

Appendix O – Water Quality and Bio-assessment Reports

This appendix contains the Water Quality Report by Terracon Consultants, Inc. and the Bio-assessment Report by Rhithron Associates, Inc. for PBS&J.

Water Quality Report

The water quality samples were taken in November 2008 and January 2009. Samples were taken at ten locations in the watershed labeled SS-1 through SS-10.

Bio-assessment Report

The bio-assessment samples were taken in late October 2008. Samples were taken at 6 locations in the watershed. Please see the note below regarding sample location naming convention.

NOTE: Three sample site labels differ between Section 6 of the Master Plan Report and the Water Quality and Bio-assessment Reports in this appendix. The table below shows how the site names in Section 6 are referred to in the Bio-assessment Report.

Section 6	Bio-assessment Report
Rock Creek Road Site	Benes Site
Waverly Road Site	Schied Site
N. 14 th Site	Parrot Site

January 30, 2009



Intuition & Logic
1306 Autumn Trace
Amelia Island, FL 32034-5400

3220 N. 20th Street, Suite 3
Lincoln, Nebraska 68521
Phone 402.466.3911
Fax 402.466.0811
www.terracon.com

Attention: Ms. Munsell McPhillips

Re: Results of Surface Water Sampling
Little Salt Creek Watershed Master Plan
Lincoln, Nebraska
Terracon Project No. A3085016

Dear Ms. McPhillips:

Terracon Consultants, Inc (Terracon) appreciates the opportunity to provide environmental sampling services for Intuition & Logic on the above referenced project. Terracon has conducted stream sampling at client selected locations along Little Salt Creek. Following the sampling, Terracon submitted the samples for laboratory analysis of several water quality parameters. The results of this effort have been summarized below.

A. PROJECT INFORMATION

Terracon understands that Intuition & Logic is assisting the City of Lincoln and the Lower Platte South Natural Resources District (NRD) with the development of a watershed master plan with the purpose of allowing planning and design engineers the ability to evaluate and manage changes in the watershed. The watershed master plan takes into account factors such as stormwater quantity and quality, channel stability, and economic and environmental issues. Terracon's role in the current stage of development is to assist Intuition & Logic with collecting water quality information at various locations along the Little Salt Creek. Terracon had initially proposed to collect two rounds of "dry" weather samples and one round of "wet" weather samples. However, since Terracon was not given authorization to proceed with the water quality sampling activities until early November 2008, Terracon was unable to obtain "wet" weather samples due to the colder climate conditions and reduced precipitation events during winter months in Nebraska.

Given the time constraints associated with the project, Terracon was initially instructed not to conduct a second water quality sampling event. However, Terracon was contacted by Intuition & Logic in mid-January 2009 and was informed there would be time to collect a second, "dry" weather set of water quality samples if the following conditions made it possible: Terracon could mobilize to conduct the work in relatively short order; the laboratory could turn around the

sample analytical results in short order; and the sampling locations along Little Salt Creek were not obstructed by ice.

Terracon tracked weather conditions for several days and was able to mobilize to the site and collect a second round of "dry" weather samples (January 22, 2009) during a 50 degree Fahrenheit day. Following sample collection, Terracon submitted the sample to TestAmerica for expedited analysis of Total Dissolved Solids, Total Suspended Solids, and 5 day BOD.

B. FIELD ACTIVITIES

Terracon conducted "dry" weather water quality sampling activities on November 19, 2008 and January 22, 2009. Terracon collected water samples from ten client selected locations along little salt creek. Stream samples were collected using laboratory supplied containers and were collected from a medial depth in a section of the creek with flowing water. In addition to the ten sample locations, a blind duplicate sample was also collected from sampling locations SS-9 (11-19-2008) and SS-7 (1-22-09) and labeled SS-A.

A diagram of depicting the general location of the water quality sampling locations is attached to this report as Figure 1. After the samples were collected, Terracon placed the water samples in an ice filled cooler for shipping to the laboratory. Samples were shipped under chain of custody procedures to TestAmerica Inc. of Cedar Falls Iowa for analysis.

C. Water Analysis

Terracon summarized the results of the water quality analysis in the attached Table 1. Terracon contacted the Nebraska Department of Environmental Quality in an effort to obtain regulatory values or goals for the analyzed parameters in an effort to conduct a comparison of values. The NDEQ indicated that they currently do not have water quality standards/goals for the indicated parameters.

D. GENERAL COMMENTS

The results presented in this report are based upon the data obtained from water samples collected from the indicated locations and from other information discussed in this report. This report does not reflect variations that may occur between sample locations or across the site. The nature and extent of such variations may not become evident until further testing is performed. If variations appear, we should be immediately notified so that further evaluations can be provided.

This report is prepared for the exclusive use of Intuition & Logic for specific application to the project discussed and has been prepared in accordance with generally accepted engineering

practices. No warranties, either express or implied, are intended or made. In the event any changes in the nature or location of observed conditions as outlined in this report are found, this report cannot be considered valid unless these changes are reviewed and the opinions and conclusions of this report are modified or verified in writing by Terracon.

We appreciate the opportunity to provide the field sampling services for this project. Please contact us if you have any questions regarding this letter, the attached laboratory test results, or if we may be of further service.

Sincerely,
TERRACON CONSULTANTS, INC.



Michael Henry, E.I.
Environmental Engineer



Michael Hagemester, P.E..
Principal Engineer

MDH/MEH:mdh/ksp

Copies to: Addressee (1)
Mr. Matt Harper, Intuition & Logic, 16253 Swingly Ridge Rd., Suite 100, St. Louis, MO
63017 (1)

Attachments

Little Salt Creek Water Quality and Bio-Assessment Sampling Locations Map

- Water Quality/Bioassessment Sampling Locations
- Water Quality Sampling Locations
- ▲ September 2000 Sampling Sites



0 0.75 1.5
Miles

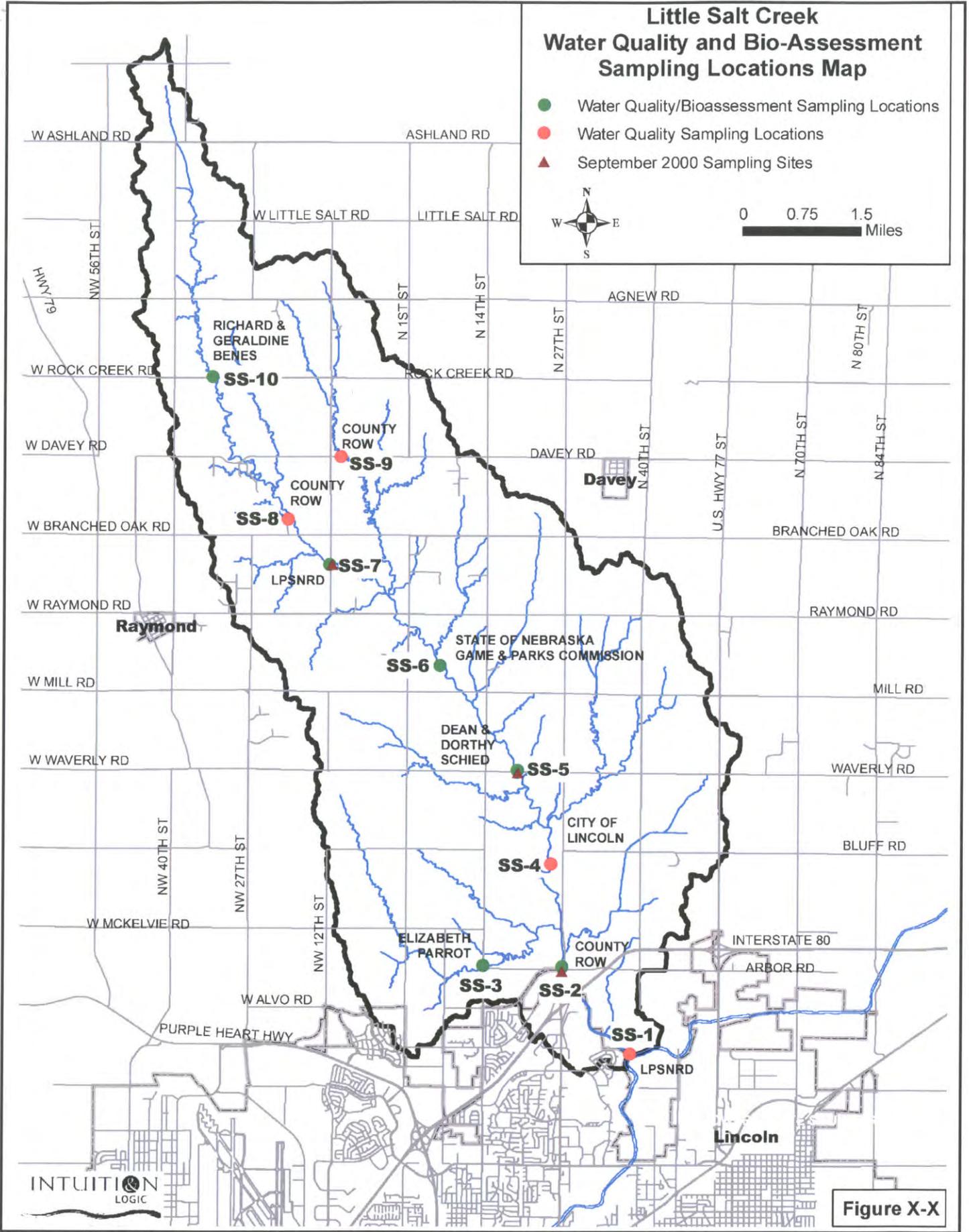


Figure X-X

Project Mgr:	MDH
Drawn By:	PAI
Checked By:	MDH
Approved By:	BAL

Project No.	A3085016
Scale:	AS SHOWN
File No.	A3085016C01
Date:	NOVEMBER 2008

Terracon
Consulting Engineers and Scientists

2211 SOUTH 156th CIRCLE OMAHA, NE 68130-2506
PH. (402) 330-2202 FAX. (402) 330-7606

SAMPLING LOCATIONS DIAGRAM

LITTLE SALT CREEK WATERSHED MASTER PLAN

LINCOLN, LANCASTER COUNTY NEBRASKA

FIG. No.	1
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**TABLE 1
SUMMARY OF RESULTS OF WATER QUALITY ANALYSIS**

Little Salt Creek Watershed Master Plan
Lincoln, Nebraska
Terracon Project No. A3085016

Sample Designation	Date of Collection	BOD (mg/L)	Total Suspended Solids (mg/L)	Total Dissolved Solids (mg/L)
SS-1	11/19/2008	<3.00	12.0	4350
	1/22/2009	<3.00	10.3	5210
SS-2	11/19/2008	<3.00	8.00	4200
	1/22/2009	<3.00	7.67	4770
SS-3	11/19/2008	<3.00	20.3	548
	1/22/2009	<3.00	10.0	524
SS-4	11/19/2008	<3.00	11.7	2700
	1/22/2009	<3.00	<5.00	2810
SS-5	11/19/2008	<3.00	30.3	2480
	1/22/2009	<3.00	<5.00	2580
SS-6	11/19/2008	<3.00	10.7	1870
	1/22/2009	<3.00	5.33	1840
SS-7	11/19/2008	<3.00	22.3	512
	1/22/2009	<3.00	13.3	452
SS-8	11/19/2008	<3.00	8.00	452
	1/22/2009	<3.00	9.00	404
SS-9	11/19/2008	<3.00	9.33	516
	1/22/2009	<3.00	7.33	464
SS-10	11/19/2008	<3.00	12.0	368
	1/22/2009	<3.00	7.67	314
SS-A	11/19/2008	<3.00	8.33	504
	1/22/2009	<3.00	14.3	446

Notes:

1. The blind duplicate (SS-A) collected on November 19, 2008 was collected at the same location as SS-9.
2. The blind duplicate (SS-A) collected on January 22, 2009 was collected at the same location as SS-7.

November 26, 2008

Client:

TERRACON - OMAHA
2211 South 156th Circle
Omaha, NE 68130

Work Order: CRK0965
Project Name: Intuition Logic
Project Number: A3085016

Attn: Michael Henry

Date Received: 11/20/08

The Chain(s) of Custody, 3 pages, are included and are an integral part of this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
SS-1	CRK0965-01	11/19/08 10:45
SS-2	CRK0965-02	11/19/08 11:14
SS-3	CRK0965-03	11/19/08 11:37
SS-4	CRK0965-04	11/19/08 12:27
SS-5	CRK0965-05	11/19/08 12:54
SS-6	CRK0965-06	11/19/08 13:28
SS-7	CRK0965-07	11/19/08 14:07
SS-8	CRK0965-08	11/19/08 14:30
SS-9	CRK0965-09	11/19/08 14:47
SS-10	CRK0965-10	11/19/08 15:26
SS-A	CRK0965-11	11/19/08

Samples were received into laboratory at a temperature of 0 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

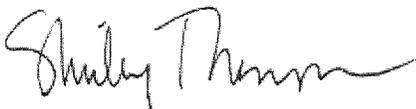
Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica Cedar Falls
Shirley Thompson
Project Manager

TERRACON - OMAHA
 2211 South 156th Circle
 Omaha, NE 68130
 Michael Henry

Work Order: CRK0965
 Project: Intuition Logic
 Project Number: A3085016

Received: 11/20/08
 Reported: 11/26/08 16:07

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Seq/ Analyst Batch	Method
Sample ID: CRK0965-01 (SS-1 - Surface Water)						Sampled: 11/19/08 10:45	Recvd: 11/20/08 09:30	
General Chemistry Parameters								
BOD - 5 Day	<3.00		mg/L	3.00	1	11/20/08 15:20	amc 8110878	SM 5210 B
Total Suspended Solids	12.0		mg/L	3.00	1	11/21/08 10:11	sas 8110918	USGS I-3765-85
General Chemistry Parameters - Dissolved								
Total Dissolved Solids	4350		mg/L	30.0	1	11/21/08 15:05	sas 8110948	SM 2540 C/97
Sample ID: CRK0965-02 (SS-2 - Surface Water)						Sampled: 11/19/08 11:14	Recvd: 11/20/08 09:30	
General Chemistry Parameters								
BOD - 5 Day	<3.00		mg/L	3.00	1	11/20/08 22:30	jmh 8110899	SM 5210 B
Total Suspended Solids	8.00		mg/L	3.00	1	11/21/08 10:13	sas 8110919	USGS I-3765-85
General Chemistry Parameters - Dissolved								
Total Dissolved Solids	4200		mg/L	30.0	1	11/21/08 15:05	sas 8110948	SM 2540 C/97
Sample ID: CRK0965-03 (SS-3 - Surface Water)						Sampled: 11/19/08 11:37	Recvd: 11/20/08 09:30	
General Chemistry Parameters								
BOD - 5 Day	<3.00		mg/L	3.00	1	11/20/08 22:30	jmh 8110899	SM 5210 B
Total Suspended Solids	20.3		mg/L	3.00	1	11/21/08 10:13	sas 8110919	USGS I-3765-85
General Chemistry Parameters - Dissolved								
Total Dissolved Solids	548		mg/L	30.0	1	11/21/08 15:05	sas 8110948	SM 2540 C/97
Sample ID: CRK0965-04 (SS-4 - Surface Water)						Sampled: 11/19/08 12:27	Recvd: 11/20/08 09:30	
General Chemistry Parameters								
BOD - 5 Day	<3.00		mg/L	3.00	1	11/20/08 22:30	jmh 8110899	SM 5210 B
Total Suspended Solids	11.7		mg/L	3.00	1	11/21/08 10:13	sas 8110919	USGS I-3765-85
General Chemistry Parameters - Dissolved								
Total Dissolved Solids	2700		mg/L	30.0	1	11/21/08 15:05	sas 8110948	SM 2540 C/97
Sample ID: CRK0965-05 (SS-5 - Surface Water)						Sampled: 11/19/08 12:54	Recvd: 11/20/08 09:30	
General Chemistry Parameters								
BOD - 5 Day	<3.00		mg/L	3.00	1	11/20/08 22:30	jmh 8110899	SM 5210 B
Total Suspended Solids	30.3		mg/L	3.00	1	11/21/08 10:13	sas 8110919	USGS I-3765-85
General Chemistry Parameters - Dissolved								
Total Dissolved Solids	2480		mg/L	30.0	1	11/21/08 15:05	sas 8110948	SM 2540 C/97
Sample ID: CRK0965-06 (SS-6 - Surface Water)						Sampled: 11/19/08 13:28	Recvd: 11/20/08 09:30	
General Chemistry Parameters								
BOD - 5 Day	<3.00		mg/L	3.00	1	11/20/08 22:30	jmh 8110899	SM 5210 B
Total Suspended Solids	10.7		mg/L	3.00	1	11/21/08 10:13	sas 8110919	USGS I-3765-85
General Chemistry Parameters - Dissolved								
Total Dissolved Solids	1870		mg/L	30.0	1	11/21/08 15:05	sas 8110948	SM 2540 C/97
Sample ID: CRK0965-07 (SS-7 - Surface Water)						Sampled: 11/19/08 14:07	Recvd: 11/20/08 09:30	
General Chemistry Parameters								
BOD - 5 Day	<3.00		mg/L	3.00	1	11/20/08 22:30	jmh 8110899	SM 5210 B

TERRACON - OMAHA
2211 South 156th Circle
Omaha, NE 68130
Michael Henry

Work Order: CRK0965
Project: Intuition Logic
Project Number: A3085016

Received: 11/20/08
Reported: 11/26/08 16:07

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CRK0965-07 (SS-7 - Surface Water) - cont.						Sampled: 11/19/08 14:07	Recvd: 11/20/08 09:30		
General Chemistry Parameters - cont.									
Total Suspended Solids	22.3		mg/L	3.00	1	11/21/08 10:13	sas	8110919	USGS 1-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	512		mg/L	30.0	1	11/21/08 15:05	sas	8110948	SM 2540 C/97
Sample ID: CRK0965-08 (SS-8 - Surface Water)						Sampled: 11/19/08 14:30	Recvd: 11/20/08 09:30		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	11/20/08 22:30	jmh	8110899	SM 5210 B
Total Suspended Solids	8.00		mg/L	3.00	1	11/21/08 10:13	sas	8110919	USGS 1-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	452		mg/L	30.0	1	11/21/08 15:05	sas	8110948	SM 2540 C/97
Sample ID: CRK0965-09 (SS-9 - Surface Water)						Sampled: 11/19/08 14:47	Recvd: 11/20/08 09:30		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	11/20/08 22:30	jmh	8110899	SM 5210 B
Total Suspended Solids	9.33		mg/L	3.00	1	11/21/08 10:13	sas	8110919	USGS 1-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	516		mg/L	30.0	1	11/21/08 15:05	sas	8110948	SM 2540 C/97
Sample ID: CRK0965-10 (SS-10 - Surface Water)						Sampled: 11/19/08 15:26	Recvd: 11/20/08 09:30		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	11/20/08 22:30	jmh	8110899	SM 5210 B
Total Suspended Solids	12.0		mg/L	3.00	1	11/21/08 10:13	sas	8110919	USGS 1-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	368		mg/L	30.0	1	11/21/08 15:05	sas	8110948	SM 2540 C/97
Sample ID: CRK0965-11 (SS-A - Surface Water)						Sampled: 11/19/08	Recvd: 11/20/08 09:30		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	11/20/08 15:20	amc	8110878	SM 5210 B
Total Suspended Solids	8.33		mg/L	3.00	1	11/21/08 10:13	sas	8110919	USGS 1-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	504		mg/L	30.0	1	11/21/08 15:05	sas	8110948	SM 2540 C/97

TERRACON - OMAHA
 2211 South 156th Circle
 Omaha, NE 68130
 Michael Henry

Work Order: CRK0965
 Project: Intuition Logic
 Project Number: A3085016

Received: 11/20/08
 Reported: 11/26/08 16:07

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
General Chemistry Parameters														
BOD - 5 Day	8110878			mg/L	N/A	3.00	<3.00							
BOD - 5 Day	8110899			mg/L	N/A	3.00	<3.00							
Total Suspended Solids	8110918			mg/L	N/A	3.00	<3.00							
Total Suspended Solids	8110919			mg/L	N/A	3.00	<3.00							
General Chemistry Parameters - Dissolved														
Total Dissolved Solids	8110948			mg/L	N/A	30.0	<30.0							

TERRACON - OMAHA
 2211 South 156th Circle
 Omaha, NE 68130
 Michael Henry

Work Order: CRK0965
 Project: Intuition Logic
 Project Number: A3085016

Received: 11/20/08
 Reported: 11/26/08 16:07

LABORATORY DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
General Chemistry Parameters													
QC Source Sample: CRK0959-01													
BOD - 5 Day	8110878	2060		mg/L	N/A	3.00	2180				6	20	
QC Source Sample: CRK1019-01													
BOD - 5 Day	8110899	9.42		mg/L	N/A	3.00	9.50				1	20	
QC Source Sample: CRK0907-02													
Total Suspended Solids	8110918	2.00		mg/L	N/A	3.00	5.33				91	20	R
QC Source Sample: CRK0959-01													
Total Suspended Solids	8110918	487		mg/L	N/A	60.0	440				10	20	
QC Source Sample: CRK0965-05													
Total Suspended Solids	8110919	30.3		mg/L	N/A	3.00	28.7				5	20	
QC Source Sample: CRK0972-04													
Total Suspended Solids	8110919	20.0		mg/L	N/A	4.50	21.5				7	20	
General Chemistry Parameters - Dissolved													
QC Source Sample: CRK0904-01													
Total Dissolved Solids	8110948	948		mg/L	N/A	30.0	960				1	20	
QC Source Sample: CRK0965-03													
Total Dissolved Solids	8110948	548		mg/L	N/A	30.0	560				2	20	

TERRACON - OMAHA
 2211 South 156th Circle
 Omaha, NE 68130
 Michael Henry

Work Order: CRK0965
 Project: Intuition Logic
 Project Number: A3085016

Received: 11/20/08
 Reported: 11/26/08 16:07

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	Limit	Q
General Chemistry Parameters														
BOD - 5 Day	8110878		198	mg/L	N/A	N/A	198		100		84.6-115.4			
BOD - 5 Day	8110899		198	mg/L	N/A	N/A	218		110		84.6-115.4			
Total Suspended Solids	8110918		100	mg/L	N/A	N/A	95.0		95		80-115			
Total Suspended Solids	8110919		100	mg/L	N/A	N/A	99.0		99		80-115			
General Chemistry Parameters - Dissolved														
Total Dissolved Solids	8110948		1000	mg/L	N/A	N/A	982		98		90-110			

TERRACON - OMAHA
2211 South 156th Circle
Omaha, NE 68130
Michael Henry

Work Order: CRK0965
Project: Intuition Logic
Project Number: A3085016

Received: 11/20/08
Reported: 11/26/08 16:07

DATA QUALIFIERS AND DEFINITIONS

R Sample duplicate RPD exceeded the laboratory control limit.

ADDITIONAL COMMENTS



Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Phone: 319-277-2401
Fax: 319-277-2425

To assist us in using the proper analytical methods,
is this work being conducted for regulatory purposes?
Compliance Monitoring

Client Name: Terracon Client #: _____
Address: 2211 South 156th Circle
City/State/Zip Code: Omaha, NE 68130-2506
Project Manager: Mike Henry
Telephone Number: (402) 330-2202 Fax: (402) 330-7606
Sampler Name: (Print Name) Michael Henry
Sampler Signature: [Signature]
Report To: Michael Henry
Invoice To: Michael Henry
Site/Location ID: _____ State: NE
Project Name: Intuition Logic
Project #: A3085016
Quote #: _____ PO#: _____

TAT X Standard Rush (surcharges may apply)	Date Needed: #####	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix	Preservation & # of Containers							5 Day BOD	Total Suspended Solids	Total Dissolved Solids	Analyze For:	Deliverables None Level 2 (Batch QC) Level 3 Level 4 Other: _____	REMARKS
							SI - Sludge DW - Drinking Water	GW - Groundwater S - Soil/Solid	MW - Wastewater Specify Other	HNO ₃ (250 ml)	HCl (40 ml vials)	NaOH	H ₂ SO ₄						
SS-1		11/9/08	10:45	C		Surface Water									X				
SS-2		11.14													X				
SS-3		11.37													X				
SS-4		12.27													X				
SS-5		12.54													X				
SS-6		1.28													X				
SS-7		2.07													X				
SS-8		2.30													X				
SS-9		2.47													X				

LABORATORY COMMENTS:
Init Lab Temp: _____ Rec Lab Temp: _____
Custody Seals: Y N NIA
Bottles Supplied by TestAmerica: Y N
Method of Shipment: _____

Special Instructions:

Relinquished By: <u>[Signature]</u>	Date: <u>11/9/08</u>	Time: <u>4:30</u>	Received By: <u>[Signature]</u>	Date: <u>11/20/08</u>	Time: <u>0930</u>
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TestAmerica

INCORPORATED

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Phone: 319-277-2401
Fax: 319-277-2425

To assist us in using the proper analytical methods,
is this work being conducted for regulatory purposes?
Compliance Monitoring

Client Name: Terracon Client #: _____
 Address: 2211 South 156th Circle
 City/State/Zip Code: Omaha, NE 68130-2506
 Project Manager: Mike Henry
 Telephone Number: (402) 330-2202 Fax: (402) 330-7606
 Sampler Name: (Print Name) Michael Henry
 Sampler Signature: 
 Report To: Michael Henry
 Invoice To: Michael Henry
 Quote #: _____ PO#: _____
 Project Name: Intertek Logic
 Project #: A3085016
 Site/Location ID: _____ State: NE

TAT	Date Needed:	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix	Preservation & # of Containers							Analyze For:	Deliverables	REMARKS			
							SL - Sludge DW - Drinking Water	GW - Groundwater S - Soil/Solid	MW - Wastewater Specify Other	HNO ₃ (250 ml)	HCl (40 ml vials)	NaOH	H ₂ SO ₄				Methanol	None - 4 oz. Jar	Other (NO-TREAT amber QT)
SS-10	#####	11/19/08	3:26	G	N	Water													
SS-A		↓		G	N	↓													
*EB-1		↓	2:53	G	N	↓													

Special Instructions:

Relinquished By:  Date: 11/19/08 Time: 4:30
 Relinquished By: _____ Date: _____ Time: _____
 Relinquished By: _____ Date: _____ Time: _____

LABORATORY COMMENTS:
 Init Lab Temp: _____ Rec Lab Temp: _____
 Custody Seals: Y N N NIA
 Bottles Supplied by TestAmerica: Y
 Method of Shipment: _____

Will call to
Verify Analysis
* Do not need Eq. Blank
Per Mike Henry *
SA 11/20/08

Sample Receipt and Temperature Log Form

Client: Terracon Project: Intuition Logic

City: Omaha

Date: 11/20/08 Receiver's Initials: SH Time (Delivered): 0930

Temperature Record:

Cooler ID# (If Applicable)

0.9 °C On Ice

Temp Blank

Temperature out of compliance

Thermometer:

- IR - 61997670 'A'
 IR - 61997671 'B'
 IR - 61854108
 22126775

Courier:

- | | |
|--|--|
| <input type="checkbox"/> UPS | <input type="checkbox"/> TA Courier |
| <input checked="" type="checkbox"/> FedEx | <input type="checkbox"/> TA Field Services |
| <input type="checkbox"/> DHL | <input type="checkbox"/> Client |
| <input type="checkbox"/> US Postal Service | <input type="checkbox"/> Other |
| <input type="checkbox"/> Spee-Dee | |

Custody seals present?

Yes

Custody seals intact?

Yes No

Non-Conformance report started

Exceptions Noted

- Sample(s) not received in a cooler.
 Sample(s) received same day of sampling.
 Evidence of a chilling process
 Temperature not taken:

*Refer to SOP CF01-01 for Temperature Criteria

January 29, 2009

Client:

TERRACON - OMAHA
2211 South 156th Circle
Omaha, NE 68130

Work Order: CSA0890
Project Name: Intuition Logic - Water Quality Assessment
Project Number: A3085016

Attn: Michael Henry

Date Received: 01/23/09

The Chain(s) of Custody, 3 pages, are included and are an integral part of this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
SS-1	CSA0890-01	01/22/09 10:37
SS-2	CSA0890-02	01/22/09 11:10
SS-3	CSA0890-03	01/22/09 11:40
SS-4	CSA0890-04	01/22/09 12:07
SS-5	CSA0890-05	01/22/09 12:34
SS-6	CSA0890-06	01/22/09 13:15
SS-7	CSA0890-07	01/22/09 13:55
SS-8	CSA0890-08	01/22/09 14:34
SS-9	CSA0890-09	01/22/09 14:53
SS-10	CSA0890-10	01/22/09 15:16
SS-A	CSA0890-11	01/22/09

Samples were received into laboratory at a temperature of 1 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

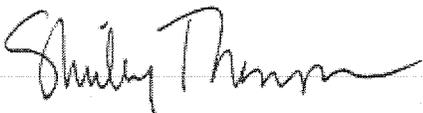
Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica Cedar Falls
Shirley Thompson
Project Manager

TERRACON - OMAHA
2211 South 156th Circle
Omaha, NE 68130
Michael Henry

Work Order: CSA0890
Project: Intuition Logic - Water Quality Assessment
Project Number: A3085016

Received: 01/23/09
Reported: 01/29/09 15:13

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CSA0890-01 (SS-1 - Surface Water)						Sampled: 01/22/09 10:37	Recvd: 01/23/09 09:25		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	01/23/09 14:50	amc	9010657	SM 5210 B
Total Suspended Solids	10.3		mg/L	5.00	1	01/23/09 15:42	sas	9010664	USGS I-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	5210		mg/L	30.0	1	01/23/09 09:46	sas	9010690	SM 2540 C/97
Sample ID: CSA0890-02 (SS-2 - Surface Water)						Sampled: 01/22/09 11:10	Recvd: 01/23/09 09:25		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	01/23/09 14:50	amc	9010657	SM 5210 B
Total Suspended Solids	7.67		mg/L	5.00	1	01/23/09 15:42	sas	9010664	USGS I-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	4770		mg/L	30.0	1	01/23/09 09:46	sas	9010690	SM 2540 C/97
Sample ID: CSA0890-03 (SS-3 - Surface Water)						Sampled: 01/22/09 11:40	Recvd: 01/23/09 09:25		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	01/23/09 14:50	amc	9010657	SM 5210 B
Total Suspended Solids	10.0		mg/L	5.00	1	01/23/09 15:42	sas	9010664	USGS I-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	524		mg/L	30.0	1	01/23/09 09:46	sas	9010690	SM 2540 C/97
Sample ID: CSA0890-04 (SS-4 - Surface Water)						Sampled: 01/22/09 12:07	Recvd: 01/23/09 09:25		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	01/23/09 14:50	amc	9010657	SM 5210 B
Total Suspended Solids	<5.00		mg/L	5.00	1	01/23/09 15:42	sas	9010664	USGS I-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	2810		mg/L	30.0	1	01/23/09 09:46	sas	9010690	SM 2540 C/97
Sample ID: CSA0890-05 (SS-5 - Surface Water)						Sampled: 01/22/09 12:34	Recvd: 01/23/09 09:25		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	01/23/09 14:50	amc	9010657	SM 5210 B
Total Suspended Solids	<5.00		mg/L	5.00	1	01/23/09 15:42	sas	9010664	USGS I-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	2580		mg/L	30.0	1	01/23/09 09:46	sas	9010690	SM 2540 C/97
Sample ID: CSA0890-06 (SS-6 - Surface Water)						Sampled: 01/22/09 13:15	Recvd: 01/23/09 09:25		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	01/23/09 14:50	amc	9010657	SM 5210 B
Total Suspended Solids	5.33		mg/L	5.00	1	01/23/09 15:43	sas	9010665	USGS I-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	1840		mg/L	30.0	1	01/23/09 09:46	sas	9010690	SM 2540 C/97
Sample ID: CSA0890-07 (SS-7 - Surface Water)						Sampled: 01/22/09 13:55	Recvd: 01/23/09 09:25		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	01/23/09 14:50	amc	9010657	SM 5210 B

TERRACON - OMAHA
 2211 South 156th Circle
 Omaha, NE 68130
 Michael Henry

Work Order: CSA0890
 Project: Intuition Logic - Water Quality Assessment
 Project Number: A3085016

Received: 01/23/09
 Reported: 01/29/09 15:13

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CSA0890-07 (SS-7 - Surface Water) - cont.						Sampled: 01/22/09 13:55	Recvd: 01/23/09 09:25		
General Chemistry Parameters - cont.									
Total Suspended Solids	13.3		mg/L	5.00	1	01/23/09 15:43	sas	9010665	USGS I-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	452		mg/L	30.0	1	01/23/09 09:46	sas	9010690	SM 2540 C/97
Sample ID: CSA0890-08 (SS-8 - Surface Water)						Sampled: 01/22/09 14:34	Recvd: 01/23/09 09:25		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	01/23/09 14:50	amc	9010657	SM 5210 B
Total Suspended Solids	9.00		mg/L	5.00	1	01/23/09 15:43	sas	9010665	USGS I-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	404		mg/L	30.0	1	01/23/09 09:46	sas	9010690	SM 2540 C/97
Sample ID: CSA0890-09 (SS-9 - Surface Water)						Sampled: 01/22/09 14:53	Recvd: 01/23/09 09:25		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	01/23/09 14:50	amc	9010657	SM 5210 B
Total Suspended Solids	7.33		mg/L	5.00	1	01/23/09 15:43	sas	9010665	USGS I-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	464		mg/L	30.0	1	01/23/09 09:46	sas	9010690	SM 2540 C/97
Sample ID: CSA0890-10 (SS-10 - Surface Water)						Sampled: 01/22/09 15:16	Recvd: 01/23/09 09:25		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	01/23/09 14:50	amc	9010657	SM 5210 B
Total Suspended Solids	7.67		mg/L	5.00	1	01/23/09 15:43	sas	9010665	USGS I-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	314		mg/L	30.0	1	01/23/09 09:46	sas	9010690	SM 2540 C/97
Sample ID: CSA0890-11 (SS-A - Surface Water)						Sampled: 01/22/09	Recvd: 01/23/09 09:25		
General Chemistry Parameters									
BOD - 5 Day	<3.00		mg/L	3.00	1	01/23/09 14:50	amc	9010657	SM 5210 B
Total Suspended Solids	14.3		mg/L	5.00	1	01/23/09 15:43	sas	9010665	USGS I-3765-85
General Chemistry Parameters - Dissolved									
Total Dissolved Solids	446		mg/L	30.0	1	01/23/09 09:46	sas	9010690	SM 2540 C/97

TERRACON - OMAHA
 2211 South 156th Circle
 Omaha, NE 68130
 Michael Henry

Work Order: CSA0890

Received: 01/23/09

Reported: 01/29/09 15:13

Project: Intuition Logic - Water Quality Assessment

Project Number: A3085016

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
General Chemistry Parameters														
BOD - 5 Day	9010657			mg/L	N/A	3.00	<3.00							
Total Suspended Solids	9010664			mg/L	N/A	5.00	<5.00							
Total Suspended Solids	9010665			mg/L	N/A	5.00	<5.00							
General Chemistry Parameters - Dissolved														
Total Dissolved Solids	9010690			mg/L	N/A	30.0	<30.0							

TERRACON - OMAHA
 2211 South 156th Circle
 Omaha, NE 68130
 Michael Henry

Work Order: CSA0890
 Project: Intuition Logic - Water Quality Assessment
 Project Number: A3085016

Received: 01/23/09
 Reported: 01/29/09 15:13

LABORATORY DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
General Chemistry Parameters													
QC Source Sample: CSA0889-03													
BOD - 5 Day	9010657	3580		mg/L	N/A	3.00	3660				2	20	
QC Source Sample: CSA0856-01													
Total Suspended Solids	9010664	92.0		mg/L	N/A	60.0	100				8	20	
QC Source Sample: CSA0888-04													
Total Suspended Solids	9010664	72.0		mg/L	N/A	10.0	64.7				11	20	
QC Source Sample: CSA0890-06													
Total Suspended Solids	9010665	5.33		mg/L	N/A	5.00	7.00				27	20	R
QC Source Sample: CSA0858-01													
Total Suspended Solids	9010665	<5.00		mg/L	N/A	5.00	<5.00					20	
General Chemistry Parameters - Dissolved													
QC Source Sample: CSA0858-01													
Total Dissolved Solids	9010690	11900		mg/L	N/A	30.0	8870				29	20	R
QC Source Sample: CSA0890-09													
Total Dissolved Solids	9010690	464		mg/L	N/A	30.0	474				2	20	

TERRACON - OMAHA
 2211 South 156th Circle
 Omaha, NE 68130
 Michael Henry

Work Order: CSA0890
 Project: Intuition Logic - Water Quality Assessment
 Project Number: A3085016

Received: 01/23/09
 Reported: 01/29/09 15:13

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
General Chemistry Parameters														
BOD - 5 Day	9010657		198	mg/L	N/A	N/A	201		102		84.6-115.4			
Total Suspended Solids	9010664		100	mg/L	N/A	N/A	90.0		90		80-115			
Total Suspended Solids	9010665		100	mg/L	N/A	N/A	92.0		92		80-115			
General Chemistry Parameters - Dissolved														
Total Dissolved Solids	9010690		1000	mg/L	N/A	N/A	966		97		90-110			

TERRACON - OMAHA
2211 South 156th Circle
Omaha, NE 68130
Michael Henry

Work Order: CSA0890
Project: Intuition Logic - Water Quality Assessment
Project Number: A3085016

Received: 01/23/09
Reported: 01/29/09 15:13

DATA QUALIFIERS AND DEFINITIONS

R Sample duplicate RPD exceeded the laboratory control limit.

ADDITIONAL COMMENTS

Client Name: Terracon Client #: _____
 Address: 2211 South 156th Circle
 City/State/Zip Code: Omaha, NE 68130-2506
 Project Manager: Mike Henry
 Telephone Number: (402) 330-2202 Fax: (402) 330-7606
 Sampler Name: (Print Name) Brandon Johnson
 Sampler Signature:  PO#: _____
 Quote #: _____

Project Name: Water Quality Assessment
 Project #: A3085016
 Site/Location ID: Little Salt Creek State: NE
 Report To: Michael Henry
 Invoice To: Michael Henry

TAT X Standard Rush (surcharges may apply)	Date Needed:	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix	Preservation & # of Containers		5 Day BOD	Total Suspended Solids	Total Dissolved Solids	Analyze For:	Deliverables None Level 2 (Batch QC) Level 3 Level 4 Other: _____	REMARKS
							Matrix	# of Containers						
						Sl. Sludge DW - Drinking Water	None - 4 oz Jar	2	X	X	X			
						GW - Groundwater S - Soil/Solid	Methanol							
						Other (NO-TREAT)	H ₂ SO ₄							
						MM - Wastewater Specify Other	NaOH							
						HNO ₃ (250 ml)	HCl (40 ml vials)							

Special Instructions: Need analytical results by morning of January 30, 2009 as discussed with Kristin on 1-21-09.

Relinquished By:  Date: 1/22/09 Time: 4:13
 Received By: Edna Muelhous Date: 1/23/09 Time: 9:25

Relinquished By: _____ Date: _____ Time: _____
 Received By: _____ Date: _____ Time: _____

Relinquished By: _____ Date: _____ Time: _____
 Received By: _____ Date: _____ Time: _____

LABORATORY COMMENTS:
 Init Lab Temp: _____
 Rec Lab Temp: _____
 Custody Seals: Y N N/A
 Bottles Supplied by TestAmerica: Y N

Method of Shipment: _____

Sample Receipt and Temperature Log Form

Client: Terrason Project: Water Quality Assessment
City: Omaha
Date: 1-23-09 Receiver's Initials: CH Time (Delivered): 9:25

Temperature Record:

Cooler ID# (If Applicable)
Client
1.7 °C On Ice

Thermometer:

- IR - 61997670 'A'
 IR - 61997671 'B'
 IR - 61854108
 22126775

Courier:

<input type="checkbox"/> UPS	<input type="checkbox"/> TA Courier
<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> TA Field Services
<input type="checkbox"/> FedEx <u>Intl</u>	<input type="checkbox"/> Client
<input type="checkbox"/> US Postal Service	<input type="checkbox"/> Other
<input type="checkbox"/> Spee-Dee	

Temp Blank

Temperature out of compliance

Exceptions Noted

<input type="checkbox"/> Sample(s) not received in a cooler.
<input type="checkbox"/> Sample(s) received same day of sampling.
<input type="checkbox"/> Evidence of a chilling process
<input type="checkbox"/> Temperature not taken:

Custody seals present?

Yes

Custody seals intact?

Yes No

Non-Conformance report started

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BIOASSESSMENT OF SITES
IN THE LITTLE SALT CREEK BASIN

LANCASTER COUNTY,
NEBRASKA

a report to
PBS&J
Missoula, Montana

John DeArment
Project Manager



prepared by

Wease Bollman
Rhithron Associates, Inc.
Missoula, Montana

January 2009

INTRODUCTION

Little Salt Creek is located in Nebraska's Loess and Glacial Drift Hills, which are part of the Western Corn Belt Plains (Ecoregion 47) (Woods et al.1999). The drainage includes rare saline wetlands, and is home to the state endangered saltwort plant (*Salicornia rubra*) and the Salt Creek Tiger Beetle (*Cicindela nevadica lincolniana*). Managers of the Little Salt Creek basin's resources wish to analyze critical features of the watershed and potential impacts of future urbanization; a multi-phase Master Plan maps out steps toward achieving that goal. The Little Salt Creek Watershed Master Plan calls for a basic biological assessment, using procedures based on the guidance provided in EPA's Rapid Bioassessment Protocols for Use in Streams and Rivers (Barbour et al. 1999). To that end, aquatic invertebrate and periphyton samples were collected by PBS&J at 5 sites on Little Salt Creek and 1 site located on a tributary to Little Salt Creek; samples were delivered to Rhithron Associates, Inc. in Missoula, Montana for processing and analysis.

The invertebrate analysis includes biological integrity condition classifications for each site, based on an index and scoring criteria developed by the Nebraska Department of Environmental Quality (Nebraska DEQ). Site-by-site narratives are also included; these are descriptive interpretations of the ecological implications of the taxonomic and functional composition of the invertebrate samples, based on demonstrated associations between assemblage components and habitat and water quality variables gleaned from the published literature, and professional judgment. These interpretations are not intended to replace canonical procedures for stressor identification, since such procedures require substantial surveys of habitat, and historical and current data related to water quality, land use, point and non-point source influences, soils, hydrology, geology, and other resources that were not readily available for this study. Instead, attributes of invertebrate taxa that are well-substantiated in diverse literature, published and unpublished research, and that are generally accepted by regional aquatic ecologists, are combined into descriptions of probable water quality and instream and reach-scale habitat conditions. These narratives also include similar interpretations of the periphyton assemblages. No evaluation procedure has been established by Nebraska DEQ for scoring or classifying sites based on the analysis of periphyton assemblages.

METHODS

Sample processing: Aquatic invertebrates

Subsamples of a minimum of 500 organisms were obtained from each of the 6 aquatic invertebrate samples using methods consistent with EPA's Rapid Bioassessment Protocols (Barbour et al. 1999): Caton sub-sampling devices (Caton 1991), divided into 30 grids, each approximately 5 cm by 6 cm were used. Each individual sample was thoroughly mixed in its jar(s), poured out and evenly spread into the Caton tray, and individual grids were randomly selected. The contents of each grid were examined under stereoscopic microscopes using 10x-30x magnification. All aquatic invertebrates from each selected grid were sorted from the substrate, and placed in 95% ethanol for

subsequent identification. Grid selection, examination, and sorting continued until at least 500 organisms were sorted. The final grid was completely sorted of all organisms. All unsorted sample fractions were retained and stored at the Rhithron laboratory.

Organisms were individually examined by certified taxonomists, using 10x – 80x stereoscopic dissecting scopes (Leica S8E and S6E) and identified to the lowest practical level, using appropriate published taxonomic references and keys. Identification, counts, life stages, and information about the condition of specimens were recorded on bench sheets. To obtain accuracy in richness measures, organisms that could not be identified to the target level specified were designated as “not unique” if other specimens from the same group could be taken to target levels. Organisms designated as “unique” were those that could be definitively distinguished from other organisms in the sample. Identified organisms were preserved in 95% ethanol in labeled vials, and archived at the Rhithron laboratory.

Midges and worms were carefully morphotyped using 10x – 80x stereoscopic dissecting microscopes (Leica S8E and S6E) and representative specimens were slide mounted and examined at 200x – 1000x magnification using an Olympus BX 51 compound microscope. Slide mounted organisms were archived at the laboratory.

Sample processing: periphyton

Permanent diatom slides were prepared from the 6 periphyton samples: subsamples were taken and treated with concentrated H_2SO_4 and 30% H_2O_2 . Samples were neutralized by rinses with distilled water, and subsample volumes were adjusted to obtain adequate densities. Small amounts of each sample were dried onto 22-mm square coverslips. Coverslips were mounted on slides using Naphrax diatom mount. To ensure a high quality mount for identification and to make replicates available for archives, 3 slide mounts were made from each sample. One of the replicates was selected from each sample batch for identification. A diamond scribe mark was made to define a transect line on the cover slip, and a minimum of 600 diatom valves were identified along the transect mark. A Leica DM 2500 compound microscope, Nomarski contrast, and 1000x magnification were used for identifications. Diatoms were identified to the lowest possible taxonomic level, generally species, following standard taxonomic references. Diatom cells were very sparse in all of the samples. For these samples, at least 300 valves were counted and identified, and identifications were extrapolated to a 600 valve count based on observed relative abundances.

For soft-bodied (non-diatom) algae samples, the raw periphyton sample was manually homogenized and emptied into a porcelain evaporating dish. A small, random sub-sample of algal material was pipetted onto a standard Palmer-Maloney microscope slide using a disposable dropper or soda straw. Visible (macroscopic) algae were also sub-sampled, in proportion to their estimated importance relative to the total volume of algal material in the sample, and

added to the liquid fraction on the slide. The Palmer-Maloney cell was then covered with a 22 x 30 mm coverslip.

Soft-bodied (non-diatom) algae were identified to genus using an Olympus BHT compound microscope under 200X and 400X magnification, following standard taxonomic references. Three hundred cells or natural units of non-diatom algae were identified, when possible. Living diatom cells were included in these counts.

Quality control procedures

Quality control procedures for initial sample processing and subsampling involved checking sorting efficiency. These checks were conducted on 5 of the samples (83.3%) by independent observers who microscopically re-examined 20% of sorted substrate from each sample. All organisms that were missed were counted and this number was added to the total number obtained in the original sort. Sorting efficiency was evaluated by applying the following calculation:

$$SE = \frac{n_1}{n_{1+2}} \times 100$$

where: SE is the sorting efficiency, expressed as a percentage, n_1 is the total number of specimens in the first sort, and n_{1+2} is the total number of specimens in the first and second sorts combined.

Quality control procedures for taxonomic determinations of invertebrates involved checking accuracy, precision and enumeration. One sample (16.6%) was randomly selected and all organisms re-identified and counted by an independent taxonomist. Taxa lists and enumerations were compared by calculating a Bray-Curtis similarity statistic (Bray and Curtis 1957) for the selected sample. Routinely, discrepancies between the original identifications and the QC identifications are discussed among the taxonomists, and necessary rectifications to the data are made. Discrepancies that cannot be rectified by discussions are routinely sent out to taxonomic specialists for identification. However, taxonomic certainty for identifications in this project was high and no external verifications were necessary.

Quality control procedures for periphyton taxonomy involved the re-identification of diatoms and non-diatom algae from a randomly selected sample by an independent taxonomist. Bray-Curtis similarity statistics were generated by comparing the original identifications with the re-identifications, and adjustments to taxonomy were made where appropriate. Discrepancies in identifications were discussed, and rectifications were made to the data.

Data analysis

Raw macroinvertebrate and periphyton data were entered into customized databases (RIALIS and RIADIS, Rhithron Associates, Inc.), and metric suites, indices and discriminant function analyses were run. The 4 metrics of the Nebraska Invertebrate Community Index (ICI) were run, after calibration of

tolerance values to Nebraska DEQ standards. ICI metrics were scored for each site using procedures established by Nebraska DEQ for the Western Corn Belt Plains ecoregion (Bazata 2007): the individual metrics were given scores of one, three, five, or seven. A score of one was given to raw data scores that were 12 percent or lower of the reference site distributions, a score of three was assigned to raw data scores between 13 and 25 percent, a score of five was given to raw data scores between 26 to 50 percent of the reference distributions, and seven was assigned as the score to raw data score greater than 50 percent of the reference distribution. Metric scores were summed to give an overall ICI score for the site.

Overall ICI scores for each site were compared to data from perennial streams classified as reference streams and test streams in the Western Corn Belt Plains ecoregion. This data was generated by Nebraska DEQ between 1997 and 2007 (Bazata 2005). To assign classifications, the 75th percentile and higher of scores for 1997-2007 reference sites was given an excellent rating; the 0 percentile to 74.9 percentile of the reference streams was given a good rating. Below the reference site level, the median and above of the test sites was given a fair rating. The scores below the median of the test sites were given a poor rating. A summary of the classifications and ICI scores is given in Table 1.

ICI score	Condition classification
24 or higher	Excellent
14 – 24	Good
16 – 14	Fair
Less than 16	Poor

Table 1. ICI score ranges and condition classifications, based on reference and test site data collected in 1997 – 2007 by Nebraska DEQ.

RESULTS

Quality Control Procedures

Results of quality control procedures for subsampling and taxonomy are given in Table 2. Sorting efficiency averaged 96.56% for macroinvertebrate samples, taxonomic precision for identification and enumeration was 96.95% for the randomly selected macroinvertebrate QA sample, and data entry efficiency averaged 100% for the project. Taxonomic precision for identification and enumeration was 63.41% for the randomly selected periphyton QA sample. These similarity statistics fall within acceptable industry criteria (aquatic invertebrates: Stribling et al. 2003; periphyton: Bahls pers. comm.)

Table 2. Results of internal quality control procedures for subsampling and taxonomy.

RAI Sample ID	Station name	Site ID	Biotic group	Sorting efficiency	Bray-Curtis similarity for taxonomy and enumeration
PBSJ08LSC001	Little Salt Creek	Benes	macroinvertebrate	100.00%	
PBSJ08LSC002	Little Salt Creek	LPSNRD	macroinvertebrate	97.16%	
PBSJ08LSC003	Little Salt Creek	Game and Parks	macroinvertebrate	97.22%	
PBSJ08LSC004	Little Salt Creek	Schied	macroinvertebrate	94.76%	
PBSJ08LSC005	Little Salt Creek	Arbor	macroinvertebrate	n.a.	
PBSJ08LSC006	Little Salt Creek - Trib	Parrot	macroinvertebrate	93.64%	96.95%
PBSJ08LSCP001	Little Salt Creek	Benes	periphyton	-	
PBSJ08LSCP002	Little Salt Creek	LPSNRD	periphyton	-	
PBSJ08LSCP003	Little Salt Creek	Game and Parks	periphyton	-	63.41%
PBSJ08LSCP004	Little Salt Creek	Schied	periphyton	-	
PBSJ08LSCP005	Little Salt Creek	Arbor	periphyton	-	
PBSJ08LSCP006	Little Salt Creek - Trib	Parrot	periphyton	-	

Aquatic invertebrate assemblages

Calculated abundances in macroinvertebrate samples ranged from fewer than 500 to more than 4500 organisms. Low abundance of invertebrates was only observed for the sample collected at the Arbor site, which yielded only 460 organisms. Dominant invertebrates at the Little Salt Creek basin sites included the amphipod *Hyalella* sp., hydropsychid caddisflies (*Hydropsyche* spp. and *Cheumatopsyche* spp.), *Physa* sp., and midges in the *Cricotopus* (*Isocladius*) group. The abundance of salt-tolerant taxa (Horrigan et al. 2005, Leland and Fend 1998) in assemblages varied from 12% at the Benes site to 37% at the Arbor site.

The results of the Nebraska ICI indicate poor biologic conditions at all 6 sampled sites; these results may be due to the limited fauna which can be expected in saline aquatic environments, but water quality impairment due to nutrients, pesticides, or other substances cannot be ruled out. In addition, habitat limitations may have also influenced the biota at these sites; in particular, impoverished or monotonous instream habitats associated with fine sediment deposition probably inhibited colonization by many invertebrates. Very poor values for EPT richness (range = 2 – 8) and the modified HBI (range = 6.30 – 7.65) were consistent among the sites. Poor or very poor scores for total taxa richness (range = 24 – 50) were also characteristic. ICI scores are summarized in Table 3.

Algal assemblages, including diatoms

Diatom assemblages were dominated by salt-tolerant taxa (VanDam et al. 1994), including *Navicula erifuga*, *Nitzschia frustulum*, *Tabularia fasciculate*, and *Navicula salinicola*. The relative abundance of these halophilic taxa ranged from 30% at the Benes site, to 68% at the Schied site. Taxa with strict freshwater requirements accounted for less than 2% of the diatom flora at Little Salt Creek sites. There is currently no bioassessment tool developed for diatom or other algal assemblages specific to the waters of Nebraska, so classifications of biotic health based on the diatom assemblages are not determined.

	Benes	LPSNRD	Game and Parks	Schied	Arbor	Parrot
Percent dominant taxon	12.3	37.4	28.9	23.6	47.4	51.5
EPT richness	6	8	5	5	2	2
Modified HBI	6.55	7.11	7.39	6.30	6.57	7.65
Total taxa richness	50	47	39	28	24	34
Percent dominant taxon	7	1	3	5	1	1
EPT richness	1	1	1	1	1	1
Modified HBI	1	1	1	1	1	1
Total taxa richness	3	3	1	1	1	1
Total score	12	6	6	8	4	4
Classification	poor	poor	poor	poor	poor	poor

Table 3. Nebraska ICI metric values and scores, total index scores, and condition classifications for sites in the Little Salt Creek Basin, 2008.

Site-by-site narrative analysis

1. Benes site

Three mayfly taxa were collected at this site. Only one mayfly taxon, however, was abundant; this was *Caenis* sp. This mayfly, and the elmid beetle *Dubiraphia* sp. which was also common at the site, are typically associated with macrophytes. The assemblage included 7 hemoglobin-bearing taxa, accounting for 21% of sampled animals. These taxa included the midges *Stictochironomus* sp. and *Chironomus* sp. Hemoglobin-bearers prefer low oxygen environs; it seems likely that sediments were hypoxic in this reach. Warm water temperatures and/or nutrient enrichment can be associated with oxygen depletion. Salt-tolerant taxa (Horrihan 2005, Leland and Fend 1998) accounted for 12% of the organisms collected in the sample.

Nearly 26% of the invertebrates present in the sample were hydropsychid caddisflies, including *Hydropsyche* spp., *Cheumatopsyche* spp., and many immature hydropsychid specimens that could not be identified to genus. The abundance of these animals suggests that stony substrate habitats were stable, and were not completely obliterated by fine sediments. Taxa richness was relatively high here, indicating that instream habitats were not as monotonous as at the other Little Salt Creek sites. Low numbers of scrapers among the functional components suggest high turbidity.

A significant proportion (30%) of the diatom assemblage at this site was salt-tolerant; however, this was the lowest proportion of halophilic taxa among the 6 sampled sites in the Little Salt Creek basin. Eutraphentic taxa, which require high concentrations of inorganic nutrients, accounted for 76% of the assemblage; this finding suggests that nutrient enrichment may have been influential along with salinity. While invertebrate taxa richness was highest at this site, diatom diversity was lowest here; these findings suggest eutrophication.

2. LPSNRD

The invertebrate assemblage at the LPSNRD site was dominated by the tolerant amphipod *Hyaella* sp., which accounted for 37% of sampled animals. Midges were the other abundant group; among the 21 chironomid taxa present in the sample, 11 taxa were hemoglobin-bearers. These included *Chironomus* sp., *Cryptochironomus* sp., and *Polypedilum* sp. Hypoxic substrates are suggested by the diversity and abundance of hemoglobin-bearing organisms in the sample. Based on these findings, nutrient enrichment cannot be ruled out here, although warm water temperatures likely contributed to low oxygen concentrations. Salt-tolerant taxa accounted for 26% of the invertebrate fauna. Taxa richness among the invertebrates was high at this site, implying diverse instream habitats. High turbidity is suggested by the scarcity of scrapers among the functional groups.

Diatom species richness was also moderately high at the LPSNRD site. The composition of the diatom assemblage suggests both high salinity as well as

possible nutrient enrichment. Forty percent of the flora was composed of halophilic taxa, including *Navicula erifuga* and *Surirella ovalis*, and eutraphentic taxa accounted for 69% of the assemblage. The abundance of the epiphytic alga *Protoderma* sp. suggests the presence of submerged macrophytes at this site. Other macrophyte associates (e.g. the elmid beetle *Dubiraphia* sp.) were also collected here.

3. Game and Parks

Tolerant physid snails (*Physa* sp.) dominated the invertebrate fauna at the Game and Parks site, accounting for 29% of collected animals. In general, this site supported one of the more tolerant invertebrate assemblages of the sites sampled on Little Salt Creek; the modified HBI value (7.39) was among the highest values calculated for any assemblage sampled. Hemoglobin-bearing taxa were abundant, and included the midge *Dicrotendipes* sp. and the snail *Stagnicola* sp. Nutrient enrichment cannot be ruled out. Nearly 30% of the invertebrate fauna was comprised of salt-tolerant taxa, including *Dicrotendipes* sp. and damselflies in the family Coenagrionidae (*Argia* sp. and *Enallagma* sp.).

Invertebrate taxa richness was lower than at the upstream sites, suggesting that instream habitats may have been more monotonous or impoverished in this reach. Salinity may have additionally limited the diversity of invertebrates here. Habitats may have included macrophyte roots and surfaces, soft substrates, and a few stony surfaces. Filamentous algae may have been present, since midges in the genera *Cricotopus* and *Orthocladius* were common, and the caddisfly *Hydroptila* sp. was present. The functional mix was dominated by gatherers, but scrapers were very abundant. However, physid snails were the vast majority of scrapers here; these animals probably inhabited macrophyte surfaces. Their abundance does not suggest that water clarity was improved here, compared to the other sampled sites.

The Game and Parks site supported the most diverse diatom assemblage of any of the sampled sites in this project; 74 taxa were identified. Halophilic taxa accounted for 49% of the diatoms counted; salinity was probably higher here than at the upstream sites. Sixty-one percent of diatoms were eutraphentic, suggesting that nutrient enrichment may also have been influential here.

4. Schied

The dominant taxa at the Schied site were the caddisfly *Cheumatopsyche* sp., the midge *Dicrotendipes* sp., and physid snails (*Physa* sp.). Abundance of *Cheumatopsyche* sp. suggests that instream habitats probably included some stony substrates devoid of sediment deposition. Large numbers of *Dicrotendipes* sp., a hemoglobin-bearer, suggests that where soft sediments were present, substrates were hypoxic. And the tolerant snail *Physa* sp. probably indicates that macrophyte surfaces were an important habitat component. Overall taxa richness was low, so instream habitats may have been generally monotonous. However, salinity may have limited the diversity of invertebrates, since 23% of the invertebrates sampled here were salt-tolerant. Water quality may have been further challenged by nutrient enrichment. 27% of taxa were hemoglobin-

bearers, indicating hypoxic substrates; nutrient enrichment and warm water temperatures could account for hypoxic substrates. Filterers, including *Cheumatopsyche* sp. as well as considerable numbers of the blackfly *Simulium* sp., were the dominant functional group. This finding suggests that fine organic particulates in suspension were a major energy source in the reach.

This site supported the diatom assemblage with the highest proportion (68%) of salt-tolerant taxa of any sampled site. Eutrathentic taxa accounted for about the same proportion, suggesting that nutrient enrichment may have been another water quality determinant. The filamentous alga *Cladophora* sp. was also present in the sample, further suggesting nutrient enrichment.

5. Arbor

Midges in 13 taxa overwhelmed the taxonomic composition of the sample collected at the Arbor site, accounting for 93% of sampled animals. Dominant among these were midges in the *Cricotopus (Isocladius)* group of species. This group is typically associated with filamentous algae. Large crops of filamentous algae may be associated with nutrient enrichment, which cannot be ruled out here. Evidence for severe water quality impairment at this site includes the complete absence of mayflies, and the near-absence of hydroptychid caddisflies; only 4 immature specimens of the latter group were collected. The hemoglobin-bearing midge *Dicrotendipes* sp. was also very abundant, suggesting hypoxic substrates. Taxa richness was very low at this site; limited habitat diversity may be indicated. Soft sediments and filamentous algae were likely the predominant instream habitat type available here. Salt-tolerant animals accounted for 37% of sampled organisms.

Sixty-one percent of the diatom taxa collected at the Arbor site were halophilic taxa. These included large numbers of *Tabularia fasciculate* and *Navicula salinicola*. The proportion of eutrathentic taxa (69%) was similar to that of the other Little Salt Creek sites. The absence of a filamentous algal component to the periphyton sample does not rule out its presence at this site. The analysis of non-diatom algae in qualitative samples is notoriously inexact, especially in samples where diatoms are the major component as they are at the Arbor site.

6. Parrot

The Parrot site is located on a tributary to Little Salt Creek. The tolerant amphipod *Hyalella* sp. was the dominant taxon at the Parrot site; this animal accounted for 51% of organisms here. The large number of copepods collected in the sample suggests that areas of stagnant flow were sampled along with the lotic areas. Hemoglobin-bearing taxa accounted for only 11% of the assemblage, suggesting that hypoxia may have been less prevalent at the Parrot site than at the Little Salt Creek sites. Salt-tolerant organisms accounted for 21% of the invertebrates sampled here. Taxa richness was somewhat higher here than at the other sites.

Fifty-one percent of the diatoms collected at the Parrot site were halophilic; taxa included *Navicula erifuga* and *Navicula trivialis*. Eutrathentic taxa accounted

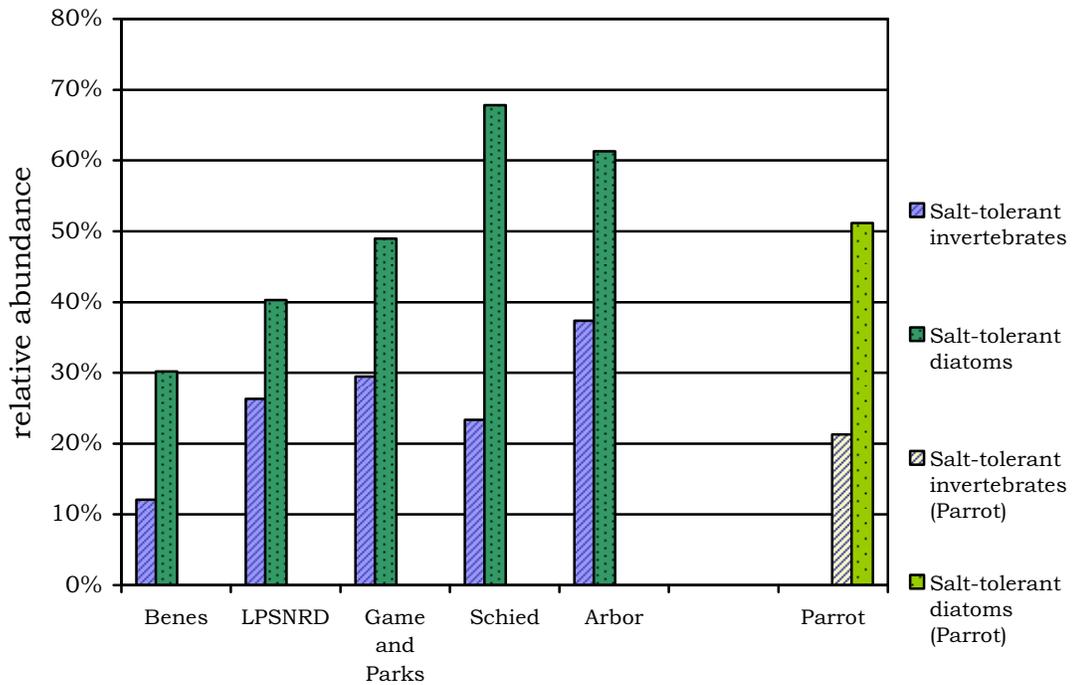


Figure 1. Relative abundances of salt-tolerant invertebrates and diatoms at sites in the Little Salt Creek basin. 2008.

for 81% of the sampled diatoms. These findings suggest that salinity and nutrient enrichment influenced the composition of the assemblage here.

DISCUSSION

Salinity is an important determinant of the taxonomic composition of both invertebrate and diatom assemblages in Little Salt Creek. Salt-tolerant invertebrate and diatom taxa increased from smaller to larger proportions along the upstream-to-downstream gradient of Little Salt Creek. Figure 1 illustrates the longitudinal progression of halophilic taxa proportions. The exception occurs at the Schied site, where salinity probably limits invertebrate diversity, although abundance was apparently not limited. Nutrient enrichment could not be ruled out at any site, and may have been influential in the persistence of hypoxic substrates, which were apparently characteristic of all sites. However, indications of the various chemical contributors to water quality are confounded in both the diatom and invertebrate data. Warm water temperatures were indicated by the invertebrate fauna at all sites.

Low ICI scores characterized the bioassessment of these sites. Given the influence of saline seeps, it is difficult to distinguish anthropogenic water

quality impairment from the naturally-occurring effects of background salinity, which essentially structures both the invertebrate and diatom assemblage composition in Little Salt Creek and its sampled tributary.

Silty substrates were probably present at all sites, since motile diatom taxa were abundant in all samples. These taxa include diverse species in the genera *Navicula* and *Nitzschia*. Soft benthic substrates result in depauperate invertebrate assemblages, since instream habitats are limited. It is difficult to determine the effect of agricultural use on the extent of sedimentation in this basin without comparisons to “reference” biota from a comparable stream with minimal human influence.

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APPENDICES

Aquatic invertebrate taxa lists and metric summaries

Periphyton taxa lists and metric summaries

Taxa Listing

Project ID: PBSJ08LSC
RAI No.: PBSJ08LSC001

RAI No.: PBSJ08LSC001

Sta. Name: Little Salt Creek

Client ID: Benes

Date Coll.: 10/27/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Non-Insect							
Nematoda	2	0.38%	Yes	Unknown		5	PA
Ostracoda	2	0.38%	Yes	Unknown		8	CG
Enchytraeidae							
<i>Fridericia</i> sp.	2	0.38%	Yes	Unknown		11	CG
Hyalellidae							
<i>Hyalella</i> sp.	1	0.19%	Yes	Unknown		8	CG
Naididae							
Naididae (Tubificinae) - with capillary setae	2	0.38%	Yes	Immature	Damaged	11	CG
Naididae (Tubificinae) - without capillary setae	10	1.92%	No	Immature	Damaged	11	CG
Physidae							
Physidae	25	4.80%	Yes	Unknown		8	SC
Sphaeriidae							
Sphaeriidae	3	0.58%	Yes	Unknown		8	CF
Tubificidae							
<i>Limnodrilus</i> sp.	1	0.19%	Yes	Unknown		10	CG
Odonata							
Calopterygidae							
<i>Calopteryx</i> sp.	4	0.77%	Yes	Larva		6	PR
Coenagrionidae							
Coenagrionidae	1	0.19%	No	Larva	Early Instar	7	PR
<i>Enallagma</i> sp.	6	1.15%	Yes	Larva		7	PR
Ephemeroptera							
Baetidae							
<i>Baetis</i> sp.	3	0.58%	Yes	Larva	Early Instar	5	CG
Caenidae							
<i>Caenis</i> sp.	42	8.06%	Yes	Larva		7	CG
Leptohyphidae							
<i>Tricorythodes</i> sp.	1	0.19%	Yes	Larva		4	CG
Heteroptera							
Belostomatidae							
<i>Belostoma</i> sp.	1	0.19%	Yes	Adult		7	PR
Megaloptera							
Sialidae							
<i>Sialis</i> sp.	1	0.19%	Yes	Larva		4	PR
Trichoptera							
Hydropsychidae							
<i>Cheumatopsyche</i> sp.	24	4.61%	Yes	Larva		5	CF
<i>Hydropsyche</i> sp.	47	9.02%	Yes	Larva		5	CF
Hydropsychidae	64	12.28%	No	Larva	Early Instar	4	CF
Leptoceridae							
<i>Oecetis</i> sp.	2	0.38%	Yes	Larva		8	PR

Taxa Listing

Project ID: PBSJ08LSC
RAI No.: PBSJ08LSC001

RAI No.: PBSJ08LSC001

Sta. Name: Little Salt Creek

Client ID: Benes

Date Coll.: 10/27/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Coleoptera							
Dytiscidae							
Dytiscidae	2	0.38%	Yes	Larva		5	PR
<i>Liodessus</i> sp.	1	0.19%	Yes	Adult		5	PR
Elmidae							
<i>Dubiraphia</i> sp.	5	0.96%	Yes	Adult		6	CG
<i>Dubiraphia</i> sp.	22	4.22%	No	Larva		6	CG
Elmidae	1	0.19%	Yes	Larva	Early Instar	4	CG
Hydrophilidae							
<i>Berosus</i> sp.	1	0.19%	Yes	Larva		5	PR
Diptera							
Ceratopogonidae							
Ceratopogoninae	7	1.34%	Yes	Larva		6	PR
Empididae							
<i>Hemerodromia</i> sp.	2	0.38%	Yes	Larva		6	PR
Ephydriidae							
Ephydriidae	2	0.38%	Yes	Larva		6	CG
Psychodidae							
Psychodidae	1	0.19%	Yes	Larva		4	CG
Simuliidae							
<i>Simulium</i> sp.	37	7.10%	Yes	Larva		6	CF
Tabanidae							
Tabanidae	4	0.77%	Yes	Larva		6	PR
Tipulidae							
<i>Dicranota</i> sp.	1	0.19%	Yes	Larva		3	PR
<i>Erioptera</i> sp.	3	0.58%	Yes	Larva		7	CG
<i>Tipula</i> sp.	1	0.19%	Yes	Larva		4	SH
Tipulidae	1	0.19%	No	Larva	Early Instar	3	SH

Taxa Listing

Project ID: PBSJ08LSC
RAI No.: PBSJ08LSC001

RAI No.: PBSJ08LSC001

Sta. Name: Little Salt Creek

Client ID: Benes

Date Coll.: 10/27/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Chironomidae							
Chironomidae							
<i>Chironomus</i> sp.	25	4.80%	Yes	Larva		10	CG
<i>Corynoneura</i> sp.	1	0.19%	Yes	Larva		7	CG
<i>Cricotopus (Cricotopus)</i> sp.	5	0.96%	Yes	Larva		7	SH
<i>Cricotopus bicinctus</i>	1	0.19%	Yes	Larva		7	SH
<i>Cryptochironomus</i> sp.	24	4.61%	Yes	Larva		8	PR
<i>Dicrotendipes</i> sp.	1	0.19%	Yes	Larva		8	CG
<i>Diplocladius</i> sp.	1	0.19%	Yes	Larva		5	CG
<i>Micropsectra</i> sp.	5	0.96%	Yes	Pupa		4	CG
<i>Microtendipes</i> sp.	5	0.96%	Yes	Larva		6	CF
<i>Orthocladius</i> sp.	2	0.38%	No	Pupa		6	CG
<i>Orthocladius</i> sp.	11	2.11%	Yes	Larva		6	CG
<i>Parametriocnemus</i> sp.	1	0.19%	Yes	Larva		5	CG
<i>Paratanytarsus</i> sp.	6	1.15%	Yes	Larva		6	CG
<i>Polypedilum</i> sp.	5	0.96%	Yes	Larva		6	SH
<i>Saetheria</i> sp.	3	0.58%	Yes	Larva		4	CG
<i>Stictochironomus</i> sp.	47	9.02%	Yes	Larva		5	CG
<i>Thienemanniella</i> sp.	8	1.54%	Yes	Larva		6	CG
Thienemannimyia Gr.	34	6.53%	Yes	Larva		5	PR
Tvetenia Bavarica Gr.	1	0.19%	Yes	Larva		5	CG
Sample Count	521						

Taxa Listing

Project ID: PBSJ08LSC
RAI No.: PBSJ08LSC002

RAI No.: PBSJ08LSC002

Sta. Name: Little Salt Creek

Client ID: LPSNRD

Date Coll.: 10/27/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Non-Insect							
Copepoda	12	2.38%	Yes	Unknown		8	CG
Hyalellidae							
<i>Hyalella</i> sp.	189	37.43%	Yes	Unknown		8	CG
Naididae							
Naididae (Tubificinae) - without capillary setae	1	0.20%	Yes	Immature	Damaged	11	CG
Physidae							
Physidae	6	1.19%	Yes	Unknown		8	SC
Planorbidae							
Planorbidae	1	0.20%	Yes	Immature		6	SC
Sphaeriidae							
Sphaeriidae	6	1.19%	Yes	Unknown		8	CF
Odonata							
Calopterygidae							
<i>Calopteryx</i> sp.	1	0.20%	Yes	Larva		6	PR
Coenagrionidae							
<i>Argia</i> sp.	3	0.59%	Yes	Larva		7	PR
Coenagrionidae	2	0.40%	No	Larva	Early Instar	7	PR
<i>Enallagma</i> sp.	9	1.78%	Yes	Larva		7	PR
Ephemeroptera							
Baetidae							
<i>Baetis</i> sp.	4	0.79%	Yes	Larva	Early Instar	5	CG
<i>Callibaetis</i> sp.	6	1.19%	Yes	Larva		9	CG
Caenidae							
<i>Caenis</i> sp.	6	1.19%	Yes	Larva		7	CG
Heptageniidae							
Heptageniidae	3	0.59%	Yes	Larva	Early Instar	4	SC
Heteroptera							
Belostomatidae							
<i>Belostoma</i> sp.	3	0.59%	Yes	Adult		7	PR
Corixidae							
Corixidae	2	0.40%	No	Adult	Damaged	10	PH
<i>Trichocorixa</i> sp.	6	1.19%	Yes	Adult		11	PR
Trichoptera							
Hydropsychidae							
<i>Cheumatopsyche</i> sp.	4	0.79%	Yes	Larva		5	CF
<i>Hydropsyche</i> sp.	1	0.20%	Yes	Larva		5	CF
Hydropsychidae	3	0.59%	No	Larva	Early Instar	4	CF
Leptoceridae							
<i>Oecetis</i> sp.	2	0.40%	Yes	Larva		8	PR

Taxa Listing

Project ID: PBSJ08LSC
RAI No.: PBSJ08LSC002

RAI No.: PBSJ08LSC002

Sta. Name: Little Salt Creek

Client ID: LPSNRD

Date Coll.: 10/27/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Coleoptera							
Dryopidae							
<i>Helichus</i> sp.	1	0.20%	Yes	Adult		2	SH
Dytiscidae							
<i>Liodessus</i> sp.	1	0.20%	Yes	Adult		5	PR
Elmidae							
<i>Dubiraphia</i> sp.	37	7.33%	Yes	Larva		6	CG
Scirtidae							
Scirtidae	1	0.20%	Yes	Larva	Damaged	5	SC
Diptera							
Ceratopogonidae							
Ceratopogoninae	3	0.59%	Yes	Larva		6	PR
Empididae							
<i>Hemerodromia</i> sp.	1	0.20%	Yes	Larva		6	PR
Simuliidae							
<i>Simulium</i> sp.	23	4.55%	Yes	Larva		6	CF
Chironomidae							
Chironomidae							
<i>Chironomus</i> sp.	11	2.18%	Yes	Larva		10	CG
<i>Corynoneura</i> sp.	1	0.20%	Yes	Larva		7	CG
<i>Cricotopus (Cricotopus)</i> sp.	1	0.20%	Yes	Larva		7	SH
<i>Cricotopus bicinctus</i>	3	0.59%	Yes	Larva		7	SH
<i>Cryptochironomus</i> sp.	11	2.18%	Yes	Larva		8	PR
<i>Cryptotendipes</i> sp.	4	0.79%	Yes	Larva		6	CG
<i>Dicrotendipes</i> sp.	5	0.99%	Yes	Larva		8	CG
<i>Endochironomus</i> sp.	1	0.20%	Yes	Larva		10	SH
<i>Micropsectra</i> sp.	7	1.39%	Yes	Larva		4	CG
<i>Microtendipes</i> sp.	2	0.40%	Yes	Larva		6	CF
<i>Orthocladius</i> sp.	2	0.40%	Yes	Larva		6	CG
<i>Parakiefferiella</i> sp.	6	1.19%	Yes	Larva		6	CG
<i>Paralauterborniella</i> sp.	3	0.59%	Yes	Larva		8	CG
<i>Paratanytarsus</i> sp.	12	2.38%	Yes	Larva		6	CG
<i>Phaenopsectra</i> sp.	3	0.59%	Yes	Larva		7	SC
<i>Polypedilum</i> sp.	10	1.98%	Yes	Larva		6	SH
<i>Procladius</i> sp.	1	0.20%	Yes	Larva		9	PR
<i>Rheocricotopus</i> sp.	1	0.20%	Yes	Larva		4	CG
<i>Stictochironomus</i> sp.	5	0.99%	Yes	Larva		5	CG
<i>Tanytarsus</i> sp.	3	0.59%	Yes	Larva		6	CF
Thienemannimyia Gr.	76	15.05%	Yes	Larva		5	PR
	Sample Count	505					

Taxa Listing

Project ID: PBSJ08LSC
RAI No.: PBSJ08LSC003

RAI No.: PBSJ08LSC003

Sta. Name: Little Salt Creek

Client ID: Game and Parks

Date Coll.: 10/28/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Non-Insect							
Copepoda	1	0.19%	Yes	Unknown		8	CG
Ostracoda	4	0.78%	Yes	Unknown		8	CG
Hyalellidae							
<i>Hyalella</i> sp.	27	5.23%	Yes	Unknown		8	CG
Lymnaeidae							
<i>Stagnicola</i> sp.	2	0.39%	Yes	Unknown		6	SC
Naididae							
Naididae (Tubificinae) - without capillary setae	5	0.97%	No	Immature	Damaged	11	CG
Physidae							
Physidae	149	28.88%	Yes	Unknown		8	SC
Tubificidae							
<i>Limnodrilus</i> sp.	1	0.19%	Yes	Unknown		10	CG
Odonata							
Calopterygidae							
<i>Hetaerina</i> sp.	1	0.19%	Yes	Larva		6	PR
Coenagrionidae							
<i>Argia</i> sp.	5	0.97%	Yes	Larva		7	PR
Coenagrionidae	4	0.78%	No	Larva	Early Instar	7	PR
<i>Enallagma</i> sp.	1	0.19%	Yes	Larva		7	PR
Ephemeroptera							
Baetidae							
Baetidae	2	0.39%	Yes	Larva	Damaged	4	CG
Caenidae							
<i>Caenis</i> sp.	6	1.16%	Yes	Larva		7	CG
Heteroptera							
Corixidae							
Corixidae	1	0.19%	No	Adult	Damaged	10	PH
Corixidae	7	1.36%	No	Larva		10	PH
<i>Trichocorixa</i> sp.	9	1.74%	Yes	Adult		11	PR
Megaloptera							
Sialidae							
<i>Sialis</i> sp.	1	0.19%	Yes	Larva		4	PR
Trichoptera							
Hydropsychidae							
<i>Cheumatopsyche</i> sp.	20	3.88%	Yes	Larva		5	CF
<i>Hydropsyche</i> sp.	1	0.19%	Yes	Larva		5	CF
Hydroptilidae							
<i>Hydroptila</i> sp.	2	0.39%	Yes	Larva		6	PH
Coleoptera							
Dytiscidae							
Dytiscidae	2	0.39%	Yes	Larva		5	PR
Elmidae							
<i>Dubiraphia</i> sp.	15	2.91%	Yes	Larva		6	CG
Hydrophilidae							
<i>Berosus</i> sp.	23	4.46%	Yes	Larva		5	PR

Friday, January 09, 2009

Taxa Listing

Project ID: PBSJ08LSC
RAI No.: PBSJ08LSC003

RAI No.: PBSJ08LSC003

Sta. Name: Little Salt Creek

Client ID: Game and Parks

Date Coll.: 10/28/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Diptera							
Ceratopogonidae							
Ceratopogoninae	32	6.20%	Yes	Larva		6	PR
Psychodidae							
Psychodidae	1	0.19%	Yes	Larva		4	CG
Simuliidae							
Simuliidae	1	0.19%	No	Pupa		6	CF
<i>Simulium</i> sp.	26	5.04%	Yes	Larva		6	CF
Chironomidae							
Chironomidae							
<i>Chironomus</i> sp.	5	0.97%	Yes	Larva		10	CG
<i>Cricotopus (Cricotopus)</i> sp.	3	0.58%	Yes	Larva		7	SH
<i>Cricotopus (Isocladius)</i> sp.	1	0.19%	Yes	Larva		7	SH
<i>Cricotopus bicinctus</i>	21	4.07%	Yes	Larva		7	SH
<i>Cryptochironomus</i> sp.	1	0.19%	Yes	Larva		8	PR
<i>Dicrotendipes</i> sp.	74	14.34%	Yes	Larva		8	CG
<i>Micropsectra</i> sp.	4	0.78%	Yes	Larva		4	CG
<i>Orthocladius</i> sp.	5	0.97%	Yes	Larva		6	CG
<i>Parakiefferiella</i> sp.	1	0.19%	Yes	Larva		6	CG
<i>Paralauterborniella</i> sp.	1	0.19%	Yes	Larva		8	CG
<i>Parametriocnemus</i> sp.	1	0.19%	Yes	Larva		5	CG
<i>Paratanytarsus</i> sp.	18	3.49%	Yes	Larva		6	CG
<i>Polypedilum</i> sp.	10	1.94%	Yes	Larva		6	SH
<i>Procladius</i> sp.	6	1.16%	Yes	Larva		9	PR
Tanypodinae	1	0.19%	No	Larva	Early Instar	7	PR
<i>Tanypus</i> sp.	3	0.58%	Yes	Larva		10	PR
<i>Thienemanniella</i> sp.	8	1.55%	Yes	Larva		6	CG
Thienemannimyia Gr.	4	0.78%	Yes	Larva		5	PR
Sample Count	516						

Taxa Listing

Project ID: PBSJ08LSC
RAI No.: PBSJ08LSC004

RAI No.: PBSJ08LSC004

Sta. Name: Little Salt Creek

Client ID: Schied

Date Coll.: 10/28/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Non-Insect							
Hyalellidae							
<i>Hyalella</i> sp.	11	2.06%	Yes	Unknown		8	CG
Lymnaeidae							
Lymnaeidae	1	0.19%	Yes	Immature		6	SC
Physidae							
Physidae	66	12.34%	Yes	Unknown		8	SC
Odonata							
Calopterygidae							
Calopterygidae	1	0.19%	Yes	Larva	Early Instar	6	PR
Coenagrionidae							
Coenagrionidae	6	1.12%	Yes	Larva	Early Instar	7	PR
Ephemeroptera							
Baetidae							
<i>Callibaetis</i> sp.	2	0.37%	Yes	Larva		9	CG
Caenidae							
<i>Caenis</i> sp.	4	0.75%	Yes	Larva		7	CG
Heteroptera							
Corixidae							
<i>Trichocorixa</i> sp.	1	0.19%	Yes	Adult		11	PR
Trichoptera							
Hydropsychidae							
<i>Cheumatopsyche</i> sp.	126	23.55%	Yes	Larva		5	CF
<i>Hydropsyche</i> sp.	8	1.50%	Yes	Larva		5	CF
Hydroptilidae							
<i>Hydroptila</i> sp.	3	0.56%	Yes	Larva		6	PH
Coleoptera							
Dytiscidae							
<i>Liodessus</i> sp.	2	0.37%	Yes	Adult		5	PR
Elmidae							
<i>Dubiraphia</i> sp.	1	0.19%	Yes	Larva		6	CG
Hydrophilidae							
<i>Berosus</i> sp.	7	1.31%	Yes	Larva		5	PR
Diptera							
Ceratopogonidae							
Ceratopogoninae	59	11.03%	Yes	Larva		6	PR
Ephydriidae							
Ephydriidae	1	0.19%	Yes	Larva		6	CG
Simuliidae							
<i>Simulium</i> sp.	57	10.65%	Yes	Larva		6	CF

Taxa Listing

Project ID: PBSJ08LSC
RAI No.: PBSJ08LSC004

RAI No.: PBSJ08LSC004

Sta. Name: Little Salt Creek

Client ID: Schied

Date Coll.: 10/28/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Chironomidae							
Chironomidae							
<i>Chironomus</i> sp.	11	2.06%	Yes	Larva		10	CG
<i>Cricotopus</i> sp.	1	0.19%	No	Pupa		7	SH
<i>Cricotopus (Cricotopus)</i> sp.	8	1.50%	Yes	Larva		7	SH
<i>Cricotopus bicinctus</i>	6	1.12%	Yes	Larva		7	SH
<i>Cryptochironomus</i> sp.	3	0.56%	Yes	Larva		8	PR
<i>Dicrotendipes</i> sp.	101	18.88%	Yes	Larva		8	CG
<i>Paraphaenocladus</i> sp.	2	0.37%	Yes	Larva		4	CG
<i>Paratanytarsus</i> sp.	2	0.37%	Yes	Larva		6	CG
<i>Polypedilum</i> sp.	29	5.42%	Yes	Larva		6	SH
<i>Procladius</i> sp.	1	0.19%	Yes	Larva		9	PR
<i>Thienemanniella</i> sp.	7	1.31%	Yes	Larva		6	CG
Thienemannimyia Gr.	8	1.50%	Yes	Larva		5	PR
Sample Count	535						

Taxa Listing

Project ID: PBSJ08LSC
RAI No.: PBSJ08LSC005

RAI No.: PBSJ08LSC005

Sta. Name: Little Salt Creek

Client ID: Arbor

Date Coll.: 10/27/2008

No. Jars: 2

STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Non-Insect							
Ostracoda	1	0.22%	Yes	Unknown		8	CG
Naididae							
Naididae (Naidinae)	1	0.22%	Yes	Unknown	Damaged	8	CG
Naididae (Tubificinae) - without capillary setae	8	1.74%	No	Immature	Damaged	11	CG
<i>Paranais</i> sp.	1	0.22%	Yes	Unknown		8	CG
Tubificidae							
<i>Limnodrilus</i> sp.	2	0.43%	Yes	Unknown		10	CG
Odonata							
Coenagrionidae							
Coenagrionidae	1	0.22%	Yes	Larva	Damaged	7	PR
Heteroptera							
Corixidae							
<i>Trichocorixa</i> sp.	5	1.09%	Yes	Adult		11	PR
Trichoptera							
Hydropsychidae							
Hydropsychidae	4	0.87%	Yes	Larva	Early Instar	4	CF
Hydroptilidae							
Hydroptilidae	1	0.22%	Yes	Larva	Early Instar	4	PH
Coleoptera							
Hydrophilidae							
<i>Berosus</i> sp.	2	0.43%	Yes	Larva		5	PR
Diptera							
Ceratopogonidae							
Ceratopogoninae	6	1.30%	Yes	Larva		6	PR
Tipulidae							
Tipulidae	2	0.43%	Yes	Larva	Early Instar	3	SH
Chironomidae							
Chironomidae							
<i>Cladotanytarsus</i> sp.	1	0.22%	Yes	Larva		7	CG
<i>Cricotopus (Cricotopus)</i> sp.	4	0.87%	Yes	Larva		7	SH
<i>Cricotopus (Isocladius)</i> sp.	218	47.39%	Yes	Larva		7	SH
<i>Cricotopus bicinctus</i>	1	0.22%	Yes	Larva		7	SH
<i>Cryptochironomus</i> sp.	5	1.09%	Yes	Larva		8	PR
<i>Dicrotendipes</i> sp.	120	26.09%	Yes	Larva		8	CG
<i>Micropsectra</i> sp.	1	0.22%	Yes	Larva		4	CG
Orthoclaadiinae							
Orthoclaadiinae	20	4.35%	No	Larva	Early Instar	6	CG
<i>Paraphaenocladus</i> sp.	1	0.22%	Yes	Larva		4	CG
<i>Polypedilum</i> sp.	11	2.39%	Yes	Larva		6	SH
<i>Pseudochironomus</i> sp.	2	0.43%	Yes	Larva		5	CG
<i>Tanytus</i> sp.	1	0.22%	Yes	Larva		10	PR
Thienemannimyia Gr.	40	8.70%	Yes	Larva		5	PR
<i>Zavrelimyia</i> sp.	1	0.22%	Yes	Larva		8	PR
Sample Count	460						

Taxa Listing

Project ID: PBSJ08LSC
RAI No.: PBSJ08LSC006

RAI No.: PBSJ08LSC006

Sta. Name: Little Salt Creek - Trib

Client ID: Parrot

Date Coll.: 10/27/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Non-Insect							
Copepoda	43	8.55%	Yes	Unknown		8	CG
Hyalellidae							
<i>Hyalella</i> sp.	259	51.49%	Yes	Unknown		8	CG
Lymnaeidae							
Lymnaeidae	1	0.20%	Yes	Immature		6	SC
Naididae							
Naididae (Tubificinae) - without capillary setae	2	0.40%	Yes	Immature	Damaged	11	CG
Physidae							
Physidae	37	7.36%	Yes	Unknown		8	SC
Planorbidae							
<i>Planorbella</i> sp.	4	0.80%	Yes	Unknown		6	SC
Sphaeriidae							
Sphaeriidae	2	0.40%	Yes	Unknown		8	CF
Odonata							
Coenagrionidae							
<i>Argia</i> sp.	1	0.20%	Yes	Larva		7	PR
Libellulidae							
Libellulidae	2	0.40%	Yes	Larva		9	PR
Ephemeroptera							
Baetidae							
<i>Callibaetis</i> sp.	10	1.99%	Yes	Larva		9	CG
Heptageniidae							
Heptageniidae	1	0.20%	Yes	Larva	Damaged	4	SC
Heteroptera							
Belostomatidae							
<i>Belostoma</i> sp.	1	0.20%	Yes	Adult		7	PR
Corixidae							
Corixidae	1	0.20%	No	Larva		10	PH
<i>Trichocorixa</i> sp.	1	0.20%	Yes	Adult		11	PR
Nepidae							
<i>Ranatra</i> sp.	1	0.20%	Yes	Adult		11	PR
Coleoptera							
Dytiscidae							
Dytiscidae	17	3.38%	No	Larva		5	PR
<i>Laccophilus</i> sp.	1	0.20%	Yes	Adult		5	PR
Elmidae							
<i>Dubiraphia</i> sp.	1	0.20%	Yes	Larva		6	CG
Halplidae							
<i>Pelodytes</i> sp.	1	0.20%	Yes	Adult		5	SH
Diptera							
Ceratopogonidae							
Ceratopogoninae	10	1.99%	Yes	Larva		6	PR
Tabanidae							
Tabanidae	1	0.20%	Yes	Larva		6	PR

Taxa Listing

Project ID: PBSJ08LSC
RAI No.: PBSJ08LSC006

RAI No.: PBSJ08LSC006

Sta. Name: Little Salt Creek - Trib

Client ID: Parrot

Date Coll.: 10/27/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Chironomidae							
Chironomidae							
<i>Chironomus</i> sp.	25	4.97%	Yes	Larva		10	CG
<i>Corynoneura</i> sp.	1	0.20%	Yes	Larva		7	CG
<i>Cryptochironomus</i> sp.	1	0.20%	Yes	Larva		8	PR
<i>Dicrotendipes</i> sp.	1	0.20%	Yes	Larva		8	CG
<i>Labrundinia</i> sp.	1	0.20%	Yes	Larva		7	PR
<i>Micropsectra</i> sp.	7	1.39%	Yes	Larva		4	CG
<i>Paralauterborniella</i> sp.	1	0.20%	Yes	Larva		8	CG
<i>Paramerina</i> sp.	11	2.19%	Yes	Larva		6	PR
<i>Paraphaenocladus</i> sp.	7	1.39%	Yes	Larva		4	CG
<i>Paratanytarsus</i> sp.	4	0.80%	Yes	Larva		6	CG
<i>Polypedilum</i> sp.	1	0.20%	Yes	Larva		6	SH
<i>Procladius</i> sp.	2	0.40%	Yes	Larva		9	PR
<i>Stictochironomus</i> sp.	2	0.40%	Yes	Larva		5	CG
Thienemannimyia Gr.	36	7.16%	Yes	Larva		5	PR
<i>Zavrelimyia</i> sp.	6	1.19%	Yes	Larva		8	PR
Sample Count	503						

Metrics Report

Project ID: PBSJ08LSC
 RAI No.: PBSJ08LSC001
 Sta. Name: Little Salt Creek
 Client ID: Benes
 STORET ID
 Coll. Date: 10/27/2008

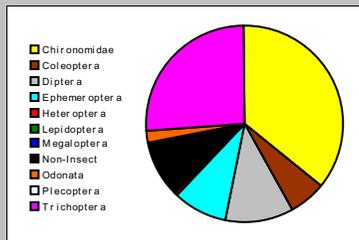
Abundance Measures

Sample Count: 521
 Sample Abundance: 822.63 63.33% of sample used

Coll. Procedure: KICK
 Sample Notes: 3:00:00 PM

Taxonomic Composition

Category	R	A	PRA
Non-Insect	8	48	9.21%
Odonata	2	11	2.11%
Ephemeroptera	3	46	8.83%
Plecoptera			
Heteroptera	1	1	0.19%
Megaloptera	1	1	0.19%
Trichoptera	3	137	26.30%
Lepidoptera			
Coleoptera	5	32	6.14%
Diptera	9	59	11.32%
Chironomidae	18	186	35.70%

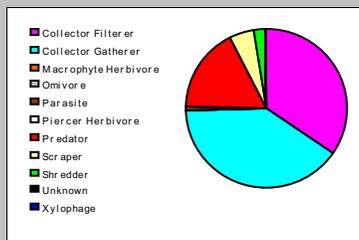


Dominant Taxa

Category	A	PRA
Hydropsychidae	64	12.28%
Stictochironomus	47	9.02%
Hydropsyche	47	9.02%
Caenis	42	8.06%
Simulium	37	7.10%
Thienemannimyia Gr.	34	6.53%
Dubiraphia	27	5.18%
Physidae	25	4.80%
Chironomus	25	4.80%
Cryptochironomus	24	4.61%
Cheumatopsyche	24	4.61%
Orthocladius	13	2.50%
Naididae (Tubificinae) - without c	10	1.92%
Thienemanniella	8	1.54%
Ceratopogoninae	7	1.34%

Functional Composition

Category	R	A	PRA
Predator	14	91	17.47%
Parasite	1	2	0.38%
Collector Gatherer	25	210	40.31%
Collector Filterer	5	180	34.55%
Macrophyte Herbivore			
Piercer Herbivore			
Xylophage			
Scraper	1	25	4.80%
Shredder	4	13	2.50%
Omnivore			
Unknown			

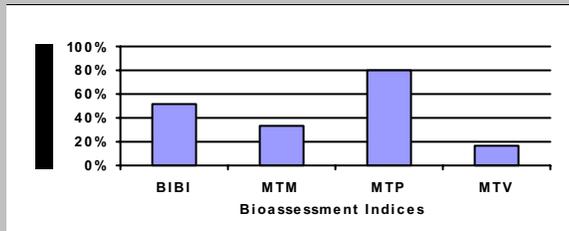


Metric Values and Scores

Metric	Value	BIBI	MTP	MTV	MTM
<i>Composition</i>					
Taxa Richness	50	5	3		3
Non-Insect Percent	9.21%				
E Richness	3	1		1	
P Richness	0	1		0	
T Richness	3	1		2	
EPT Richness	6		2		0
EPT Percent	35.12%		2		0
Oligochaeta+Hirudinea Percent	2.88%				
Baetidae/Ephemeroptera	0.065				
Hydropsychidae/Trichoptera	0.985				
<i>Dominance</i>					
Dominant Taxon Percent	12.28%		3		3
Dominant Taxa (2) Percent	21.31%				
Dominant Taxa (3) Percent	30.33%	5			
Dominant Taxa (10) Percent	71.40%				
<i>Diversity</i>					
Shannon H (loge)	3.098				
Shannon H (log2)	4.470		3		
Margalef D	8.109				
Simpson D	0.064				
Evenness	0.042				
<i>Function</i>					
Predator Richness	14		3		
Predator Percent	17.47%	3			
Filterer Richness	5				
Filterer Percent	34.55%			0	
Collector Percent	74.86%		2		1
Scraper+Shredder Percent	7.29%		1		0
Scraper/Filterer	0.139				
Scraper/Scraper+Filterer	0.122				
<i>Habit</i>					
Burrower Richness	10				
Burrower Percent	17.47%				
Swimmer Richness	3				
Swimmer Percent	0.96%				
Clinger Richness	9	1			
Clinger Percent	41.46%				
<i>Characteristics</i>					
Cold Stenotherm Richness	0				
Cold Stenotherm Percent	0.00%				
Hemoglobin Bearer Richness	7				
Hemoglobin Bearer Percent	20.73%				
Air Breather Richness	8				
Air Breather Percent	2.88%				
<i>Voltinism</i>					
Univoltine Richness	21				
Semivoltine Richness	6	5			
Multivoltine Percent	37.04%		3		
<i>Tolerance</i>					
Sediment Tolerant Richness	3				
Sediment Tolerant Percent	0.77%				
Sediment Sensitive Richness	0				
Sediment Sensitive Percent	0.00%				
Metals Tolerance Index	4.123				
Pollution Sensitive Richness	0				
Pollution Tolerant Percent	43.57%	1	3		0
Hilsenhoff Biotic Index	5.913		2		0
Intolerant Percent	0.00%				
Supertolerant Percent	16.12%				
CTQa	96.925				

Bioassessment Indices

BioIndex	Description	Score	Pct	Rating
BIBI	B-IBI (Karr et al.)	26	52.00%	
MTP	Montana DEQ Plains (Bukantis 1998)	24	80.00%	Slight
MTV	Montana Revised Valleys/Foothills (Bollman 1998)	3	16.67%	Severe
MTM	Montana DEQ Mountains (Bukantis 1998)	7	33.33%	Moderate



Metrics Report

Project ID: PBSJ08LSC
 RAI No.: PBSJ08LSC002
 Sta. Name: Little Salt Creek
 Client ID: LPSNRD
 STORET ID
 Coll. Date: 10/27/2008

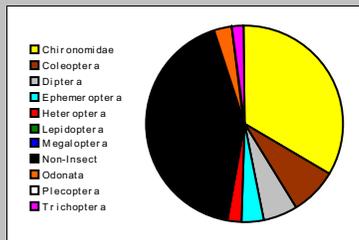
Abundance Measures

Sample Count: 505
 Sample Abundance: 946.88 53.33% of sample used

Coll. Procedure: KICK
 Sample Notes: 5:00:00 PM

Taxonomic Composition

Category	R	A	PRA
Non-Insect	6	215	42.57%
Odonata	3	15	2.97%
Ephemeroptera	4	19	3.76%
Plecoptera			
Heteroptera	2	11	2.18%
Megaloptera			
Trichoptera	3	10	1.98%
Lepidoptera			
Coleoptera	4	40	7.92%
Diptera	3	27	5.35%
Chironomidae	21	168	33.27%

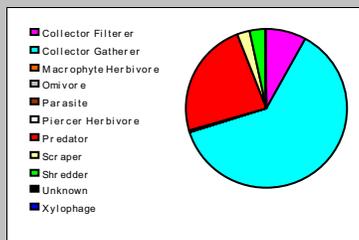


Dominant Taxa

Category	A	PRA
Hyalella	189	37.43%
Thienemannimyia Gr.	76	15.05%
Dubiraphia	37	7.33%
Simulium	23	4.55%
Paratanytarsus	12	2.38%
Copepoda	12	2.38%
Cryptochironomus	11	2.18%
Chironomus	11	2.18%
Polypedium	10	1.98%
Enallagma	9	1.78%
Microsectra	7	1.39%
Sphaeriidae	6	1.19%
Parakiefferiella	6	1.19%
Callibaetis	6	1.19%
Caenis	6	1.19%

Functional Composition

Category	R	A	PRA
Predator	12	119	23.56%
Parasite			
Collector Gatherer	18	312	61.78%
Collector Filterer	6	42	8.32%
Macrophyte Herbivore			
Piercer Herbivore	0	2	0.40%
Xylophage			
Scraper	5	14	2.77%
Shredder	5	16	3.17%
Omnivore			
Unknown			

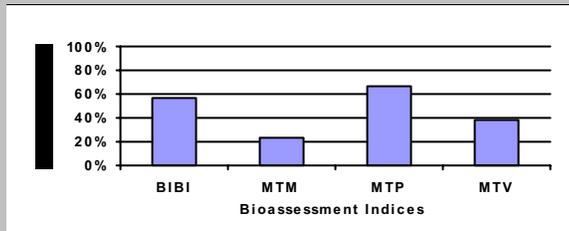


Metric Values and Scores

Metric	Value	BIBI	MTP	MTV	MTM
<i>Composition</i>					
Taxa Richness	46	5	3		3
Non-Insect Percent	42.57%				
E Richness	4	1		2	
P Richness	0	1		0	
T Richness	3	1		2	
EPT Richness	7		2		0
EPT Percent	5.74%		0		0
Oligochaeta+Hirudinea Percent	0.20%				
Baetidae/Ephemeroptera	0.52%				
Hydropsychidae/Trichoptera	0.80%				
<i>Dominance</i>					
Dominant Taxon Percent	37.43%		2		1
Dominant Taxa (2) Percent	52.48%				
Dominant Taxa (3) Percent	59.80%	3			
Dominant Taxa (10) Percent	77.23%				
<i>Diversity</i>					
Shannon H (loge)	2.552				
Shannon H (log2)	3.681		3		
Margalef D	7.246				
Simpson D	0.178				
Evenness	0.058				
<i>Function</i>					
Predator Richness	12		3		
Predator Percent	23.56%	5			
Filterer Richness	6				
Filterer Percent	8.32%			2	
Collector Percent	70.10%		2		1
Scraper+Shredder Percent	5.94%		1		0
Scraper/Filterer	0.333				
Scraper/Scraper+Filterer	0.250				
<i>Habit</i>					
Burrower Richness	5				
Burrower Percent	4.95%				
Swimmer Richness	4				
Swimmer Percent	3.76%				
Clinger Richness	12	3			
Clinger Percent	19.01%				
<i>Characteristics</i>					
Cold Stenotherm Richness	0				
Cold Stenotherm Percent	0.00%				
Hemoglobin Bearer Richness	12				
Hemoglobin Bearer Percent	11.29%				
Air Breather Richness	1				
Air Breather Percent	0.20%				
<i>Voltinism</i>					
Univoltine Richness	16				
Semivoltine Richness	5	5			
Multivoltine Percent	37.62%		3		
<i>Tolerance</i>					
Sediment Tolerant Richness	1				
Sediment Tolerant Percent	0.20%				
Sediment Sensitive Richness	0				
Sediment Sensitive Percent	0.00%				
Metals Tolerance Index	3.365				
Pollution Sensitive Richness	0				0
Pollution Tolerant Percent	21.39%		3		1
Hilsenhoff Biotic Index	6.908			1	
Intolerant Percent	0.20%				
Supertolerant Percent	50.50%				
CTQa	100.472				

Bioassessment Indices

BioIndex	Description	Score	Pct	Rating
BIBI	B-IBI (Karr et al.)	28	56.00%	
MTP	Montana DEQ Plains (Bukantis 1998)	20	66.67%	Slight
MTV	Montana Revised Valleys/Foothills (Bollman 1998)	7	38.89%	Moderate
MTM	Montana DEQ Mountains (Bukantis 1998)	5	23.81%	Moderate



Metrics Report

Project ID: PBSJ08LSC
 RAI No.: PBSJ08LSC003
 Sta. Name: Little Salt Creek
 Client ID: Game and Parks
 STORET ID
 Coll. Date: 10/28/2008

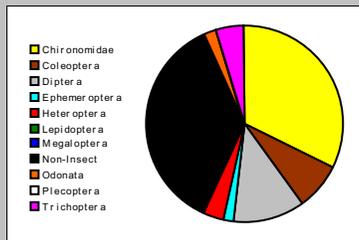
Abundance Measures

Sample Count: 516
 Sample Abundance: 4,763.08 10.83% of sample used

Coll. Procedure: KICK
 Sample Notes: 3:00:00 PM

Taxonomic Composition

Category	R	A	PRA
Non-Insect	6	189	36.63%
Odonata	3	11	2.13%
Ephemeroptera	2	8	1.55%
Plecoptera			
Heteroptera	1	17	3.29%
Megaloptera	1	1	0.19%
Trichoptera	3	23	4.46%
Lepidoptera			
Coleoptera	3	40	7.75%
Diptera	3	60	11.63%
Chironomidae	17	167	32.36%

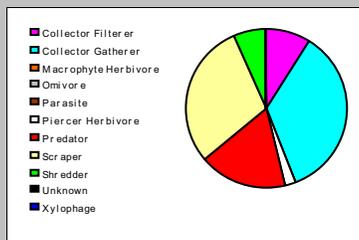


Dominant Taxa

Category	A	PRA
Physidae	149	28.88%
Dicrotendipes	74	14.34%
Ceratopogoninae	32	6.20%
Hvallella	27	5.23%
Simulium	26	5.04%
Berosus	23	4.46%
Cricotopus bicinctus	21	4.07%
Cheumatopsyche	20	3.88%
Paratanytarsus	18	3.49%
Dubiraphia	15	2.91%
Polypedium	10	1.94%
Trichocorixa	9	1.74%
Thienemanniella	8	1.55%
Corixidae	8	1.55%
Caenis	6	1.16%

Functional Composition

Category	R	A	PRA
Predator	12	93	18.02%
Parasite			
Collector Gatherer	17	179	34.69%
Collector Filterer	3	48	9.30%
Macrophyte Herbivore			
Piercer Herbivore	1	10	1.94%
Xylophage			
Scraper	2	151	29.26%
Shredder	4	35	6.78%
Omnivore			
Unknown			

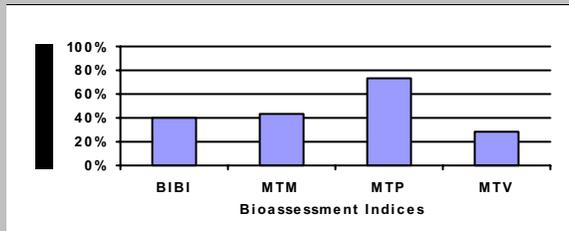


Metric Values and Scores

Metric	Value	BIBI	MTP	MTV	MTM
<i>Composition</i>					
Taxa Richness	39	3	3		3
Non-Insect Percent	36.63%				
E Richness	2	1		1	
P Richness	0	1		0	
T Richness	3	1		2	
EPT Richness	5		1		0
EPT Percent	6.01%		0		0
Oligochaeta+Hirudinea Percent	1.16%				
Baetidae/Ephemeroptera	0.250				
Hydropsychidae/Trichoptera	0.913				
<i>Dominance</i>					
Dominant Taxon Percent	28.88%		3		2
Dominant Taxa (2) Percent	43.22%				
Dominant Taxa (3) Percent	49.42%	5			
Dominant Taxa (10) Percent	78.49%				
<i>Diversity</i>					
Shannon H (loge)	2.645				
Shannon H (log2)	3.816		3		
Margalef D	6.121				
Simpson D	0.130				
Evenness	0.058				
<i>Function</i>					
Predator Richness	12		3		
Predator Percent	18.02%	3			
Filterer Richness	3				
Filterer Percent	9.30%			2	
Collector Percent	43.99%		3		3
Scraper+Shredder Percent	36.05%		3		1
Scraper/Filterer	3.146				
Scraper/Scraper+Filterer	0.759				
<i>Habit</i>					
Burrower Richness	4				
Burrower Percent	21.71%				
Swimmer Richness	2				
Swimmer Percent	7.75%				
Clinger Richness	10	1			
Clinger Percent	20.35%				
<i>Characteristics</i>					
Cold Stenotherm Richness	0				
Cold Stenotherm Percent	0.00%				
Hemoglobin Bearer Richness	8				
Hemoglobin Bearer Percent	19.57%				
Air Breather Richness	3				
Air Breather Percent	5.04%				
<i>Voltinism</i>					
Univoltine Richness	14				
Semivoltine Richness	4	3			
Multivoltine Percent	34.11%			3	
<i>Tolerance</i>					
Sediment Tolerant Richness	1				
Sediment Tolerant Percent	0.39%				
Sediment Sensitive Richness	0				
Sediment Sensitive Percent	0.00%				
Metals Tolerance Index	3.790				
Pollution Sensitive Richness	0	1			0
Pollution Tolerant Percent	61.82%	1			0
Hilsenhoff Biotic Index	7.145		0		0
Intolerant Percent	0.00%				
Supertolerant Percent	54.26%				
CTQa	102.667				

Bioassessment Indices

BiIndex	Description	Score	Pct	Rating
BIBI	B-IBI (Karr et al.)	20	40.00%	
MTP	Montana DEQ Plains (Bukantis 1998)	22	73.33%	Slight
MTV	Montana Revised Valleys/Foothills (Bollman 1998)	5	27.78%	Moderate
MTM	Montana DEQ Mountains (Bukantis 1998)	9	42.86%	Moderate



Metrics Report

Project ID: PBSJ08LSC
 RAI No.: PBSJ08LSC004
 Sta. Name: Little Salt Creek
 Client ID: Schied
 STORET ID
 Coll. Date: 10/28/2008

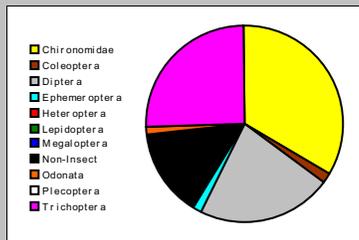
Abundance Measures

Sample Count: 535
 Sample Abundance: 1,337.50 40.00% of sample used

Coll. Procedure: KICK
 Sample Notes: 12:00:00 PM

Taxonomic Composition

Category	R	A	PRA
Non-Insect	3	78	14.58%
Odonata	2	7	1.31%
Ephemeroptera	2	6	1.12%
Plecoptera			
Heteroptera	1	1	0.19%
Megaloptera			
Trichoptera	3	137	25.61%
Lepidoptera			
Coleoptera	3	10	1.87%
Diptera	3	117	21.87%
Chironomidae	11	179	33.46%

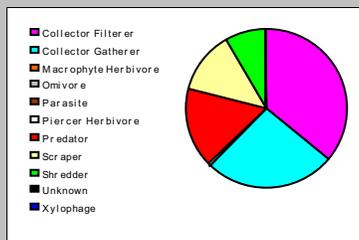


Dominant Taxa

Category	A	PRA
Cheumatopsyche	126	23.55%
Dicrotendipes	101	18.88%
Physidae	66	12.34%
Ceratopogoninae	59	11.03%
Simulium	57	10.65%
Polypedium	29	5.42%
Hyalella	11	2.06%
Chironomus	11	2.06%
Thienemannimvia Gr.	8	1.50%
Hydropsyche	8	1.50%
Cricotopus (Cricotopus)	8	1.50%
Thienemanniella	7	1.31%
Berosus	7	1.31%
Cricotopus bicinctus	6	1.12%
Coenagrionidae	6	1.12%

Functional Composition

Category	R	A	PRA
Predator	9	88	16.45%
Parasite			
Collector Gatherer	10	142	26.54%
Collector Filterer	3	191	35.70%
Macrophyte Herbivore			
Piercer Herbivore	1	3	0.56%
Xylophage			
Scraper	2	67	12.52%
Shredder	3	44	8.22%
Omnivore			
Unknown			

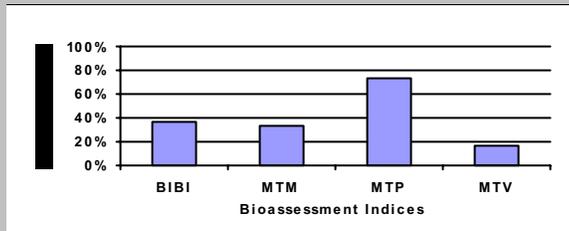


Metric Values and Scores

Metric	Value	BIBI	MTP	MTV	MTM
<i>Composition</i>					
Taxa Richness	28	3	3		2
Non-Insect Percent	14.58%				
E Richness	2	1		1	
P Richness	0	1		0	
T Richness	3	1		2	
EPT Richness	5		1		0
EPT Percent	26.73%		1		0
Oligochaeta+Hirudinea Percent					
Baetidae/Ephemeroptera	0.333				
Hydropsychidae/Trichoptera	0.978				
<i>Dominance</i>					
Dominant Taxon Percent	23.55%		3		3
Dominant Taxa (2) Percent	42.43%				
Dominant Taxa (3) Percent	54.77%	3			
Dominant Taxa (10) Percent	88.97%				
<i>Diversity</i>					
Shannon H (loge)	2.367				
Shannon H (log2)	3.415		3		
Margalef D	4.299				
Simpson D	0.134				
Evenness	0.073				
<i>Function</i>					
Predator Richness	9		3		
Predator Percent	16.45%	3			
Filterer Richness	3				
Filterer Percent	35.70%			0	
Collector Percent	62.24%		2		2
Scraper+Shredder Percent	20.75%		2		0
Scraper/Filterer	0.351				
Scraper/Scraper+Filterer	0.260				
<i>Habit</i>					
Burrower Richness	3				
Burrower Percent	31.96%				
Swimmer Richness	4				
Swimmer Percent	2.24%				
Clinger Richness	8	1			
Clinger Percent	44.67%				
<i>Characteristics</i>					
Cold Stenotherm Richness	0				
Cold Stenotherm Percent	0.00%				
Hemoglobin Bearer Richness	6				
Hemoglobin Bearer Percent	27.48%				
Air Breather Richness	2				
Air Breather Percent	1.68%				
<i>Voltinism</i>					
Univoltine Richness	12				
Semivoltine Richness	3	3			
Multivoltine Percent	34.39%		3		
<i>Tolerance</i>					
Sediment Tolerant Richness	1				
Sediment Tolerant Percent	0.19%				
Sediment Sensitive Richness	0				
Sediment Sensitive Percent	0.00%				
Metals Tolerance Index	4.405				
Pollution Sensitive Richness	0				0
Pollution Tolerant Percent	62.06%	1			0
Hilsenhoff Biotic Index	6.534		1		0
Intolerant Percent	0.00%				
Supertolerant Percent	36.45%				
CTQa	102.909				

Bioassessment Indices

BioIndex	Description	Score	Pct	Rating
BIBI	B-IBI (Karr et al.)	18	36.00%	
MTP	Montana DEQ Plains (Bukantis 1998)	22	73.33%	Slight
MTV	Montana Revised Valleys/Foothills (Bollman 1998)	3	16.67%	Severe
MTM	Montana DEQ Mountains (Bukantis 1998)	7	33.33%	Moderate



Metrics Report

Project ID: PBSJ08LSC
 RAI No.: PBSJ08LSC005
 Sta. Name: Little Salt Creek
 Client ID: Arbor
 STORET ID
 Coll. Date: 10/27/2008

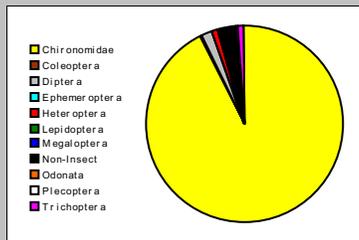
Abundance Measures

Sample Count: 460
 Sample Abundance: 460.00 100.00% of sample used

Coll. Procedure: KICK
 Sample Notes: 9:30:00 AM

Taxonomic Composition

Category	R	A	PRA
Non-Insect	4	13	2.83%
Odonata	1	1	0.22%
Ephemeroptera			
Plecoptera			
Heteroptera	1	5	1.09%
Megaloptera			
Trichoptera	2	5	1.09%
Lepidoptera			
Coleoptera	1	2	0.43%
Diptera	2	8	1.74%
Chironomidae	13	426	92.61%

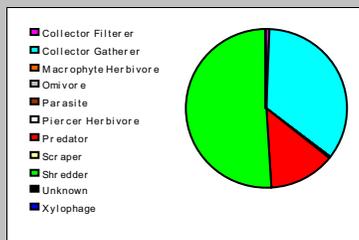


Dominant Taxa

Category	A	PRA
Cricotopus (Isocladius)	218	47.39%
Dicrotendipes	120	26.09%
Thienemannimyia Gr.	40	8.70%
Orthoclaudiinae	20	4.35%
Polypedilum	11	2.39%
Naididae (Tubificinae) - without c	8	1.74%
Ceratopogoninae	6	1.30%
Trichocorixa	5	1.09%
Cryptochironomus	5	1.09%
Hydropsychidae	4	0.87%
Cricotopus (Cricotopus)	4	0.87%
Tipulidae	2	0.43%
Pseudochironomus	2	0.43%
Limnodrilus	2	0.43%
Berosus	2	0.43%

Functional Composition

Category	R	A	PRA
Predator	8	61	13.26%
Parasite			
Collector Gatherer	9	158	34.35%
Collector Filterer	1	4	0.87%
Macrophyte Herbivore			
Piercer Herbivore	1	1	0.22%
Xylophage			
Scraper			
Shredder	5	236	51.30%
Omnivore			
Unknown			

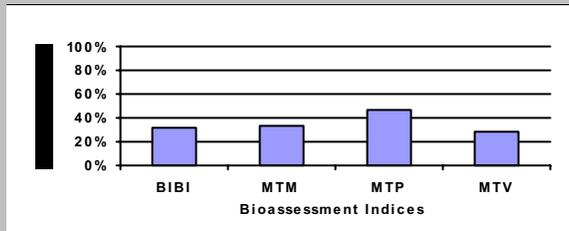


Metric Values and Scores

Metric	Value	BIBI	MTP	MTV	MTM
<i>Composition</i>					
Taxa Richness	24	3	2		2
Non-Insect Percent	2.83%				
E Richness	0	1		0	
P Richness	0	1		0	
T Richness	2	1		1	
EPT Richness	2		0		0
EPT Percent	1.09%		0		0
Oligochaeta+Hirudinea Percent	2.61%				
Baetidae/Ephemeroptera	0.00%				
Hydropsychidae/Trichoptera	0.80%				
<i>Dominance</i>					
Dominant Taxon Percent	47.39%		1		0
Dominant Taxa (2) Percent	73.48%				
Dominant Taxa (3) Percent	82.17%	1			
Dominant Taxa (10) Percent	95.00%				
<i>Diversity</i>					
Shannon H (loge)	1.518				
Shannon H (log2)	2.190		1		
Margalef D	3.790				
Simpson D	0.340				
Evenness	0.094				
<i>Function</i>					
Predator Richness	8		3		
Predator Percent	13.26%	3			
Filterer Richness	1				
Filterer Percent	0.87%			3	
Collector Percent	35.22%		3		3
Scraper+Shredder Percent	51.30%		3		2
Scraper/Filterer	0.00%				
Scraper/Scraper+Filterer	0.00%				
<i>Habit</i>					
Burrower Richness	3				
Burrower Percent	27.83%				
Swimmer Richness	2				
Swimmer Percent	1.52%				
Clinger Richness	6	1			
Clinger Percent	51.96%				
<i>Characteristics</i>					
Cold Stenotherm Richness	0				
Cold Stenotherm Percent	0.00%				
Hemoglobin Bearer Richness	7				
Hemoglobin Bearer Percent	30.87%				
Air Breather Richness	2				
Air Breather Percent	0.87%				
<i>Voltinism</i>					
Univoltine Richness	6				
Semivoltine Richness	1	1			
Multivoltine Percent	93.04%		0		
<i>Tolerance</i>					
Sediment Tolerant Richness	1				
Sediment Tolerant Percent	0.43%				
Sediment Sensitive Richness	0				
Sediment Sensitive Percent	0.00%				
Metals Tolerance Index	4.811				
Pollution Sensitive Richness	0				
Pollution Tolerant Percent	28.48%	3		1	
Hilsenhoff Biotic Index	6.964		1		0
Intolerant Percent	0.00%				
Supertolerant Percent	28.70%				
CTQa	103.500				

Bioassessment Indices

BiIndex	Description	Score	Pct	Rating
BIBI	B-IBI (Karr et al.)	16	32.00%	
MTP	Montana DEQ Plains (Bukantis 1998)	14	46.67%	Moderate
MTV	Montana Revised Valleys/Foothills (Bollman 1998)	5	27.78%	Moderate
MTM	Montana DEQ Mountains (Bukantis 1998)	7	33.33%	Moderate



Metrics Report

Project ID: PBSJ08LSC
 RAI No.: PBSJ08LSC006
 Sta. Name: Little Salt Creek - Trib
 Client ID: Parrot
 STORET ID
 Coll. Date: 10/27/2008

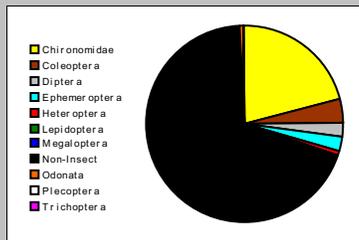
Abundance Measures

Sample Count: 503
 Sample Abundance: 603.60 83.33% of sample used

Coll. Procedure: KICK
 Sample Notes: 11:30:00 AM

Taxonomic Composition

Category	R	A	PRA
Non-Insect	7	348	69.18%
Odonata	2	3	0.60%
Ephemeroptera	2	11	2.19%
Plecoptera			
Heteroptera	3	4	0.80%
Megaloptera			
Trichoptera			
Lepidoptera			
Coleoptera	3	20	3.98%
Diptera	2	11	2.19%
Chironomidae	15	106	21.07%

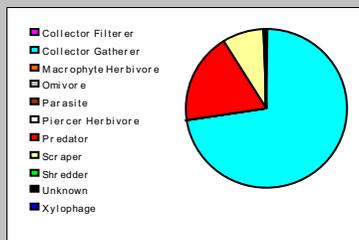


Dominant Taxa

Category	A	PRA
Hyalella	259	51.49%
Copepoda	43	8.55%
Physidae	37	7.36%
Thienemannimvia Gr.	36	7.16%
Chironomus	25	4.97%
Dytiscidae	17	3.38%
Paramerina	11	2.19%
Ceratopogoninae	10	1.99%
Callibaetis	10	1.99%
Paraphaenocladus	7	1.39%
Micropsectra	7	1.39%
Zavreliimia	6	1.19%
Planorbella	4	0.80%
Paratanytarsus	4	0.80%
Stictochironomus	2	0.40%

Functional Composition

Category	R	A	PRA
Predator	14	92	18.29%
Parasite			
Collector Gatherer	13	363	72.17%
Collector Filterer	1	2	0.40%
Macrophyte Herbivore			
Piercer Herbivore	0	1	0.20%
Xylophage			
Scraper	4	43	8.55%
Shredder	2	2	0.40%
Omnivore			
Unknown			

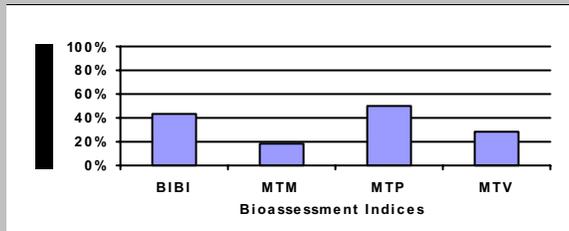


Metric Values and Scores

Metric	Value	BIBI	MTP	MTV	MTM
<i>Composition</i>					
Taxa Richness	34	3	3		3
Non-Insect Percent	69.18%				
E Richness	2	1		1	
P Richness	0	1		0	
T Richness	0	1		0	
EPT Richness	2		0		0
EPT Percent	2.19%		0		0
Oligochaeta+Hirudinea Percent	0.40%				
Baetidae/Ephemeroptera	0.909				
Hydropsychidae/Trichoptera	0.000				
<i>Dominance</i>					
Dominant Taxon Percent	51.49%		1		0
Dominant Taxa (2) Percent	60.04%				
Dominant Taxa (3) Percent	67.40%	3			
Dominant Taxa (10) Percent	90.46%				
<i>Diversity</i>					
Shannon H (loge)	1.911				
Shannon H (log2)	2.757		2		
Margalef D	5.336				
Simpson D	0.308				
Evenness	0.069				
<i>Function</i>					
Predator Richness	14		3		
Predator Percent	18.29%	3			
Filterer Richness	1				
Filterer Percent	0.40%			3	
Collector Percent	72.56%		2		1
Scraper+Shredder Percent	8.95%		1		0
Scraper/Filterer	21.500				
Scraper/Scraper+Filterer	0.956				
<i>Habit</i>					
Burrower Richness	4				
Burrower Percent	7.55%				
Swimmer Richness	4				
Swimmer Percent	2.78%				
Clinger Richness	4	1			
Clinger Percent	0.80%				
<i>Characteristics</i>					
Cold Stenotherm Richness	0				
Cold Stenotherm Percent	0.00%				
Hemoglobin Bearer Richness	11				
Hemoglobin Bearer Percent	11.13%				
Air Breather Richness	3				
Air Breather Percent	3.98%				
<i>Voltinism</i>					
Univoltine Richness	9				
Semivoltine Richness	5	5			
Multivoltine Percent	31.61%		3		
<i>Tolerance</i>					
Sediment Tolerant Richness	2				
Sediment Tolerant Percent	0.99%				
Sediment Sensitive Richness	0				
Sediment Sensitive Percent	0.00%				
Metals Tolerance Index	3.219				
Pollution Sensitive Richness	0				
Pollution Tolerant Percent	22.47%	1	3		0
Hilsenhoff Biotic Index	7.529		0		0
Intolerant Percent	0.00%				
Supertolerant Percent	77.53%				
CTQa	102.087				

Bioassessment Indices

BioIndex	Description	Score	Pct	Rating
BIBI	B-IBI (Karr et al.)	22	44.00%	
MTP	Montana DEQ Plains (Bukantis 1998)	15	50.00%	Moderate
MTV	Montana Revised Valleys/Foothills (Bollman 1998)	5	27.78%	Moderate
MTM	Montana DEQ Mountains (Bukantis 1998)	4	19.05%	Severe



Taxa Listing

Project ID: PBSJ08LSCP
RAI No.: PBSJ08LSCP001

RAI No.: PBSJ08LSCP001 Sta. Name: Little Salt Creek
Client ID: Benes
Date Coll.: 10/27/2008 No. Jars: 1 STORET ID:

Taxonomic Name	Count	PRA	Abnorm.	Comment
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Algae

Bacillariophyta				
Diatoms	186	31.00%		
Chlorophyta				
<i>Cladophora</i> sp.	2	0.33%		
<i>Oedogonium</i> sp.	24	4.00%		
Cyanophyta				
<i>Phormidium</i> sp.	10	1.67%		
Rhodophyta				
<i>Audouinella</i> sp.	126	21.00%		

Diatoms

Bacillariophyta				
<i>Amphora montana</i>	8	1.33%	0.00	
<i>Cocconeis pediculus</i>	8	1.33%	0.00	
<i>Cocconeis placentula</i>	20	3.33%	0.00	
<i>Eolimna minima</i>	102	17.00%	0.00	
<i>Gomphonema angustatum</i>	8	1.33%	0.00	
<i>Gomphonema minutum</i>	16	2.67%	0.00	
<i>Gomphonema parvulum</i>	12	2.00%	0.00	
<i>Gyrosigma</i> sp.	8	1.33%	0.00	
<i>Melosira varians</i>	12	2.00%	0.00	
<i>Navicula erifuga</i>	45	7.50%	0.00	
<i>Navicula lanceolata</i>	12	2.00%	0.00	
<i>Navicula libonensis</i>	12	2.00%	0.00	
<i>Navicula recens</i>	24	4.00%	0.00	
<i>Navicula subminuscula</i>	20	3.33%	0.00	
<i>Navicula symmetrica</i>	16	2.67%	0.00	
<i>Navicula tripunctata</i>	24	4.00%	0.00	
<i>Navicula veneta</i>	8	1.33%	0.00	
<i>Neidium</i> sp.	8	1.33%	0.00	
<i>Nitzschia amphibia</i>	32	5.33%	0.00	
<i>Nitzschia dissipata</i>	28	4.67%	0.00	
<i>Nitzschia inconspicua</i>	8	1.33%	0.00	
<i>Nitzschia linearis</i>	41	6.83%	0.00	
<i>Nitzschia palea</i>	20	3.33%	0.00	
<i>Planothidium frequentissimum</i>	32	5.33%	0.00	
<i>Planothidium lanceolatum</i>	16	2.67%	0.00	
<i>Rhoicosphenia abbreviata</i>	8	1.33%	0.00	
<i>Rhopalodia operculata</i>	16	2.67%	0.00	
<i>Stephanocyclus meneghiniana</i>	8	1.33%	0.00	
<i>Surirella angusta</i>	8	1.33%	0.00	
<i>Surirella ovalis</i>	8	1.33%	0.00	
<i>Tryblionella apiculata</i>	12	2.00%	0.00	

Sample Count 948

Taxa Listing

Project ID: PBSJ08LSCP
RAI No.: PBSJ08LSCP002

RAI No.: PBSJ08LSCP002

Sta. Name: Little Salt Creek

Client ID: LPSNRD

Date Coll.: 10/27/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Abnorm.	Comment
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Algae

Bacillariophyta				
Diatoms	203	33.67%		
Chlorophyta				
<i>Protoderma</i> sp.	12	1.99%		
<i>Spirogyra</i> sp.	5	0.83%		
Cyanophyta				
<i>Anabaena</i> sp.	15	2.49%		
<i>Phormidium</i> sp.	55	9.12%		
<i>Pseudanabaena</i> sp.	20	3.32%		

Diatoms

Bacillariophyta				
<i>Adlafia minuscula</i>	3	0.50%	0.00	
<i>Amphora montana</i>	18	2.99%	0.00	
<i>Amphora pediculus</i>	6	1.00%	0.00	
<i>Amphora veneta</i>	3	0.50%	0.00	
<i>Caloneis bacillum</i>	12	1.99%	0.00	
<i>Cocconeis placentula</i>	24	3.98%	0.00	
<i>Craticula cuspidata</i>	3	0.50%	0.00	
<i>Diploneis puella</i>	6	1.00%	0.00	
<i>Eolimna minima</i>	15	2.49%	0.00	
<i>Fallacia omissa</i>	9	1.49%	0.00	
<i>Fragilaria capucina</i> v. <i>mesolepta</i>	3	0.50%	0.00	
<i>Fragilaria vaucheriae</i>	9	1.49%	0.00	
<i>Geissleria decussis</i>	3	0.50%	0.00	
<i>Gomphonema parvulum</i>	6	1.00%	0.00	
<i>Gyrosigma acuminatum</i>	3	0.50%	0.00	
<i>Luticola</i> sp.	3	0.50%	0.00	
<i>Mayamaea atomus</i>	3	0.50%	0.00	
<i>Navicula amphiceropsis</i>	3	0.50%	0.00	
<i>Navicula arctotenelloides</i>	3	0.50%	0.00	
<i>Navicula erifuga</i>	51	8.46%	0.00	
<i>Navicula libonensis</i>	6	1.00%	0.00	
<i>Navicula pseudotenelloides</i>	6	1.00%	0.00	
<i>Navicula radiosa</i>	3	0.50%	0.00	
<i>Navicula salinicola</i>	3	0.50%	0.00	
<i>Navicula seibigiana</i>	6	1.00%	0.00	
<i>Navicula subminuscula</i>	3	0.50%	0.00	
<i>Navicula trivialis</i>	12	1.99%	0.00	
<i>Navicula upsaliensis</i>	12	1.99%	0.00	
<i>Navicula veneta</i>	18	2.99%	0.00	
<i>Nitzschia acicularis</i>	12	1.99%	0.00	
<i>Nitzschia amphibia</i>	9	1.49%	0.00	
<i>Nitzschia capitellata</i>	6	1.00%	0.00	
<i>Nitzschia desertorum</i>	6	1.00%	0.00	
<i>Nitzschia dissipata</i>	3	0.50%	0.00	
<i>Nitzschia fonticola</i>	3	0.50%	0.00	

Taxa Listing

Project ID: PBSJ08LSCP
RAI No.: PBSJ08LSCP002

RAI No.: PBSJ08LSCP002 Sta. Name: Little Salt Creek
Client ID: LPSNRD
Date Coll.: 10/27/2008 No. Jars: 1 STORET ID:

Taxonomic Name	Count	PRA	Abnorm.	Comment
<i>Nitzschia frustulum</i>	9	1.49%	0.00	
<i>Nitzschia gracilis</i>	3	0.50%	0.00	
<i>Nitzschia linearis</i>	36	5.97%	0.00	
<i>Nitzschia palea</i>	39	6.47%	0.00	
<i>Nitzschia paleacea</i>	3	0.50%	0.00	
<i>Nitzschia pseudofonticola</i>	57	9.45%	0.00	
<i>Nitzschia pusilla</i>	15	2.49%	0.00	
<i>Nitzschia reversa</i>	3	0.50%	0.00	
<i>Nitzschia supralitorea</i>	6	1.00%	0.00	
<i>Pinnularia obscura</i>	3	0.50%	0.00	
<i>Planothidium frequentissimum</i>	21	3.48%	0.00	
<i>Planothidium lanceolatum</i>	3	0.50%	0.00	
<i>Pseudostaurosira parasitica v. subconstricta</i>	6	1.00%	0.00	
<i>Rhoicosphenia abbreviata</i>	18	2.99%	0.00	
<i>Sellaphora laevissima</i>	3	0.50%	0.00	
<i>Sellaphora pupula</i>	3	0.50%	0.00	
<i>Sellaphora seminulum</i>	15	2.49%	0.00	
<i>Stephanocyclus meneghiniana</i>	3	0.50%	0.00	
<i>Surirella angusta</i>	18	2.99%	0.00	
<i>Surirella brebissonii</i>	6	1.00%	0.00	
<i>Surirella ovalis</i>	21	3.48%	0.00	
<i>Tryblionella apiculata</i>	6	1.00%	0.00	
<i>Tryblionella hungarica</i>	12	1.99%	0.00	
Sample Count	913			

Taxa Listing

Project ID: PBSJ08LSCP
RAI No.: PBSJ08LSCP003

RAI No.: PBSJ08LSCP003

Sta. Name: Little Salt Creek

Client ID: Game and Parks

Date Coll.: 10/28/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Abnorm.	Comment
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Algae

Bacillariophyta				
Diatoms	157	25.36%		
Cyanophyta				
<i>Oscillatoria</i> sp.	99	15.99%		
<i>Phormidium</i> sp.	90	14.54%		

Diatoms

Bacillariophyta				
<i>Achnanthes lemmermanni</i>	3	0.48%	0.00	
<i>Achnantheidium minutissimum</i>	9	1.45%	0.00	
<i>Amphora coffeaeformis</i>	2	0.32%	0.00	
<i>Amphora copulata</i>	2	0.32%	0.00	
<i>Amphora veneta</i>	3	0.48%	0.00	
<i>Bacillaria paradoxa</i>	11	1.78%	0.00	
<i>Caloneis silicula</i>	3	0.48%	0.00	
<i>Cocconeis pediculus</i>	3	0.48%	0.00	
<i>Cocconeis placentula</i>	106	17.12%	2.00	
<i>Cyclotella bodanica</i>	5	0.81%	0.00	
<i>Denticula subtilis</i>	6	0.97%	0.00	
<i>Diploneis puella</i>	2	0.32%	0.00	
<i>Entomoneis</i> sp.	2	0.32%	0.00	
<i>Fallacia pygmaea</i>	11	1.78%	0.00	
<i>Fragilaria vaucheriae</i>	3	0.48%	0.00	
<i>Gomphonema parvulum</i>	6	0.97%	0.00	
<i>Gyrosigma acuminatum</i>	2	0.32%	0.00	
<i>Hippodonta hungarica</i>	6	0.97%	0.00	
<i>Melosira varians</i>	2	0.32%	0.00	
<i>Navicula</i> sp.	2	0.32%	0.00	
<i>Navicula antonii</i>	2	0.32%	0.00	
<i>Navicula arctotenelloides</i>	18	2.91%	0.00	
<i>Navicula capitatoradiata</i>	2	0.32%	0.00	
<i>Navicula caterva</i>	3	0.48%	0.00	
<i>Navicula cincta</i>	12	1.94%	0.00	
<i>Navicula digitoradiata</i> v. <i>minima</i>	6	0.97%	0.00	
<i>Navicula erifuga</i>	26	4.20%	0.00	
<i>Navicula exilis</i>	2	0.32%	0.00	
<i>Navicula gregaria</i>	3	0.48%	0.00	
<i>Navicula libonensis</i>	17	2.75%	0.00	
<i>Navicula lundii</i>	2	0.32%	0.00	
<i>Navicula margalithii</i>	3	0.48%	0.00	
<i>Navicula perminuta</i>	8	1.29%	0.00	
<i>Navicula pseudotenelloides</i>	41	6.62%	0.00	
<i>Navicula recens</i>	11	1.78%	0.00	
<i>Navicula salinarum</i>	5	0.81%	0.00	
<i>Navicula salinicola</i>	39	6.30%	0.00	
<i>Navicula streckeriae</i>	11	1.78%	0.00	
<i>Navicula subminuscula</i>	3	0.48%	0.00	

Taxa Listing

Project ID: PBSJ08LSCP
RAI No.: PBSJ08LSCP003

RAI No.: PBSJ08LSCP003

Sta. Name: Little Salt Creek

Client ID: Game and Parks

Date Coll.: 10/28/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Abnorm.	Comment
<i>Navicula tripunctata</i>	9	1.45%	0.00	
<i>Navicula trivialis</i>	2	0.32%	0.00	
<i>Navicula veneta</i>	30	4.85%	0.00	
<i>Navicula vilaplani</i>	3	0.48%	0.00	
<i>Neidium</i> sp.	2	0.32%	0.00	
<i>Nitzschia</i> sp.	2	0.32%	0.00	
<i>Nitzschia amphibia</i>	2	0.32%	0.00	
<i>Nitzschia angustatula</i>	3	0.48%	0.00	
<i>Nitzschia bergii</i>	12	1.94%	0.00	
<i>Nitzschia calida</i>	5	0.81%	0.00	
<i>Nitzschia capitellata</i>	5	0.81%	0.00	
<i>Nitzschia clausii</i>	6	0.97%	0.00	
<i>Nitzschia desertorum</i>	5	0.81%	0.00	
<i>Nitzschia dissipata</i>	2	0.32%	0.00	
<i>Nitzschia frustulum</i>	15	2.42%	0.00	
<i>Nitzschia inconspicua</i>	3	0.48%	0.00	
<i>Nitzschia linearis</i>	2	0.32%	0.00	
<i>Nitzschia palea</i>	14	2.26%	0.00	
<i>Nitzschia perminuta</i>	2	0.32%	0.00	
<i>Nitzschia sigma</i>	2	0.32%	0.00	
<i>Planothidium frequentissimum</i>	8	1.29%	0.00	
<i>Planothidium lanceolatum</i>	6	0.97%	0.00	
<i>Pseudostaurosira parasitica</i>	3	0.48%	0.00	
<i>Rhoicosphenia abbreviata</i>	2	0.32%	0.00	
<i>Rhopalodia operculata</i>	8	1.29%	0.00	
<i>Staurosirella pinnata</i>	3	0.48%	0.00	
<i>Stephanocyclus meneghiniana</i>	12	1.94%	0.00	
<i>Surirella angusta</i>	6	0.97%	0.00	
<i>Surirella brebissonii</i>	8	1.29%	0.00	
<i>Surirella ovalis</i>	2	0.32%	0.00	
<i>Surirella tenera</i>	2	0.32%	0.00	
<i>Tabularia fasciculata</i>	5	0.81%	0.00	
<i>Tryblionella apiculata</i>	12	1.94%	0.00	
<i>Tryblionella hungarica</i>	11	1.78%	0.00	
<i>Tryblionella levidensis</i> v. <i>salinarum</i>	2	0.32%	0.00	

Sample Count 965

Taxa Listing

Project ID: PBSJ08LSCP
RAI No.: PBSJ08LSCP004

RAI No.: PBSJ08LSCP004

Sta. Name: Little Salt Creek

Client ID: Schied

Date Coll.: 10/28/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Abnorm.	Comment
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Algae

Bacillariophyta				
Diatoms	231	38.50%		
Chlorophyta				
<i>Cladophora</i> sp.	10	1.67%		
Cyanophyta				
<i>Oscillatoria</i> sp.	57	9.50%		
<i>Pseudanabaena</i> sp.	5	0.83%		

Diatoms

Bacillariophyta				
<i>Achnanthydium thienemannii</i>	5	0.83%	0.00	
<i>Amphora coffeaeformis</i>	22	3.67%	0.00	
<i>Amphora montana</i>	3	0.50%	0.00	
<i>Bacillaria paradoxa</i>	11	1.83%	0.00	
<i>Caloneis</i> sp.	3	0.50%	0.00	
<i>Caloneis bacillum</i>	5	0.83%	0.00	
<i>Caloneis westii</i>	3	0.50%	0.00	
<i>Cocconeis placentula</i>	11	1.83%	0.00	
<i>Entomoneis alata</i>	5	0.83%	0.00	
<i>Eolimna minima</i>	3	0.50%	0.00	
<i>Fallacia omissa</i>	3	0.50%	0.00	
<i>Fallacia pygmaea</i>	5	0.83%	0.00	
<i>Frustulia weinholdii</i>	11	1.83%	0.00	
<i>Gomphonema minutum</i>	5	0.83%	0.00	
<i>Hippodonta hungarica</i>	5	0.83%	0.00	
<i>Luticola</i> sp.	3	0.50%	0.00	
<i>Navicula arctotenelloides</i>	11	1.83%	0.00	
<i>Navicula cincta</i>	5	0.83%	0.00	
<i>Navicula dealpina</i>	11	1.83%	0.00	
<i>Navicula erifuga</i>	49	8.17%	0.00	
<i>Navicula exilis</i>	5	0.83%	0.00	
<i>Navicula gregaria</i>	8	1.33%	0.00	
<i>Navicula laterostrata</i>	14	2.33%	0.00	
<i>Navicula perminuta</i>	3	0.50%	0.00	
<i>Navicula pseudotenelloides</i>	3	0.50%	0.00	
<i>Navicula recens</i>	19	3.17%	0.00	
<i>Navicula salinarum</i>	11	1.83%	0.00	
<i>Navicula salinicola</i>	19	3.17%	0.00	
<i>Navicula streckeriae</i>	19	3.17%	0.00	
<i>Navicula subminuscula</i>	14	2.33%	0.00	
<i>Navicula tripunctata</i>	11	1.83%	0.00	
<i>Navicula vaucheriae</i>	5	0.83%	0.00	
<i>Navicula veneta</i>	43	7.17%	0.00	
<i>Nitzschia amphibia</i>	5	0.83%	0.00	
<i>Nitzschia clausii</i>	3	0.50%	0.00	
<i>Nitzschia dissipata</i>	5	0.83%	0.00	
<i>Nitzschia fonticola</i>	8	1.33%	0.00	

Monday, January 05, 2009

Taxa Listing

Project ID: PBSJ08LSCP
RAI No.: PBSJ08LSCP004

RAI No.: PBSJ08LSCP004 Sta. Name: Little Salt Creek
Client ID: Schied
Date Coll.: 10/28/2008 No. Jars: 1 STORET ID:

Taxonomic Name	Count	PRA	Abnorm.	Comment
<i>Nitzschia frustulum</i>	19	3.17%	1.00	
<i>Nitzschia inconspicua</i>	14	2.33%	0.00	
<i>Nitzschia palea</i>	5	0.83%	0.00	
<i>Nitzschia perminuta</i>	5	0.83%	0.00	
<i>Nitzschia pusilla</i>	49	8.17%	0.00	
<i>Nitzschia reversa</i>	8	1.33%	0.00	
<i>Nitzschia sigma</i>	3	0.50%	0.00	
<i>Nitzschia tubicola</i>	3	0.50%	0.00	
<i>Nitzschia vitrea</i>	3	0.50%	0.00	
<i>Pleurosira laevis</i>	3	0.50%	0.00	
<i>Rhopalodia operculata</i>	3	0.50%	0.00	
<i>Stephanocyclus meneghiniana</i>	30	5.00%	0.00	
<i>Surirella ovalis</i>	5	0.83%	0.00	
<i>Surirella subsalsa</i>	14	2.33%	0.00	
<i>Synedra ulna</i>	11	1.83%	0.00	
<i>Tabularia fasciculata</i>	30	5.00%	0.00	
<i>Tryblionella calida</i>	5	0.83%	0.00	
<i>Tryblionella hungarica</i>	8	1.33%	0.00	
<i>Tryblionella levidensis v. salinarum</i>	8	1.33%	0.00	
Sample Count	903			

Taxa Listing

Project ID: PBSJ08LSCP
RAI No.: PBSJ08LSCP005

RAI No.: PBSJ08LSCP005

Sta. Name: Little Salt Creek

Client ID: Arbor

Date Coll.: 10/27/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Abnorm.	Comment
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Algae

Bacillariophyta				
Diatoms	294	48.20%		
Cyanophyta				
<i>Phormidium</i> sp.	15	2.46%		

Diatoms

Bacillariophyta				
<i>Achnantheidium thienemanni</i>	3	0.49%	0.00	
<i>Adlafia minuscula</i>	6	0.98%	0.00	
<i>Amphora coffeaeformis</i>	9	1.48%	0.00	
<i>Amphora copulata</i>	12	1.97%	0.00	
<i>Amphora holsatica</i>	3	0.49%	0.00	
<i>Amphora montana</i>	3	0.49%	0.00	
<i>Amphora veneta</i>	9	1.48%	0.00	
<i>Bacillaria paradoxa</i>	3	0.49%	0.00	
<i>Cocconeis placentula</i>	9	1.48%	0.00	
<i>Entomoneis alata</i>	3	0.49%	0.00	
<i>Eolimna minima</i>	3	0.49%	0.00	
<i>Fallacia omissa</i>	12	1.97%	0.00	
<i>Fallacia pygmaea</i>	9	1.48%	0.00	
<i>Fragilaria vaucheriae</i>	6	0.98%	0.00	
<i>Frustulia weinholdii</i>	3	0.49%	0.00	
<i>Gomphonema angustatum</i>	6	0.98%	0.00	
<i>Gomphonema parvulum</i>	6	0.98%	0.00	
<i>Gyrosigma attenuatum</i>	3	0.49%	0.00	
<i>Hippodonta hungarica</i>	12	1.97%	0.00	
<i>Luticola</i> sp.	3	0.49%	0.00	
<i>Navicula antonii</i>	3	0.49%	0.00	
<i>Navicula cincta</i>	6	0.98%	0.00	
<i>Navicula cryptocephala</i>	6	0.98%	0.00	
<i>Navicula dealpina</i>	6	0.98%	0.00	
<i>Navicula erifuga</i>	32	5.25%	0.00	
<i>Navicula gregaria</i>	3	0.49%	0.00	
<i>Navicula laterostrata</i>	9	1.48%	0.00	
<i>Navicula peregrina</i>	3	0.49%	0.00	
<i>Navicula pseudotenelloides</i>	23	3.77%	0.00	
<i>Navicula recens</i>	32	5.25%	0.00	
<i>Navicula salinarum</i>	6	0.98%	0.00	
<i>Navicula salinicola</i>	23	3.77%	0.00	
<i>Navicula streckeriae</i>	20	3.28%	0.00	
<i>Navicula subminuscula</i>	6	0.98%	0.00	
<i>Navicula tripunctata</i>	26	4.26%	0.00	
<i>Navicula vaucheriae</i>	9	1.48%	0.00	
<i>Navicula veneta</i>	38	6.23%	0.00	
<i>Nitzschia acicularis</i>	3	0.49%	0.00	
<i>Nitzschia fonticola</i>	17	2.79%	0.00	
<i>Nitzschia frustulum</i>	61	10.00%	0.00	

Monday, January 05, 2009

Taxa Listing

Project ID: PBSJ08LSCP
RAI No.: PBSJ08LSCP005

RAI No.: PBSJ08LSCP005

Sta. Name: Little Salt Creek

Client ID: Arbor

Date Coll.: 10/27/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Abnorm.	Comment
<i>Nitzschia inconspicua</i>	29	4.75%	0.00	
<i>Nitzschia perminuta</i>	3	0.49%	0.00	
<i>Nitzschia pusilla</i>	3	0.49%	0.00	
<i>Nitzschia tubicola</i>	3	0.49%	0.00	
<i>Rhopalodia operculata</i>	6	0.98%	0.00	
<i>Stauroneis anceps</i>	9	1.48%	0.00	
<i>Stephanocyclus meneghiniana</i>	12	1.97%	0.00	
<i>Stephanodiscus hantzschii</i>	3	0.49%	0.00	
<i>Stephanodiscus minutulus</i>	3	0.49%	0.00	
<i>Surirella hoefleri</i>	6	0.98%	0.00	
<i>Surirella ovalis</i>	9	1.48%	0.00	
<i>Tabularia fasciculata</i>	63	10.33%	0.00	
<i>Tryblionella hungarica</i>	6	0.98%	0.00	

Sample Count 919

Taxa Listing

Project ID: PBSJ08LSCP
RAI No.: PBSJ08LSCP006

RAI No.: PBSJ08LSCP006

Sta. Name: Little Salt Creek - Trib

Client ID: Parrot

Date Coll.: 10/27/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Abnorm.	Comment
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Algae

Bacillariophyta

Diatoms	306	49.84%		
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Diatoms

Bacillariophyta

<i>Adlafia minuscula</i>	2	0.33%	0.00	
<i>Cymatopleura solea</i>	5	0.81%	0.00	
<i>Encyonema triangulum</i>	5	0.81%	0.00	
<i>Eolimna minima</i>	7	1.14%	0.00	
<i>Eunotia bilunaris</i>	2	0.33%	0.00	
<i>Fragilaria vaucheriae</i>	9	1.47%	0.00	
<i>Gomphonema angustatum</i>	11	1.79%	0.00	
<i>Gomphonema olivaceum</i>	5	0.81%	0.00	
<i>Gomphonema parvulum</i>	14	2.28%	0.00	
<i>Gyrosigma exilis</i>	2	0.33%	0.00	
<i>Mayamaea atomus</i>	7	1.14%	0.00	
<i>Navicula cincta</i>	7	1.14%	0.00	
<i>Navicula cryptotenella</i>	2	0.33%	0.00	
<i>Navicula digitoradiata</i>	5	0.81%	0.00	
<i>Navicula erifuga</i>	128	20.85%	0.00	
<i>Navicula gregaria</i>	2	0.33%	0.00	
<i>Navicula lanceolata</i>	2	0.33%	0.00	
<i>Navicula normaloides</i>	34	5.54%	0.00	
<i>Navicula recens</i>	20	3.26%	0.00	
<i>Navicula subminuscula</i>	7	1.14%	0.00	
<i>Navicula trivialis</i>	56	9.12%	0.00	
<i>Navicula veneta</i>	14	2.28%	0.00	
<i>Navicula ventralis</i>	5	0.81%	0.00	
<i>Nitzschia amphibia</i>	9	1.47%	0.00	
<i>Nitzschia communis</i>	5	0.81%	0.00	
<i>Nitzschia filiformis</i>	5	0.81%	0.00	
<i>Nitzschia inconspicua</i>	5	0.81%	0.00	
<i>Nitzschia linearis</i>	14	2.28%	0.00	
<i>Nitzschia palea</i>	34	5.54%	0.00	
<i>Nitzschia paleacea</i>	5	0.81%	0.00	
<i>Nitzschia perminuta</i>	5	0.81%	0.00	
<i>Nitzschia pseudofonticola</i>	99	16.12%	0.00	
<i>Nitzschia pusilla</i>	5	0.81%	0.00	
<i>Nitzschia solita</i>	5	0.81%	0.00	
<i>Nitzschia supralitorea</i>	11	1.79%	0.00	
<i>Nitzschia tubicola</i>	11	1.79%	0.00	
<i>Pinnularia brebissonii</i>	5	0.81%	0.00	
<i>Planothidium lanceolatum</i>	5	0.81%	0.00	
<i>Sellaphora pupula</i>	14	2.28%	0.00	
<i>Surirella angusta</i>	5	0.81%	0.00	
<i>Surirella brebissonii</i>	5	0.81%	0.00	
<i>Surirella ovalis</i>	2	0.33%	0.00	

Monday, January 05, 2009

Taxa Listing

Project ID: PBSJ08LSCP
RAI No.: PBSJ08LSCP006

RAI No.: PBSJ08LSCP006

Sta. Name: Little Salt Creek - Trib

Client ID: Parrot

Date Coll.: 10/27/2008

No. Jars: 1

STORET ID:

Taxonomic Name	Count	PRA	Abnorm.	Comment
<i>Synedra ulna</i>	5	0.81%	0.00	
<i>Tryblionella calida</i>	2	0.33%	0.00	
<i>Tryblionella gracilis</i>	2	0.33%	0.00	
<i>Tryblionella hungarica</i>	5	0.81%	0.00	
Sample Count	920			

Metrics Report

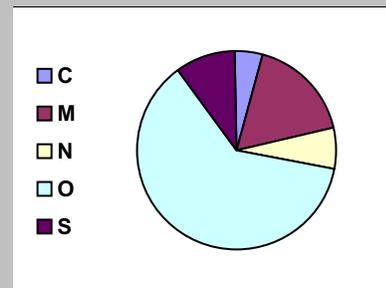
Project ID: PBSJ08LSCP
Sample ID: PBSJ08LSCP001
Station Name: Little Salt Creek
Client ID: Benes
STORET ID:
Date Collected: 10/27/2008
Count Of Taxon: 31
Sum Of Count: 600

Table 1 Metrics

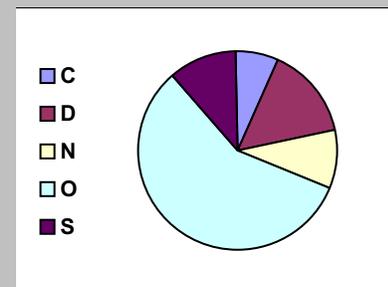
Metric	Value	MTM	MTP
<i>Community Structure</i>			
Shannon H (log2)	4.535	Excellent	Excellent
Species Richness	31	Excellent	Good
Native Taxa Percent	0.00%		
Cosmopolitan Taxa Percent	80.00%		
Mountains Rare Taxa Percent	0.00%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	17.00%	Excellent	Excellent
<i>Sediment</i>			
Siltation Taxa Percent	70.00%	Poor	Good
Motile Taxa Percent	76.67%		
Mountains Brackish Taxa Percent	64.50%		
Plains Brackish Taxa Percent	0.00%		
<i>Organic Nutrients</i>			
Pollution Index	1.877	Fair	Good
Nitrogen Heterotroph Taxa Percent	35.67%		
Polysaprobous Taxa Percent	54.33%		
Low DO Taxa Percent	29.67%		
<i>Inorganic Nutrients</i>			
Nitrogen Autotroph Taxa Percent	40.17%		
Eutraphentic Taxa Percent	75.83%		
Rhopalodiales Percent	2.67%		
<i>Metals</i>			
Disturbance Taxa Percent	0.00%	Excellent	Excellent
Acidophilous Taxa Percent	0.00%		
Metals Tolerant Taxa Percent	26.33%		
Abnormal Cells Percent	0.00%	Excellent	

Increaser/Decreaser Taxa

Metric	Value	Prob.
Mountains General Increasers Taxa Percent	38.33%	75.49%
Mountains Metals Increasers Taxa Percent	21.67%	33.36%
Mountains Nutrient Increasers Taxa Percent	11.33%	16.11%
Mountains Sediment Increasers Taxa Percent	14.67%	33.72%



Metric	Value	Prob.
Plains General Decreasers Taxa Percent	14.83%	61.41%
Plains General Increasers Taxa Percent	28.17%	35.57%



BioIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Poor
MTP	Montana DEQ Plains (Bahls 1992)	Good

Metrics Report

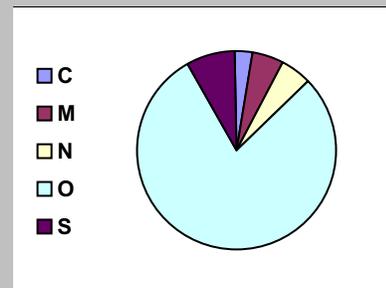
Project ID: PBSJ08LSCP
Sample ID: PBSJ08LSCP002
Station Name: Little Salt Creek
Client ID: LPSNRD
STORET ID:
Date Collected: 10/27/2008
Count Of Taxon: 58
Sum Of Count: 603

Table 1 Metrics

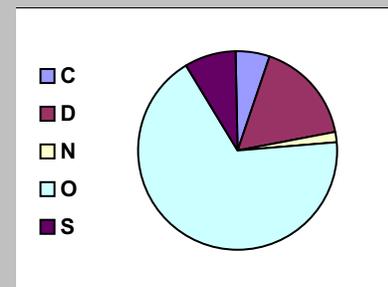
Metric	Value	MTM	MTP
<i>Community Structure</i>			
Shannon H (log2)	5.241	Excellent	Excellent
Species Richness	58	Excellent	Excellent
Native Taxa Percent	0.00%		
Cosmopolitan Taxa Percent	64.18%		
Mountains Rare Taxa Percent	0.00%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	9.45%	Excellent	Excellent
<i>Sediment</i>			
Siltation Taxa Percent	76.12%	Poor	Fair
Motile Taxa Percent	84.58%		
Mountains Brackish Taxa Percent	57.21%		
Plains Brackish Taxa Percent	1.49%		
<i>Organic Nutrients</i>			
Pollution Index	1.856	Fair	Good
Nitrogen Heterotroph Taxa Percent	20.40%		
Polysaprobous Taxa Percent	38.31%		
Low DO Taxa Percent	23.88%		
<i>Inorganic Nutrients</i>			
Nitrogen Autotroph Taxa Percent	49.25%		
Eutraphentic Taxa Percent	69.15%		
Rhopalodiales Percent	0.00%		
<i>Metals</i>			
Disturbance Taxa Percent	0.00%	Excellent	Excellent
Acidophilous Taxa Percent	0.00%		
Metals Tolerant Taxa Percent	19.40%		
Abnormal Cells Percent	0.00%	Excellent	

Increaser/Decreaser Taxa

Metric	Value	Prob.
Mountains General Increasers Taxa Percent	21.39%	43.25%
Mountains Metals Increasers Taxa Percent	7.96%	8.85%
Mountains Nutrient Increasers Taxa Percent	8.46%	11.90%
Mountains Sediment Increasers Taxa Percent	10.95%	24.83%



Metric	Value	Prob.
Plains General Decreasers Taxa Percent	16.92%	56.36%
Plains General Increasers Taxa Percent	15.42%	9.85%



BioIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Poor
MTP	Montana DEQ Plains (Bahls 1992)	Fair

Metrics Report

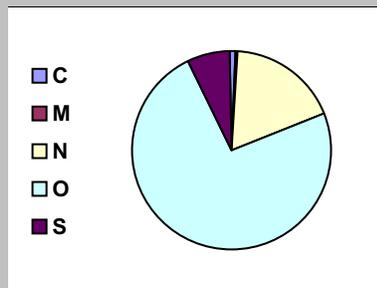
Project ID: PBSJ08LSCP
Sample ID: PBSJ08LSCP003
Station Name: Little Salt Creek
Client ID: Game and Parks
STORET ID:
Date Collected: 10/28/2008
Count Of Taxon: 74
Sum Of Count: 619

Table 1 Metrics

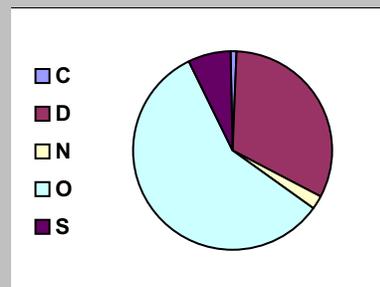
Metric	Value	MTM	MTP
<i>Community Structure</i>			
Shannon H (log2)	5.282	Excellent	Excellent
Species Richness	74	Excellent	Excellent
Native Taxa Percent	0.48%		
Cosmopolitan Taxa Percent	64.30%		
Mountains Rare Taxa Percent	0.00%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	17.12%	Excellent	Excellent
<i>Sediment</i>			
Siltation Taxa Percent	64.62%	Poor	Good
Motile Taxa Percent	71.57%		
Mountains Brackish Taxa Percent	33.12%		
Plains Brackish Taxa Percent	0.81%		
<i>Organic Nutrients</i>			
Pollution Index	2.008	Good	Good
Nitrogen Heterotroph Taxa Percent	10.99%		
Polysaprobous Taxa Percent	30.86%		
Low DO Taxa Percent	14.86%		
<i>Inorganic Nutrients</i>			
Nitrogen Autotroph Taxa Percent	49.27%		
Eutraphentic Taxa Percent	60.74%		
Rhopalodiales Percent	1.29%		
<i>Metals</i>			
Disturbance Taxa Percent	1.45%	Excellent	Excellent
Acidophilous Taxa Percent	0.00%		
Metals Tolerant Taxa Percent	5.65%		
Abnormal Cells Percent	0.32%	Good	

Increaser/Decreaser Taxa

Metric	Value	Prob.
Mountains General Increasers Taxa Percent	26.33%	53.19%
Mountains Metals Increasers Taxa Percent	1.29%	3.67%
Mountains Nutrient Increasers Taxa Percent	18.90%	30.50%
Mountains Sediment Increasers Taxa Percent	7.75%	18.67%



Metric	Value	Prob.
Plains General Decreasers Taxa Percent	31.66%	21.77%
Plains General Increasers Taxa Percent	10.34%	4.95%



BiIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Poor
MTP	Montana DEQ Plains (Bahls 1992)	Good

Metrics Report

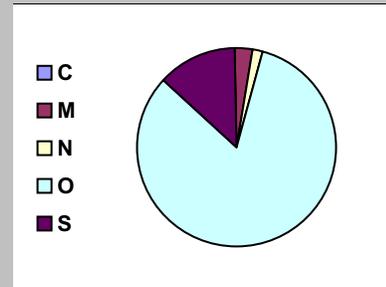
Project ID: PBSJ08LSCP
Sample ID: PBSJ08LSCP004
Station Name: Little Salt Creek
Client ID: Schied
STORET ID:
Date Collected: 10/28/2008
Count Of Taxon: 56
Sum Of Count: 600

Table 1 Metrics

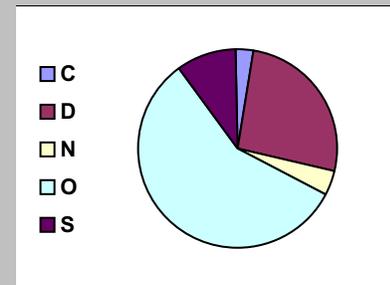
Metric	Value	MTM	MTP
<i>Community Structure</i>			
Shannon H (log2)	5.267	Excellent	Excellent
Species Richness	56	Excellent	Excellent
Native Taxa Percent	2.33%		
Cosmopolitan Taxa Percent	68.33%		
Mountains Rare Taxa Percent	0.00%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	8.17%	Excellent	Excellent
<i>Sediment</i>			
Siltation Taxa Percent	73.17%	Poor	Fair
Motile Taxa Percent	84.17%		
Mountains Brackish Taxa Percent	19.33%		
Plains Brackish Taxa Percent	0.00%		
<i>Organic Nutrients</i>			
Pollution Index	1.793	Fair	Good
Nitrogen Heterotroph Taxa Percent	15.83%		
Polysaprobous Taxa Percent	42.00%		
Low DO Taxa Percent	21.17%		
<i>Inorganic Nutrients</i>			
Nitrogen Autotroph Taxa Percent	45.83%		
Eutraphentic Taxa Percent	60.17%		
Rhopalodiales Percent	0.50%		
<i>Metals</i>			
Disturbance Taxa Percent	0.00%	Excellent	Excellent
Acidophilous Taxa Percent	0.00%		
Metals Tolerant Taxa Percent	3.17%		
Abnormal Cells Percent	0.17%	Good	

Increaser/Decreaser Taxa

Metric	Value	Prob.
Mountains General Increasers Taxa Percent	17.67%	35.57%
Mountains Metals Increasers Taxa Percent	2.67%	4.46%
Mountains Nutrient Increasers Taxa Percent	1.83%	5.48%
Mountains Sediment Increasers Taxa Percent	13.17%	30.15%



Metric	Value	Prob.
Plains General Decreasers Taxa Percent	26.17%	33.36%
Plains General Increasers Taxa Percent	16.67%	11.51%



BioIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Poor
MTP	Montana DEQ Plains (Bahls 1992)	Fair

Metrics Report

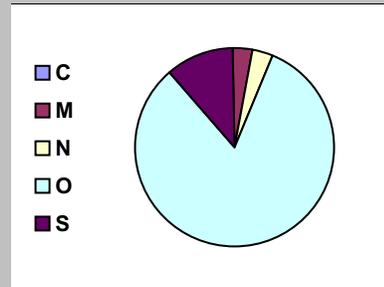
Project ID: PBSJ08LSCP
Sample ID: PBSJ08LSCP005
Station Name: Little Salt Creek
Client ID: Arbor
STORET ID:
Date Collected: 10/27/2008
Count Of Taxon: 53
Sum Of Count: 610

Table 1 Metrics

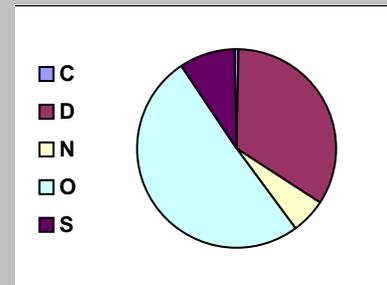
Metric	Value	MTM	MTP
<i>Community Structure</i>			
Shannon H (log2)	5.061	Excellent	Excellent
Species Richness	53	Excellent	Excellent
Native Taxa Percent	1.48%		
Cosmopolitan Taxa Percent	65.25%		
Mountains Rare Taxa Percent	0.00%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	10.33%	Excellent	Excellent
<i>Sediment</i>			
Siltation Taxa Percent	71.48%	Poor	Fair
Motile Taxa Percent	81.80%		
Mountains Brackish Taxa Percent	25.25%		
Plains Brackish Taxa Percent	0.98%		
<i>Organic Nutrients</i>			
Pollution Index	1.907	Fair	Good
Nitrogen Heterotroph Taxa Percent	21.64%		
Polysaprobous Taxa Percent	43.28%		
Low DO Taxa Percent	15.08%		
<i>Inorganic Nutrients</i>			
Nitrogen Autotroph Taxa Percent	44.75%		
Eutraphentic Taxa Percent	69.18%		
Rhopalodiales Percent	0.98%		
<i>Metals</i>			
Disturbance Taxa Percent	0.00%	Excellent	Excellent
Acidophilous Taxa Percent	0.00%		
Metals Tolerant Taxa Percent	3.44%		
Abnormal Cells Percent	0.00%	Excellent	

Increaser/Decreaser Taxa

Metric	Value	Prob.
Mountains General Increasers Taxa Percent	18.20%	36.69%
Mountains Metals Increasers Taxa Percent	3.28%	4.85%
Mountains Nutrient Increasers Taxa Percent	3.44%	6.68%
Mountains Sediment Increasers Taxa Percent	11.48%	26.11%



Metric	Value	Prob.
Plains General Decreasers Taxa Percent	33.93%	17.88%
Plains General Increasers Taxa Percent	15.25%	9.68%



BioIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Poor
MTP	Montana DEQ Plains (Bahls 1992)	Fair

Metrics Report

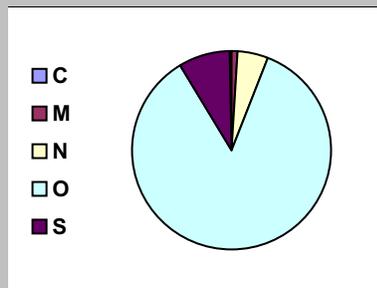
Project ID: PBSJ08LSCP
Sample ID: PBSJ08LSCP006
Station Name: Little Salt Creek - Trib
Client ID: Parrot
STORET ID:
Date Collected: 10/27/2008
Count Of Taxon: 46
Sum Of Count: 614

Table 1 Metrics

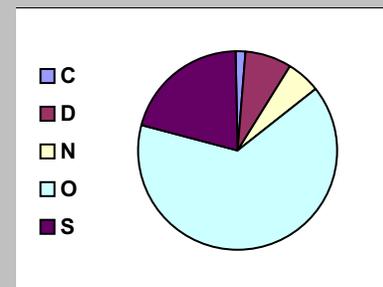
Metric	Value	MTM	MTP
<i>Community Structure</i>			
Shannon H (log2)	4.376	Excellent	Excellent
Species Richness	46	Excellent	Excellent
Native Taxa Percent	0.81%		
Cosmopolitan Taxa Percent	63.52%		
Mountains Rare Taxa Percent	0.00%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	20.85%	Excellent	Excellent
<i>Sediment</i>			
Siltation Taxa Percent	88.92%	Poor	Fair
Motile Taxa Percent	90.88%		
Mountains Brackish Taxa Percent	40.39%		
Plains Brackish Taxa Percent	1.14%		
<i>Organic Nutrients</i>			
Pollution Index	1.827	Fair	Good
Nitrogen Heterotroph Taxa Percent	17.75%		
Polysaprobous Taxa Percent	41.86%		
Low DO Taxa Percent	13.84%		
<i>Inorganic Nutrients</i>			
Nitrogen Autotroph Taxa Percent	28.50%		
Eutraphentic Taxa Percent	81.11%		
Rhopalodiales Percent	0.00%		
<i>Metals</i>			
Disturbance Taxa Percent	0.00%	Excellent	Excellent
Acidophilous Taxa Percent	0.00%		
Metals Tolerant Taxa Percent	15.15%		
Abnormal Cells Percent	0.00%	Excellent	

Increaser/Decreaser Taxa

Metric	Value	Prob.
Mountains General Increasers Taxa Percent	14.66%	30.15%
Mountains Metals Increasers Taxa Percent	1.47%	3.75%
Mountains Nutrient Increasers Taxa Percent	5.21%	8.38%
Mountains Sediment Increasers Taxa Percent	8.63%	20.33%



Metric	Value	Prob.
Plains General Decreasers Taxa Percent	7.49%	77.64%
Plains General Increasers Taxa Percent	28.34%	35.94%



BioIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Poor
MTP	Montana DEQ Plains (Bahls 1992)	Fair

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