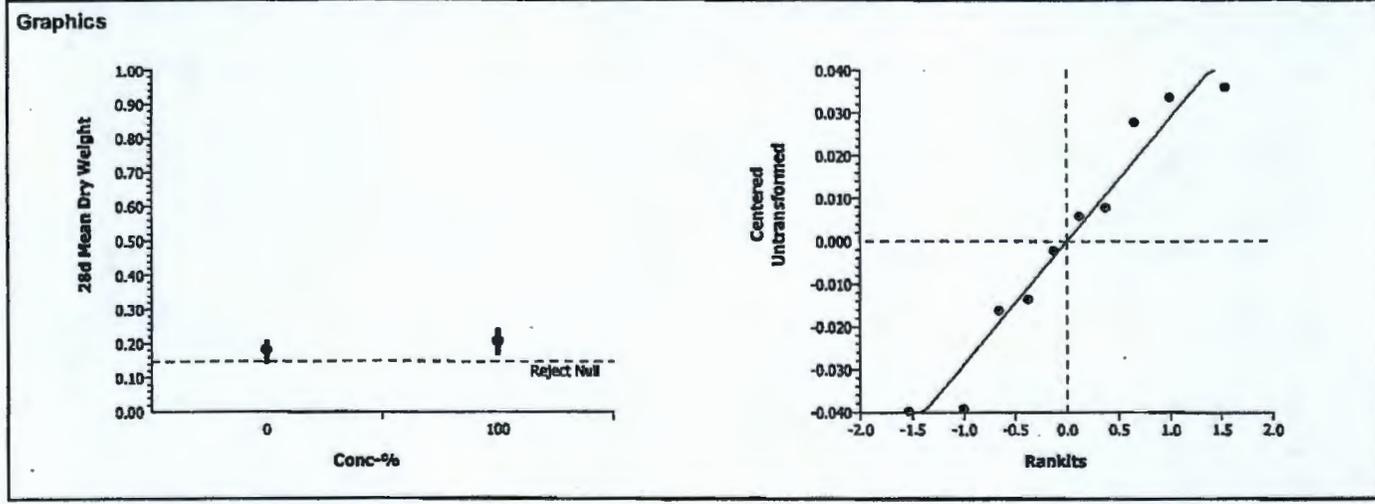
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	18.92%

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				



## CETIS Test Summary

 Report Date: 10 Apr-06 11:22 AM  
 Test Link: 05-3200-4993/B153831hac

 Hyalella 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: Chesapeake Cultures, Naves, 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

**Hyalalela 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**

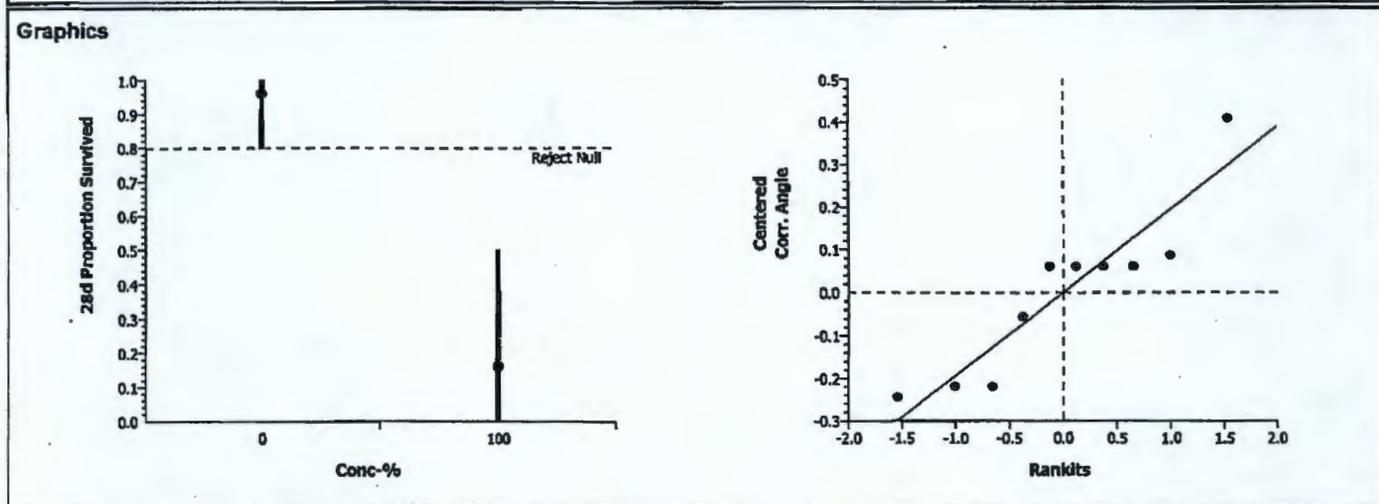
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	2.368629	2.368629	1	54.62	0.00008	Significant Effect
Error	0.3469422	0.043368	8			
Total	2.71557137	2.411997	9			

**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**

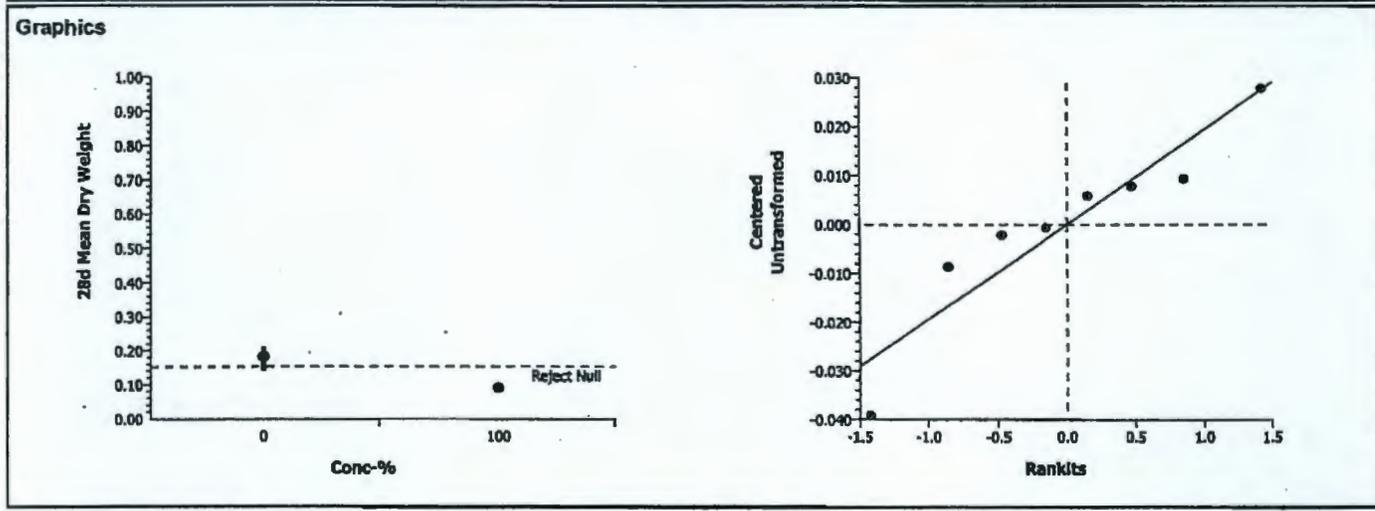
Conc-%	Control Type	Count	Original Data				Transformed Data			
			Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.16000	0.00000	0.50000	0.20736	0.37767	0.15878	0.78540	0.26105



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 10 Apr-06 11:22 AM  
 Analysis: 09-5439-4519/B153831hac

Hyalalela 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					



## CETIS Test Summary

 Report Date: 10 Apr-06 11:23 AM  
 Test Link: 09-7284-1143/B153832hac

## Hyallella 42-d Survival, Growth, and Reproduction Sediment Test

CH2M Hill

Test No: 06-5231-4106	Test Type: Hyallella (42d)	Duration: 28d 0h
Start Date: 10 Mar-06	Protocol: EPA/600/R-99/064 (2000)	Species: Hyallella azteca
Ending Date: 07 Apr-06	Dil Water:	Source: Chesapeake Cultures, Naves, 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

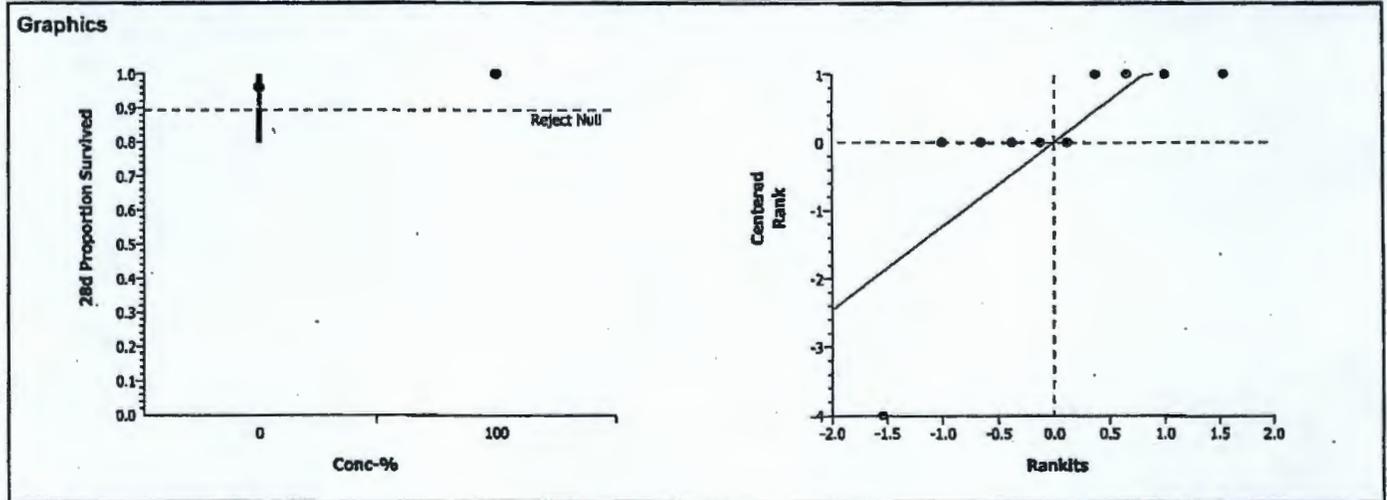
## 28d Proportion Survived Detail

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

Comparisons: Page 1 of 2  
 Report Date: 10 Apr-06 11:23 AM  
 Analysis: 10-8400-2966/B153832hac

Hyallolela 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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 10 Apr-06 11:23 AM  
 Analysis: 07-0218-0612/B153832hac

**Hyallolella 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**

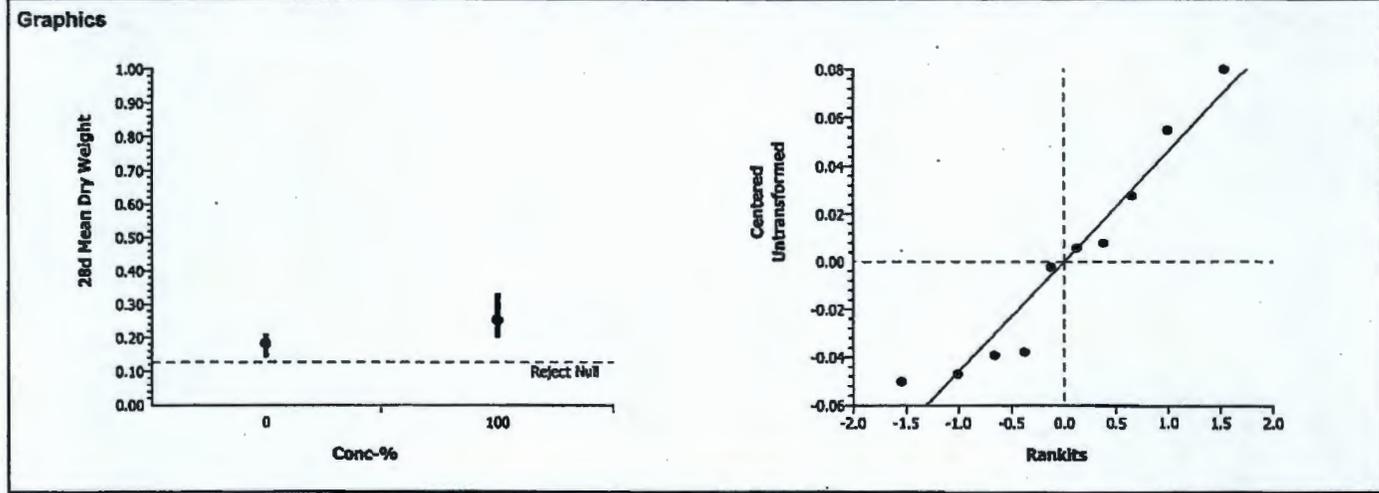
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0118336	0.011834	1	5.26	0.05093	Non-Significant Effect
Error	0.0179868	0.002248	8			
Total	0.02982042	0.014082	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

Report Date: 10 Apr-06 11:25 AM  
Test Link: 07-6908-9009/B153833hac

Hyalella 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:	Chesapeake Cultures, Naves, 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

Comparisons: Page 1 of 2  
 Report Date: 10 Apr-06 11:25 AM  
 Analysis: 03-6243-7501/B153833hac

**Hyalalela 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**

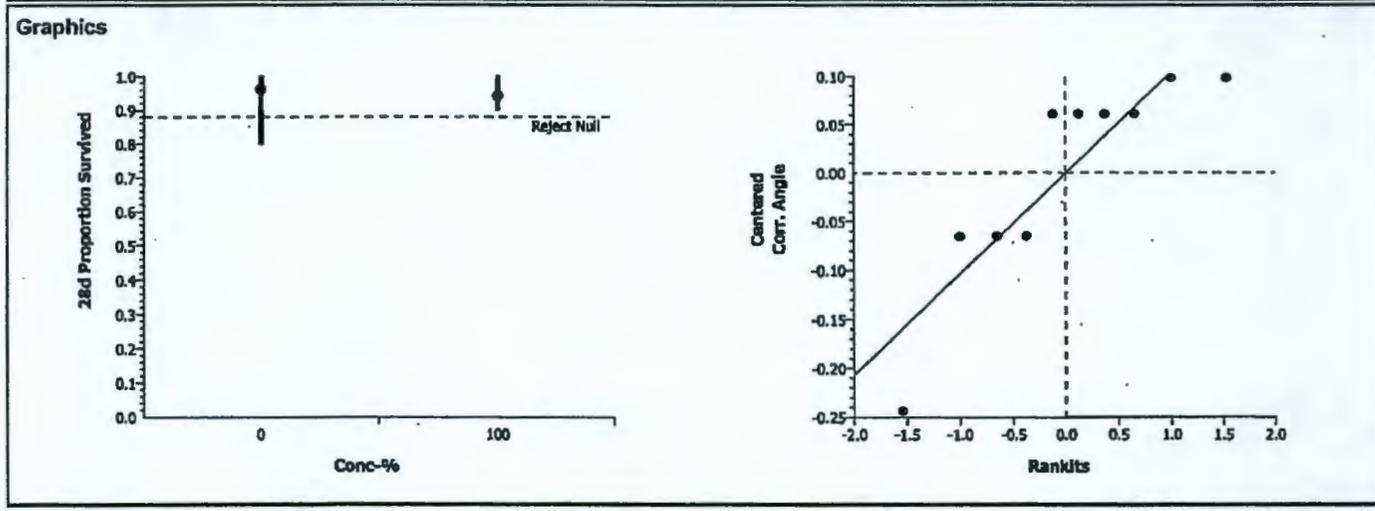
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0033872	0.003387	1	0.26	0.62713	Non-Significant Effect.
Error	0.1062265	0.013278	8			
Total	0.10961371	0.0166655	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 10 Apr-06 11:25 AM  
 Analysis: 11-9944-6587/B153633hac

## Hyalalela 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

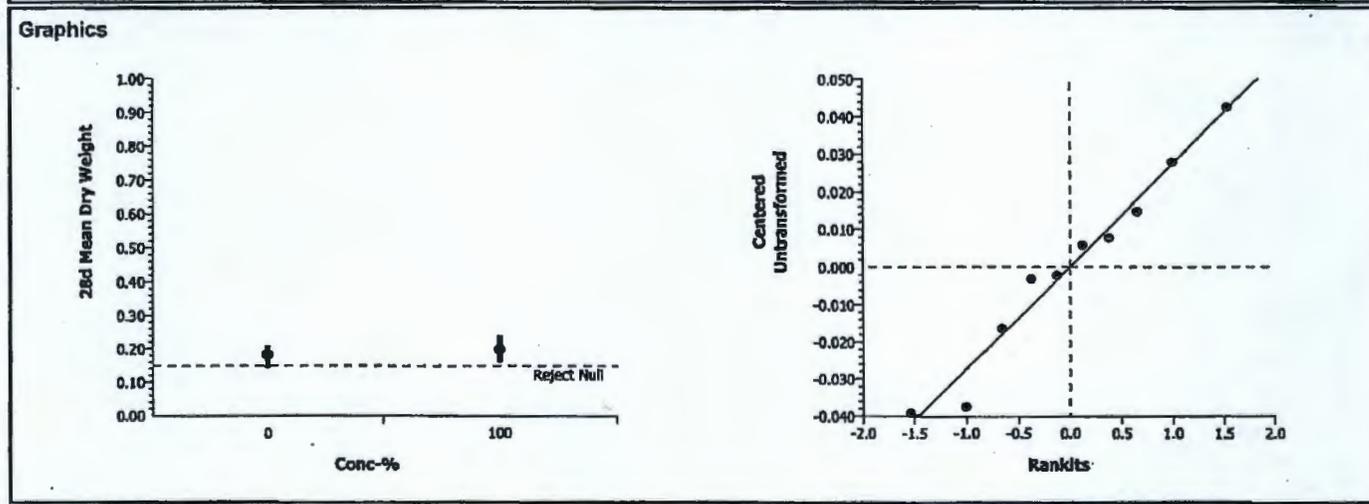
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	17.85%

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				



## CETIS Test Summary

Report Date: 10 Apr-06 11:29 AM

Test Link: 05-1276-0371/B153834hac

Hyalloella 42-d Survival, Growth, and Reproduction Sediment Test							CH2M Hill	
Test No:	03-6512-6552	Test Type:	Hyalloella (42d)	Duration:	28d 0h			
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalloella azteca			
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeake Cultures, Naves, 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

Comparisons: Page 1 of 2  
 Report Date: 10 Apr-06 11:29 AM  
 Analysis: 10-6618-9985/B153834hac

**Hyalalella 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**

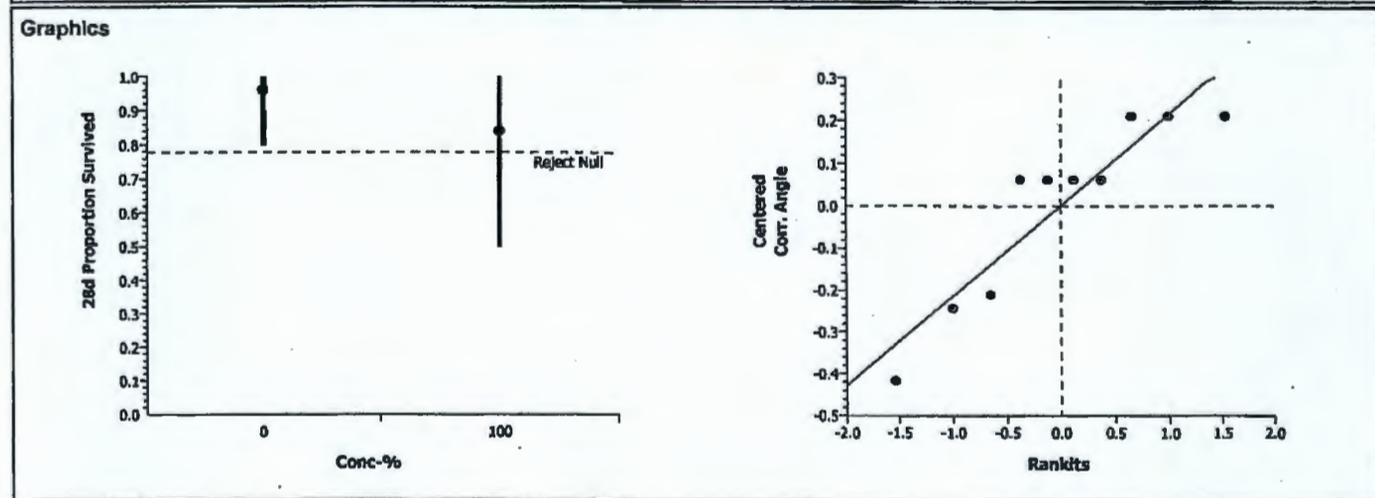
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.055147	0.055147	1	1.04	0.33792	Non-Significant Effect
Error	0.4246863	0.053086	8			
Total	0.47983326	0.1082328	9			

**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

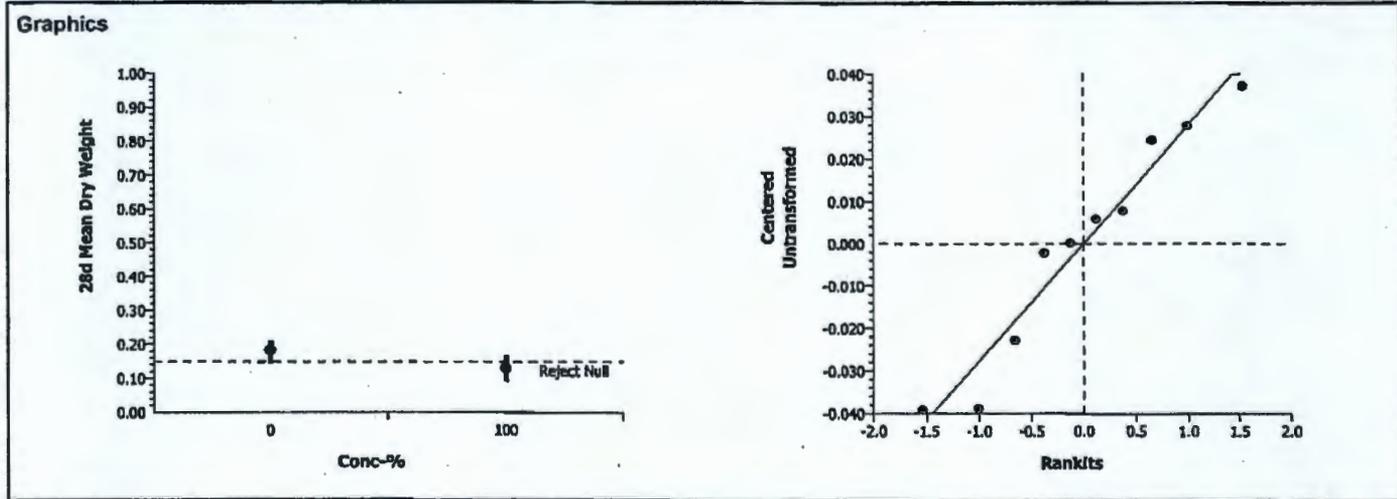
**Data Summary**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Hyallella 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										
Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

 Report Date: 10 Apr-06 11:30 AM  
 Test Link: 12-4877-4799/B153835hac

Hyalella 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:	Chesapeake Cultures, Naves, 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							
<b>Comparison Summary</b>								
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		
<b>Test Acceptability</b>								
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		
<b>28d Mean Dry Weight Summary</b>								
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%
<b>28d Proportion Survived Summary</b>								
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%
<b>28d Mean Dry Weight Detail</b>								
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		
<b>28d Proportion Survived Detail</b>								
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 ✓	0.68000 ✓	0.70000 ✓		



# CETIS Analysis Detail

Comparisons: Page 2 of 2  
 Report Date: 10 Apr-06 11:30 AM  
 Analysis: 09-5055-5237/B153835hac

**Hyallolella 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**

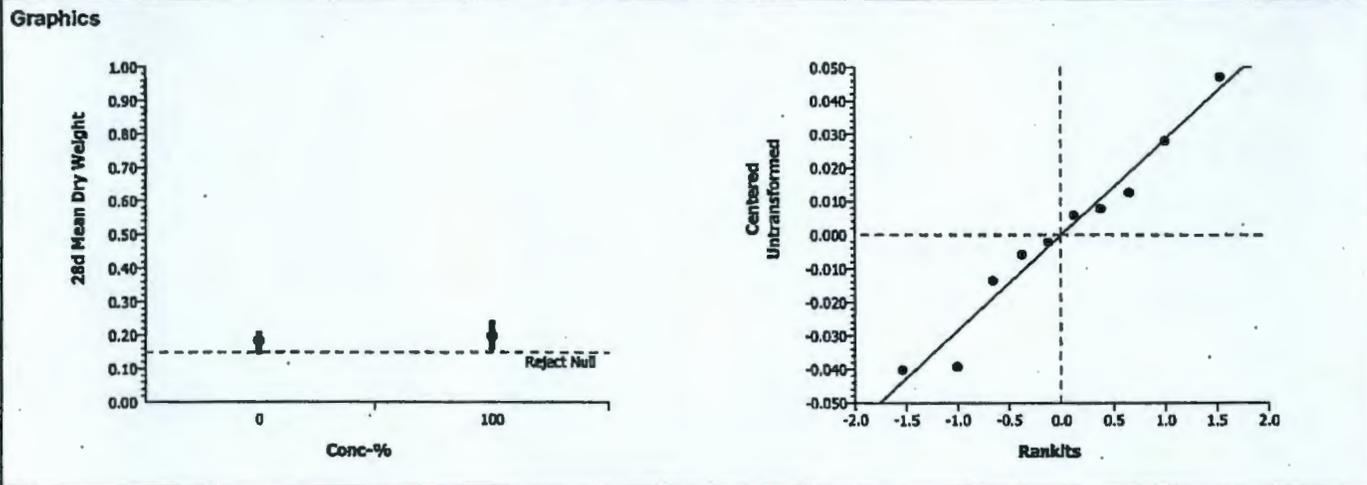
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.000462	0.000462	1	0.56	0.47627	Non-Significant Effect
Error	0.0066179	0.000827	8			
Total	0.00707985	0.0012892	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

Report Date: 10 Apr-06 11:31 AM  
Test Link: 19-2440-1348/B153836hac

Hyalella 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	DII Water:		Source:	Chesapeake Cultures, Nayas, 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

Comparisons: Page 1 of 2  
 Report Date: 10 Apr-06 11:31 AM  
 Analysis: 12-3402-9408/B153836hac

**Hyalalela 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**

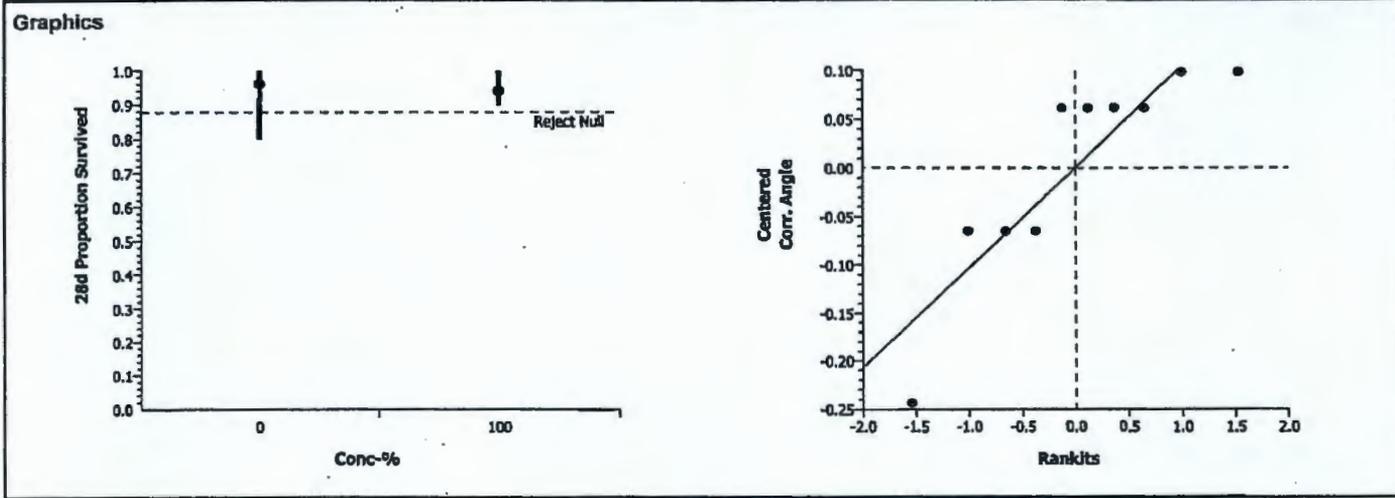
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0033872	0.003387	1	0.26	0.62713	Non-Significant Effect
Error	0.1062265	0.013278	8			
Total	0.10961371	0.0166655	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

**Hyalalela 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**

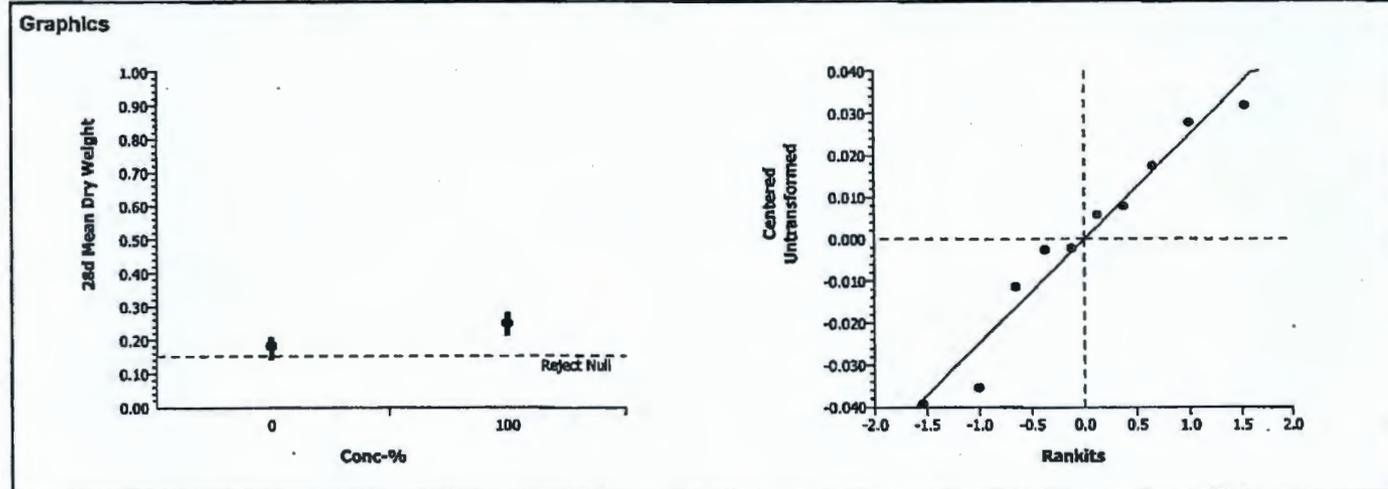
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.011613	0.011613	1	18.17	0.00275	Significant Effect
Error	0.0051134	0.000639	8			
Total	0.01672637	0.0122521	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



## CETIS Test Summary

 Report Date: 10 Apr-06 11:33 AM  
 Test Link: 17-9952-9504/B153837hac

Hyalella 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:	Chesapeake Cultures, Naves, 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

Comparisons: Page 1 of 2  
 Report Date: 10 Apr-08 11:33 AM  
 Analysis: 07-8432-1576/B153837hac

**Hyallolela 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**

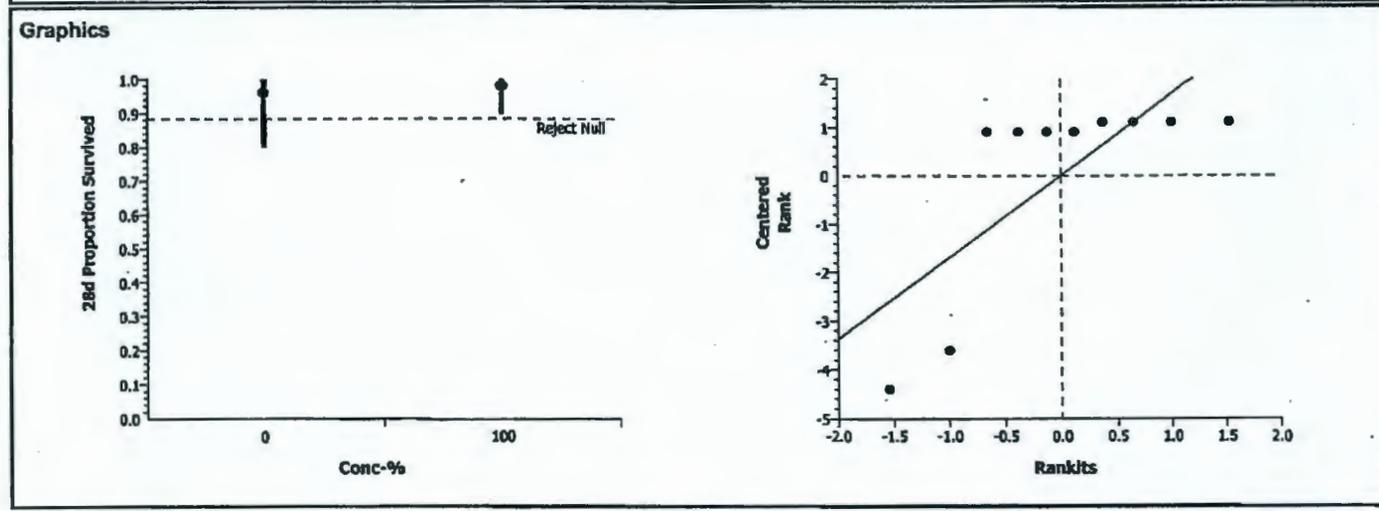
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0020135	0.002013	1	0.17	0.69223	Non-Significant Effect
Error	0.0956028	0.011950	8			
Total	0.09761624	0.0139638	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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



# CETIS Analysis Detail

Comparisons: Page 2 of 2

Report Date: 10 Apr-06 11:33 AM

Analysis: 02-4594-7010/B153837hac

**Hyallolella 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**

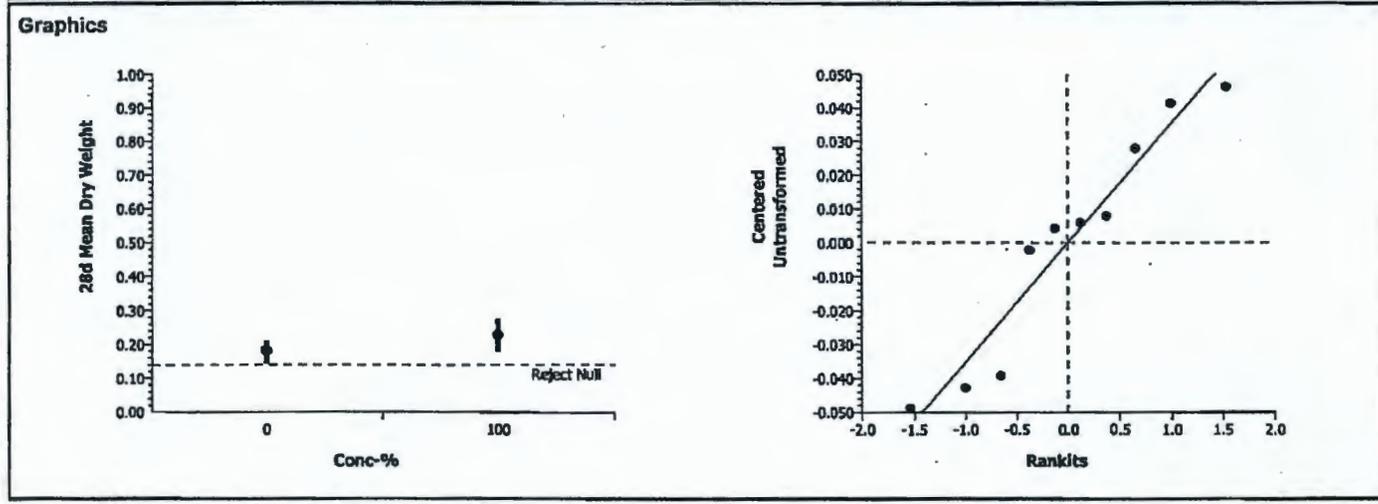
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0054289	0.005429	1	4.15	0.07608	Non-Significant Effect
Error	0.0104716	0.001309	8			
Total	0.0159005	0.0067379	9			

**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**

Conc-%	Control Type	Count	Original Data				Transformed Data			
			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				



**APPENDIX B**  
**REFERENCE TOXICANT DATA SHEETS**

**REFERENCE TOXICANT DATA SHEET**

Client QA/QC Reference Toxicant Cd as CdCl<sub>2</sub> · 2.5 H<sub>2</sub>O Test Begin: Date 3-2-06 Time 1040  
 Test Organism Hyalloella azteca Solvent distilled H<sub>2</sub>O Stock Solution 1 ppm Cd Test End: Date 3-4-06 Time 1600  
 Source Chesapeake Cultures Reagent Log ID # 18031-01  
 ID# Amp. 56 \*Dilution Water Recon MH (FAM) ID# 2605  
 Age 7 days Total Hardness as CaCO<sub>3</sub> 88 Total Alkalinity as CaCO<sub>3</sub> 64  
 Size - Conductivity (µmhos/cm) / Salinity (ppt) 261 Temperature 20 ± 1°C  
 Loading - Technician 0 hr SD 24 hr SD 48 hr TP 72 hr - 96 hr -  
 Time 0 hr 1040 24 hr 1100 48 hr 1600 72 hr - 96 hr -

Toxicant Concn. µg/L Cd	Test Chamber Number	Number Surviving					Dissolved Oxygen mg/l					pH					Temperature °C					Cond. 0
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	
Control		10	10	10			8.3	8.4	8.4			7.8	-	7.8			19.8	20.1	20.1			248
2		10	10	8			8.3	-	8.5			7.8	-	7.8			19.7	20.1	20.1			254
4		10	9	4			8.2	-	8.6			7.8	-	7.8			19.7	20.2	20.2			255
8		10	5	2			8.0	-	8.6			7.8	-	7.8			19.7	20.3	20.3			256
16		10	5	0			8.1	-	8.6			7.8	-	7.8			19.5	20.3	20.3			256
32		10	6	0			8.1	-	8.7			7.6	-	7.8			19.6	20.3	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

42 h LC50 3.62  
 Cusum Chart Limits 3.58 to 8.52  
 Statistical Method Probit

We verify this data is true and correct.

Task Manager Doug Wimmer  
 Project Manager [Signature]  
 QA Officer [Signature]

## CETIS Test Summary

Report Date:

06 Mar-06 9:39 AM

Test Link:

01-7581-7320/rhaa056

## Hyalalella 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:	Hyalalella azteca
Ending Date:	04 Mar-06 04:00 PM	Dil Water:		Source:	Chesapeake Cultures, Naves, 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

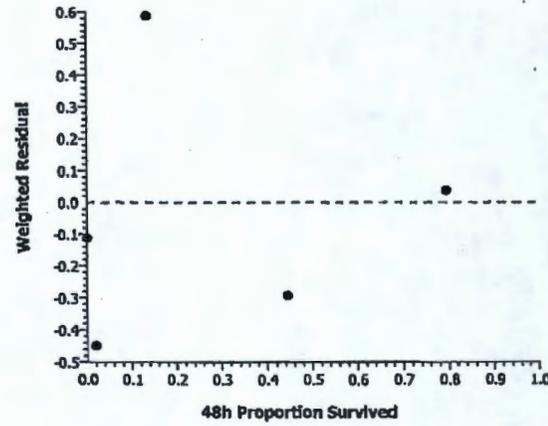
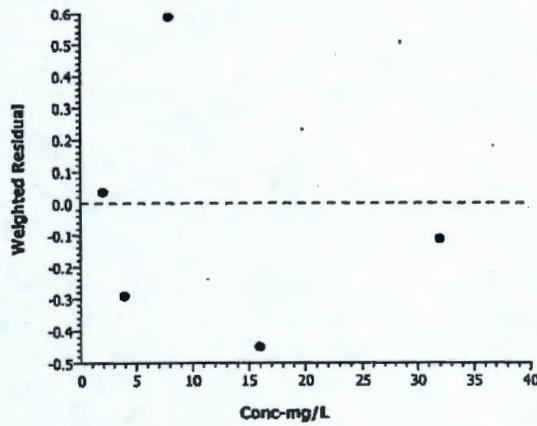
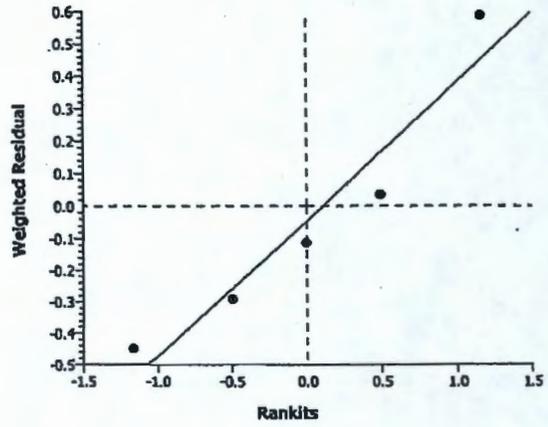
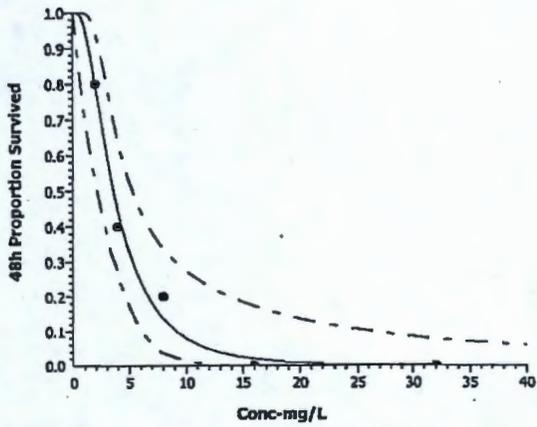
# CETIS Analysis Detail

Linear Regression: Page 1 of 2  
 Report Date: 06 Mar-06 9:39 AM  
 Analysis: 04-2914-8908/rhaa056

Hyalloela 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											
Conc-mg/	Control Type	Count	Calculated Variate(A/B)								
			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





Report Date: 10 Mar-06 8:26 AM  
 Test Link: 04-1225-5904/rhaa057

# CETIS Test Summary

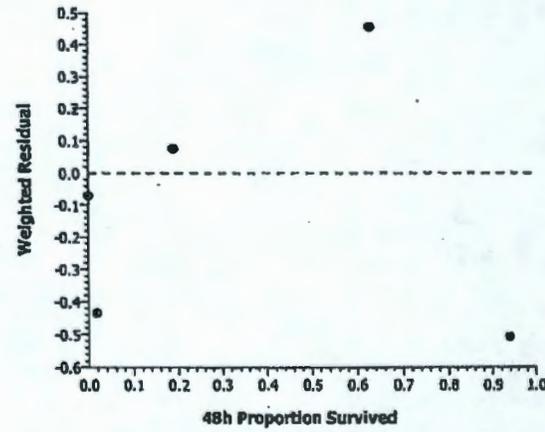
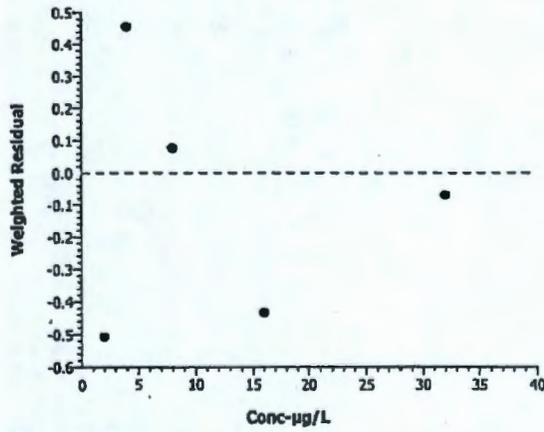
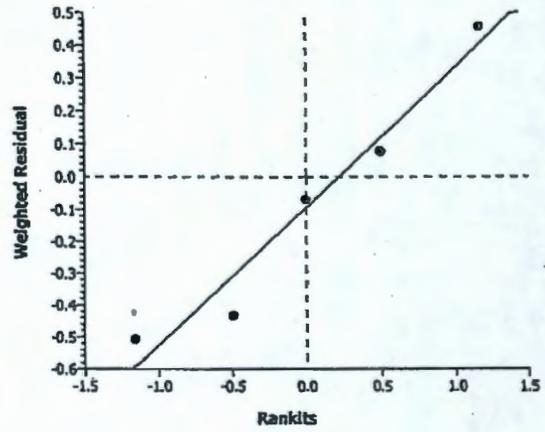
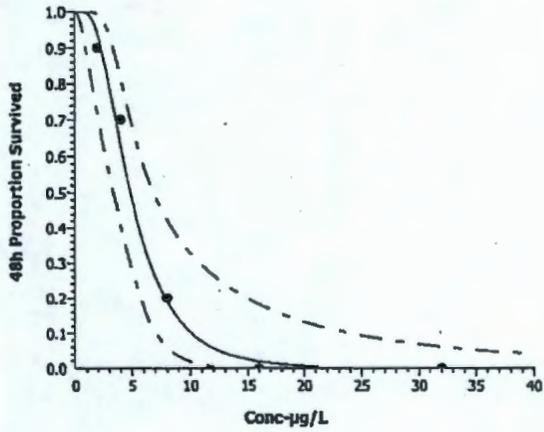
Hyallolela azteca 48-h Acute Survival Test							CH2M Hill	
Test No:	15-2044-2609	Test Type:	Survival (48h)	Duration:	49h			
Start Date:	07 Mar-06 01:50 PM	Protocol:		Species:	Hyallolela azteca			
Ending Date:	09 Mar-06 02:40 PM	Dil Water:		Source:	Chesapeake Cultures, Naves, Virginia			
Setup Date:	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 CdCl <sub>2</sub> x 2.5 H <sub>2</sub> O							
Point Estimate Summary								
Analysis	Endpoint	% Effect	Conc- $\mu$ g/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- $\mu$ g/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- $\mu$ g/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

Hyalalela 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											
Conc-µg/L	Control Type	Count	Calculated Variate(A/B)							A	B
			Mean	Minimum	Maximum	SE	SD				
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 <i>JE Bernhard</i>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>		Data Turnaround <b>21 Days</b>						
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti		Sampling Location <i>300+ RBF #16 SPS 2-5-06</i>			SAF No. RC-047		Air Quality <input type="checkbox"/>									
Ice Chest No. <i>SAWS-336</i>		Field Logbook No. EL-1596 <i>7 SEP 2-5-06</i>		COA BESRAS6520		Method of Shipment GROUND TRANSPORT										
Shipped To CH2MHILL		Offsite Property No. <i>A060151</i>				Bill of Lading/Air Bill No. SEE OSPC										
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</i>				Preservation	Cool 4C	None	None									
Special Handling and/or Storage <i>COOL 4C</i>				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				SPECIAL INSTRUCTIONS								
Relinquished By/Removed From <i>JEB</i>		Date/Time 1400		Received By/Stored In <i>JEB</i>		Date/Time 1400		(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  <i>31533-01 for Analytical</i>								
JAMES BERNHARD		02-05-06		EAS LOCKED STORAGE		02-05-06										
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 0745		Received By/Stored In <i>RZ Steffler R.Z. Steffler</i>		Date/Time 2-6-06										
RZ Steffler		1500		Fed Ex												
FED EX				<i>Kmckenley</i>		2/7/06 1020										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix *								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						S=Soil	SE=Sediment	SO=Solid	S=Sediment	W=Water
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						O=Oil	A=Air	DS=Drum Solids	DL=Drum Liquids	T=Tissue
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		W=Wipe	L=Liquid	V=Vegetation	X=Other					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
LABORATORY SECTION	Received By <i>Kmckenley</i>		Title		Date/Time 2/7/06 1020											
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time											

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-9		Page 1 of 1		
Collector <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>		Data Turnaround	
Project Designation 100 & 300 Area Component of the RCBRA Sediment and TI		Sampling Location U-2			SAF No. RC-047		Air Quality <b>[7]</b>		<b>21 Days</b>		
Ice Chest No. <b>AFS-04-050</b>		Field Logbook No. EL-1597 JEB 2-8-06		COA BESRAS6520		Method of Shipment GROUND TRANSPORT					
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>			Bill of Lading/Air Bill No. SEE OSPC						
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</i>				Preservation	Cool 4C	None	None				
Special Handling and/or Storage <i>COOL 4C</i>				Type of Container	G/P	P/G	P/G				
				No. of Container(s)	<i>1</i>	<i>1</i>	<i>1</i>				
				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					SPECIAL INSTRUCTIONS					Matrix *	
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 2-8-06 1700		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 2-8-06 1700		(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  <i>B1539-02 for Hyaluron</i> <i>B1539-02 for outside / pack chn</i>  <i>COC seals intact</i>			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
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 2-9-06 0715		Received By/Stored In <i>R. J. Stettin</i>		Date/Time 2-9-06 0715					
Relinquished By/Removed From <i>R. J. Stettin</i>		Date/Time 2-9-06 1500		Received By/Stored In <b>Fed Ex</b>		Date/Time					
Relinquished By/Removed From <b>Fed Ex</b>		Date/Time		Received By/Stored In <i>John Mudge</i>		Date/Time 2-10-06 1400					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION	Received By	Title					Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By					Date/Time				

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-047-7		Page 1 of 1		
Collector <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and TI		Sampling Location 300-2		SAF No. RC-047		Air Quality <input type="checkbox"/>		Data Turnaround <b>21 Days</b>		
Ice Chest No. <b>AFS-04-050</b>		Field Logbook No. EL-15987 <i>see 2-8-06</i>		COA BESRAS6520		Method of Shipment GROUND TRANSPORT				
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>		Bill of Lading/Air Bill No. SEE OSPC						
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</i>				Preservation	Cool 4C	None	None			
Special Handling and/or Storage <i>COOL 4C</i>				Type of Container	G/P	P/G	P/G			
				No. of Container(s)	<i>5</i>	<i>1</i>	<i>1</i>			
				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				SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 1700 2-8-06	Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 1700 2-8-06	(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  <i>B1538-03 for Hyalohala</i> <i>B1539-03 for Mitsudake / P.k. Choi</i> <i>COC seals intact on arrival</i>				S=Soil SE=Soil/arena SO=Solid SI=Sediment W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 0715 2-9-06	Received By/Stored In <i>R2 Staffer R. J. Staffer</i>		Date/Time 0715 2-9-06					
Relinquished By/Removed From <i>R2 Staffer R. J. Staffer</i>		Date/Time 1520 2-9-06	Received By/Stored In <b>Fed Ex</b>		Date/Time					
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time	Received By/Stored In <i>Blitt Mudgey</i>		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					
LABORATORY SECTION	Received By	Title				Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time				

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-047-8		Page 1 of 1		
Collector <b>JES JAMES BERNHARD</b>		Company Contact <b>JOAN KESSNER</b>		Telephone No. <b>375-4688</b>		Project Coordinator <b>KESSNER, JH</b>		Price Code <b>9N</b> Data Turnaround <b>21 Days</b>		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and TI		Sample Location <b>U-1</b>		SAF No. <b>RC-047</b>		Air Quality <input type="checkbox"/>				
Ice Chest No. <b>AFS-04-050</b>		Field Logbook No. <b>EL-15987 JEB 2-8-06</b>		COA <b>BESRAS6520</b>		Method of Shipment <b>GROUND TRANSPORT</b>				
Shipped To <b>CH2MHILL</b>		Offsite Property No. <b>A060151</b>				Bill of Lading/Air Bill No. <b>SEE OSCP</b>				
POSSIBLE SAMPLE HAZARDS/REMARKS <b>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</b>				Preservation	Cool 4C	None	None			
Special Handling and/or Storage <b>COOL 4C</b>				Type of Container	G/P	P/G	P/G			
				No. of Container(s)	<b>#2</b> <b>JEB 2-8-06</b>	1	1			
				Volume	1000g	3000g	19000g			
SAMPLE ANALYSIS				Spec 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										
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time <b>2-8-06</b>		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time <b>2-8-06</b>		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time <b>2-9-06</b>		Received By/Stored In <b>RZ Stettler R.P. Stettler</b>		Date/Time <b>2-9-06</b>		(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2210; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422  <b>31538-04 for Hyattle</b> <b>31539-04 for nitrate/pink chert</b>  <b>COC seals intact on arrival</b>		S=Soil SE=Sediment SO=Solid SL=Sedg W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>RZ Stettler R.P. Stettler</b>		Date/Time <b>2-9-06</b>		Received By/Stored In <b>Fed. Ex</b>		Date/Time				
Relinquished By/Removed From <b>Fed. Ex</b>		Date/Time		Received By/Stored In <b>Brett Mulvey</b>		Date/Time <b>2-10-06</b>				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
LABORATORY SECTION	Received By			Title			Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time			

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352



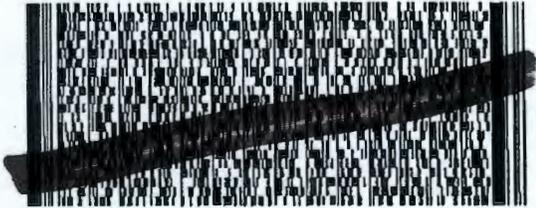
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Ship Date: 09FEB06  
ActWgt: 38 LB  
System#: 5851986/NET2400  
Account#: S\*\*\*\*\*

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

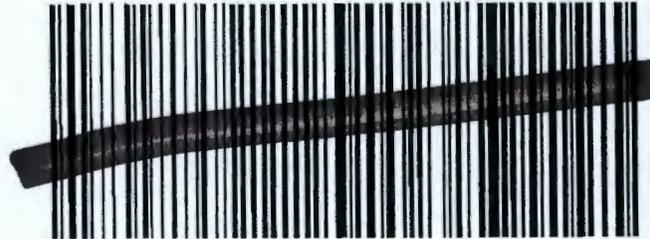
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FORM  
0201

PDX      AA

97339 -OR-US

86 CVOA



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RICHLAND, WA 99352



CLSA 1226/14/18

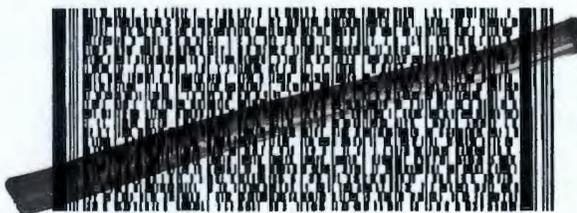
Ship Date: 09FEB06  
ActWgt: 78 LB  
System#: 5851966/INET2400  
Account#: S \*\*\*\*\*

REF: A060151



Delivery Address Bar Code

SHIP TO: (541)768-3127      BILL THIRD PARTY  
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**CORVALLIS, OR 97339**



**PRIORITY OVERNIGHT**

**FRI**  
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TRK# 7918 5661 0680

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From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352



CLS 12286/94/13

Ship Date: 09FEB06  
AcWgt: 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

FRI

Deliver By:  
10FEB06

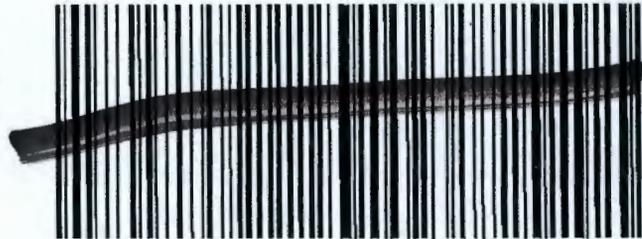
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Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-50		Page 1 of 1			
Collector TILLER JAMES BERNHARD		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 9N		Data Turnaround		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and T1		Sampling Location REF/Z SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>		21 Days				
Ice Chest No. ERC-99-065		Field Logbook No. EL-1597		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				Preservation	Cool 4C	None	None					
Special Handling and/or Storage COOLAC				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									
J116N1	OTHER SOLID	2-9-06	1530	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				
Relinquished By/Removed From JAMES BERNHARD		Date/Time 2-9-06		Received By/Stored In EAS LOCKED STORAGE		Date/Time 2-9-06		(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  B1538-05 = Hyalella B1539-05 = Nutsedge/Rakchoi F1192-01 Coc intact.				
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 0715 2-13-06		Received By/Stored In RZ Spiller R.Z. Spiller		Date/Time 2-13-06						
Relinquished By/Removed From RZ Spiller R.Z. Spiller		Date/Time 1500 2-13-06		Received By/Stored In Fed Ex		Date/Time						
Relinquished By/Removed From FED-X		Date/Time 2-14-06		Received By/Stored In Jule Starway		Date/Time 2-14-06 1100						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By				Title				Date/Time		
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time		

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-047-52	Page 1 of 1
Collector TILLER 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 REF/3SEDIMENT	SAF No. RC-047		Air Quality <input type="checkbox"/>	
Ice Chest No. ERC-99-065	Field Logbook No. EL-1597	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)	2-9-06 12	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											
J116N3	OTHER SOLID	2-9-06	1400	X	X	X								

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2-9-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 2-9-06	(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  B1538-06 Hyabilla B1539-06 Nutsedge/Pak Choi  Custody seals intact  F1192-02				S=Soil SE=Sediment SO=Solid SB=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trace WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02-13-06	Received By/Stored In R2 Stottler R. J. Stottler	Date/Time 2-13-06					
Relinquished By/Removed From R2 Stottler R. J. Stottler	Date/Time 2-13-06	Received By/Stored In Fed EX	Date/Time					
Relinquished By/Removed From Fed EX	Date/Time	Received By/Stored In Julie Sawney	Date/Time 2-14-06 1100					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-27		Page 1 of 1				
Collector TILLER <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>		Data Turnaround <b>21 Days</b>			
Project Designation 100 & 300 Area Component of the RCBRA Sediment and TI		Sampling Location Cr 5, SEDIMENT			SAF No. RC-047		Air Quality <input type="checkbox"/>						
Ice Chest No. <b>ERC-96-012</b>		Field Logbook No. EL-1598 <b>7/13/06</b>		COA BESRAS6520		Method of Shipment GROUND TRANSPORT							
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>			Bill of Lading/Air Bill No. SEE OSPC								
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</i>				Preservation	Cool 4C	None	None						
Special Handling and/or Storage <i>COOL 4C</i>				Type of Container	G/P	Poly Bag	Poly Bag						
				No. of Container(s)	<i>2</i>	<i>1</i>	<i>1</i>						
				Volume	1000g	3000g	1900g						
SAMPLE ANALYSIS				See item (I) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11							
				Sample No.	Matrix *	Sample Date	Sample Time						
J112B7	OTHER SOLID	2-12-06	1200	X	X	X							
CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS					Matrix *		
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 2-12-06		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 2-12-06		(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 <i> cooler temp for chemical analysis = 1.4 °C</i>  <b>B1538-07</b> <i>Alykella</i> <b>B1539-07</b> <i>Nutsedge/Pakchoi</i>  <i>Custody seals intact</i>  <b>F1192-03</b>					S=Soil
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 02-13-06		Received By/Stored In <i>RZ Steffler R. J. Steffler</i>		Date/Time 2-13-06							
Relinquished By/Removed From <i>RZ Steffler R. J. Steffler</i>		Date/Time 2-13-06		Received By/Stored In <i>Fid Ex</i>		Date/Time							
Relinquished By/Removed From <i>Fid Ex</i>		Date/Time		Received By/Stored In <i>John Staraway</i>		Date/Time 2-14-06							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION	Received By	Title				Date/Time							
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time							

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-047-51	Page 1 of 1	
Collector TILLER 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 REF/SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>		
Ice Chest No. ERC-96-012		Field Logbook No. EL-1597		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				Preservation	Cool 4C	None	None	
Special Handling and/or Storage COOLAC				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					
J116N2	OTHER SOLID	2-9-06	1445	X	X	X		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS			Matrix *	
Relinquished By/Removed From JAMES BERNHARD		Date/Time 2-9-06 1830		Received By/Stored In EAS LOCKED STORAGE		Date/Time 2-9-06 1830		(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  B 1538-04 <sup>03ms</sup> Hyalella B 1539-04 <sup>08ms</sup> Nutsedge/P. xchori  Custody seals intact  F1192-04
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 2-13-06 0745		Received By/Stored In R. J. Striffler R. J. Striffler		Date/Time 2-13-06 0745		
Relinquished By/Removed From R. J. Striffler R. J. Striffler		Date/Time 2-13-06 1500		Received By/Stored In Fed Ex		Date/Time		
Relinquished By/Removed From Fed - X		Date/Time		Received By/Stored In J. Starosky		Date/Time 2-14-06 1100		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		
LABORATORY SECTION	Received By	Title				Date/Time		
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time		

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-43		Page 1 of 1			
Collector TILLER 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 T1		Sampling Location Cr 9 SEDIMENT			SAF No. RC-047		Air Quality <input type="checkbox"/>					
Ice Chest No. AFS-04-034		Field Logbook No. EL-1597		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				Preservation	Cool 4C	None	None					
Special Handling and/or Storage COOL 4C 2-13-06				Type of Container	G/P	P/G	P/G					
				No. of Container(s)	5 BE # 2 2-12-06	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									
J116M4	OTHER SOLID	2-12-06	1400	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names			SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From JAMES BERNHARD		Date/Time 2-12-06		Received By/Stored In EAS LOCKED STORAGE		Date/Time 2-12-06		(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  - cooler Temp = 1.4°C  B1538-09 <sup>ms</sup> Hyalella B1539-08 <sup>g</sup> Nutsedge/Parchain Custody seals intact  F1192-05				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trash W1=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 2-12-06		Received By/Stored In RZ Stiller R.Z. Stiller		Date/Time 2-12-06						
Relinquished By/Removed From RZ Stiller R.Z. Stiller		Date/Time 2-13-06		Received By/Stored In Fed Ex		Date/Time						
Relinquished By/Removed From Fed Ex		Date/Time		Received By/Stored In with Starway		Date/Time 2-14-06 1100						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION	Received By	Title				Date/Time						
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time						

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-047-49		Page 1 of 1			
Collector TILLER 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 REF/4 SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC-96-058		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT					
Shipped To CH2MHILL		Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSCP							
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE <DOT LIMITS				Preservation	Cool 4C	None	None				
Special Handling and/or Storage COOL 4C				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								
J116N0	OTHER SOLID	2-9-06	1230	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names			SPECIAL INSTRUCTIONS			Matrix *	
Relinquished By/Removed From JAMES BERNHARD		Date/Time 2-9-06 1830		Received By/Stored In EAS LOCKED STORAGE		Date/Time 2-9-06 1830		(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  B1538-10 B1539-10 COC seeds intact  F1192-06			S=Soil SB=Substrate SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trickle W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 02-13-06 0745		Received By/Stored In RZ Steffler R.J. Steffler		Date/Time 2-13-06 0745					
Relinquished By/Removed From RZ Steffler R.J. Steffler		Date/Time 2-12-06 1500		Received By/Stored In Fed Ex		Date/Time					
Relinquished By/Removed From Fed Ex		Date/Time		Received By/Stored In Brett Mackay		Date/Time 2-14-06 1300					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION	Received By	Title				Date/Time					
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time					

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-047-97		Page 1 of 1		
Collector TELER 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 REF//, SEDIMENT FULL QC		SAF No. RC-047		Air Quality <input type="checkbox"/>				
Ice Chest No. ERC-96-058		Field Logbook No. EL-1597		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				Preservation	Cool 4C	None	None			
Special Handling and/or Storage COOL 4C				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							
J11731	OTHER SOLID	2-9-06	1600	X	X	X				
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From JAMES BERNHARD		Date/Time 1830 2-9-06		Received By/Stored In EAS LOCKED STORAGE		Date/Time 1830 2-9-06		(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  31539-11 B1539-11  coc soils intact  F1192-07		S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trace W/W=Type L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 0745 02-13-06		Received By/Stored In RE STEFFLER K.J. STEFFLER		Date/Time 0745 2-13-06				
Relinquished By/Removed From RE STEFFLER K.J. STEFFLER		Date/Time 1500 2-13-06		Received By/Stored In Fed Ex		Date/Time				
Relinquished By/Removed From Fed Ex		Date/Time		Received By/Stored In Brett Mueky		Date/Time 1700 2-14-06				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
LABORATORY SECTION		Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time		

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-44		Page 1 of 1			
Collector TILLER 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 Cr/Sediment			SAF No. RC-047		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC-02-501		Field Logbook No. EL-1597		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				Preservation		Cool 4C	None	None				
Special Handling and/or Storage COOL4C				Type of Container		G/P	P/G	P/G				
				No. of Container(s)		2	1	1				
				Volume		1000g	3000g	19000g				
SAMPLE ANALYSIS				See Item (1) in Special Instructions.		Sediment Invertebrate Toxicity ASTM B1706		Sediment Phytotoxicity EEDP-04-11				
Sample No.	Matrix #	Sample Date	Sample Time									
J116M5	OTHER SOLID	2-12-06	1530	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix #
Relinquished By/Removed From JAMES BERNHARD		Date/Time 2-12-06		Received By/Stored In EAS LOCKED STORAGE		Date/Time 2-12-06		(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  B1538-12 B1539-12 C0C seals intact F1192-08				S=Soil SE=Soilment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 02-13-06		Received By/Stored In R2 Staffler R.J. Staffler		Date/Time 2-13-06						
Relinquished By/Removed From R2 Staffler R.J. Staffler		Date/Time 2-13-06		Received By/Stored In Fid Ex		Date/Time						
Relinquished By/Removed From Fid Ex		Date/Time		Received By/Stored In Brett Mackey		Date/Time 2-14-06						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By				Title				Date/Time		
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time		

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-047-47		Page 1 of 1		
Collector TILLER <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and TI		Sampling Location Cr <del>SEDIMENT</del> <b>FULL QC</b>		SAF No. RC-047		Air Quality <input type="checkbox"/>		Data Turnaround <b>21 Days</b>		
Ice Chest No. <b>ERC-02-501</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT				
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>				Bill of Lading/Air Bill No. SEE OSPC				
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE <DOT LIMITS			Preservation	Cool 4C	None	None				
Special Handling and/or Storage COOL 4C			Type of Container	G/P	P/G	P/G				
			No. of Container(s)	5th 42 2-12-06	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							
J116M8	OTHER SOLID	2-12-06	1315	X	X	X				
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS				
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 1900 2-12-06		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 1900 2-12-06		(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  B153B - 13 B1539 - 13  CUC seals intact  F1192-09		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wife L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 0745 02-13-06		Received By/Stored In <b>RZ Steffler R. J. Steffler</b>		Date/Time 0745 2-13-06				
Relinquished By/Removed From <b>RZ Steffler R. J. Steffler</b>		Date/Time 1500 2-13-06		Received By/Stored In <b>Fed Ex</b>		Date/Time 1500				
Relinquished By/Removed From <b>Fed Ex</b>		Date/Time		Received By/Stored In <b>J. J. [Signature]</b>		Date/Time 1300 2-14-06				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
LABORATORY SECTION	Received By			Title			Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time			

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352



Ship Date: 13FEB06  
ActWgt: 72 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

TUE

Deliver By:  
14FEB06

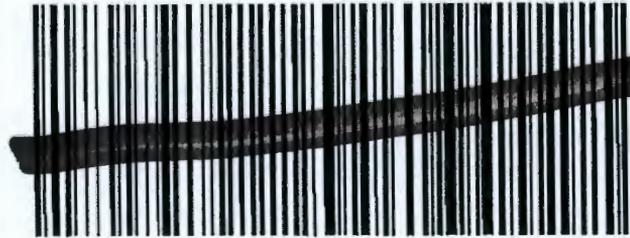
TRK# 7913 7159 9081

FORM  
0201

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B1538-05-13 & B1539-05-13

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162  
RICHLAND, WA 99352



Ship Date: 13FEB06  
ActWgt: 76 LB  
System#: 5851986/NET2400  
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

TUE  
Deliver By:  
14FEB06

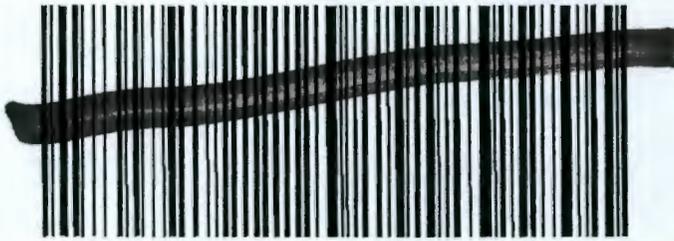
TRK# 7903 2014 0379

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B1539 & B1538-05-13

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352



CL581226/1911

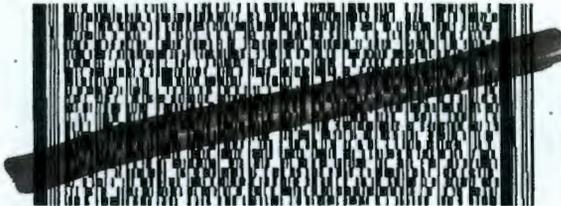
Ship Date: 13FEB06  
ActWgt: 26 LB  
System#: 5851986/NET2400  
Account#: S \*\*\*\*\*

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

TUE

Deliver By:  
14FEB06

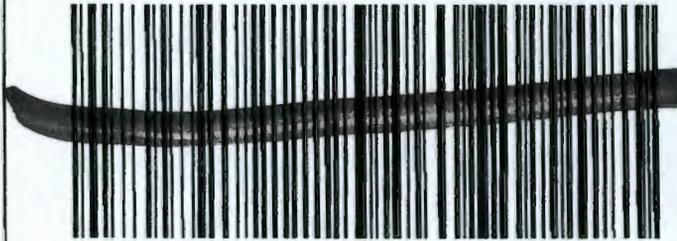
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81538 & 81539 - 05-13

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352



CLSR 1226/14/18

Ship Date: 13FEB06  
ActWgt: 95 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

TUE

Deliver By:  
14FEB06

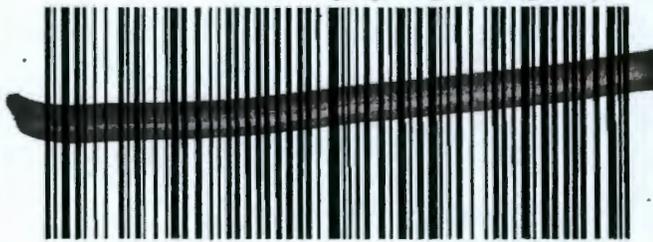
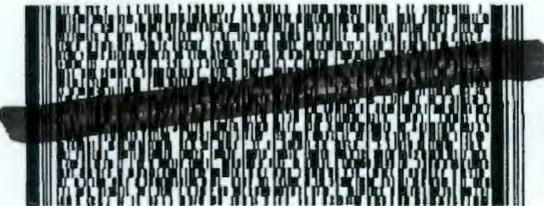
TRK# 7903 2014 0368

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B1538 ; B1539 - 05 - 13

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352



Ship Date: 19FEB06  
ActWgt: 78 LB  
System#: 5851966/INET2400  
Account#: S \*\*\*\*\*

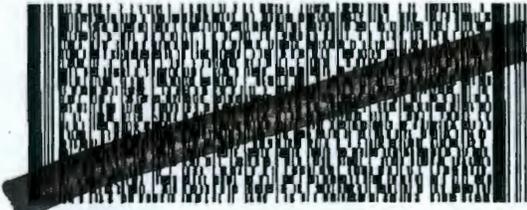
REF: A060151



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

TUE

Deliver By:  
14FEB06

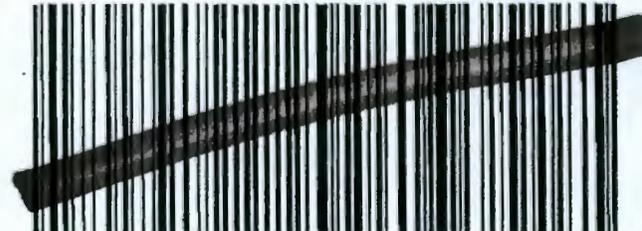
TRK# 7913 7159 9070

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B1539 1/2 B1539 - 05 - 13

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162  
RICHLAND, WA 99352



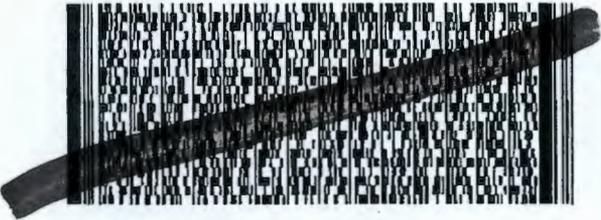
Ship Date: 13FEB06  
ActWgt: 88 LB  
System#: 5851986/INET2400  
Account#: S \*\*\*\*\*

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

TUE  
Deliver By:  
14FEB06

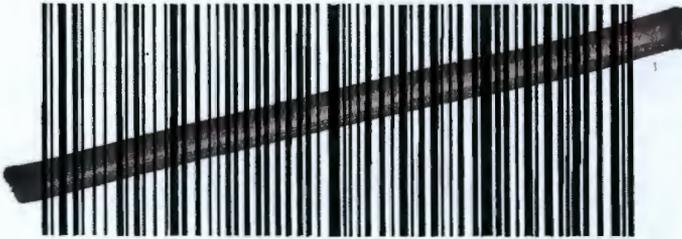
TRK# 7903 2014 0390

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B 1538 & B 1539 - 05 - 13

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-128		Page 1 of 1			
Collector TILLER 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 U3, SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>						
Ice Chest No. <b>ERC-99-027</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT						
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>		Bill of Lading/Air Bill No. SEE OSPC								
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE <DOT LIMITS				Preservation	Cool 4C	None	None					
Special Handling and/or Storage COOL 4C				Type of Container	G/P	P/G	P/G					
				No. of Container(s)	2-13-06 2-13-06	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									
J11752	OTHER SOLID	2-13-06	1345	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names			SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From JAMES BERNHARD		Date/Time 2-13-06		Received By/Stored In EAS LOCKED STORAGE		Date/Time 2-13-06		(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  300g lysed in us B1539-14 received 2-15-06 1900g lysed in us B1539-14 received 2-15-06  COC received 2-16-06, COC seals intact @ 30°C 1000g containers (2) arrived w/COE on 2-16-06 F1207.01 for chemistry				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WL=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 02-14-06		Received By/Stored In R2 Staffler R. J. Staffler		Date/Time 2-14-06						
Relinquished By/Removed From R2 Staffler R. J. Staffler		Date/Time 2-14-06		Received By/Stored In Fed Ex		Date/Time						
Relinquished By/Removed From Fed Ex		Date/Time		Received By/Stored In Fed Ex		Date/Time 11:00						
Relinquished By/Removed From		Date/Time		Received By/Stored In Fed Ex		Date/Time 2-16-06						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title		Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time						

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-121		Page 1 of 1			
Collector TILLER 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 6, SEDIMENT			SAF No. RC-047		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC-99-027		Field Logbook No. EL-1597		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				Preservation	Cool 4C	Noar	None					
Special Handling and/or Storage COOL4C				Type of Container	G/P	P/G	P/G					
				No. of Container(s)	250 2-13-06	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									
J11745	OTHER SOLID	2-13-06	1145	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From JAMES BERNHARD		Date/Time 2-13-06		Received By/Stored In EAS LOCKED STORAGE		Date/Time 2-13-06		(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  Coc seals intact B1532-15 for Hyalida (3mg) B1539-15 for Nitroedge / P.kchwi (14mg) F1207-02 for Chem lab (2x 1000g) @ 3.0°C				S=Soil SB=Soilment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trash WL=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 02-14-06		Received By/Stored In RZ Steffler R.Z. Steffler		Date/Time 2-14-06 / 0700						
Relinquished By/Removed From RZ Steffler R.Z. Steffler		Date/Time 1600 2-11-06		Received By/Stored In Fed Ex		Date/Time 1100						
Relinquished By/Removed From Fed Ex		Date/Time		Received By/Stored In DREW MURPHY		Date/Time 2-16-06						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION	Received By	Title				Date/Time						
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time						

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-126		Page 1 of 1			
Collector <b>TILLER JAMES BERNHARD</b>		Company Contact <b>JOAN KESSNER</b>		Telephone No. 375-4688		Project Coordinator <b>KESSNER, JH</b>		Price Code <b>9N</b>		Data Turnaround <b>21 Days</b>		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti		Sampling Location <b>U 9, SEDIMENT</b>		SAF No. RC-047		Air Quality <input type="checkbox"/>						
Ice Chest No. <b>AFS-04-049</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT						
Shipped To <b>CH2MHILL</b>		Offsite Property No. <b>A060151</b>		Bill of Lading/Air Bill No. SEE OSPC								
POSSIBLE SAMPLE HAZARDS/REMARKS <b>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</b>				Preservation		Cool 4C	None	None				
Special Handling and/or Storage <b>COOL 4C</b>				Type of Container		G/P	P/G	P/G				
				No. of Container(s)		<b>2</b>	<b>1</b>	<b>1</b>				
				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									
J11750	OTHER SOLID	2-13-06	1545	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 2-13-06		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 2-13-06		(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  <b>COC seals intact</b> <b>21538-16 for Hydro (300g)</b> <b>21538-16 for Nutsedge/Pike chwi (1900g)</b> <b>F1207-03 for Chemistry (2x 1000g) @ 3.0°C</b>				S=Soil SE=Soilment SO=Solid SL=Sludge W=Water O=Dil A=Air DS=Drum Solids DL=Drum Liquids T=Tar W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 02-14-06		Received By/Stored In <b>RE STELLER R.J. STELLER</b>		Date/Time 2-14-06						
Relinquished By/Removed From <b>RE STELLER R.J. STELLER</b>		Date/Time 2-14-06		Received By/Stored In <b>FEK EX</b>		Date/Time						
Relinquished By/Removed From <b>FEK EX</b>		Date/Time		Received By/Stored In <b>DR MURPHY BERT MURPHY</b>		Date/Time 2-16-06						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time				

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-127		Page 1 of 1			
Collector TILLER <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>		Data Turnaround		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and T1		Sampling Location U3, SEDIMENT			SAF No. RC-047		Air Quality <input type="checkbox"/>		<b>21 Days</b>			
Ice Chest No. <b>AFS-04-049</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT						
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>			Bill of Lading/Air Bill No. SEE OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE <DOT LIMITS				Preservation	Cool 4C	None	None					
Special Handling and/or Storage COOL 4C				Type of Container	G/P	P/G	P/G					
				No. of Container(s)	50 # 2 2-13-06	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									
J11751	OTHER SOLID	2-13-06	1445	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names			SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 2-13-06		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 2-13-06		(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  CVC seeds intact B1539-17 for Hyalids (300g) B1539-17 for Nutsedge / P. lechi (1600g) F1207-04 for Chemistry @ 3.0°C				S=Soil SB=Substratum SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 02-14-06		Received By/Stored In <i>R2 Steffler R.P. Steffler</i>		Date/Time 2-14-06						
Relinquished By/Removed From <i>R2 Steffler R.P. Steffler</i>		Date/Time 1600 WCH 2-14-06		Received By/Stored In <i>Fred FX</i>		Date/Time						
Relinquished By/Removed From <i>Fred FX</i>		Date/Time		Received By/Stored In <i>Bill Murray Brett Munday</i>		Date/Time 1100 2-16-06						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION	Received By	Title					Date/Time					
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By					Date/Time					

Collector **TILLER 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 7, SEDIMENT** SAF No. **RC-047** Air Quality

Ice Chest No. **ERC-02-007** Field Logbook No. **EL-1597** COA **BESRAS6520** Method of Shipment **GROUND TRANSPORT**

Shipped To **CH2MHILL** Offsite Property No. **A060151** Bill of Lading/Air Bill No. **SEE OSCP**

POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</i>	Preservation	Cool 4C	None	None						
	Type of Container	G/P	P/G	P/G						
	No. of Container(s)	<i>800 # 2</i> <i>2-13-06</i>	1	1						
	Volume	1000g	3000g	19000g						

SPECIAL HANDLING and/or Storage <i>COOL 4C</i>	SAMPLE ANALYSIS	See Item (1) in Special Instructions	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11						
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Sample No.	Matrix *	Sample Date	Sample Time							
J11753	OTHER SOLID	2-13-06	1245	X	X	X				

CHAIN OF POSSESSION		Sign/Print Names		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  <i>CWC seals intact</i> <i>D 1538-18 for Hyalohala (3000g)</i> <i>B 1539-18 for Nitrobenzene / Pink Chlor (15000g)</i> <i>F1207-05 for Chromium @ 3.0°C</i>	Matrix * S=Soil SS=Sludgment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids TL=Transe Wt=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time <i>1730</i> 2-13-06	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time <i>1730</i> 2-13-06		
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time <i>0700</i> 02-14-06	Received By/Stored In <i>R2 Steffli R2 Steffli</i>	Date/Time <i>0700</i> 2-14-06		
Relinquished By/Removed From <i>R2 Steffli R2 Steffli</i>	Date/Time <i>1600</i> 2-14-06	Received By/Stored In <i>FRD Ex</i>	Date/Time		
Relinquished By/Removed From <i>FRD Ex</i>	Date/Time	Received By/Stored In <i>FRD Ex</i>	Date/Time <i>1100</i>		
Relinquished By/Removed From	Date/Time	Received By/Stored In <i>FRD Ex</i>	Date/Time <i>246-06</i>		

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352



Ship Date: 14FEB06  
ActWgt: 116 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

WED

Deliver By:  
15FEB06

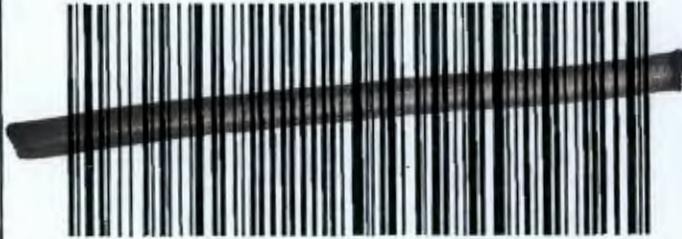
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FORM  
0201

PDX AA

97339 -OR-US

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*Order received 2-10-06*

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352



CL 36 (228/14)11

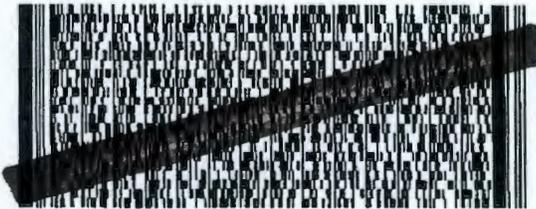
Ship Date: 14 FEB06  
ActWgt: 64 LB  
System#: 5851986/INET2400  
Account#: S \*\*\*\*\*

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

WED

Deliver By:  
15 FEB06

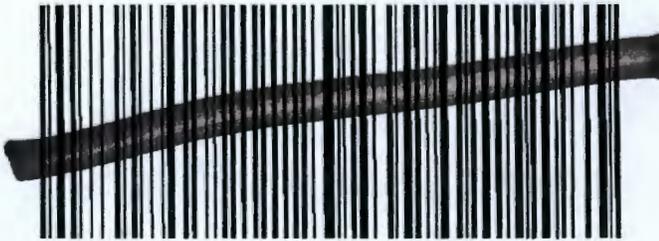
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*order received 2-16-06*

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162  
RICHLAND, WA 99352



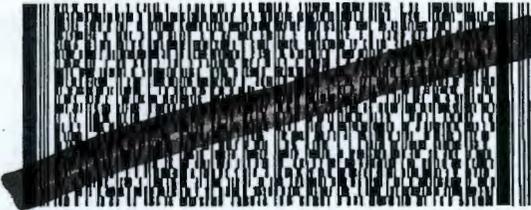
Ship Date: 14FEB06  
ActWgt: 91 LB  
System#: 5851986/INET2400  
Account#: S \*\*\*\*\*

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

WED

Deliver By:  
15FEB06

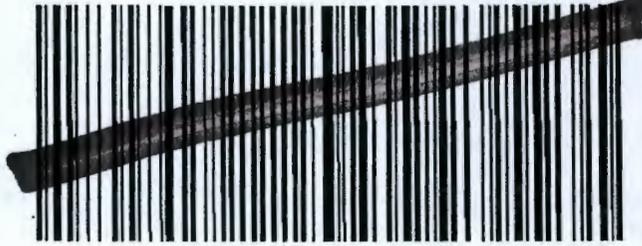
TRK# 7913 7327 4575

FORM  
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*order received 2-16-06*

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-047-122	Page 1 of 1
Collector TILLER <b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code <b>9N</b>	Data Turnaround <b>21 Days</b>
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti		Sampling Location U4, SEDIMENT	SAF No. RC-047	Air Quality <input type="checkbox"/>		
Ice Chest No. <b>ERC-96-096</b>	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT			
Shipped To CH2MHILL	Offsite Property No. <b>A060151</b>		Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE <DOT LIMITS  Special Handling and/or Storage COOLAC	Preservation	Cool 4C	None	None								
	Type of Container	G/P	P/G	P/G								
	No. of Container(s)	<b>12</b> JEB 2-19-06	<b>1</b>	<b>20</b> JEB 2-19-06								
	Volume	1000g	3000g	19000g								

SAMPLE ANALYSIS				See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11							
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Sample No.	Matrix *	Sample Date	Sample Time										
J11746	OTHER SOLID	2-19-06	1500	X	X	X	JEB 2-19-06						
				F1239-1	B1538-19								

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 1800 2-19-06	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 1800 2-19-06	(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  <b>3538-19</b>				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trace Wt=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 0900 2-21-06	Received By/Stored In <b>RZ Steffler R.J. Steffler</b>	Date/Time 0900 2-21-06					
Relinquished By/Removed From <b>RZ Steffler R.J. Steffler</b>	Date/Time 1600 2-21-06	Received By/Stored In <b>Fed Ex</b>	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In <b>Doug Winn</b>	Date/Time 2-22-06/1350					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-123		Page 1 of 1			
Collector TILLER <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>		Data Turnaround		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti		Sampling Location U 9, SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>		21 Days				
Ice Chest No. <b>ERC-96-096</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT						
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>			Bill of Lading/Air Bill No. SEE OSFC							
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE <DOT LIMITS				Preservation	Cool 4C	None	None					
Special Handling and/or Storage COOL 4C				Type of Container	G/P	P/G	P/G					
				No. of Container(s)	<b>12</b> JEB 2-19-06	<b>1</b>	<b>10</b> JEB 2-19-06					
				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									
J11747	OTHER SOLID	2-19-06	1600	X	X	X	2-19-06 JEB					
				F1239-2	B1538-20							
CHAIN OF POSSESSION				Sign/Print Names			SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 2-19-06		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 2-19-06		(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  <b>B1538-20</b>				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water OW=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 2-21-06		Received By/Stored In <b>RZ Steffler R. J. Steffler</b>		Date/Time 2-21-06						
Relinquished By/Removed From <b>RZ Steffler R. J. Steffler</b>		Date/Time WC H 2-21-06		Received By/Stored In <b>Fed Ex</b>		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In <b>Donna Wynn</b>		Date/Time 2-22-06 / 1350						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION	Received By	Title				Date/Time						
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time						

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-047-124		Page 1 of 1		
Collector TILLER <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and TI		Sampling Location U/D, SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>		Data Turnaround <b>21 Days</b>		
Ice Chest No. <b>ERC-96-096</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT				
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>				Bill of Lading/Air Bill No. SEE OSPC				
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE <DOT LIMITS		Preservation		Cool 4C	None	None				
Special Handling and/or Storage COOL 4C		Type of Container		G/P	P/G	P/G				
		No. of Container(s)		2-19-06	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							
J11748	OTHER SOLID	2-19-06	1640	X	X	X				
				F1239-3	B1538-21					
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 2-19-06		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 2-19-06		(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  <b>31538-21</b>		S=Soil SE=Soil/mnt SO=Solid SJ=Sludge W=Water O=Oil A=Air OS=Drum Solids DL=Drum Liquids TL=Turner WL=Wipe LL=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 2-21-06		Received By/Stored In <i>R2 Steffler R2 Steffler</i>		Date/Time 2-21-06				
Relinquished By/Removed From <i>R2 Steffler R2 Steffler</i>		Date/Time 2-21-06		Received By/Stored In <b>Fed Ex</b>		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In <i>Doug Winn</i>		Date/Time 2-22-06/1350				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
LABORATORY SECTION		Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time				

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-125		Page 1 of 1				
Collector <b>TILLER JAMES BERNHARD</b>		Company Contact <b>JOAN KESSNER</b>		Telephone No. 375-4688		Project Coordinator <b>KESSNER, JH</b>		Price Code <b>9N</b>		Data Turnaround <b>21 Days</b>			
Project Designation 100 & 300 Area Component of the RCBRA Sediment and TI		Sampling Location U, SEDIMENT <i>300-1</i>			SAF No. RC-047		Air Quality <input type="checkbox"/>						
Ice Chest No. <i>ERC-96-096</i>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT							
Shipped To CH2MHILL		Offsite Property No. <i>A060151</i>			Bill of Lading/Air Bill No. SEE OSPC								
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</i>				Preservation	Cool 4C	None	None						
Special Handling and/or Storage <i>COOL 4C</i>				Type of Container	G/P	P/G	P/G						
				No. of Container(s)	<i>3</i> <sup>+2</sup> <i>2-19-06</i>	<i>1</i>	<i>10</i> <i>2-19-06</i>						
				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										
J11749	OTHER SOLID	<i>2-19-06</i>	<i>1400</i>	X	X	<i>2-19-06</i>							
				F1239-4	B1538-22								
CHAIN OF POSSESSION				Sign/Print Names			SPECIAL INSTRUCTIONS					Matrix *	
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time <i>2-19-06 1800</i>		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time <i>2-19-06 1800</i>		(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  <i>B1538-22</i>					Soil SE=Soilment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trash W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time <i>2-21-06 0900</i>		Received By/Stored In <i>RZ Steffler R.Z. Steffler</i>		Date/Time <i>2-21-06 0900</i>							
Relinquished By/Removed From <i>RZ Steffler R.Z. Steffler</i>		Date/Time <i>2-21-06 1600</i>		Received By/Stored In <b>Fed. Ex</b>		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In <i>Doug Wynn</i>		Date/Time <i>2-22-06/1350</i>							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION	Received By	Title					Date/Time						
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By					Date/Time						

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162  
RICHLAND, WA 99352



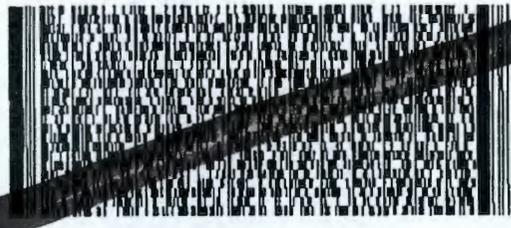
Ship Date: 21FEB06  
ActWgt: 61 LB  
System#: 5851986/NET2400  
Account#: S \*\*\*\*\*

REF: BESRAS6520



Delivery Address Bar Code

SHIP TO: (541)752-4271 BILL THIRD PARTY  
SAMPLE RECEIVING  
APPLIED SCIENCE LABORATORY  
2300 NORTHWEST WALNUT BLVD.  
CH2M HILL A060151  
CORVALLIS, OR 97330



PRIORITY OVERNIGHT

WED

Deliver By:  
22FEB06

TRK# 7913 8094 0144

FORM  
0201

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From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162



RICHLAND, WA 99352

Ship Date: 21FEB06  
ActWgt: 52 LB  
System#: 5851986/INET2400  
Account#: S \*\*\*\*\*

REF: BESRAS6520



Delivery Address Bar Code

SHIP TO: (541)752-4271 BILL THIRD PARTY  
SAMPLE RECEIVING  
APPLIED SCIENCE LABORATORY  
2300 NORTHWEST WALNUT BLVD.  
CH2M HILL A060151  
CORVALLIS, OR 97330

CL 88122M/14/18

PRIORITY OVERNIGHT

WED

Deliver By:  
22FEB06

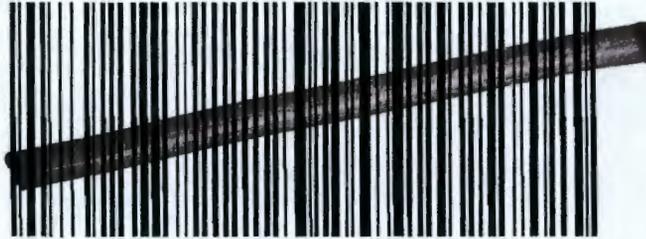
TRK# 7913 8094 0155

FORM  
0201

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97330 -OR-US

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Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-23		Page 1 of 1			
Collector TILLER <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>		Data Turnaround <b>21 Days</b>		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Tt		Sampling Location Cr 1, SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>						
Ice Chest No. <b>AFS-04-008</b>		Field Logbook No. EL-15987 <b>4/0 13/06</b>		COA BESRAS6520		Method of Shipment GROUND TRANSPORT						
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>		Bill of Lading/Air Bill No. SEE OSPC								
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</i>			Preservation	Cool 4C	None	None						
Special Handling and/or Storage <i>COOL 4C</i>			Type of Container	G/P	Poly Bag	Poly Bag						
			No. of Container(s)	<i>42</i>	1	<i>40</i>						
			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									
J112B3	OTHER SOLID	2-21-06	1100	X	X	X						
CHAIN OF POSSESSION			Sign/Print Names			SPECIAL INSTRUCTIONS					Matrix *	
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 2-21-06	Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 2-21-06	(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  <i>BUSB-23 for Analytical</i> <i>F 1242-01 for Chem</i>  <i>6.1°C in arrival</i>					S=Soil SE=Soil/soil SO=Soil SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 2-22-06	Received By/Stored In <i>R2 Staffle R.J. Staffle</i>		Date/Time 2-22-06							
Relinquished By/Removed From <i>R2 Staffle R.J. Staffle</i>		Date/Time 2-22-06	Received By/Stored In <b>Fed Ex</b>		Date/Time 1050							
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time	Received By/Stored In <i>Britt Mackay</i>		Date/Time 2-23-06							
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time							
LABORATORY SECTION	Received By	Title			Date/Time							
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By			Date/Time							

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-24		Page 1 of 1			
Collector TILLER <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>		Data Turnaround <b>21 Days</b>		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and TI		Sampling Location Cr 2, SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>						
Ice Chest No. <b>AFS-04-008</b>		Field Logbook No. EL-1596-7 <i>Mar 17/06</i>		COA BESRAS6520		Method of Shipment GROUND TRANSPORT						
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>		Bill of Lading/Air Bill No. SEE OSPC								
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</i>				Preservation	Cool 4C	None	None					
Special Handling and/or Storage <i>COOL 4C</i>				Type of Container	GP	Poly Bag	Poly Bag					
				No. of Container(s)	<i>2</i> JEB 2-21-06	<i>1</i>	<i>2</i> JEB 2-21-06					
				Volume	1000g	3000g	19000g					
SAMPLE ANALYSIS				Sec item (I) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11						
Sample No.	Matrix *	Sample Date	Sample Time									
J112B4	OTHER SOLID	2-21-06	1200	X	X	^						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 1900 2-21-06		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 1940 2-21-06		(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  <i>B1538-24 for Hyalocin      can sealis int. A</i>  <i>F1242-02 for chem</i>  <i>6.12 on arrival 2-23</i>				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dross Solids DL=Dross Liquids T=Trace WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 0830 2-22-06		Received By/Stored In <i>R2 Steffler R. J. Steffler</i>		Date/Time 0830 2-22-06						
Relinquished By/Removed From <i>R2 Steffler R. J. Steffler</i>		Date/Time 1600 2-22-06		Received By/Stored In <b>Fed Ex</b>		Date/Time						
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time		Received By/Stored In <i>TR [Signature]</i>		Date/Time 1450 2-22-06						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time				

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-047-25		Page 1 of 1	
Collector TILLER <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>	
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti		Sampline Location Cr 3, SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>		Data Turnaround <b>21 Days</b>	
Ice Chest No. <b>AFS-04-008</b>		Field Logbook No. EL-1596-7 <i>7/11/06</i>		COA BESRAS6520		Method of Shipment GROUND TRANSPORT			
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>				Bill of Lading/Air Bill No. SEE OSPC			
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</i>		Preservation	Cool 4C	None	None				
Special Handling and/or Storage <b>COOL 4C</b>		Type of Container	G/P	Poly Bag	Poly Bag				
		No. of Container(s)	<i>2</i>	1	<i>2</i>				
		Volume	1000g	3000g	19000g				
SAMPLE ANALYSIS		Sec item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1705	Sediment Phytotoxicity EEDP-04-11					
Sample No.	Matrix *	Sample Date	Sample Time						
J112B5	OTHER SOLID	2-21-06	1300	X	X	X			
CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 1900		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 1900		(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D221.6; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422  <i>B1539-25 for Hg, Pb, Cd</i> <i>F1242-03 for Chem</i>  <i>6.1°C in arrival 2-23</i>	
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 0830		Received By/Stored In <i>RZ Steffen R.Z. Steffen</i>		Date/Time 0830			
Relinquished By/Removed From <i>RZ Steffen R.Z. Steffen</i>		Date/Time 1600		Received By/Stored In <b>Fed Ex</b>		Date/Time			
Relinquished By/Removed From <b>Fed Ex</b>		Date/Time		Received By/Stored In <i>10/1/06</i>		Date/Time 1050			
Relinquished By/Removed From		Date/Time		Received By/Stored In <b>BRETT MULLAY</b>		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION	Received By	Title	Date/Time						
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time						

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-047-26		Page 1 of 1	
Collector TILLER <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b> Data Turnaround	
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti		Sampling Location Cr 4, SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>		<b>21 Days</b>	
Ice Chest No. <b>AFS-04-008</b>		Field Logbook No. EL-1596-7 A/B 1310 C		COA BESRAS6520		Method of Shipment GROUND TRANSPORT			
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>		Bill of Lading/Air Bill No. SEE OSPC					
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</i>				Preservation	Cool 4C	None	None		
Special Handling and/or Storage <i>COOL 4C</i>				Type of Container	G/P	Poly Bag	Poly Bag		
				No. of Container(s)	<i>2</i>	<i>1</i>	<i>10</i>		
				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						
J11286	OTHER SOLID	2-21-06	1400	X	X	X			
CHAIN OF POSSESSION									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		SPECIAL INSTRUCTIONS	
JAMES BERNHARD		1900 2-21-06		EAS LOCKED STORAGE		1900 2-21-06		(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  B1538-26 for Hygellela      coc seeds intact  F1242-04 for Chem  6.1 2 on ground	
EAS LOCKED STORAGE		0830 2-22-06		RZ Steffler R.Z. Steffler		0830 2-22-06			
RZ Steffler R.Z. Steffler		1600 2-22-06		FEL EX					
FEL EX				Brett Mulkey		1430 2-23-06			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix *	
								S=Soil SE=Sediment SO=Solid SL=Sediment W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Time W=Wipe L=Liquid V=Vegetation X=Other	
LABORATORY SECTION	Received By	Title				Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time			

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-45		Page 1 of 1			
Collector TILLER 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 Cr 7-SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>						
Ice Chest No. AFS-04-008		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT						
Shipped To CH2MHLL		Offsite Property No. A060151			Bill of Lading/Air Bill No. SEE OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE <DOT LIMITS				Preservation		Cool 4C	None	None				
Special Handling and/or Storage COOL 4C				Type of Container		G/P	P/G	P/G				
				No. of Container(s)		2	1	10				
				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									
J116M6	OTHER SOLID	2-21-06	1445	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From JAMES BERNHARD		Date/Time 2-21-06		Received By/Stored In EAS LOCKED STORAGE		Date/Time 2-21-06		(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  B1538-27 for Hyalate F1242-05 for Chem  6.1°C in arrival 2-23				S=Soil SE=Sediment SQ=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Traces W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 2-22-06		Received By/Stored In R2 Staffer R.J. Staffer		Date/Time 2-22-06						
Relinquished By/Removed From R2 Staffer R.J. Staffer		Date/Time 2-22-06/1600		Received By/Stored In Fed EX		Date/Time						
Relinquished By/Removed From Fed EX		Date/Time		Received By/Stored In Britt Mackenzie		Date/Time 2-23-06						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By				Title				Date/Time		
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time		

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-46		Page 1 of 1						
Collector TILLER <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>		Data Turnaround <b>21 Days</b>					
Project Designation 100 & 300 Area Component of the RCBRA Sediment and TI		Sampling Location Cr. SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>									
Ice Chest No. <b>AFS-04-008</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT									
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>		Bill of Lading/Air Bill No. SEE OSCP											
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 <i>2-21-06</i>	1	2 <i>2-21-06</i>							
				Volume		1000g	3000g	1900g							
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							
J116M7		OTHER SOLID	2-21-06	1530	X	X	X								
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 1900 2-21-06		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 1900 2-21-06		(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  B1538-28 for Hydrolysis COC seals intact  F1242-06 for Chem  6.1°C on arrival 2-23-06				S=Soil SS=Sediment SQ=Solid SL=Sediment W=Water O=Oil A=Air DS=Drum Solids OL=Drum Liquid T=Trace W=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 0830 2-22-06		Received By/Stored In <i>R. Steffler R. J. Steffler</i>		Date/Time 0830 2-22-06									
Relinquished By/Removed From <i>R. Steffler R. J. Steffler</i>		Date/Time 1600 2-22-06		Received By/Stored In <b>Fed Ex</b>		Date/Time									
Relinquished By/Removed From <b>Fed Ex</b>		Date/Time		Received By/Stored In <i>D. J. Munday</i>		Date/Time 1050 2-23-06									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By		Title				Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time							

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-100		Page 1 of 1			
Collector TILLER 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 REF, SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>						
Ice Chest No. AFS-04-008		Field Logbook No. EL-1597		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				Preservation	Cool 4C	None	None					
Special Handling and/or Storage COOL 4C				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									
J11734	OTHER SOLID	2-21-06	1630	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From JAMES BERNHARD		Date/Time 2-21-06		Received By/Stored In EAS LOCKED STORAGE		Date/Time 2-21-06		(1) IC Anions - 300.0; Ammonia - 350.3; pH (Sol) - 9045; TOC - 9060; Moisture Content - D3216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422  B1538-29 for Hydrolysis CUC reals intact.  F1242-07 R Chem  6.1°C on arrival				S=Soil SE=Soilment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 2-22-06		Received By/Stored In R2 Staffler R.J. Staffler		Date/Time 2-22-06						
Relinquished By/Removed From R2 Staffler R.J. Staffler		Date/Time 2-22-06		Received By/Stored In Fred EK		Date/Time						
Relinquished By/Removed From Fred EK		Date/Time		Received By/Stored In Beltz Mackey		Date/Time 2-23-06						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION	Received By	Title				Date/Time						
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time						

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162  
RICHLAND, WA 99352



Ship Date: 22FEB06  
ActWgt: 71 LB  
System#: 5851986/NET2400  
Account#: S \*\*\*\*\*

REF: BESRAS6520



Delivery Address Bar Code

SHIP TO: (541)752-4271 BILL THIRD PARTY  
SAMPLE RECEIVING  
APPLIED SCIENCE LABORATORY  
2300 NORTHWEST WALNUT BLVD.  
CH2M HILL A060151  
CORVALLIS, OR 97330



PRIORITY OVERNIGHT

THU

Deliver By:  
23FEB06

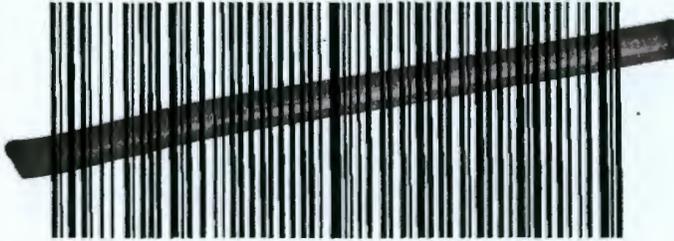
TRK# 7903 3116 3116

FORM  
0201

PDX AA

97330 -OR-US

86 CVOA



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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

received 2-23-06

3538 23 6-29

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352



CLASS 1206/1418

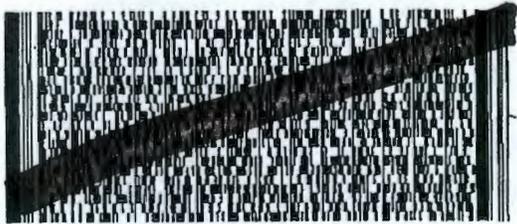
Ship Date: 22FEB06  
ActWgt: 69 LB  
System#: 5851986/INET2400  
Account#: S \*\*\*\*\*

REF: BESRAS6520



Delivery Address Bar Code

SHIP TO: (541)752-4271 BILL THIRD PARTY  
**SAMPLE RECEIVING  
APPLIED SCIENCE LABORATORY  
2300 NORTHWEST WALNUT BLVD.  
CH2M HILL A060151  
CORVALLIS, OR 97330**



**PRIORITY OVERNIGHT**

**THU**

Deliver By:  
23FEB06

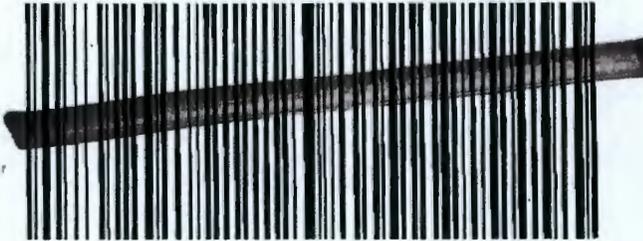
TRK# 7903 3116 3127

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*received 2-23-06*

*8:530-23 6 29*

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162  
  
RICHLAND, WA 99352



Ship Date: 22FEB06  
ActWgt: 48 LB  
System#: 5851986/INET2400  
Account#: S \*\*\*\*\*

REF: BESRAS6520



Delivery Address Bar Code

SHIP TO: (541)752-4271 BILL THIRD PARTY  
**SAMPLE RECEIVING**  
APPLIED SCIENCE LABORATORY  
2300 NORTHWEST WALNUT BLVD.  
CH2M HILL A060151  
CORVALLIS, OR 97330

**PRIORITY OVERNIGHT**

**THU**

Deliver By:  
23FEB06

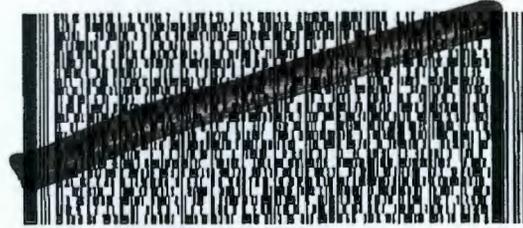
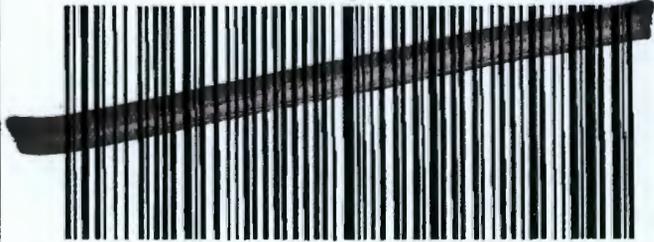
TRK# 7903 3116 3105

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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

*received 2-23-06*

*B. 538-23 to 29*

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-80		Page 1 of 1			
Collector TILLER <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>		Data Turnaround <b>21 Days</b>		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and TI		Sampling Location Sr 3, SEDIMENT			SAF No. RC-047		Air Quality <input type="checkbox"/>					
Ice Chest No. <b>ERC-96-014</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT						
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>			Bill of Lading/Air Bill No. SEE OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE <DOT LIMITS				Preservation	Cool 4C	None	None					
Special Handling and/or Storage COOL 4C				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									
J116X2	OTHER SOLID	2-27-06	1130	X	X	X						
				FILBU-01	31538-30	3639-30						
CHAIN OF POSSESSION				Sign/Print Names			SPECIAL INSTRUCTIONS					Matrix *
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 2-27-06	Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 2-27-06	(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  Temp. upon arrival @ lab = 2.7°C  31538-30					S=Soil SE=Soilment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 03/16/06	Received By/Stored In <b>R2 Steffler R2 Steffler</b>		Date/Time 3-1-06							
Relinquished By/Removed From <b>RE Steffler R2 Steffler</b>		Date/Time 3-1-06	Received By/Stored In <b>Fed. Ex</b>		Date/Time							
Relinquished By/Removed From <b>Fed. Ex</b>		Date/Time	Received By/Stored In <b>Doug Winn</b>		Date/Time 3-2-06/1230							
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time							
LABORATORY SECTION		Received By		Title			Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By			Date/Time					

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-77		Page 1 of 1			
Collector TILLER <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b>		Data Turnaround <b>21 Days</b>		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and TI		Sampling Location Sr 1, SEDIMENT			SAF No. RC-047		Air Quality <input type="checkbox"/>					
Ice Chest No. <b>ERC-96-014</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT						
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>			Bill of Lading/Air Bill No. SEE OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</i>				Preservation	Cool 4C	None	None					
Special Handling and/or Storage <i>COOL 4C</i>				Type of Container	G/P	P/G	P/G					
				No. of Container(s)	<i>X2</i>	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									
J116W9	OTHER SOLID	2-27-06	1000	X	X	X						
				<i>Field 2-27-06</i>	<i>31533-31</i>	<i>31539-31</i>						
CHAIN OF POSSESSION				Sign/Print Names			SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 2-27-06 1700		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 2-27-06 1700		(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  <i>Temp. upon arrival @ lab = 2.6 °C</i>  <b>31533-31</b>				S=Soil SE=Sediment SO=Solid SH=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WT=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 0715		Received By/Stored In <i>R2 Steffler R.J. Steffler</i>		Date/Time 3-1-06						
Relinquished By/Removed From <i>R2 Steffler R.J. Steffler</i>		Date/Time 3-1-06 1600		Received By/Stored In <b>Fed Ex</b>		Date/Time						
Relinquished By/Removed From <b>Fed Ex</b>		Date/Time		Received By/Stored In <b>Doug Wynn</b>		Date/Time 3-2-06/1230						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION	Received By	Title				Date/Time						
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time						

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-047-78	Page 1 of 1
Collector TILLER	JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Protect Designation 100 & 300 Area Component of the RCBRA Sediment and Ti		Sampling Location Sr 5, SEDIMENT		SAF No. RC-047	Air Quality <input type="checkbox"/>	
Ice Chest No. ERC-02-002	Field Logbook No. EL-1597	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)	12 <i>ONE 2-27-06</i>	1	10 <i>SE0 2-27-06</i>															
	Volume	1000g	3000g	19000g															

SAMPLE ANALYSIS				Sec item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11													
Sample No.	Matrix *	Sample Date	Sample Time																
J116X0	OTHER SOLID	2-27-06	1230	X	X	X													
				F1220-03	B15-38-32	N/A													

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2-27-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 2-27-06	(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  Temp. upon arrival @ lab = 2.7°C  B030-32				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Titrate W1=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 2/27/06	Received By/Stored In RZ Steffler R. J. Steffler	Date/Time 3-1-06					
Relinquished By/Removed From RZ Steffler R. J. Steffler	Date/Time 3-1-06	Received By/Stored In FED EX	Date/Time					
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In Doug Hinne	Date/Time 3-2-06 / 1230					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-047-79		Page 1 of 1		
Collector TILLER <b>JAMES BERNHARD</b>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <b>9N</b> Data Turnaround <b>21 Days</b>		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and TI		Sampling Location Sr 4, SEDIMENT		SAF No. RC-047		Air Quality <input type="checkbox"/>				
Ice Chest No. <b>ERC-02-002</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT				
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>		Bill of Lading/Air Bill No. SEE OSCP						
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE <DOT LIMITS				Preservation		Cool 4C		None		
Special Handling and/or Storage COOL 4C				Type of Container		G/P		P/G		
				No. of Container(s)		1		10		
				Volume		1000g		3000g		
SAMPLE ANALYSIS				See item (1) in Special Instructions.		Sediment Invertebrate Toxicity ASTM E 1706		Sediment Phytotoxicity EEDP-04-11		
Sample No.	Matrix *	Sample Date	Sample Time							
J116X1	OTHER SOLID	2-27-06	1200	X	X	X				
				FR20-01	3058-33	N/A				
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS				
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 2-27-06 1700		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 2-27-06 1700		(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  <b>Temp. upon arrival @ lab = 2.7°C</b>  <b>3058-33</b>		Matrix * S=Soil SE=Soilment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wl=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 0715		Received By/Stored In <b>RE Steffler</b>		Date/Time 3-1-06				
Relinquished By/Removed From <b>RE Steffler</b>		Date/Time 1600		Received By/Stored In <b>Fed Ex</b>		Date/Time 3-1-06				
Relinquished By/Removed From <b>Fed Ex</b>		Date/Time		Received By/Stored In <b>Doug Winn</b>		Date/Time 3-2-06/1230				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
LABORATORY SECTION	Received By	Title				Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time				

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-81		Page 1 of 1			
Collector <b>TILLER JAMES BERNHARD</b>		Company Contact <b>JOAN KESSNER</b>		Telephone No. 375-4688		Project Coordinator <b>KESSNER, JH</b>		Price Code <b>9N</b>		Data Turnaround <b>21 Days</b>		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and TI		Sample Location Sr 2, SEDIMENT			SAF No. RC-047		Air Quality <input type="checkbox"/>					
Ice Chest No. <b>ERC-02-002</b>		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT						
Shipped To CH2MHILL		Offsite Property No. <b>A060151</b>			Bill of Lading/Air Bill No. SEE OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE &lt;DOT LIMITS</i>				Preservation	Cool 4C	None	None					
Special Handling and/or Storage <i>COOL 4C</i>				Type of Container	G/P	P/G	P/G					
				No. of Container(s)	<i>x 2</i> <i>SEP 2-27-06</i>	1	<i>x 0</i> <i>SEP 2-27-06</i>					
				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									
J116X3	OTHER SOLID	2-27-06	1100	X	X	X						
				F120-05	B530-34	N/A						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time 2-27-06		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time 2-27-06		(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  <i>Temp. upon arrival @ lab = 2.7°C</i>  <i>B030-34</i>				
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time 03/01/06		Received By/Stored In <i>R. J. Steffler R. J. Steffler</i>		Date/Time 3-1-06						
Relinquished By/Removed From <i>R. J. Steffler R. J. Steffler</i>		Date/Time 1600 3-1-06		Received By/Stored In <b>Fed Ex</b>		Date/Time						
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time		Received By/Stored In <b>Doug Winn</b>		Date/Time 3-2-06/1230						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix *				
LABORATORY SECTION		Received By		Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time				

<b>Washington Closure Hanford</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>			RC-047-84	Page 1 of 1
Collector TILLER <b>JAMES BERNHARD</b>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code <b>9N</b>	Data Turnaround <b>21 Days</b>
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Tl		Sample Location Sr <b>6</b> , SEDIMENT	SAF No. RC-047		Air Quality <input type="checkbox"/>	
Ice Chest No. <b>ERC-02-002</b>	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT			
Shipped To CH2MHILL	Offsite Property No. <b>A060151</b>		Bill of Lading/Air Bill No. SEE OSPC			

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> POTENTIAL RADIOACTIVE <DOT LIMITS  <b>Special Handling and/or Storage</b> COOL 4C	Preservation	Cool 4C	None	None								
	Type of Container	G/P	P/G	P/G								
	No. of Container(s)	<b>12</b> 558 2-27-06	1	<b>10</b> 558 2-27-06								
	Volume	1000g	3000g	19000g								

<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11							
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Sample No.	Matrix *	Sample Date	Sample Time										
J116X6	OTHER SOLID	2-27-06	1300	X	X	X							
				F1538-06	R1538-35	N/A							

<b>CHAIN OF POSSESSION</b>		<b>Sign/Print Names</b>		<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b>
Relinquished By/Removed From <b>JAMES BERNHARD</b>	Date/Time 1700	Received By/Stored In <b>EAS LOCKED STORAGE</b>	Date/Time 1700	(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  <b>Temp. upon arrival @ lab = 2.6 °C</b>  <b>B1538-35</b>				S=Soil SB=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trash W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>	Date/Time 0715	Received By/Stored In <b>RZ Staffler R.Z. Staffler</b>	Date/Time 0715					
Relinquished By/Removed From <b>RZ Staffler R.Z. Staffler</b>	Date/Time 1600	Received By/Stored In <b>Fed Ex</b>	Date/Time 3-1-06					
Relinquished By/Removed From <b>Fed Ex</b>	Date/Time 3-1-06	Received By/Stored In <b>Doug Winn</b>	Date/Time 3-2-06/1230					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

<b>LABORATORY SECTION</b>	Received By	Title	Date/Time
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method	Disposed By	Date/Time

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-75		Page 1 of 1					
Collector <b>TILLER JAMES BERNHARD</b>		Company Contact <b>JOAN KESSNER</b>		Telephone No. <b>375-4688</b>		Project Coordinator <b>KESSNER, JH</b>		Price Code <b>9N</b>		Data Turnaround <b>21 Days</b>				
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti		Sampling Location <b>Sr9, SEDIMENT</b>		SAF No. <b>RC-047</b>		Air Quality <input type="checkbox"/>								
Ice Chest No. <b>ERC-02-002</b>		Field Logbook No. <b>EL-1597</b>		COA <b>BESRAS6520</b>		Method of Shipment <b>GROUND TRANSPORT</b>								
Shipped To <b>CH2MHILL</b>		Offsite Property No. <b>A060151</b>			Bill of Lading/Air Bill No. <b>SEE OSPC</b>									
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> POTENTIAL RADIOACTIVE <DOT LIMITS  <b>Special Handling and/or Storage</b> COOL 4C				Preservation		Cool 4C	None	None						
				Type of Container		G/P	P/G	P/G						
				No. of Container(s)		<b>X2</b> <i>See 2-27-06</i>	<b>1</b>	<b>+0</b> <i>See 2-27-06</i>						
				Volume		1000g	3000g	19000g						
<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions.		Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11							
				Sample No.		Matrix *	Sample Date	Sample Time						
J116W7		OTHER SOLID	2-27-06	1430	X	X	X							
					<i>F280-07</i>	<i>3,332-36</i>	<i>NA</i>							
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>						
Relinquished By/Removed From <b>JAMES BERNHARD</b>		Date/Time <b>2-27-06 1700</b>		Received By/Stored In <b>EAS LOCKED STORAGE</b>		Date/Time <b>2-27-06 1700</b>		(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  <b>Temp. upon arrival @ lab = 2.7°C</b>  <b>B038-36</b>						
Relinquished By/Removed From <b>EAS LOCKED STORAGE</b>		Date/Time <b>02/27/06 0715</b>		Received By/Stored In <i>R2 Steffler R. J. Steffler</i>		Date/Time <b>3-1-06</b>								
Relinquished By/Removed From <i>R2 Steffler R. J. Steffler</i>		Date/Time <b>02-31-06 1600</b>		Received By/Stored In <b>Fed EX</b>		Date/Time								
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time		Received By/Stored In <b>Doug Winn</b>		Date/Time <b>3-2-06/1230</b>								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
LABORATORY SECTION		Received By				Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time				

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-047-76		Page 1 of 1						
Collector TILLER JAMES BERNHARD		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 9N		Data Turnaround					
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti		Sampling Location Sr / O, SEDIMENT			SAF No. RC-047		Air Quality <input type="checkbox"/>		21 Days						
Ice Chest No. ERC-02-002		Field Logbook No. EL-1597		COA BESRAS6520		Method of Shipment GROUND TRANSPORT									
Shipped To CH2MHILL		Offsite Property No. A060151			Bill of Lading/Air Bill No. SEE OSCP										
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE <DOT LIMITS  Special Handling and/or Storage COOL4C				Preservation		Cool 4C	None	None							
				Type of Container		G/P	P/G	P/G							
				No. of Container(s)		22 JEB 2-27-06	1	10 JEB 2-27-06							
				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												
J116W8	OTHER SOLID	2-27-06	1500	X	X	X									
				1280-08	3038-37	NA									
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *							
Relinquished By/Removed From JAMES BERNHARD		Date/Time 2-27-06 1700		Received By/Stored In EAS LOCKED STORAGE		Date/Time 2-27-06 1700		(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) - D423  Temp. upon arrival @ lab = 2.7°C  3038-37				S=Soil SE=Solids SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Traces W=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From EAS LOCKED STORAGE		Date/Time 03/10/06 0715		Received By/Stored In RZ Steffler R.Z. Steffler		Date/Time 3-1-06 0715									
Relinquished By/Removed From RZ Steffler R.Z. Steffler		Date/Time WCH 3-1-06 1600		Received By/Stored In Fed Ex		Date/Time									
Relinquished By/Removed From Fed Ex		Date/Time		Received By/Stored In Doug Wynn		Date/Time 3-2-06/1230									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By		Title				Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time							

From: Origin ID: (509)376-7768  
SHIPPING DEPT  
FLUOR HANFORD  
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352



CL501229/14/11

Ship Date: 01MAR06  
ActWgt: 60 LB  
System#: 5851986/INET2400  
Account#: S \*\*\*\*\*

REF: BESRAS6520



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**CORVALLIS, OR 97330**

**PRIORITY OVERNIGHT**

**THU**

Deliver By:  
02MAR06

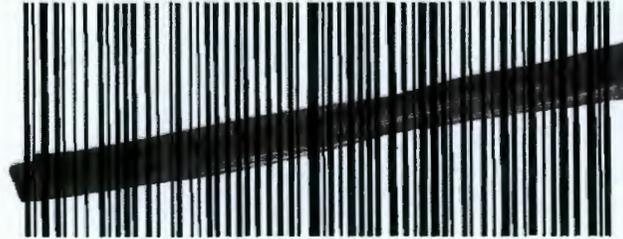
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CL581228/14/18

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ActWgt: 73 LB  
System#: 5851966/INET2400  
Account#: S \*\*\*\*\*

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CORVALLIS, OR 97330

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02MAR06

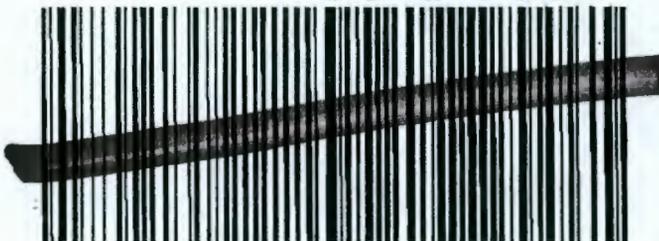
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CL9812286/1018

Ship Date: 01MAR06  
ActWgt: 71 LB  
System#: 5851986/INET2400  
Account#: S \*\*\*\*\*

REF: BESRAS6520



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**CH2M HILL A060151**  
**CORVALLIS, OR 97330**

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Deliver By:  
02MAR06

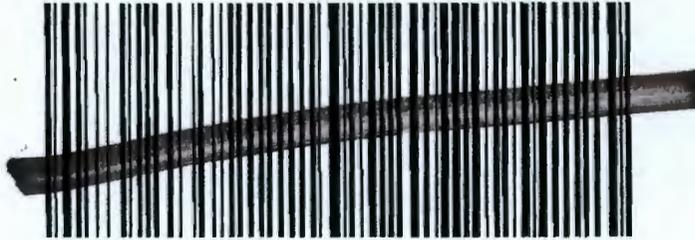
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