AR TARGET SHEET

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

EDMC#: 0069511
SECTION: 1 OF 2

DOCUMENT #: F1239

TITLE: Data Package

0069511

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

COMPLETE COPY OF DATA PACKAGE TO:

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

COMMENTS:

SDG _F1239___ SAF-RC-051

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: U - Sediments

RECEIVED
MAY 04 2006
EDMC

CH2M HILL
Applied Sciences Laboratory
2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

CH2MHILL
Applied Sciences Laboratory

RECEIVED
APR 2006

March 23, 2006

ELR Consulting
2328 S. Garfield Street
Kennewick, WA 99337

RE: Laboratory Report for ELR Consulting
Applied Sciences Laboratory Reference No. F1239

Dear Emmett Richards:

On February 22, 2006, CH2M HILL Applied Sciences Laboratory received four samples with a request for analysis of selected parameters. All analyses were performed by CH2M HILL unless otherwise indicated below.

The analytical results and associated quality control data are enclosed. Any unusual difficulties encountered during the analysis of your samples are discussed in the case narrative. This data package meets standards requested by client and is not intended or implied to meet any other standard.

CH2M HILL Applied Sciences Laboratory appreciates your business and looks forward to serving your analytical needs again. If you should have any questions concerning the data, or if you need additional information, please call Mark Bos at (541) 758-0235, extension 3135.

Sincerely,

Mark Bos
Analytical Manager

Enclosures

CLIENT SAMPLE CROSS-REFERENCE

CH2M HILL Applied Sciences Laboratory Reference No. F1239

Sample ID	Client Sample ID	Date Collected	Time Collected
F123901	J11746	02/19/2006	15:00
F123902	J11747	02/19/2006	16:00
F123903	J11748	02/19/2006	16:40
F123904	J11749	02/19/2006	14:00

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Applied Sciences Laboratory

Organic CLP and CLP Like Data Qualifiers

U — The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J — The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ — The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N — The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ — The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

P — The primary and confirmation analyte result recoveries do not match.

E — The analyte was positively identified; the associated numerical value exceeded the instrument calibration range.

R — The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Inorganic CLP and CLP Like Data Qualifiers

U — The analyte was analyzed for, but not detected above the reported sample quantitation limit.

B — The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ — The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

E — The analyte was positively identified; the associated numerical value exceeded the instrument calibration range.

N — The matrix spike/matrix spike duplicate recovery for the analyte is outside of acceptance criteria—qualifier is applied to the native sample only.

R — The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

AMMONIA
METHOD EPA 350.3

CASE NARRATIVE
AMMONIA

Analytical Method: EPA 350.3 Batch No.: F1239

Lab Name: CH2M HILL Applied Sciences Lab Contract #.: 920842.OTC

Project Name: ELR Consulting Prime Contractor.: _____

I. Holding Times:
All acceptance criteria were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Matrix Spike Duplicate(MS/MSD)
All analyses were performed in accordance with standard operating procedures.

D. Laboratory Control Spike(LCS)
All acceptance criteria were met.

E. Duplicate Sample(s):
All analyses were performed in accordance with standard operating procedures.

F. Analytical Exceptions:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: Elizabeth M Tipps Date: 3-15-06

Reviewed by: Doug A. Schaefer Date: 3/20/06

SAMPLE DATA
SUMMARY

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11746

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: F123901

% Moisture: 15

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7664-41-7	Ammonia-N	1.11	4.16	3.39	B	mg/kg	1	0.5658 G	E350.3	02/23/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11747

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: F123902

% Moisture: 20

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7664-41-7	Ammonia-N	1.30	4.87	4.35	B	mg/kg	1	0.513 G	E350.3	02/23/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11748

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: F123903

% Moisture: 11

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7664-41-7	Ammonia-N	1.08	4.04	3.02	B	mg/kg	1	0.5566 G	E350.3	02/23/06

ET060315-14:50-F1239-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11749

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: F123904

% Moisture: 20

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7664-41-7	Ammonia-N	1.19	4.45	3.56	B	mg/kg	1	0.5622 G	E350.3	02/23/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

SB1-0223

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: SB1-0223

% Moisture: 0

Date Received: / /

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7664-41-7	Ammonia-N	0.534	2.00	0.889	B	mg/kg	1	1 G	E350.3	02/23/06

ET060315-14:50-F1239-W

FORM I GEN CHEM

QC DATA
SUMMARY

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Initial Calibration Date: 02/23/06 1000

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 022306NH3

Analyte	Std 1	Resp 1	Std 2	Resp 2	Std 3	Resp 3	Std 4	Resp 4	Std 5	Resp 5	Std 6	Resp 6	Std 7	Resp 7
Ammonia-N	0.10	159	1.0	106	10.0	52.3	100	-3.0						

Comments:

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Initial Calibration Date: 02/23/06 1000

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 022306NH3

Analyte	Curve Type	r	Q
Ammonia-N	LNR	0.9999	

Comments:

GENERAL CHEMISTRY SECOND SOURCE CALIBRATION VERIFICATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Second Source ID: ICV0223

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 022306NH3

Analyte	Expected	Found	%D	Q
Ammonia-N	1	1.02	2.0	

Comments:

2A-WC

GENERAL CHEMISTRY CALIBRATION VERIFICATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Analytical Lot ID: 022306NH3

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 022306NH3

CCV #1 ID: CV1-0223 CCV #2 ID: CV2-0223 CCV #3 ID: CV3-0223

Analyte	Expected	Found	%D	Q	Expected	Found	%D	Q	Expected	Found	%D	Q
Ammonia-N	1	0.978	-2.2		10	9.74	-2.6		1	1.05	4.7	

Comments:

2A-WC

GENERAL CHEMISTRY CALIBRATION VERIFICATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Analytical Lot ID: 022306NH3

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 022306NH3

CCV #4 ID: CV4-0223 CCV #5 ID: CCV #6 ID:

Analyte	Expected	Found	%D	Q	Expected	Found	%D	Q	Expected	Found	%D	Q
Ammonia-N	1	1.09	9.2									

Comments:

3-WC

SOIL GENERAL CHEMISTRY METHOD BLANK SUMMARY

Field Sample ID:

SB1-0223

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Lab Sample ID: SB1-0223

Initial Cal ID: 022306NH3

Date Analyzed: 02/23/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1441

Instrument: NONE

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
19	J11746	F123901	02/23/06	1612
20	J11747	F123902	02/23/06	1615
21	J11748	F123903	02/23/06	1617
22	J11749	F123904	02/23/06	1620

COMMENTS:

7-WC

GENERAL CHEMISTRY LABORATORY CONTROL SAMPLE

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

LCS ID: BS1S0223

Initial Cal ID: 022306NH3

Date Analyzed: 02/23/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1432

Instrument: NONE

Concentration Units: mg/kg

Analyte	Expected	Found	%R	QC Limits %R	Q
Ammonia-N	20	20.4	102.0	80-120	

* Values outside of QC limits

Comments:

14-WC

GENERAL CHEMISTRY ANALYTICAL SEQUENCE

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Lab Code: CVO

Instrument: NONE

Analytical Lot ID: 022306NH3

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	LEVEL-1	LEVEL-1	02/23/06	1000
02	LEVEL-2	LEVEL-2	02/23/06	1005
03	LEVEL-3	LEVEL-3	02/23/06	1010
04	LEVEL-4	LEVEL-4	02/23/06	1015
05	CV1-0223	CV1-0223	02/23/06	1427
06	CV2-0223	CV2-0223	02/23/06	1427
07	ICV0223	ICV0223	02/23/06	1432
09	BS1S0223	BS1S0223	02/23/06	1432
11	SB1-0223	SB1-0223	02/23/06	1441
21	CV3-0223	CV3-0223	02/23/06	1549
23	J11746	F123901	02/23/06	1612
24	J11747	F123902	02/23/06	1615
25	J11748	F123903	02/23/06	1617
26	J11749	F123904	02/23/06	1620
27	CV4-0223	CV4-0223	02/23/06	1629

COMMENTS:

CH2MHILL
Applied Sciences Laboratory

CH2M HILL
Applied Sciences Labortory (ASL)
2300 NW Walnut Blvd.
P.O. Box 428
Corvallis, OR 97330-0428
Telephone: 541-752-4271
Fax: 541-752-0276

03/15/06

MDL Study Report

Analytical Method: E350.3

Matrix: Soil

Instrument ID: NONE

Concentration Units: mg/kg

Analyte	Analysis Date	Amt. Spiked	Replicates 1	2	3	4	5	6	7	8	Std. Dev.	MDL
Ammonia	08/05/05	2	2.18	1.70	1.73	1.70	1.73	1.74	1.81		0.170	0.534

ANIONS BY METHOD EPA300.0A

CASE NARRATIVE
ANIONS

Analytical Method: EPA300.0 Batch No.: F1239

Lab Name: CH2M HILL Applied Sciences Lab Contract #.: 920842.OTC

Base/Command: ELR Consulting Prime Contractor.:

I. Holding Times:
All acceptance criteria were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Matrix Spike Duplicate Sample(s):
Samples were analyzed in accordance with SOP.

D. Laboratory Control Spike(LCS)
All acceptance criteria were met.

E. Analytical Exception:
None.

F. Other:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: Date: 3/22/06

Reviewed by: Date: 3/22/06

SAMPLE DATA SUMMARY

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11746

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: F123901

% Moisture: 15

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
16887-00-6	Chloride	0.0620	0.511	0.583		mg/kg	1	5.758 G	E300.0A	03/02/06
16984-48-8	Fluoride	0.0554	0.511	0.603		mg/kg	1	5.758 G	E300.0A	03/02/06
14797-55-8	Nitrate-N	0.0480	0.511	1.11		mg/kg	1	5.758 G	E300.0A	03/02/06
14797-65-0	Nitrite-N	0.0459	0.511	0.598		mg/kg	1	5.758 G	E300.0A	03/02/06
14808-79-8	Sulfate	0.0824	0.511	2.82		mg/kg	1	5.758 G	E300.0A	03/02/06

YL060321-15:32-F1239-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11747

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: F123902

% Moisture: 20

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
16887-00-6	Chloride	0.0675	0.556	0.641		mg/kg	1	5.619 G	E300.0A	03/02/06
16984-48-8	Fluoride	0.0604	0.556	0.556	U	mg/kg	1	5.619 G	E300.0A	03/02/06
14797-55-8	Nitrate-N	0.0522	0.556	1.69		mg/kg	1	5.619 G	E300.0A	03/02/06
14797-65-0	Nitrite-N	0.0499	0.556	1.69		mg/kg	1	5.619 G	E300.0A	03/02/06
14808-79-8	Sulfate	0.0897	0.556	3.50		mg/kg	1	5.619 G	E300.0A	03/02/06

YL060321-15:32-F1239-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11748

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: F123903

% Moisture: 11

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
16887-00-6	Chloride	0.0588	0.484	1.15		mg/kg	1	5.801 G	E300.0A	03/02/06
16984-48-8	Fluoride	0.0526	0.484	0.290	B	mg/kg	1	5.801 G	E300.0A	03/02/06
14797-55-8	Nitrate-N	0.0455	0.484	1.69		mg/kg	1	5.801 G	E300.0A	03/02/06
14797-65-0	Nitrite-N	0.0435	0.484	0.295	B	mg/kg	1	5.801 G	E300.0A	03/02/06
14808-79-8	Sulfate	0.0781	0.484	1.27		mg/kg	1	5.801 G	E300.0A	03/02/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11749

SDG No.: F1239

Matrix: SOIL

% Moisture: 20

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123904

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
16887-00-6	Chloride	0.0725	0.597	11.2		mg/kg	1	5.237 G	E300.0A	03/02/06
16984-48-8	Fluoride	0.0648	0.597	0.597	U	mg/kg	1	5.237 G	E300.0A	03/02/06
14797-55-8	Nitrate-N	0.0560	0.597	19.2		mg/kg	1	5.237 G	E300.0A	03/02/06
14797-65-0	Nitrite-N	0.0536	0.597	0.286	B	mg/kg	1	5.237 G	E300.0A	03/02/06
14808-79-8	Sulfate	0.0962	0.597	13.4		mg/kg	1	5.237 G	E300.0A	03/02/06

YL060321-15:32-F1239-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

SB1-0302

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: SB1-0302

% Moisture: 0

Date Received: / /

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
16887-00-6	Chloride	0.121	1.00	0.200	B	mg/kg	1	2.5 G	E300.0A	03/02/06
16984-48-8	Fluoride	0.109	1.00	1.00	U	mg/kg	1	2.5 G	E300.0A	03/02/06
14797-55-8	Nitrate-N	0.0939	1.00	1.00	U	mg/kg	1	2.5 G	E300.0A	03/02/06
14797-65-0	Nitrite-N	0.0898	1.00	1.00	U	mg/kg	1	2.5 G	E300.0A	03/02/06
14808-79-8	Sulfate	0.161	1.00	1.00	U	mg/kg	1	2.5 G	E300.0A	03/02/06

YL060321-15:32-F1239-W

FORM I GEN CHEM

QC DATA SUMMARY

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

Initial Calibration Date: 01/30/06 18:27

Instrument Name: ICQ

Concentration Units: mg/L

Initial Calibration ID: 300A-013006

Analyte	Std 1	Resp 1	Std 2	Resp 2	Std 3	Resp 3	Std 4	Resp 4	Std 5	Resp 5	Std 6	Resp 6	Std 7	Resp 7
Chloride	0.020	0.0032	0.050	0.0041	0.10	0.023	0.50	0.050	1.0	0.11	5.0	0.67	10.0	1.5
Fluoride					0.10	0.0085	0.50	0.046	1.0	0.13	5.0	0.85	10.0	1.8
Nitrate-N	0.020	0.0059	0.050	0.012	0.10	0.067	0.50	0.14	1.0	0.32	5.0	1.8	10.0	4.1
Nitrite-N	0.020	0.0067	0.050	0.012	0.10	0.050	0.50	0.10	1.0	0.25	5.0	1.4	10.0	3.0
Sulfate	0.060	0.0065	0.15	0.014	0.30	0.059	1.5	0.13	3.0	0.27	15.0	1.5	30.0	3.2

Comments:

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

Initial Calibration Date: 01/30/06 18:27

Instrument Name: ICQ

Concentration Units: mg/L

Initial Calibration ID: 300A-013006

Analyte	Curve Type	r	Q
Chloride	LNR	0.9985	
Fluoride	LNR	0.9988	
Nitrate-N	LNR	0.9983	
Nitrite-N	LNR	0.9988	
Sulfate	LNR	0.9991	

Comments:

GENERAL CHEMISTRY SECOND SOURCE CALIBRATION VERIFICATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

Second Source ID: ICV-0130

Instrument Name: ICQ

Concentration Units: mg/L

Initial Calibration ID: 300A-013006

Analyte	Expected	Found	%D	Q
Chloride	5	5.06	1.2	
Fluoride	5	4.57	-8.6	
Nitrate-N	7.19	7.13	-0.8	
Nitrite-N	1.13	1.02	-9.4	
Sulfate	5	5.14	2.8	

Comments:

2A-WC

GENERAL CHEMISTRY CALIBRATION VERIFICATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

Analytical Lot ID: 030206Q1

Instrument Name: ICQ

Concentration Units: mg/kg

Initial Calibration ID: 300A-013006

CCV #1 ID: CV1-0302 CCV #2 ID: CV2-0302 CCV #3 ID:

Analyte	Expected	Found	%D	Q	Expected	Found	%D	Q	Expected	Found	%D	Q
Chloride	5	5.36	7.1		5	5.34	6.8					
Fluoride	5	5.43	8.5		5	5.41	8.2					
Nitrate-N	5	5.38	7.5		5	5.36	7.1					
Nitrite-N	5	5.47	9.4		5	5.30	6.0					
Sulfate	15	16.1	7.0		15	16.3	8.8					

Comments:

SOIL GENERAL CHEMISTRY METHOD BLANK SUMMARY

Field Sample ID: SB1-0302

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

Lab Sample ID: SB1-0302

Initial Cal ID: 300A-013006

Date Analyzed: 03/02/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1426

Instrument: ICQ

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
16	BS1S0302	BS1S0302	03/02/06	1347
18	BS2S0302	BS2S0302	03/02/06	1407
19	BS3S0302	BS3S0302	03/02/06	1416
21	J11746	F123901	03/02/06	1436
22	J11747	F123902	03/02/06	1505
23	J11748	F123903	03/02/06	1514
24	J11749	F123904	03/02/06	1524

COMMENTS: _____

7-WC

GENERAL CHEMISTRY LABORATORY CONTROL SAMPLE

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

LCS ID: BS1S0302

Initial Cal ID: 300A-013006

Date Analyzed: 03/02/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1347

Instrument: ICQ

Concentration Units: mg/kg

Analyte	Expected	Found	%R	QC Limits %R	Q
Chloride	50	50.6	101.1	70-130	
Fluoride	50	54.7	109.3	70-130	
Sulfate	50	53.1	106.2	70-130	

* Values outside of QC limits

Comments:

GENERAL CHEMISTRY LABORATORY CONTROL SAMPLE

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

LCS ID: BS2S0302

Initial Cal ID: 300A-013006

Date Analyzed: 03/02/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1407

Instrument: ICQ

Concentration Units: mg/kg

Analyte	Expected	Found	%R	QC Limits %R	Q
Nitrite-N	11.3	11.5	101.5	70-130	

* Values outside of QC limits

Comments:

7-WC

GENERAL CHEMISTRY LABORATORY CONTROL SAMPLE

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

LCS ID: BS3S0302

Initial Cal ID: 300A-013006

Date Analyzed: 03/02/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1416

Instrument: ICQ

Concentration Units: mg/kg

Analyte	Expected	Found	%R	QC Limits %R	Q
Nitrate-N	71.9	78.6	109.2	70-130	

* Values outside of QC limits

Comments:

14-WC

GENERAL CHEMISTRY ANALYTICAL SEQUENCE

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

Lab Code: CVO

Instrument: ICQ

Analytical Lot ID: 300A-013006

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
02	LEVEL1	LEVEL1	01/30/06	1729
03	LEVEL2	LEVEL2	01/30/06	1739
04	LEVEL3	LEVEL3	01/30/06	1749
05	LEVEL4	LEVEL4	01/30/06	1758
06	LEVEL5	LEVEL5	01/30/06	1808
07	LEVEL6	LEVEL6	01/30/06	1818
08	LEVEL7	LEVEL7	01/30/06	1827
10	ICV-0130	ICV-0130	01/30/06	1846
11	ICV-0130	ICV-0130	01/30/06	1856
13	ICV-0130	ICV-0130	01/30/06	1916

COMMENTS: _____

14-WC

GENERAL CHEMISTRY ANALYTICAL SEQUENCE

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

Lab Code: CVO

Instrument: ICQ

Analytical Lot ID: 030206Q1

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
15	CV1-0302	CV1-0302	03/02/06	1338
16	BS1S0302	BS1S0302	03/02/06	1347
18	BS2S0302	BS2S0302	03/02/06	1407
19	BS3S0302	BS3S0302	03/02/06	1416
20	SB1-0302	SB1-0302	03/02/06	1426
21	J11746	F123901	03/02/06	1436
22	J11747	F123902	03/02/06	1505
23	J11748	F123903	03/02/06	1514
24	J11749	F123904	03/02/06	1524
31	CV2-0302	CV2-0302	03/02/06	1632

COMMENTS: _____

CH2MHILL
Applied Sciences Laboratory

CH2M HILL
Applied Sciences Labortory (ASL)
2300 NW Walnut Blvd.
P.O. Box 428
Corvallis, OR 97330-0428
Telephone: 541-752-4271
Fax: 541-752-0276

03/21/06

MDL Study Report

Analytical Method: E300.0A

Instrument ID: ICQ

Matrix: Soil

Concentration Units: mg/kg

Analyte	Analysis Date	Amt. Spiked	Replicates 1	2	3	4	5	6	7	8	Std. Dev.	MDL
Nitrate	11/01/05	0.25	0.225	0.250	0.215	0.240	0.245	0.225	0.255		0.0149	0.0469
Nitrite-N	11/01/05	0.25	0.230	0.270	0.270	0.260	0.270	0.260	0.265		0.0143	0.0449
Sulfate	11/01/05	0.75	0.790	0.735	0.730	0.795	0.775	0.750	0.760		0.0256	0.0806
Chloride	11/01/05	0.25	0.315	0.315	0.340	0.340	0.290	0.300	0.330		0.0193	0.0607
Fluoride	11/02/05	0.5	0.505	0.480	0.500	0.470	0.490	0.485	0.455		0.0173	0.0543

PERCENT MOISTURE
ASTM D2216

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11746

SDG No.: F1239

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123901

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
MOISTURE	Moisture	0.00	0.00	15.1		%	1	6.2809 G	ASTM D2216	03/07/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11747

SDG No.: F1239

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123902

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
MOISTURE	Moisture	0.00	0.00	20.2		%	1	11.1464 G	ASTM D2216	03/07/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11748

SDG No.: F1239

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123903

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
MOISTURE	Moisture	0.00	0.00	10.8		%	1	9.9907 G	ASTM D2216	03/07/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11749

SDG No.: F1239

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123904

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
MOISTURE	Moisture	0.00	0.00	20.0		%	1	11.6614 G	ASTM D2216	03/07/06

PARTICLE SIZE
METHOD 422

Hanford

Particle Size

259.7 **g sample used**

Weight retained is the weight of material ON each sieve

ANALYST: **KE** **03/17/2006**

Lab I.D.	Client I.D.	Sieve #	Sieve Size (um)	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Coarser (%)	Cumulative Finer (%)
F123901	J11746	8	2362	2.362	26.80	10.36	10.36	89.64
		16	1180	1.180	28.90	11.18	21.54	78.46
		30	600	0.600	28.40	10.98	32.52	67.48
		50	500	0.500	42.70	16.51	49.03	50.97
		100	147	0.147	81.70	31.59	80.63	19.37
		200	75	0.075	36.80	14.23	94.86	5.14
		pan			13.30	5.14	100.00	0.00
		total			258.6			

CH2M HILL
Applied Sciences Group

2300 NW Walnut Blvd., Corvallis, OR 97330-3538
P.O. Box 428, Corvallis, OR 97339-0428
Tel 541.752.4271 Fax 541.752.0276

Hanford

Particle Size

260.5 **g sample used**

Weight retained is the weight of material ON each sieve

ANALYST: **KE** **03/17/2006**

Lab I.D.	Client I.D.	Sieve #	Sieve Size (um)	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Coarser (%)	Cumulative Finer (%)
F123902	J11747	8	2362	2.362	22.10	8.48	8.48	91.52
		16	1180	1.180	28.50	10.94	19.42	80.58
		30	600	0.600	26.20	10.06	29.48	70.52
		50	500	0.500	39.10	15.01	44.49	55.51
		100	147	0.147	95.20	36.55	81.04	18.96
		200	75	0.075	37.00	14.20	95.24	4.76
		pan			12.40	4.76	100.00	0.00
		total			260.5			

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Applied Sciences Group

2300 NW Walnut Blvd., Corvallis, OR 97330-3538
P.O. Box 428, Corvallis, OR 97339-0428
Tel 541.752.4271 Fax 541.752.0276

Hanford

Particle Size

435.5 g sample used

Weight retained is the weight of material ON each sieve

ANALYST: KE 03/17/2006

Lab I.D.	Client I.D.	Sieve #	Sieve Size (um)	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Coarser (%)	Cumulative Finer (%)
F123903	J11748	8	2362	2.362	0.00	0.00	0.00	100.00
		16	1180	1.180	4.20	0.97	0.97	99.03
		30	600	0.600	6.70	1.54	2.51	97.49
		50	500	0.500	27.40	6.31	8.82	91.18
		100	147	0.147	217.80	50.17	59.00	41.00
		200	75	0.075	123.70	28.50	87.49	12.51
		pan			54.30	12.51	100.00	0.00
		total			434.1			

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Applied Sciences Group

2300 NW Walnut Blvd., Corvallis, OR 97330-3538
P.O. Box 428, Corvallis, OR 97339-0428
Tel 541.752.4271 Fax 541.752.0276

Hanford

Particle Size

276.9 **g sample used**

Weight retained is the weight of material ON each sieve

ANALYST: **KE** **03/17/2006**

Lab I.D.	Client I.D.	Sieve #	Sieve Size (um)	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Coarser (%)	Cumulative Finer (%)
F123904	J11749	8	2362	2.362	14.50	5.25	5.25	94.75
		16	1180	1.180	14.70	5.33	10.58	89.42
		30	600	0.600	30.80	11.16	21.74	78.26
		50	500	0.500	67.10	24.31	46.05	53.95
		100	147	0.147	70.40	25.51	71.56	28.44
		200	75	0.075	57.40	20.80	92.36	7.64
		pan			21.10	7.64	100.00	0.00
		total			276.0			

CH2M HILL
Applied Sciences Group

2300 NW Walnut Blvd., Corvallis, OR 97330-3538
P.O. Box 428, Corvallis, OR 97339-0428
Tel 541.752.4271 Fax 541.752.0276

pH
METHOD SW9045C

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11746

SDG No.: F1239

Matrix: SOIL

% Moisture: 15

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123901

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
pH	pH	0.00	0.00	7.02		pH	1	20 G	SW9045C	02/28/06

ET060315-18:55-F1239-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11747

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: F123902

% Moisture: 20

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
pH	pH	0.00	0.00	7.10		pH	1	20 G	SW9045C	02/28/06

ET060315-18:55-F1239-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11748

SDG No.: F1239

Matrix: SOIL

% Moisture: 11

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123903

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
pH	pH	0.00	0.00	6.97		pH	1	20 G	SW9045C	02/28/06

BT060315-18:5S-F1239-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11749

SDG No.: F1239

Matrix: SOIL

% Moisture: 20

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123904

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
pH	pH	0.00	0.00	7.47		pH	1	20 G	SW9045C	02/28/06

ET060315-18:55-F1239-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

SB1-0228

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: SB1-0228

% Moisture: 0

Date Received: / /

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
pH	pH	0.00	0.00	6.62		pH	1	20 G	SW9045C	02/28/06

ET060315-18:55-F1239-W

FORM I GEN CHEM

TKN
METHOD EPA 351.4

CASE NARRATIVE
TKN

Analytical Method: EPA 351.4 | Batch No.: F1239

Lab Name: CH2M HILL Applied Sciences Lab | Contract #.: 920842.OTC

Project Name: ELR Consulting | Prime Contractor.: _____

I. Holding Times:
All acceptance criteria were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Matrix Spike Duplicate(MS/MSD)
All analyses were performed in accordance with standard operating procedures.

D. Laboratory Control Spike(LCS)
All acceptance criteria were met.

E. Duplicate Sample(s):
All analyses were performed in accordance with standard operating procedures.

F. Analytical Exceptions:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: Elizabeth M Tuggs | Date: 3-15-06

Reviewed by: [signature] | Date: 3/20/06

SAMPLE DATA SUMMARY

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11746

SDG No.: F1239

Matrix: SOIL

% Moisture: 15

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123901

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7727-37-9	Total Kjeldahl Nitrogen as N	49.4	236	1920		mg/kg	1	0.499 G	E351.4	03/02/06

ET060313-18:12-F1239-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11747

SDG No.: F1239

Matrix: SOIL

% Moisture: 20

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123902

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7727-37-9	Total Kjeldahl Nitrogen as N	49.9	238	1840		mg/kg	1	0.5247 G	E351.4	03/02/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11748

SDG No.: F1239

Matrix: SOIL

% Moisture: 11

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123903

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7727-37-9	Total Kjeldahl Nitrogen as N	43.0	205	914		mg/kg	1	0.5482 G	E351.4	03/02/06

ET060313-18:12-F1239-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11749

SDG No.: F1239

Matrix: SOIL

% Moisture: 20

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123904

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7727-37-9	Total Kjeldahl Nitrogen as N	54.0	258	1140		mg/kg	1	0.4848 G	E351.4	03/02/06

ET060313-18:12-F1239-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

SB1-0302

SDG No.: F1239

Matrix: SOIL

% Moisture: 0

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: SB1-0302

Date Received: / /

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7727-37-9	Total Kjeldahl Nitrogen as N	21.0	100	62.0	B	mg/kg	1	1 G	E351.4	03/02/06

QC DATA
SUMMARY

2-WC

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E351.4

Initial Calibration Date: 03/02/06 1515

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 030206TKN

Analyte	Std 1	Resp 1	Std 2	Resp 2	Std 3	Resp 3	Std 4	Resp 4	Std 5	Resp 5	Std 6	Resp 6	Std 7	Resp 7
Total Kjeldahl Nitrogen	2.0	161	20.0	110	200	53.9	2000	-1.5						

Comments:

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E351.4

Initial Calibration Date: 03/02/06 1515

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 030206TKN

Analyte	Curve Type	r	Q
Total Kjeldahl Nitrogen as N	LNR	0.9997	

Comments:

2B-WC

GENERAL CHEMISTRY SECOND SOURCE CALIBRATION VERIFICATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E351.4

Second Source ID: ICV-0302

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 030206TKN

Analyte	Expected	Found	%D	Q
Total Kjeldahl Nitrogen as N	13.6	15.7	15.4	

Comments:

2A-WC

GENERAL CHEMISTRY CALIBRATION VERIFICATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E351.4

Analytical Lot ID: 030206TKN

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 030206TKN

CCV #1 ID: CV1-0302 CCV #2 ID: CV2-0302 CCV #3 ID: CV3-0302

Analyte	Expected	Found	%D	Q	Expected	Found	%D	Q	Expected	Found	%D	Q
Total Kjeldahl Nitrogen as N	20	18.7	-6.3		200	198	-1.1		20	20.1	0.3	

Comments:

3-WC

SOIL GENERAL CHEMISTRY METHOD BLANK SUMMARY

Field Sample ID:

SB1-0302

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E351.4

Lab Sample ID: SB1-0302

Initial Cal ID: 030206TKN

Date Analyzed: 03/02/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1559

Instrument: NONE

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
05	BS1S0302	BS1S0302	03/02/06	1549
12	J11746	F123901	03/02/06	1652
13	J11747	F123902	03/02/06	1655
14	J11748	F123903	03/02/06	1700
15	J11749	F123904	03/02/06	1702

COMMENTS:

7-WC

GENERAL CHEMISTRY LABORATORY CONTROL SAMPLE

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E351.4

LCS ID: BS1S0302

Initial Cal ID: 030206TKN

Date Analyzed: 03/02/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1549

Instrument: NONE

Concentration Units: mg/kg

Analyte	Expected	Found	%R	QC Limits %R	Q
Total Kjeldahl Nitrogen as N	680	785	115.4	75-125	

* Values outside of QC limits

Comments:

14-WC

GENERAL CHEMISTRY ANALYTICAL SEQUENCE

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E351.4

Lab Code: CVO

Instrument: NONE

Analytical Lot ID: 030206TKN

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	LEVEL-1	LEVEL-1	03/02/06	1515
02	LEVEL-2	LEVEL-2	03/02/06	1518
03	LEVEL-3	LEVEL-3	03/02/06	1520
04	LEVEL-4	LEVEL-4	03/02/06	1525
05	CV1-0302	CV1-0302	03/02/06	1528
06	CV2-0302	CV2-0302	03/02/06	1528
07	ICV-0302	ICV-0302	03/02/06	1549
09	BS1S0302	BS1S0302	03/02/06	1549
10	SB1-0302	SB1-0302	03/02/06	1559
16	J11746	F123901	03/02/06	1652
17	J11747	F123902	03/02/06	1655
18	J11748	F123903	03/02/06	1700
19	J11749	F123904	03/02/06	1702
22	CV3-0302	CV3-0302	03/02/06	1717

COMMENTS: _____

CH2MHILL
Applied Sciences Laboratory

CH2M HILL
Applied Sciences Labortory (ASL)
2300 NW Walnut Blvd.
P.O. Box 428
Corvallis, OR 97330-0428
Telephone: 541-752-4271
Fax: 541-752-0276

03/13/06

MDL Study Report

Analytical Method: E351.4

Instrument ID: NONE

Matrix: Soil

Concentration Units: mg/kg

Analyte	Analysis Date	Amt. Spiked	Replicates 1	2	3	4	5	6	7	8	Std. Dev.	MDL
Total Kjeldahl Nitrogen	03/17/05	100	100	109	113	103	101	116	99.8		6.66	21.0

TOTAL ORGANIC CARBON
BY ASTM E777

CASE NARRATIVE
TOC-SOILS

Analytical Method: ASTM E-777 Batch No.: F1239

Lab Name: CH2M HILL Applied Sciences Lab Contraet #.: 920842.OTC

Project Name: ELR Consulting Prime Contractor.: _____

I. Holding Times:
All acceptance criteria were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Matrix Spike Duplicate(MS/MSD)
All analyses were performed in accordance with standard operating procedures.

D. Laboratory Control Spike(LCS)
All acceptance criteria were met.

E. Duplicate Sample(s):
All analyses were performed in accordance with standard operating procedures.

F. Analytical Exceptions:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: [signature] Date: 3.21-06

Reviewed by: [signature] Date: 3-21-06

SAMPLE DATA SUMMARY

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11746

SDG No.: F1239

Matrix: SOIL

% Moisture: 0

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123901

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
TOC	Total Organic Carbon	114	327	11700		mg/kg	1	0.3061 G	ASTM E-777	03/06/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11747

SDG No.: F1239

Matrix: SOIL

% Moisture: 0

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F123902

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
TOC	Total Organic Carbon	84.1	241	11700		mg/kg	1	0.4156 G	ASTM E-777	03/06/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11748

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: F123903

% Moisture: 0

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
TOC	Total Organic Carbon	74.0	212	5210		mg/kg	1	0.4721 G	ASTM E-777	03/06/06

AD060321-11:02-F1239-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11749

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: F123904

% Moisture: 0

Date Received: 02/22/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
TOC	Total Organic Carbon	106	305	13700		mg/kg	1	0.3284 G	ASTM E-777	03/06/06

AD060321-11:02-F1239-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

SB1-0306

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: SB1-0306

% Moisture: 0

Date Received: / /

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
TOC	Total Organic Carbon	35.0	100	100	U	mg/kg	1	1 G	ASTM E-777	03/06/06

QC SUMMARY

2-WC

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

Initial Calibration Date: 10/14/05 11:48

Instrument Name: TOC Skalar

Concentration Units: mg/Kg

Initial Calibration ID: 101405S1

Analyte	Std 1	Resp 1	Std 2	Resp 2	Std 3	Resp 3	Std 4	Resp 4	Std 5	Resp 5	Std 6	Resp 6	Std 7	Resp 7
Total Organic Carbon	100	737000	200	1600000	1000	6840000	4000	2.48E+7	8000	4.79E+7				

Comments:

2-WC

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

Initial Calibration Date: 10/14/05 11:48

Instrument Name: TOC Skalar

Concentration Units: mg/Kg

Initial Calibration ID: 101405S1

Analyte	Curve Type	r	Q
Total Organic Carbon	LNR	0.9997	

Comments:

2B-WC

GENERAL CHEMISTRY SECOND SOURCE CALIBRATION VERIFICATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

Second Source ID: ICV-1014

Instrument Name: TOC Skalar

Concentration Units: mg/kg

Initial Calibration ID: 101405S1

Analyte	Expected	Found	%D	Q
Total Organic Carbon	6430	6680	3.9	

Comments:

2A-WC

GENERAL CHEMISTRY CALIBRATION VERIFICATION DATA

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

Analytical Lot ID: 030606TOCS

Instrument Name: TOC Skalar

Concentration Units: mg/kg

Initial Calibration ID: 101405S1

CCV #1 ID: CV1-0306 CCV #2 ID: CV2-0306 CCV #3 ID: CV3-0306

Analyte	Expected	Found	%D	Q	Expected	Found	%D	Q	Expected	Found	%D	Q
Total Organic Carbon	4000	3710	-7.3		4000	4150	3.9		4000	4130	3.2	

Comments:

SOIL GENERAL CHEMISTRY METHOD BLANK SUMMARY

Field Sample ID: SB1-0306

SDG No.: F1239

Analysis Method: ASTM E-777

Initial Cal ID: 101405S1

Matrix: (Soil/Water) SOIL

Instrument: TOC SKALAR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: SB1-0306

Date Analyzed: 03/06/06

Time Analyzed: 1036

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
02	BS1S0306	BS1S0306	03/06/06	1025
09	J11746	F123901	03/06/06	1442
11	J11747	F123902	03/06/06	1508
12	J11748	F123903	03/06/06	1528
17	J11749	F123904	03/06/06	1647

COMMENTS:

7-WC

GENERAL CHEMISTRY LABORATORY CONTROL SAMPLE

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

LCS ID: BS1S0306

Initial Cal ID: 101405S1

Date Analyzed: 03/06/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1025

Instrument: TOC SKALAR

Concentration Units: mg/kg

Analyte	Expected	Found	%R	QC Limits %R	Q
Total Organic Carbon	8840	9140	103.3	75-125	

* Values outside of QC limits

Comments:

14-WC

GENERAL CHEMISTRY ANALYTICAL SEQUENCE

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

Lab Code: CVO

Instrument: TOC SKALAR

Analytical Lot ID: 101405TOCS

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
02	LEVEL1	LEVEL1	10/14/05	1148
03	LEVEL2	LEVEL2	10/14/05	1158
04	LEVEL3	LEVEL3	10/14/05	1208
05	LEVEL4	LEVEL4	10/14/05	1218
06	LEVEL5	LEVEL5	10/14/05	1228
07	ICV-1014	ICV-1014	10/14/05	1252

COMMENTS:

14-WC

GENERAL CHEMISTRY ANALYTICAL SEQUENCE

SDG No.: F1239

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

Lab Code: CVO

Instrument: TOC SKALAR

Analytical Lot ID: 030606TOCS

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	CV1-0306	CV1-0306	03/06/06	1011
02	BS1S0306	BS1S0306	03/06/06	1025
03	SB1-0306	SB1-0306	03/06/06	1036
09	J11746	F123901	03/06/06	1442
11	J11747	F123902	03/06/06	1508
12	J11748	F123903	03/06/06	1528
14	CV2-0306	CV2-0306	03/06/06	1548
17	J11749	F123904	03/06/06	1647
27	CV3-0306	CV3-0306	03/06/06	1810

COMMENTS: _____

CH2MHILL
Applied Sciences Laboratory

CH2M HILL
Applied Sciences Labortory (ASL)
2300 NW Walnut Blvd.
P.O. Box 428
Corvallis, OR 97330-0428
Telephone: 541-752-4271
Fax: 541-752-0276

03/21/06

MDL Study Report

Analytical Method: ASTM E-777

Instrument ID: TOC Skalar

Matrix: Soil

Concentration Units: mg/kg

Analyte	Analysis Date	Amt. Spiked	Replicates 1	2	3	4	5	6	7	8	Std. Dev.	MDL
Total Organic Carbon	08/17/05	140	31.0	14.4	8.89	29.4	32.4	27.1	6.37		11.1	35.0

CHAIN OF CUSTODY/SHIPPING DOCUMENTS

F1239 1504

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-122	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	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U-4, SEDIMENT	SAF No.: RC-047	
Ice Chest No.: ERC-96-096	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 SEB 2-19-06	1	10 SEB 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										
J11746	OTHER SOLID	2-19-06	1500	X	X	X SEB 2-19-06							-1

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-19-06 1800	Received By/Stored In: EAS LOCKED STORAGE
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 2-21-06 0900	Received By/Stored In: RZ Steffler
Relinquished By/Removed From: RZ Steffler	Date/Time: 2-21-06 1600	Received By/Stored In: Fed Ex
Relinquished By/Removed From:	Date/Time: 2-22-06/1350	Received By/Stored In: 2-22-06 13:50
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:

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

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

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

BHI-EE-011 (08/29/2005)

F1239 2004

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-123	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	Air Quality ☐	
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U 9, SEDIMENT	SAF No. RC-047	
Ice Chest No. ERC-96-096	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 JEB 2-19-06	1	10 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							-2

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1800 2-19-06	EAS LOCKED STORAGE	1800 2-19-06
EAS LOCKED STORAGE	0900 2-21-06	RZ Stoffler	0900 2-21-06
RZ Stoffler	1600 WLH 2-21-06	Fed Ex	
Doug Wimm	2-22-06 1350	M Beckman	2-22-06 13:50

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

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
Ti=Tissue
Wi=Wipe
Li=Liquid
V=Vegetation
X=Other

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

BHI-EE-011 (08/29/2005)

F1239 3 of 4

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-124	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/o, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-96-096	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)	2-19-06 JB	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							3

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 2-19-06 1800	Received By/Stored In EAS LOCKED STORAGE Date/Time 2-19-06 1800	(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
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 2-21-06 0900	Received By/Stored In RZ Stoffler Date/Time 2-21-06 0900	
Relinquished By/Removed From RZ Stoffler Date/Time 2-21-06 1600	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Doug Kinn Date/Time 2-22-06 1350	Received By/Stored In Date/Time 2-22-06 13:50	
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 *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

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

BHI-EE-011 (08/29/2005)

F1239- 4004

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-125	Page 1 of 1
llector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER; Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N; Data Turnaround 21 Days
oject Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U , SEDIMENT 300-1	SAF No. RC-047	Air Quality ☐
Chest No. ERC-96-096	Field Logbook No. EL-1597; COA BESRAS6520	Method of Shipment GROUND TRANSPORT	
ipped To CH2MHILL	Offsite Property No. A060151	Bill of Lading/Air Bill No. SEE OSPC	

OSSIBLE SAMPLE HAZARDS/REMARKS
OTENTIAL RADIOACTIVE <DOT LIMITS

pecial Handling and/or Storage
OOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	+2 SEE 2-19-06	1	+0 SEE 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										
1749	OTHER SOLID	2-19-06	1400	X	X								-4

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1800 2-19-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1800 2-19-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0900 2-21-06	Received By/Stored In R2 Steffler R.J. Steffler	Date/Time 0900 2-21-06
Relinquished By/Removed From R2 Steffler R.J. Steffler	Date/Time 1600 2-21-06	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Doug Wann	Date/Time 2-22-06 1350	Received By/Stored In Melody Bechtel	Date/Time 2-22-06 13:50
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

II-EE-011 (08/29/2005)

CH2MHILL
Analytical Services

Sample Receipt Record

Batch Number: F1239 Date received: 2-22-06

Client/Project CLR Consultants – Washington Closure Hanford

VERIFICATION OF SAMPLE CONDITIONS (verify all items) * HD = Client Hand delivered Samples

Observation		YES	NO
Radiological Screening for AFCEE			X
Were custody seals intact and on the outside of the cooler?	HD		
If yes, Where? Front____ Rear____ Lt Side____ Rt Side____	HD		
Type of packing material: Ice Blue Ice Bubble wrap		X	~~X~~ 06
Was the Chain of Custody inside the cooler?	HD		
Was the Chain of Custody properly filled out?		X	
Were the sample containers in good condition?		X	
Containers supplied by ASL?		X	
Any sample with < 1/2 holding time remaining? If so contact LPM		X	X R06
Was there ice in the cooler? Enter temp. <6°C D.W. ~~[illegible]~~		X	X R06
All VOCs free of air bubbles ?	N/A		

VERIFICATION OF SAMPLE PRESERVATION

Sample No	Nutrients pH <2	Metals pH <2	Volatiles pH <2	Cyanides pH >12	TOC pH <2	TOX pH <2	Other (specify)	N/A (soils/umpres)
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

LOGIN AND pH VERIFICATIONS PERFORMED BY

[signature] Date/Time 2-22-06 13:50

Date/Time

Rev 11/05/2003-recptrcd.xls

VersionCo	LabName	SDG	FieldID	NativeID	QAQCTyp	LRType	Matrix	LabSampl	AnalysisM	ExtractionI	SampleDa	SampleTin	ReceiveDa	
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	ASTM D22	NONE	2/19/2006	15:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	ASTM D22	NONE	2/19/2006	16:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	ASTM D22	NONE	2/19/2006	16:40	2/22/2006	
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	ASTM D22	NONE	2/19/2006	14:00	2/22/2006	
4.00EPAC	CHMC	F1239	BS1S0306	BS1S0306	BS		SOIL	BS1S0306	ASTM E-7	NONE				
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	ASTM E-7	NONE	2/19/2006	15:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	ASTM E-7	NONE	2/19/2006	16:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	ASTM E-7	NONE	2/19/2006	16:40	2/22/2006	
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	ASTM E-7	NONE	2/19/2006	14:00	2/22/2006	
4.00EPAC	CHMC	F1239	SB1-0306	SB1-0306	LB		SOIL	SB1-0306	ASTM E-7	NONE				
4.00EPAC	CHMC	F1239	BS1S0302	BS1S0302	BS		SOIL	BS1S0302	E300.0A	METHOD				
4.00EPAC	CHMC	F1239	BS1S0302	BS1S0302	BS		SOIL	BS1S0302	E300.0A	METHOD				
4.00EPAC	CHMC	F1239	BS1S0302	BS1S0302	BS		SOIL	BS1S0302	E300.0A	METHOD				
4.00EPAC	CHMC	F1239	BS2S0302	BS2S0302	BS		SOIL	BS2S0302	E300.0A	METHOD				
4.00EPAC	CHMC	F1239	BS3S0302	BS3S0302	BS		SOIL	BS3S0302	E300.0A	METHOD				
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E300.0A	METHOD	2/19/2006	15:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E300.0A	METHOD	2/19/2006	15:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E300.0A	METHOD	2/19/2006	15:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E300.0A	METHOD	2/19/2006	15:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E300.0A	METHOD	2/19/2006	15:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E300.0A	METHOD	2/19/2006	16:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E300.0A	METHOD	2/19/2006	16:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E300.0A	METHOD	2/19/2006	16:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E300.0A	METHOD	2/19/2006	16:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E300.0A	METHOD	2/19/2006	16:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E300.0A	METHOD	2/19/2006	16:40	2/22/2006	
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E300.0A	METHOD	2/19/2006	16:40	2/22/2006	
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E300.0A	METHOD	2/19/2006	16:40	2/22/2006	
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E300.0A	METHOD	2/19/2006	16:40	2/22/2006	
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E300.0A	METHOD	2/19/2006	16:40	2/22/2006	
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E300.0A	METHOD	2/19/2006	14:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E300.0A	METHOD	2/19/2006	14:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E300.0A	METHOD	2/19/2006	14:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E300.0A	METHOD	2/19/2006	14:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E300.0A	METHOD	2/19/2006	14:00	2/22/2006	
4.00EPAC	CHMC	F1239	SB1-0302	SB1-0302	LB		SOIL	SB1-0302	E300.0A	METHOD				
4.00EPAC	CHMC	F1239	SB1-0302	SB1-0302	LB		SOIL	SB1-0302	E300.0A	METHOD				
4.00EPAC	CHMC	F1239	SB1-0302	SB1-0302	LB		SOIL	SB1-0302	E300.0A	METHOD				
4.00EPAC	CHMC	F1239	SB1-0302	SB1-0302	LB		SOIL	SB1-0302	E300.0A	METHOD				
4.00EPAC	CHMC	F1239	SB1-0302	SB1-0302	LB		SOIL	SB1-0302	E300.0A	METHOD				
4.00EPAC	CHMC	F1239	BS1S0223	BS1S0223	BS		SOIL	BS1S0223	E350.3	METHOD				2
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E350.3	METHOD	2/19/2006	15:00	2/22/2006	2
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E350.3	METHOD	2/19/2006	16:00	2/22/2006	2
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E350.3	METHOD	2/19/2006	16:40	2/22/2006	2
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E350.3	METHOD	2/19/2006	14:00	2/22/2006	2
4.00EPAC	CHMC	F1239	SB1-0223	SB1-0223	LB		SOIL	SB1-0223	E350.3	METHOD				2
4.00EPAC	CHMC	F1239	BS1S0302	BS1S0302	BS		SOIL	BS1S0302	E351.4	METHOD				
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E351.4	METHOD	2/19/2006	15:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E351.4	METHOD	2/19/2006	16:00	2/22/2006	
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E351.4	METHOD	2/19/2006	16:40	2/22/2006	
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E351.4	METHOD	2/19/2006	14:00	2/22/2006	
4.00EPAC	CHMC	F1239	SB1-0302	SB1-0302	LB		SOIL	SB1-0302	E351.4	METHOD				
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	SW9045C	METHOD	2/19/2006	15:00	2/22/2006	2
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	SW9045C	METHOD	2/19/2006	16:00	2/22/2006	2
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	SW9045C	METHOD	2/19/2006	16:40	2/22/2006	2
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	SW9045C	METHOD	2/19/2006	14:00	2/22/2006	2
4.00EPAC	CHMC	F1239	SB1-0228	SB1-0228	LB		SOIL	SB1-0228	SW9045C	METHOD				2

ExpectedV	Units	Dilution	MDL	RL	LabQualifi	Surrogate	Comments	ParValUnc	Recovery	LowerCont	UpperCont	Basis	ConcQual	M
	PERCENT	1	0	0		N						D	=	
	PERCENT	1	0	0		N						D	=	
	PERCENT	1	0	0		N						D	=	
	PERCENT	1	0	0		N						D	=	
8840	MG/KG	1	54.8	157		N			103.3	75	125	D	=	
	MG/KG	1	114	327		N						D	=	
	MG/KG	1	84.1	241		N						D	=	
	MG/KG	1	74	212		N						D	=	
	MG/KG	1	106	305		N						D	=	
0	MG/KG	1	35	100	U	N						D	U	
50	MG/KG	1	0.121	1		N			101.1	70	130	D	=	
50	MG/KG	1	0.109	1		N			109.3	70	130	D	=	
50	MG/KG	1	0.161	1		N			106.2	70	130	D	=	
11.3	MG/KG	1	0.0898	1		N			101.5	70	130	D	=	
71.9	MG/KG	1	0.0939	1		N			109.2	70	130	D	=	
	MG/KG	1	0.0527	0.434		N						D	=	
	MG/KG	1	0.0471	0.434		N						D	=	
	MG/KG	1	0.0408	0.434		N						D	=	
	MG/KG	1	0.039	0.434		N						D	=	
	MG/KG	1	0.07	0.434		N						D	=	
	MG/KG	1	0.054	0.445		N						D	=	
	MG/KG	1	0.0483	0.445	U	N						D	U	
	MG/KG	1	0.0418	0.445		N						D	=	
	MG/KG	1	0.0399	0.445		N						D	=	
	MG/KG	1	0.0717	0.445		N						D	=	
	MG/KG	1	0.0523	0.431		N						D	=	
	MG/KG	1	0.0468	0.431	B	N						D	J	
	MG/KG	1	0.0405	0.431		N						D	=	
	MG/KG	1	0.0387	0.431	B	N						D	J	
	MG/KG	1	0.0695	0.431		N						D	=	
	MG/KG	1	0.058	0.477		N						D	=	
	MG/KG	1	0.0518	0.477	U	N						D	U	
	MG/KG	1	0.0448	0.477		N						D	=	
	MG/KG	1	0.0429	0.477	B	N						D	J	
	MG/KG	1	0.077	0.477		N						D	=	
0	MG/KG	1	0.121	1	B	N						D	J	
0	MG/KG	1	0.109	1	U	N						D	U	
0	MG/KG	1	0.0939	1	U	N						D	U	
0	MG/KG	1	0.0898	1	U	N						D	U	
0	MG/KG	1	0.161	1	U	N						D	U	
20	MG/KG	1	0.534	2		N			102	80	120	D	=	
	MG/KG	1	0.944	3.53	B	N						D	J	
	MG/KG	1	1.04	3.9	B	N						D	J	
	MG/KG	1	0.959	3.59	B	N						D	J	
	MG/KG	1	0.95	3.56	B	N						D	J	
0	MG/KG	1	0.534	2	B	N						D	J	
680	MG/KG	1	21	100		N			115.4	75	125	D	=	
	MG/KG	1	42	200		N						D	=	
	MG/KG	1	39.9	191		N						D	=	
	MG/KG	1	38.2	182		N						D	=	
	MG/KG	1	43.2	206		N						D	=	
0	MG/KG	1	21	100	B	N						D	J	
	PH UNITS	1	0	0		N						D	=	
	PH UNITS	1	0	0		N						D	=	
	PH UNITS	1	0	0		N						D	=	
	PH UNITS	1	0	0		N						D	=	
0	PH UNITS	1	0	0		N						D	=	

VersionCo	LabName	SDG	FieldID	NativeID	QAQCTyp	LRType	Matrix	LabSampl	AnalysisM	ExtractionI	SampleDa	SampleTin	ReceiveDa	ExtractDat	ExtractTim	AnalysisDa	AnalysisTi	PercentSo	LabLotCtlN	CAS	ParamID	Analyte	Result
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	ASTM D22	NONE	2/19/2006	15:00	2/22/2006			3/7/2006	14:50	84.9		MOISTURI	MOIST	Moisture	15.1
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	ASTM D22	NONE	2/19/2006	16:00	2/22/2006			3/7/2006	14:50	79.8		MOISTURI	MOIST	Moisture	20.2
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	ASTM D22	NONE	2/19/2006	16:40	2/22/2006			3/7/2006	14:50	89.2		MOISTURI	MOIST	Moisture	10.8
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	ASTM D22	NONE	2/19/2006	14:00	2/22/2006			3/7/2006	14:50	80		MOISTURI	MOIST	Moisture	20
4.00EPAC	CHMC	F1239	BS1S0306	BS1S0306	BS		SOIL	BS1S0306	ASTM E-7	NONE						3/6/2006	10:25	100		TOC	TOC	Total Orga	9140
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	ASTM E-7	NONE	2/19/2006	15:00	2/22/2006			3/6/2006	14:42	84.9		TOC	TOC	Total Orga	11700
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	ASTM E-7	NONE	2/19/2006	16:00	2/22/2006			3/6/2006	15:08	79.8		TOC	TOC	Total Orga	11700
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	ASTM E-7	NONE	2/19/2006	16:40	2/22/2006			3/6/2006	15:28	89.2		TOC	TOC	Total Orga	5210
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	ASTM E-7	NONE	2/19/2006	14:00	2/22/2006			3/6/2006	16:47	80		TOC	TOC	Total Orga	13700
4.00EPAC	CHMC	F1239	SB1-0306	SB1-0306	LB		SOIL	SB1-0306	ASTM E-7	NONE						3/6/2006	10:36	100		TOC	TOC	Total Orga	100
4.00EPAC	CHMC	F1239	BS1S0302	BS1S0302	BS		SOIL	BS1S0302	E300.0A	METHOD				3/2/2006	13:47	3/2/2006	13:47	100	SB1-0302	16887-00-(	CL	Chloride	50.6
4.00EPAC	CHMC	F1239	BS1S0302	BS1S0302	BS		SOIL	BS1S0302	E300.0A	METHOD				3/2/2006	13:47	3/2/2006	13:47	100	SB1-0302	16984-48-(	F	Fluoride	54.7
4.00EPAC	CHMC	F1239	BS1S0302	BS1S0302	BS		SOIL	BS1S0302	E300.0A	METHOD				3/2/2006	13:47	3/2/2006	13:47	100	SB1-0302	14808-79-(	SO4	Sulfate	53.1
4.00EPAC	CHMC	F1239	BS2S0302	BS2S0302	BS		SOIL	BS2S0302	E300.0A	METHOD				3/2/2006	14:07	3/2/2006	14:07	100	SB1-0302	14797-65-(	NO2N	Nitrite-N	11.5
4.00EPAC	CHMC	F1239	BS3S0302	BS3S0302	BS		SOIL	BS3S0302	E300.0A	METHOD				3/2/2006	14:16	3/2/2006	14:16	100	SB1-0302	14797-55-(	NO3N	Nitrate-N	78.6
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E300.0A	METHOD	2/19/2006	15:00	2/22/2006	3/2/2006	14:36	3/2/2006	14:36	84.9	SB1-0302	16887-00-(	CL	Chloride	0.583
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E300.0A	METHOD	2/19/2006	15:00	2/22/2006	3/2/2006	14:36	3/2/2006	14:36	84.9	SB1-0302	16984-48-(	F	Fluoride	0.603
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E300.0A	METHOD	2/19/2006	15:00	2/22/2006	3/2/2006	14:36	3/2/2006	14:36	84.9	SB1-0302	14797-55-(	NO3N	Nitrate-N	1.11
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E300.0A	METHOD	2/19/2006	15:00	2/22/2006	3/2/2006	14:36	3/2/2006	14:36	84.9	SB1-0302	14797-65-(	NO2N	Nitrite-N	0.598
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E300.0A	METHOD	2/19/2006	15:00	2/22/2006	3/2/2006	14:36	3/2/2006	14:36	84.9	SB1-0302	14808-79-(	SO4	Sulfate	2.82
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E300.0A	METHOD	2/19/2006	16:00	2/22/2006	3/2/2006	15:05	3/2/2006	15:05	79.8	SB1-0302	16887-00-(	CL	Chloride	0.641
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E300.0A	METHOD	2/19/2006	16:00	2/22/2006	3/2/2006	15:05	3/2/2006	15:05	79.8	SB1-0302	16984-48-(	F	Fluoride	0.556
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E300.0A	METHOD	2/19/2006	16:00	2/22/2006	3/2/2006	15:05	3/2/2006	15:05	79.8	SB1-0302	14797-55-(	NO3N	Nitrate-N	1.69
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E300.0A	METHOD	2/19/2006	16:00	2/22/2006	3/2/2006	15:05	3/2/2006	15:05	79.8	SB1-0302	14797-65-(	NO2N	Nitrite-N	1.69
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E300.0A	METHOD	2/19/2006	16:00	2/22/2006	3/2/2006	15:05	3/2/2006	15:05	79.8	SB1-0302	14808-79-(	SO4	Sulfate	3.5
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E300.0A	METHOD	2/19/2006	16:40	2/22/2006	3/2/2006	15:14	3/2/2006	15:14	89.2	SB1-0302	16887-00-(	CL	Chloride	1.15
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E300.0A	METHOD	2/19/2006	16:40	2/22/2006	3/2/2006	15:14	3/2/2006	15:14	89.2	SB1-0302	16984-48-(	F	Fluoride	0.29
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E300.0A	METHOD	2/19/2006	16:40	2/22/2006	3/2/2006	15:14	3/2/2006	15:14	89.2	SB1-0302	14797-55-(	NO3N	Nitrate-N	1.69
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E300.0A	METHOD	2/19/2006	16:40	2/22/2006	3/2/2006	15:14	3/2/2006	15:14	89.2	SB1-0302	14797-65-(	NO2N	Nitrite-N	0.295
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E300.0A	METHOD	2/19/2006	16:40	2/22/2006	3/2/2006	15:14	3/2/2006	15:14	89.2	SB1-0302	14808-79-(	SO4	Sulfate	1.27
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E300.0A	METHOD	2/19/2006	14:00	2/22/2006	3/2/2006	15:24	3/2/2006	15:24	80	SB1-0302	16887-00-(	CL	Chloride	11.2
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E300.0A	METHOD	2/19/2006	14:00	2/22/2006	3/2/2006	15:24	3/2/2006	15:24	80	SB1-0302	16984-48-(	F	Fluoride	0.597
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E300.0A	METHOD	2/19/2006	14:00	2/22/2006	3/2/2006	15:24	3/2/2006	15:24	80	SB1-0302	14797-55-(	NO3N	Nitrate-N	19.2
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E300.0A	METHOD	2/19/2006	14:00	2/22/2006	3/2/2006	15:24	3/2/2006	15:24	80	SB1-0302	14797-65-(	NO2N	Nitrite-N	0.286
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E300.0A	METHOD	2/19/2006	14:00	2/22/2006	3/2/2006	15:24	3/2/2006	15:24	80	SB1-0302	14808-79-(	SO4	Sulfate	13.4
4.00EPAC	CHMC	F1239	SB1-0302	SB1-0302	LB		SOIL	SB1-0302	E300.0A	METHOD				3/2/2006	14:26	3/2/2006	14:26	100	SB1-0302	16887-00-(	CL	Chloride	0.2
4.00EPAC	CHMC	F1239	SB1-0302	SB1-0302	LB		SOIL	SB1-0302	E300.0A	METHOD				3/2/2006	14:26	3/2/2006	14:26	100	SB1-0302	16984-48-(	F	Fluoride	1
4.00EPAC	CHMC	F1239	SB1-0302	SB1-0302	LB		SOIL	SB1-0302	E300.0A	METHOD				3/2/2006	14:26	3/2/2006	14:26	100	SB1-0302	14797-55-(	NO3N	Nitrate-N	1
4.00EPAC	CHMC	F1239	SB1-0302	SB1-0302	LB		SOIL	SB1-0302	E300.0A	METHOD				3/2/2006	14:26	3/2/2006	14:26	100	SB1-0302	14797-65-(	NO2N	Nitrite-N	1
4.00EPAC	CHMC	F1239	SB1-0302	SB1-0302	LB		SOIL	SB1-0302	E300.0A	METHOD				3/2/2006	14:26	3/2/2006	14:26	100	SB1-0302	14808-79-(	SO4	Sulfate	1
4.00EPAC	CHMC	F1239	BS1S0223	BS1S0223	BS		SOIL	BS1S0223	E350.3	METHOD				2/23/2006	14:32	2/23/2006	14:32	100	SB1-0223	7664-41-7	NH3N	Ammonia-I	20.4
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E350.3	METHOD	2/19/2006	15:00	2/22/2006	2/23/2006	16:12	2/23/2006	16:12	84.9	SB1-0223	7664-41-7	NH3N	Ammonia-I	3.39
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E350.3	METHOD	2/19/2006	16:00	2/22/2006	2/23/2006	16:15	2/23/2006	16:15	79.8	SB1-0223	7664-41-7	NH3N	Ammonia-I	4.35
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E350.3	METHOD	2/19/2006	16:40	2/22/2006	2/23/2006	16:17	2/23/2006	16:17	89.2	SB1-0223	7664-41-7	NH3N	Ammonia-I	3.02
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E350.3	METHOD	2/19/2006	14:00	2/22/2006	2/23/2006	16:20	2/23/2006	16:20	80	SB1-0223	7664-41-7	NH3N	Ammonia-I	3.56
4.00EPAC	CHMC	F1239	SB1-0223	SB1-0223	LB		SOIL	SB1-0223	E350.3	METHOD				2/23/2006	14:41	2/23/2006	14:41	100	SB1-0223	7664-41-7	NH3N	Ammonia-I	0.889
4.00EPAC	CHMC	F1239	BS1S0302	BS1S0302	BS		SOIL	BS1S0302	E351.4	METHOD				3/2/2006	15:49	3/2/2006	15:49	100	SB1-0302	7727-37-9	KN	Total Kjeld	785
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	E351.4	METHOD	2/19/2006	15:00	2/22/2006	3/2/2006	16:52	3/2/2006	16:52	84.9	SB1-0302	7727-37-9	KN	Total Kjeld	1920
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	E351.4	METHOD	2/19/2006	16:00	2/22/2006	3/2/2006	16:55	3/2/2006	16:55	79.8	SB1-0302	7727-37-9	KN	Total Kjeld	1840
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	E351.4	METHOD	2/19/2006	16:40	2/22/2006	3/2/2006	17:00	3/2/2006	17:00	89.2	SB1-0302	7727-37-9	KN	Total Kjeld	914
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	E351.4	METHOD	2/19/2006	14:00	2/22/2006	3/2/2006	17:02	3/2/2006	17:02	80	SB1-0302	7727-37-9	KN	Total Kjeld	1140
4.00EPAC	CHMC	F1239	SB1-0302	SB1-0302	LB		SOIL	SB1-0302	E351.4	METHOD				3/2/2006	15:59	3/2/2006	15:59	100	SB1-0302	7727-37-9	KN	Total Kjeld	62
4.00EPAC	CHMC	F1239	J11746	J11746	N		SOIL	F123901	SW9045C	METHOD	2/19/2006	15:00	2/22/2006	2/28/2006	12:12	2/28/2006	12:12	84.9	SB1-0228	pH	PH	pH	7.02
4.00EPAC	CHMC	F1239	J11747	J11747	N		SOIL	F123902	SW9045C	METHOD	2/19/2006	16:00	2/22/2006	2/28/2006	12:13	2/28/2006	12:13	79.8	SB1-0228	pH	PH	pH	7.1
4.00EPAC	CHMC	F1239	J11748	J11748	N		SOIL	F123903	SW9045C	METHOD	2/19/2006	16:40	2/22/2006	2/28/2006	12:14	2/28/2006	12:14	89.2	SB1-0228	pH	PH	pH	6.97
4.00EPAC	CHMC	F1239	J11749	J11749	N		SOIL	F123904	SW9045C	METHOD	2/19/2006	14:00	2/22/2006	2/28/2006	12:16	2/28/2006	12:16	80	SB1-0228	pH	PH	pH	7.47
4.00EPAC	CHMC	F1239	SB1-0228	SB1-0228	LB		SOIL	SB1-0228	SW9045C	METHOD				2/28/2006	11:57	2/28/2006	11:57	100	SB1-0228	pH	PH	pH	6.62

ExpectedV	Units	Dilution	MDL	RL	LabQualifi	Surrogate	Comments	ParValUnc	Recovery	LowerCont	UpperCont	Basis	ConcQual	MDLAdjust	RLAdjuste	SampleDe	LeachMeth	LeachDate	LeachTime	LeachLot	AnalysisLo	CalRefID
	PERCENT	1	0	0		N						D	=	0	0	J11746	NONE				030706MC	NONE
	PERCENT	1	0	0		N						D	=	0	0	J11747	NONE				030706MC	NONE
	PERCENT	1	0	0		N						D	=	0	0	J11748	NONE				030706MC	NONE
	PERCENT	1	0	0		N						D	=	0	0	J11749	NONE				030706MC	NONE
8840	MG/KG	1	54.8	157		N			103.3	75	125	D	=	54.8	157		NONE				SB1-0306	101405S1
	MG/KG	1	114	327		N						D	=	114	327	J11746	NONE				SB1-0306	101405S1
	MG/KG	1	84.1	241		N						D	=	84.1	241	J11747	NONE				SB1-0306	101405S1
	MG/KG	1	74	212		N						D	=	74	212	J11748	NONE				SB1-0306	101405S1
	MG/KG	1	106	305		N						D	=	106	305	J11749	NONE				SB1-0306	101405S1
0	MG/KG	1	35	100	U	N						D	U	35	100		NONE				SB1-0306	101405S1
50	MG/KG	1	0.121	1		N			101.1	70	130	D	=	0.121	1		NONE				030206Q1	300A-013006
50	MG/KG	1	0.109	1		N			109.3	70	130	D	=	0.109	1		NONE				030206Q1	300A-013006
50	MG/KG	1	0.161	1		N			106.2	70	130	D	=	0.161	1		NONE				030206Q1	300A-013006
11.3	MG/KG	1	0.0898	1		N			101.5	70	130	D	=	0.0898	1		NONE				030206Q1	300A-013006
71.9	MG/KG	1	0.0939	1		N			109.2	70	130	D	=	0.0939	1		NONE				030206Q1	300A-013006
	MG/KG	1	0.0527	0.434		N						D	=	0.062	0.511	J11746	NONE				030206Q1	300A-013006
	MG/KG	1	0.0471	0.434		N						D	=	0.0554	0.511	J11746	NONE				030206Q1	300A-013006
	MG/KG	1	0.0408	0.434		N						D	=	0.048	0.511	J11746	NONE				030206Q1	300A-013006
	MG/KG	1	0.039	0.434		N						D	=	0.0459	0.511	J11746	NONE				030206Q1	300A-013006
	MG/KG	1	0.07	0.434		N						D	=	0.0824	0.511	J11746	NONE				030206Q1	300A-013006
	MG/KG	1	0.054	0.445		N						D	=	0.0675	0.556	J11747	NONE				030206Q1	300A-013006
	MG/KG	1	0.0483	0.445	U	N						D	U	0.0604	0.556	J11747	NONE				030206Q1	300A-013006
	MG/KG	1	0.0418	0.445		N						D	=	0.0522	0.556	J11747	NONE				030206Q1	300A-013006
	MG/KG	1	0.0399	0.445		N						D	=	0.0499	0.556	J11747	NONE				030206Q1	300A-013006
	MG/KG	1	0.0717	0.445		N						D	=	0.0897	0.556	J11747	NONE				030206Q1	300A-013006
	MG/KG	1	0.0523	0.431		N						D	=	0.0588	0.484	J11748	NONE				030206Q1	300A-013006
	MG/KG	1	0.0468	0.431	B	N						D	J	0.0526	0.484	J11748	NONE				030206Q1	300A-013006
	MG/KG	1	0.0405	0.431		N						D	=	0.0455	0.484	J11748	NONE				030206Q1	300A-013006
	MG/KG	1	0.0387	0.431	B	N						D	J	0.0435	0.484	J11748	NONE				030206Q1	300A-013006
	MG/KG	1	0.0695	0.431		N						D	=	0.0781	0.484	J11748	NONE				030206Q1	300A-013006
	MG/KG	1	0.058	0.477		N						D	=	0.0725	0.597	J11749	NONE				030206Q1	300A-013006
	MG/KG	1	0.0518	0.477	U	N						D	U	0.0648	0.597	J11749	NONE				030206Q1	300A-013006
	MG/KG	1	0.0448	0.477		N						D	=	0.056	0.597	J11749	NONE				030206Q1	300A-013006
	MG/KG	1	0.0429	0.477	B	N						D	J	0.0536	0.597	J11749	NONE				030206Q1	300A-013006
	MG/KG	1	0.077	0.477		N						D	=	0.0962	0.597	J11749	NONE				030206Q1	300A-013006
0	MG/KG	1	0.121	1	B	N						D	J	0.121	1		NONE				030206Q1	300A-013006
0	MG/KG	1	0.109	1	U	N						D	U	0.109	1		NONE				030206Q1	300A-013006
0	MG/KG	1	0.0939	1	U	N						D	U	0.0939	1		NONE				030206Q1	300A-013006
0	MG/KG	1	0.0898	1	U	N						D	U	0.0898	1		NONE				030206Q1	300A-013006
0	MG/KG	1	0.161	1	U	N						D	U	0.161	1		NONE				030206Q1	300A-013006
20	MG/KG	1	0.534	2		N			102	80	120	D	=	0.534	2		NONE				022306NH	022306NH3
	MG/KG	1	0.944	3.53	B	N						D	J	1.11	4.16	J11746	NONE				022306NH	022306NH3
	MG/KG	1	1.04	3.9	B	N						D	J	1.3	4.87	J11747	NONE				022306NH	022306NH3
	MG/KG	1	0.959	3.59	B	N						D	J	1.08	4.04	J11748	NONE				022306NH	022306NH3
	MG/KG	1	0.95	3.56	B	N						D	J	1.19	4.45	J11749	NONE				022306NH	022306NH3
0	MG/KG	1	0.534	2	B	N						D	J	0.534	2		NONE				022306NH	022306NH3
680	MG/KG	1	21	100		N			115.4	75	125	D	=	21	100		NONE				030206KN	030206TKN
	MG/KG	1	42	200		N						D	=	49.4	236	J11746	NONE				030206KN	030206TKN
	MG/KG	1	39.9	191		N						D	=	49.9	238	J11747	NONE				030206KN	030206TKN
	MG/KG	1	38.2	182		N						D	=	43	205	J11748	NONE				030206KN	030206TKN
	MG/KG	1	43.2	206		N						D	=	54	258	J11749	NONE				030206KN	030206TKN
0	MG/KG	1	21	100	B	N						D	J	21	100		NONE				030206KN	030206TKN
	PH UNITS	1	0	0		N						D	=	0	0	J11746	NONE				022806PH	NONE
	PH UNITS	1	0	0		N						D	=	0	0	J11747	NONE				022806PH	NONE
	PH UNITS	1	0	0		N						D	=	0	0	J11748	NONE				022806PH	NONE
	PH UNITS	1	0	0		N						D	=	0	0	J11749	NONE				022806PH	NONE
0	PH UNITS	1	0	0		N						D	=	0	0		NONE				022806PH	NONE

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

Prepared for

ELR CONSULTING, INC.
WASHINGTON CLOSURE HANFORD
RICHLAND, WASHINGTON

Prepared by

CH2M HILL
2300 NW Walnut Boulevard
Corvallis, Oregon 97330

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INTRODUCTION

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

METHODS AND MATERIALS

TEST METHODS

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

TEST ORGANISMS

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

OVERLYING WATER

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

TEST CONCENTRATIONS

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

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

SAMPLE COLLECTION

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

SAMPLE CROSS-REFERENCE TABLES

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

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

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

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

SAMPLE PREPARATION

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

MONITORING OF BIOASSAYS

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

DATA ANALYSIS

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

RESULTS AND DISCUSSION

CHRONIC BIOASSAYS

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

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

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

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

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

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

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

--, indicates no statistical test performed.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

REFERENCE TOXICANT TESTS

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

Table 6
Reference Toxicant Tests
(Cadmium µg/L)

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

CERTIFICATION STATEMENT

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

APPENDIX A
RAW DATA SHEETS

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

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

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

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

Hyalella azteca / AMP 57 — /

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

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

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

Water Quality Meters Used/ID#

Dissolved Oxygen #2 pH 3 Temperature _____

Conductivity #1 Refractometer _____ Other _____

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	0.08775	100
B1538-11	J11731	0	A	0.04141	104
B1538-11	J11731	0	B	0.63606	42
B1538-11	J11731	0	C	0.88833	12
B1538-11	J11731	0	D	0.49000	53
B1538-11	J11731	0	E	0.69702	34
B1538-12	J116M5	0	A	0.57522	47
B1538-12	J116M5	0	B	0.76259	26

RANDOMIZATION SHEET

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

Laboratory ID:	Field ID:	Alternate ID:	Replicate ID:	Random Number	Test Chamber Number:
B1538-12	J116M5	0	C	0.05297	103
B1538-12	J116M5	0	D	0.23174	86
B1538-12	J116M5	0	E	0.37224	70
B1538-13	J116M8	0	A	0.37187	71
B1538-13	J116M8	0	B	0.37854	69
B1538-13	J116M8	0	C	0.50121	52
B1538-13	J116M8	0	D	0.05955	102
B1538-13	J116M8	0	E	0.48613	56
B1538-14	J11752	0	A	0.71792	30
B1538-14	J11752	0	B	0.48443	54
B1538-14	J11752	0	C	0.18583	91
B1538-14	J11752	0	D	0.23383	85
B1538-14	J11752	0	E	0.90229	10
B1538-15	J11745	0	A	0.65921	37
B1538-15	J11745	0	B	0.93699	6
B1538-15	J11745	0	C	0.43748	60
B1538-15	J11745	0	D	0.38907	67
B1538-15	J11745	0	E	0.69843	33
B1538-16	J11750	0	A	0.45782	58
B1538-16	J11750	0	B	0.63614	41
B1538-16	J11750	0	C	0.67886	36
B1538-16	J11750	0	D	0.54743	39
B1538-16	J11750	0	E	0.84468	20
B1538-17	J11751	0	A	0.72372	29
B1538-17	J11751	0	B	0.41433	63
B1538-17	J11751	0	C	0.27614	82
B1538-17	J11751	0	D	0.96295	4
B1538-17	J11751	0	E	0.18896	90
B1538-18	J11753	0	A	0.20599	89
B1538-18	J11753	0	B	0.18353	92
B1538-18	J11753	0	C	0.37159	72
B1538-18	J11753	0	D	0.22469	87
B1538-18	J11753	0	E	0.91536	7
B1538-19	J11746	0	A	0.34461	75
B1538-19	J11746	0	B	0.41564	62
B1538-19	J11746	0	C	0.12147	97
B1538-19	J11746	0	D	0.70805	31
B1538-19	J11746	0	E	0.40302	65
B1538-20	J11747	0	A	0.23435	84
B1538-20	J11747	0	B	0.40688	64
B1538-20	J11747	0	C	0.26696	81
B1538-20	J11747	0	D	0.87729	15
B1538-20	J11747	0	E	0.53578	49
Sediment Control	Beaver Creek	Control	A	0.68453	35
Sediment Control	Beaver Creek	Control	B	0.20917	88
Sediment Control	Beaver Creek	Control	C	0.63142	44
Sediment Control	Beaver Creek	Control	D	0.06008	101
Sediment Control	Beaver Creek	Control	E	0.37151	73

TITRATION AND AMMONIA DATA

Client: Washington Closure Hanford

Species ID#: AMP 56

Sample Description: See Randomization Sheet.

Start Date: March 3, 2006

Laboratory ID	Hardness (mg/L as $CaCO_3$)		Alkalinity (mg/L as $CaCO_3$)		Ammonia (mg/L as NH_3-N)	
	Initial	Final	Initial	Final	Initial	Final
Sediment Control	98	98	84	74	0.35	0.05
B1538-01	156	104	80	74	0.51	0.06
B1538-02	130	160	82	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

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client: Washington Closure, Hanford
Sample Description: See Cross Reference Sheet batch Number B 1538 1-20
Test Species: Hyallela azteca
ID#: 56
Amp: 56

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

AM change: Tech.	Day 0 MS	Day 1 MS	Day 2 MS	Day 3 MS	Day 4 MS	Day 5 DW	Day 6 DW	Day 7 DW	Day 8 Q	Day 9 Q
Time	Day 0 0700	Day 1 NJ	Day 2 NJ	Day 3 0720	Day 4 0620	Day 5 0700	Day 6 0700	Day 7 0700	Day 8 0700	Day 9 0705
PM change: Tech.	Day 0 DW/BM	Day 1 TP	Day 2 TP	Day 3 Bm	Day 4 DW	Day 5 Bm	Day 6 MS	Day 7 Bm	Day 8 TP	Day 9 TP
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 1900	Day 9 ~~1700~~ 1640
Feeding: ✓ when done	Day 0 ✓	Day 1 ✓	Day 2 ✓	Day 3 ✓	Day 4 ✓	Day 5 ✓	Day 6 ✓	Day 7 ✓	Day 8 ✓	Day 9 ✓

Beaker Number	Dissolved Oxygen (mg/l)										Temperature (°C)										pH				Conductivity (µmohs/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	22.9	23.4	22.9	22.4	21.9	22.1	21.9	21.6	7.7	7.6	7.3	7.1	311	312
19	8.3			6.8			7.7			7.6	23.5	22.0	23.0	23.4	22.9	22.7	21.8	22.0	21.8	20.6	7.8	7.7	7.4	7.0	306	310
21	7.9			6.7			7.7			7.9	23.6	22.1	23.0	23.4	22.7	22.6	22.1	21.9	22.0	21.9	7.6	7.6	7.4	7.1	315	318
29	7.9			6.5			7.7			7.9	23.5	22.0	23.0	23.4	22.8	23.0	21.8	22.1	22.4	21.7	7.7	7.5	7.3	7.0	316	318
30	7.8			6.7			7.5			7.6	23.4	22.0	23.0	23.4	22.9	22.7	21.9	22.3	22.2	22.0	7.7	7.4	7.3	6.9	327	318
32	8.0			6.8			7.6			7.1	23.6	22.1	23.0	23.4	22.7	22.6	22.0	21.7	22.0	21.8	7.8	7.5	7.4	7.0	316	313
35	8.0			6.4			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	22.8	22.9	22.2	22.3	21.9	21.4	7.6	7.4	7.1	7.2	327	320
45	7.5			6.3			7.1			6.6	23.6	22.1	23.1	23.5	22.9	23.1	21.9	22.0	22.2	21.4	7.5	7.4	7.2	7.2	316	312
46	8.0			6.8			7.4			7.4	23.5	22.0	23	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	21.4	7.6	7.4	7.3	7.4	334	322
68	8.2			6.8			7.3			6.9	23.7	22.1	23.1	23.3	23.3	22.5	22.1	21.8	21.9	21.7	7.7	7.5	7.4	7.3	309	310
71	8.0			6.7			7.1			7.0	24.0	22.1	23.2	23.4	23.4	22.9	21.9	22.0	21.6	21.6	7.7	7.6	7.3	7.1	322	312
75	7.8			6.5			7.0			6.6	23.9	22.0	23.1	23.5	23.2	22.8	22.0	22.1	22.4	22.0	7.3	7.3	7.2	7.1	333	332
84	7.8			6.3			7.1			6.4	23.8	22.2	23.4	23.5	23.4	22.5	22.2	22.3	21.4	21.5	7.5	7.4	7.2	7.0	320	319
89	7.8			6.5			7.2			6.6	23.6	22.1	23.1	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			6.4			7.2			7.0	23.8	22.0	23.3	23.4	23.5	23.2	22.0	21.9	21.5	21.4	7.8	7.6	7.4	7.0	326	315

* 079 test chamber has living "clam"

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client

Sample Description: See Cross Reference Sheet batch Number B

Test Species: Hyallela azteca

ID#: Amp 56

Beginning, Date 3-3-06 Time 1300

Ending, Date 3-31-06 Time 0700 to

	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19
AM change: Tech.	MS	MS	DW	DW	DW	[illegible]	[illegible]	MS	DW	DW
Time	0640	0630	0700	0655	0695	0700	0600	0640	0710	0700
PM change: Tech.	NJ	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MS	[illegible]	[illegible]
Time	1650	1750	1745	1710	1730	1840	1745	1640	1700	1650
Feeding: ✓ when done	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client

Sample Description: See Cross Reference Sheet batch Number B

Test Species: Hyallela azteca

ID#: 56

Amp 56

Beginning, Date 3-3-06 Time 1300

Ending, Date 3-31-06 Time 0700

	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28
AM change: Tech.	MS	MS/[illegible]	[illegible]	[illegible]	MS	MS/[illegible]	[illegible]	MS	MS/
Time	0700	0700	0700	0700	0700	0700	0700	0700	0640
PM change: Tech.	[illegible]	3~	[illegible]	[illegible]	NJ	3~	NJ	8~	
Time	1655	1725	1715	1730	1640	1700	1640	1715	
Feeding: ✓ when done	✓	✓	✓	✓	✓	✓	✓	✓	

Beaker Number	Dissolved Oxygen (mg/l) 20	21	22	23	24	25	26	27	28	Temperature (°C) 20	21	22	23	24	25	26	27	28	pH 21	24	26	28	Conductivity (µmohs/cm) 21	28
1		6.7			7.7		7.8		6.0	23.4	22.9	23.0	23.4	23.2	23.5	23.1	23.2	23.3	7.3	7.4	7.2	7.2	313	330
18		6.6			7.5		7.7		6.6	23.5	23.1	23.1	23.2	23.3	23.3	23.4	23.5	23.4	7.3	7.5	7.3	7.3	320	340
19		6.4			7.3		7.6		6.4	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	23.5	23.8	23.7	23.7	23.3	7.2	7.6	7.2	7.1	302	346
58		6.4			7.3		7.4		6.5	24.4	23.7	22.7	23.4	23.5	23.9	23.6	23.6	23.4	7.2	7.5	7.2	7.1	329	317
68		6.3			7.2		7.5		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	23.8	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	23.9	24.0	23.9	23.8	7.1	7.6	7.2	7.1	335	346
89		6.2			7.2		7.4		6.5	24.3	23.7	23.2	23.1	23.5	23.9	24.0	23.9	23.7	7.2	7.6	7.3	7.2	325	340
95		6.3			7.3		7.4		6.4	24.1	23.6	22.8	23.1	23.6	23.7	23.9	23.9	23.6	7.2	7.5	7.2	7.0	339	346
104		6.3			7.5		7.5		6.4	24.4	23.9	22.9	23.1	23.7	23.9	24.0	23.9	23.9	7.2	7.6	7.2	7.2	324	341

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

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

Sample Description see randomization sheet. Batch number: B 1538 1-20 Ending, Date 3-31-06 Time 1030

Test Species: Hyallela azteca ID#: AMP 56

Test Initiation: Tech: Tech: BW/DW Time: 1300 Test Termination: Tech: Tech: 3-31-06 Time: 1030

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

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

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

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

Sample Description see randomization sheet. Batch number: B ~~6~~ 1538 1-20 Ending, Date 3-31-06 Time 1200

Test Species: Hyallela azteca ID#: AMP 56

Test Initiation: Tech: Tech: BN/DW Time: 1300 Test Termination: Tech: Tech: BN Time: RCD

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

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

CH2M HILL **FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA**

Client _____ 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: Hyallela azteca ID#: AMP 56

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

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

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

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client _____

Sample Description see randomization sheet. Batch number: B 1538

Test Species: Hyallela azteca ID#: AMP 56

Beginning, Date 3-3-06 Time 1300

Ending, Date 3-31-06 Time 0700

Test Initiation: Tech: Tech: BMOW Time: 1300

Test Termination: Tech: Tech: MS Time: 0700

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

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

103 ~~Caddis~~ Mayfly larvae

Hyallela GROWTH DATA

Client Hanford Species ID# AMP 56

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

Sample Description:

Technician: BM dw

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

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

weigh to 0.01 mg

Hyallela GROWTH DATA

Client: Hanford Species ID#: AMP 56

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

Sample Description:

Technician: BM dw

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

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

weigh to 0.01 mg

Hyallela GROWTH DATA

Client Hanford Species ID# AMP 56

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

Sample Description:

Technician: BM dw

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

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

weigh to 0.01 mg

Hyallela GROWTH DATA

Client Hanford Species ID# AMP 56

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

Sample Description:

Technician: BM dw

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

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

weigh to 0.01 mg

CETIS Test Summary

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

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

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

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

Comments: J11143

Comparison Summary

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

Test Acceptability

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

28d Mean Dry Weight Summary

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

28d Proportion Survived Summary

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

28d Mean Dry Weight Detail

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

28d Proportion Survived Detail

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

CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

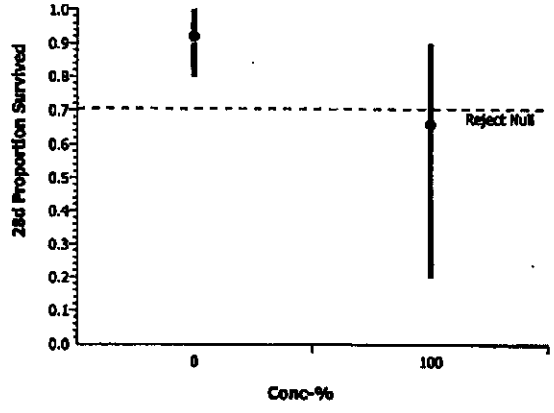
ANOVA Assumptions

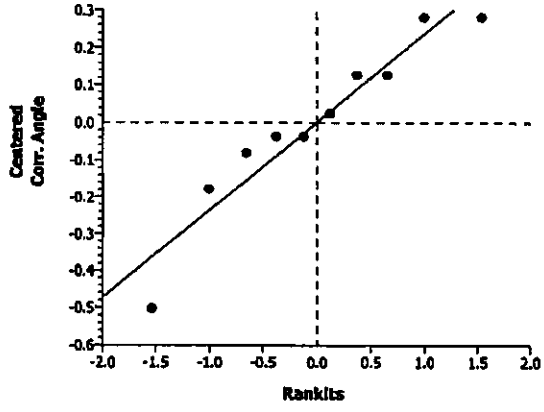
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	6.31165	23.15450	0.10200	Equal Variances
Distribution	Shapiro-Wilk W	0.92047		0.36086	Normal Distribution

Data Summary

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

Graphics





CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

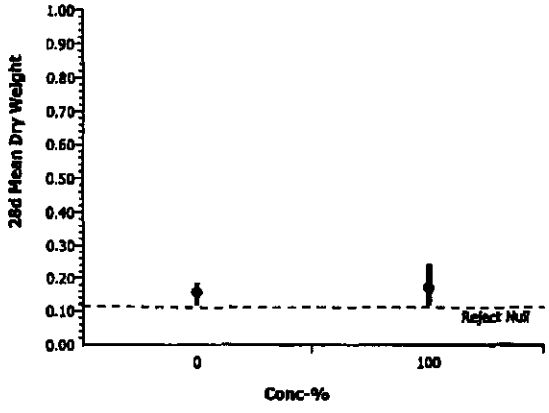
ANOVA Assumptions

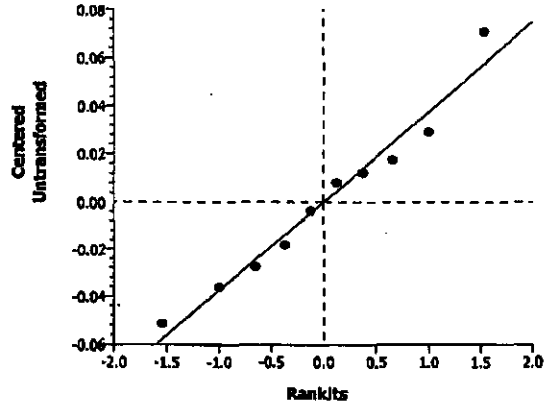
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.00789	23.15450	0.31139	Equal Variances
Distribution	Shapiro-Wilk W	0.97233		0.91160	Normal Distribution

Data Summary

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

Graphics





CETIS Test Summary

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

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

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

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

Comments: J11146

Comparison Summary

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

Test Acceptability

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

28d Mean Dry Weight Summary

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

28d Proportion Survived Summary

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

28d Mean Dry Weight Detail

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

28d Proportion Survived Detail

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

CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

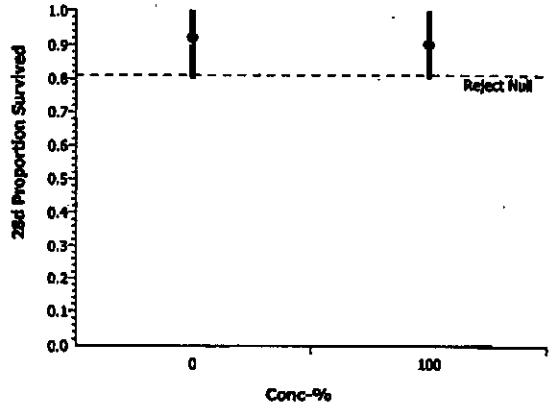
ANOVA Assumptions

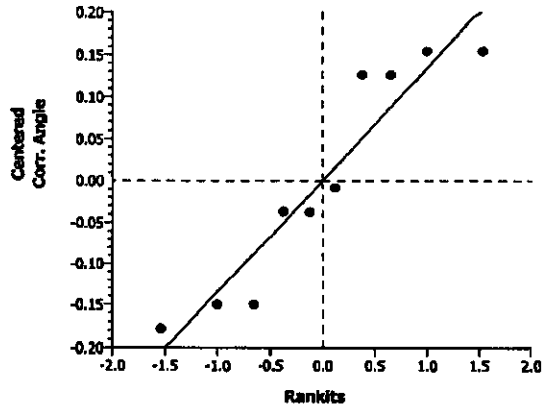
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.39943	23.15450	0.75260	Equal Variances
Distribution	Shapiro-Wilk W	0.86706		0.09235	Normal Distribution

Data Summary

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

Graphics





CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

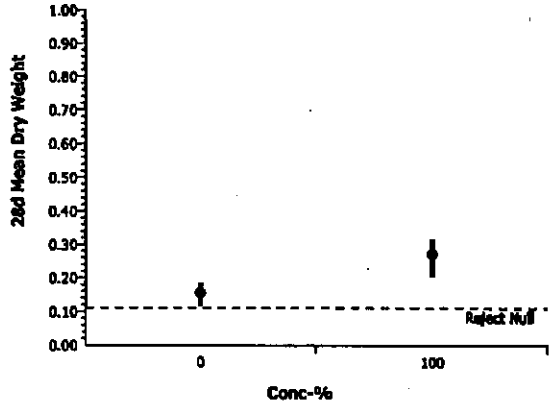
ANOVA Assumptions

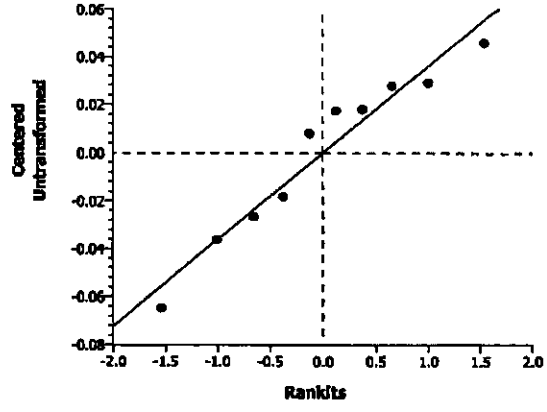
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.84309	23.15450	0.33577	Equal Variances
Distribution	Shapiro-Wilk W	0.93921		0.54424	Normal Distribution

Data Summary

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

Graphics





CETIS Test Summary

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

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

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

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

Comments: J11144

Comparison Summary

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

Test Acceptability

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

28d Mean Dry Weight Summary

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

28d Proportion Survived Summary

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

28d Mean Dry Weight Detail

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

28d Proportion Survived Detail

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

CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

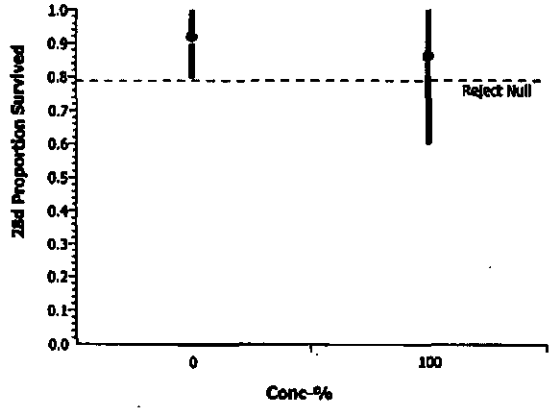
ANOVA Assumptions

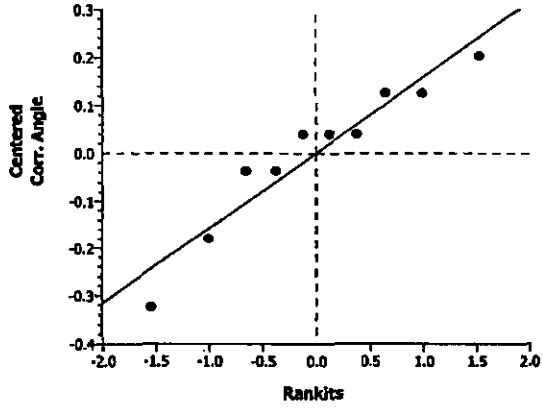
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.26095	23.15450	0.44889	Equal Variances
Distribution	Shapiro-Wilk W	0.91920		0.35033	Normal Distribution

Data Summary

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

Graphics





CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

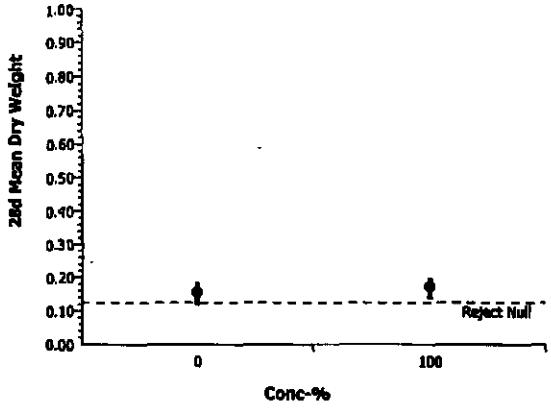
ANOVA Assumptions

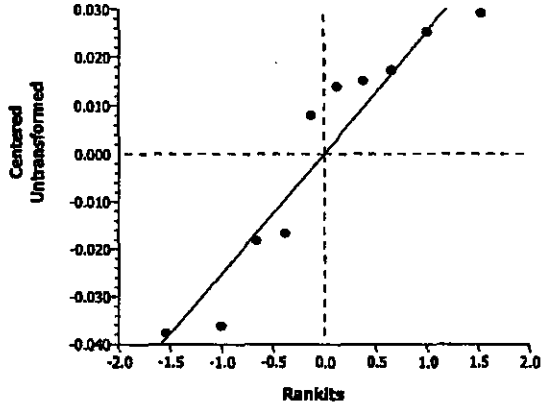
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.03645	23.15450	0.97316	Equal Variances
Distribution	Shapiro-Wilk W	0.87969		0.12944	Normal Distribution

Data Summary

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

Graphics





CETIS Test Summary

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

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

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

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

Comments: J11145

Comparison Summary

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

Test Acceptability

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

28d Mean Dry Weight Summary

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

28d Proportion Survived Summary

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

28d Mean Dry Weight Detail

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

28d Proportion Survived Detail

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

CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

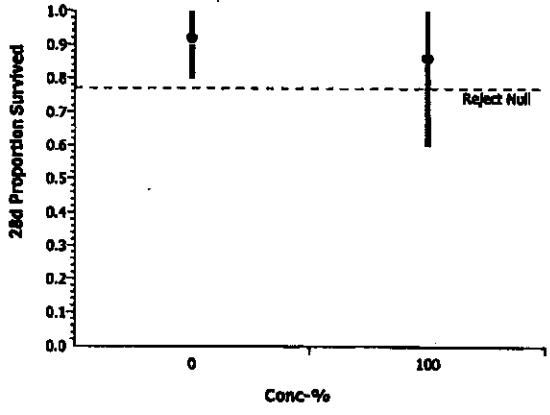
ANOVA Assumptions

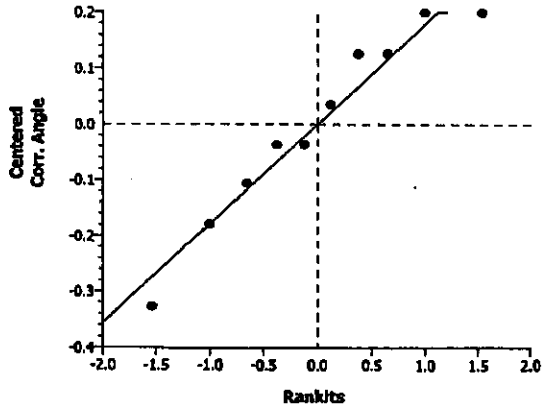
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.98736	23.15450	0.31428	Equal Variances
Distribution	Shapiro-Wilk W	0.93793		0.53025	Normal Distribution

Data Summary

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

Graphics





CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

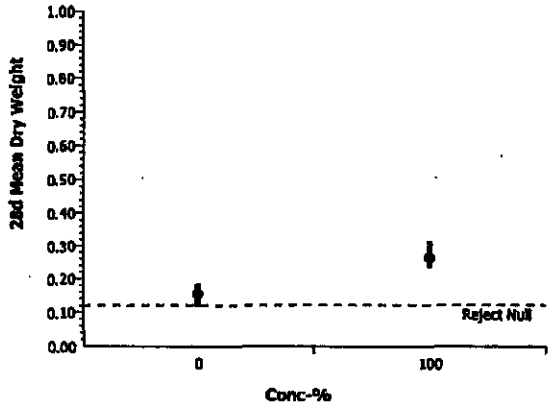
ANOVA Assumptions

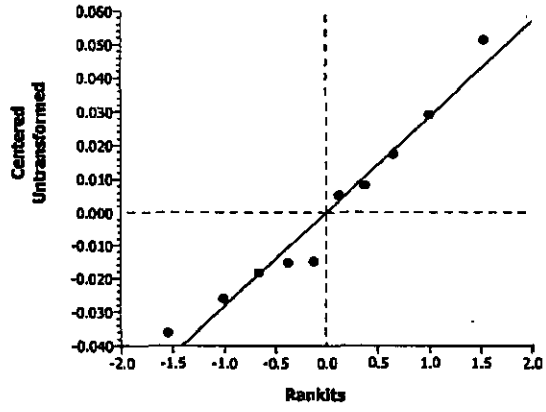
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.32942	23.15450	0.78929	Equal Variances
Distribution	Shapiro-Wilk W	0.95368		0.71208	Normal Distribution

Data Summary

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

Graphics





CETIS Test Summary

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

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

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

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

Comments: J116N1

Comparison Summary

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

Test Acceptability

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

28d Mean Dry Weight Summary

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

28d Proportion Survived Summary

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

28d Mean Dry Weight Detail

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

28d Proportion Survived Detail

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

CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

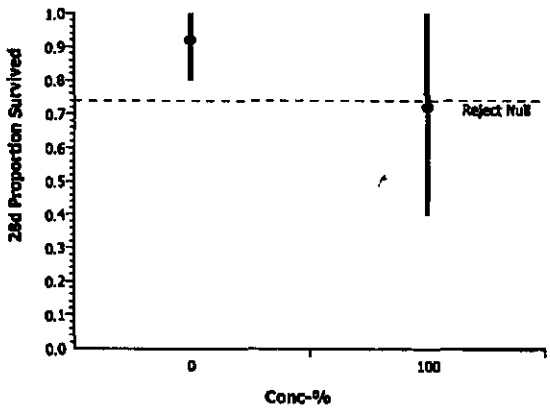
ANOVA Assumptions

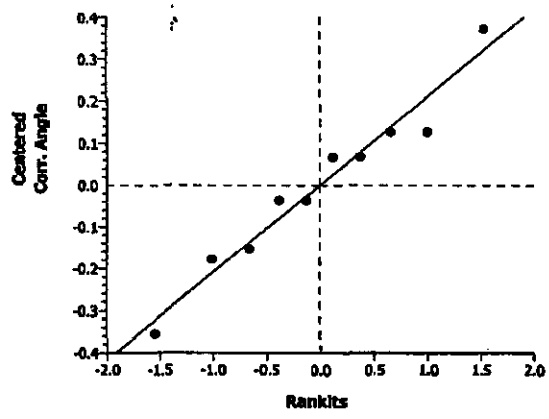
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	4.47252	23.15450	0.17594	Equal Variances
Distribution	Shapiro-Wilk W	0.97145		0.90394	Normal Distribution

Data Summary

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

Graphics





CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

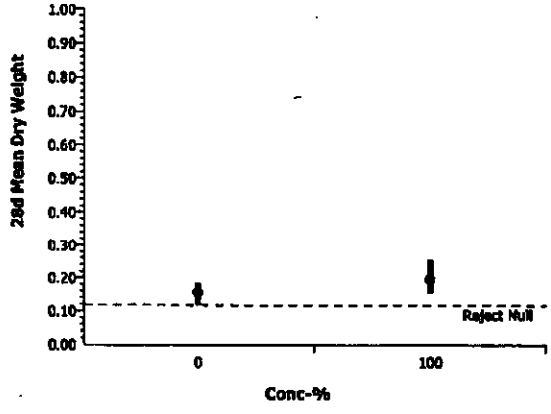
ANOVA Assumptions

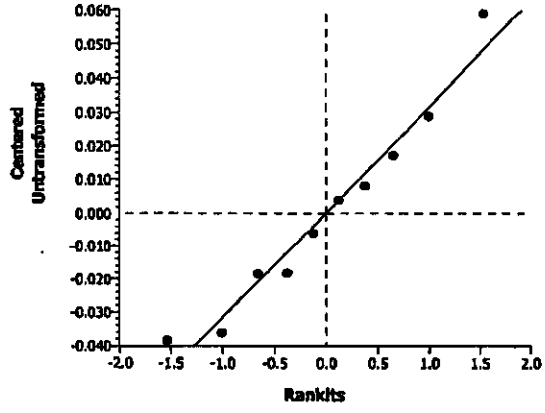
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.87867	23.15450	0.55637	Equal Variances
Distribution	Shapiro-Wilk W	0.95860		0.76974	Normal Distribution

Data Summary

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

Graphics





CETIS Test Summary

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

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

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

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

Comments: J116N3

Comparison Summary

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

Test Acceptability

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

28d Mean Dry Weight Summary

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

28d Proportion Survived Summary

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

28d Mean Dry Weight Detail

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

28d Proportion Survived Detail

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

CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

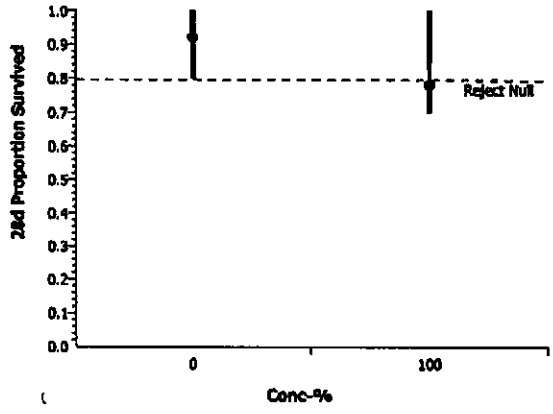
ANOVA Assumptions

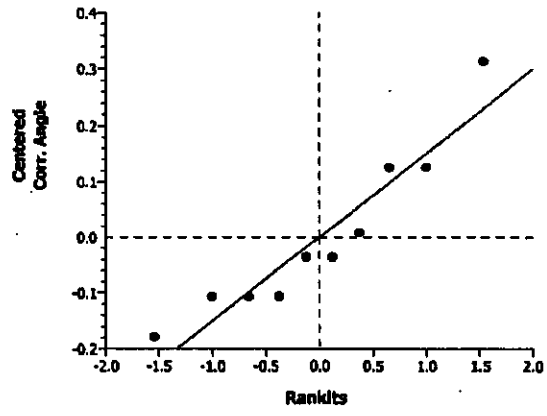
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.99965	23.15450	0.51862	Equal Variances
Distribution	Shapiro-Wilk W	0.89942		0.21588	Normal Distribution

Data Summary

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

Graphics





CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

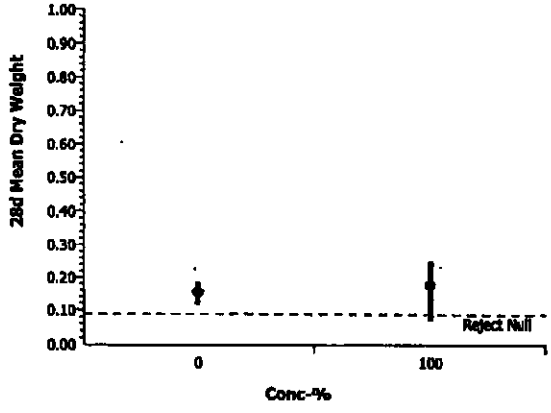
ANOVA Assumptions

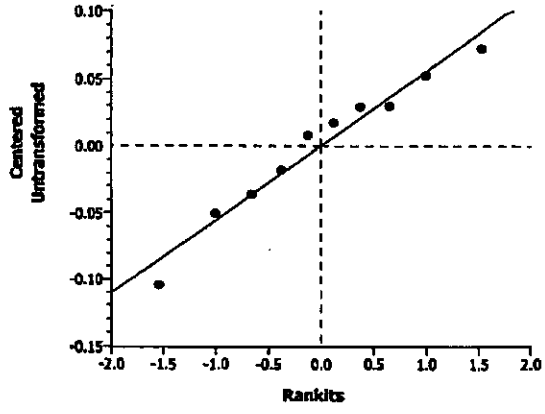
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	7.85185	23.15450	0.07081	Equal Variances
Distribution	Shapiro-Wilk W	0.96190		0.80730	Normal Distribution

Data Summary

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

Graphics





CETIS Test Summary

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

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

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

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

Comments: J112B7

Comparison Summary

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

Test Acceptability

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

28d Mean Dry Weight Summary

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

28d Proportion Survived Summary

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

28d Mean Dry Weight Detail

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

28d Proportion Survived Detail

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

CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

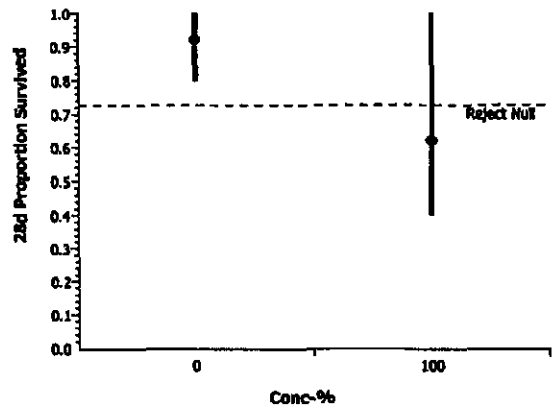
ANOVA Assumptions

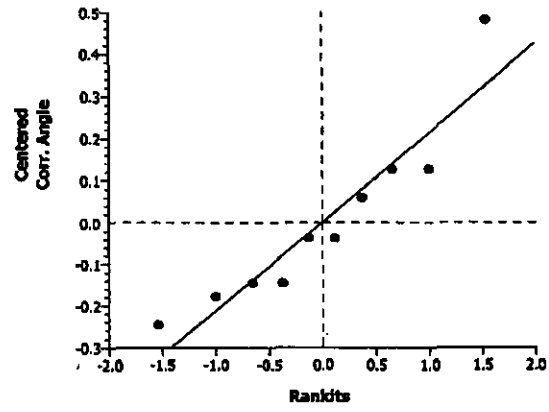
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	5.08501	23.15450	0.14429	Equal Variances
Distribution	Shapiro-Wilk W	0.89358		0.18600	Normal Distribution

Data Summary

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

Graphics





CETIS Analysis Detail

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	06-7721-7047	06-7721-7047	03 Apr-06 11:39 AM	CETISv1.1.2

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

Group Comparisons

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

ANOVA Table

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

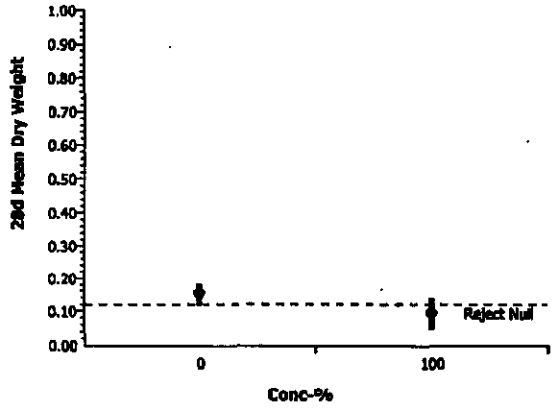
ANOVA Assumptions

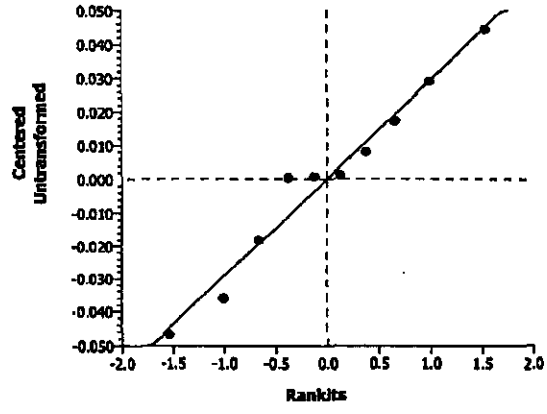
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.45381	23.15450	0.72575	Equal Variances
Distribution	Shapiro-Wilk W	0.96688		0.86050	Normal Distribution

Data Summary

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

Graphics





CETIS Test Summary

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

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

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

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

Comments: J116N2

Comparison Summary

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

Test Acceptability

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

28d Mean Dry Weight Summary

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

28d Proportion Survived Summary

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

28d Mean Dry Weight Detail

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

28d Proportion Survived Detail

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

CETIS Analysis Detail

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

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

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

Group Comparisons

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

ANOVA Table

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

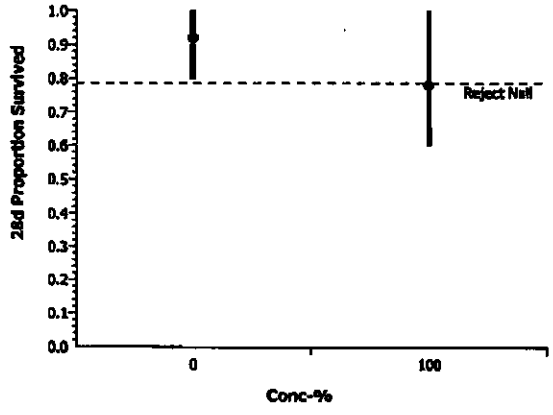
ANOVA Assumptions

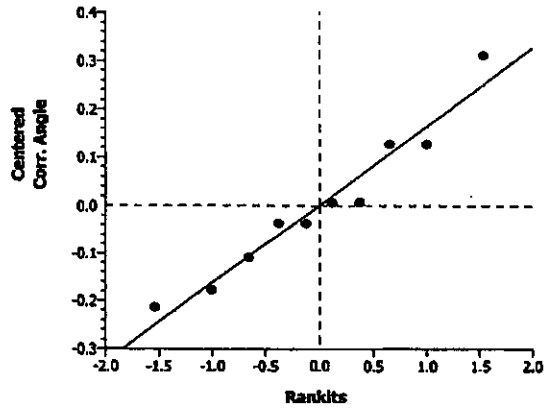
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.33252	23.15450	0.43218	Equal Variances
Distribution	Shapiro-Wilk W	0.95346		0.70953	Normal Distribution

Data Summary

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

Graphics





CETIS Analysis Detail

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

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

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

Group Comparisons

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

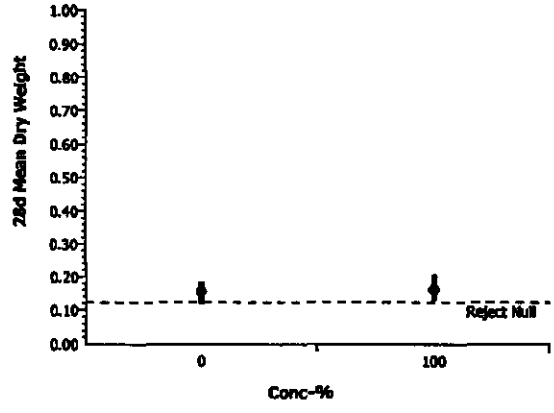
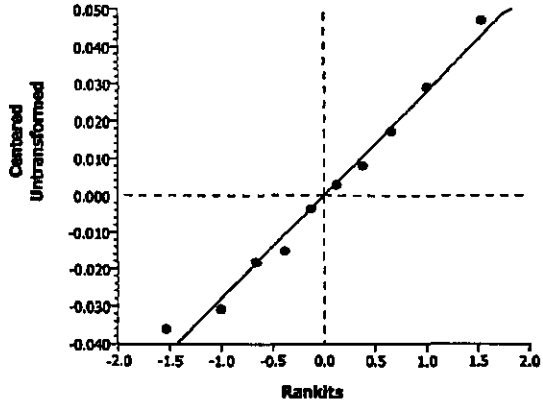
ANOVA Table

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

ANOVA Assumptions

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

Data Summary

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

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