

Report Date:
22-Sep-10 17:10



- Final Report
- Re-Issued Report
- Revised Report

SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

Laboratory Report

University of New Hampshire
Room 330, Gregg Hall
Durham, NH 03824
Attn: Bob Craycraft

Project: Lake wentworth Watershed Management Plan
Project #: [none]

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SB17881-01	1 Fullers	Sediment	16-Aug-10 09:32	08-Sep-10 14:30
SB17881-02	2 Triggs	Sediment	16-Aug-10 12:25	08-Sep-10 14:30
SB17881-03	12 Gov Deep	Sediment	16-Aug-10 10:37	08-Sep-10 14:30
SB17881-04	6 Center	Sediment	16-Aug-10 11:30	08-Sep-10 14:30
SB17881-05	Nearshore	Sediment	16-Aug-10 13:27	08-Sep-10 14:30

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.

All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435
Vermont # VT-11393



Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Technical Reviewer's Initial:

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes.

Please note that this report contains 9 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

The samples were received 20.1 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

Phosphorus Fractionation Case Narrative

25 ml. aliquots of a 1 M solution of ammonium chloride (buffered to pH 7) was added to various sample weights and tumbled for a two hour period. This extract is tested for loosely-bound phosphorus using ASTM method D515-88 for reactive phosphorus.

The next extraction was performed by adding 25 ml. aliquots of the dithionite solution (0.11 M NaHCO₃/0.11 M Na₂S₂O₄ final pH 6.8) to the original samples. The samples were tumbled for 1 hour. This extract is tested for iron-bound phosphorus using ASTM method D515-88 for reactive phosphorus.

A spiked sample / sample duplicate were analyzed throughout the complete procedure. The total matrix spike recovery for SB17881-03(12 Gov Deep) MS/MSD exceeded laboratory acceptance criteria of 80-120% at 22 and 20% showing a matrix effect of the sample from this work order. No appreciable spike recovery for the loosely-bound portion was determined.

The negligible recovery of the loosely-bound phosphorus in SBSB17881-03 is typical of sediments normally seen at this laboratory. The corresponding elevated matrix spike recovery of the iron bound portion follows the typical pattern.

All samples were analyzed for %moisture from the original submitted aliquot. Following the initial analysis for %moisture, the samples were air dried to a mousse-like or drier consistency and analyzed for %solids. All results have been reported on a dry weight basis based on the laboratory prepared %solid samples.

These samples contained a large amount of water upon receipt. For any future samples please remove as much standing water as possible prior to submission to the laboratory.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

ASTM D515-88(A)

Spikes:

1019770-MS1 *Source: SB17881-03*

The spike recovery was outside acceptance limits for the MS, MSD and/or PS due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

Loosely-sorbed Phosphorus as P

1019770-MSD1 *Source: SB17881-03*

The spike recovery was outside acceptance limits for the MS, MSD and/or PS due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

Loosely-sorbed Phosphorus as P

1019771-MS2 *Source: SB17881-03*

The spike recovery was outside acceptance limits for the MS, MSD and/or PS due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

Iron bound Phosphorus as P

1019771-MSD2 *Source: SB17881-03*

The spike recovery was outside acceptance limits for the MS, MSD and/or PS due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

Iron bound Phosphorus as P

Duplicates:

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* Reportable Detection Limit

BRL = Below Reporting Limit

ASTM D515-88(A)

Duplicates:

1019770-DUP1 *Source: SB17881-03*

Analyses are not controlled on RPD values from sample concentrations less than the reporting limit. QC batch accepted based on LCS and/or LCSD QC results

Loosely-sorbed Phosphorus as P

SM2540 G

Duplicates:

1019558-DUP1 *Source: SB17881-01*

This sample was received outside the EPA recommended holding time for the analysis specified.

Total Volatile Solids

Samples:

SB17881-01 *1 Fullers*

This sample was received outside the EPA recommended holding time for the analysis specified.

Total Volatile Solids

SB17881-02 *2 Triggs*

This sample was received outside the EPA recommended holding time for the analysis specified.

Total Volatile Solids

SB17881-03 *12 Gov Deep*

This sample was received outside the EPA recommended holding time for the analysis specified.

Total Volatile Solids

SB17881-04 *6 Center*

This sample was received outside the EPA recommended holding time for the analysis specified.

Total Volatile Solids

SB17881-05 *Nearshore*

This sample was received outside the EPA recommended holding time for the analysis specified.

Total Volatile Solids

SW846 6010B

Spikes:

1019492-MS1 *Source: SB17881-05*

The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.

Aluminum
Iron

1019492-MSD1 *Source: SB17881-05*

The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.

Aluminum
Iron

SW846 6010B

Spikes:

1019492-PS1

Source: SB17881-05

The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.

Aluminum

Iron

Sample Identification

1 Fullers Client Project # [none] Matrix Sediment Collection Date/Time 16-Aug-10 09:32 Received 08-Sep-10
SB17881-01

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Total Metals by EPA 6000/7000 Series Methods												
7429-90-5	Aluminum	18,900		mg/kg dry	8.97	1	SW846 6010B	17-Sep-10	20-Sep-10	JB	1019492	X
7439-89-6	Iron	12,800		mg/kg dry	7.18	1	"	"	"	"	"	X
7723-14-0	Phosphorus as P	1,570		mg/kg dry	188	1	"	"	"	"	"	
General Chemistry Parameters												
	% Solids	55.6		%		1	SM2540 G Mod.	17-Sep-10	17-Sep-10	AB	1019753	
	Moisture	91.5		%		1	SM2540 G Mod. calculation	14-Sep-10	14-Sep-10	BD	1019479	
	Iron bound Phosphorus as P	10.7		mg/kg dry dry	4.50	1	ASTM D515-88(A)	18-Sep-10	20-Sep-10	JOC	1019771	
	Loosely-sorbed Phosphorus as P	BRL		mg/kg dry dry	0.90	1	"	"	20-Sep-10	"	1019770	
	Total Volatile Solids	23.2	HT2	%		1	SM2540 G	15-Sep-10	15-Sep-10	BD	1019558	

Sample Identification

2 Triggs Client Project # [none] Matrix Sediment Collection Date/Time 16-Aug-10 12:25 Received 08-Sep-10
SB17881-02

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Total Metals by EPA 6000/7000 Series Methods												
7429-90-5	Aluminum	21,200		mg/kg dry	16.5	1	SW846 6010B	17-Sep-10	20-Sep-10	JB	1019492	X
7439-89-6	Iron	15,100		mg/kg dry	13.2	1	"	"	"	"	"	X
7723-14-0	Phosphorus as P	1,430		mg/kg dry	346	1	"	"	"	"	"	
General Chemistry Parameters												
	% Solids	26.0		%		1	SM2540 G Mod.	17-Sep-10	17-Sep-10	AB	1019753	
	Moisture	89.0		%		1	SM2540 G Mod. calculation	14-Sep-10	14-Sep-10	BD	1019479	
	Iron bound Phosphorus as P	22.3		mg/kg dry dry	9.61	1	ASTM D515-88(A)	18-Sep-10	20-Sep-10	JOC	1019771	
	Loosely-sorbed Phosphorus as P	BRL		mg/kg dry dry	1.92	1	"	"	20-Sep-10	"	1019770	
	Total Volatile Solids	18.3	HT2	%		1	SM2540 G	15-Sep-10	15-Sep-10	BD	1019558	

Sample Identification

12 Gov Deep Client Project # [none] Matrix Sediment Collection Date/Time 16-Aug-10 10:37 Received 08-Sep-10
SB17881-03

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Total Metals by EPA 6000/7000 Series Methods												
7429-90-5	Aluminum	19,000		mg/kg dry	16.6	1	SW846 6010B	17-Sep-10	20-Sep-10	JB	1019492	X
7439-89-6	Iron	13,300		mg/kg dry	13.3	1	"	"	"	"	"	X
7723-14-0	Phosphorus as P	1,610		mg/kg dry	349	1	"	"	"	"	"	
General Chemistry Parameters												
	% Solids	27.9		%		1	SM2540 G Mod.	17-Sep-10	17-Sep-10	AB	1019753	
	Moisture	86.4		%		1	SM2540 G Mod. calculation	14-Sep-10	14-Sep-10	BD	1019479	
	Iron bound Phosphorus as P	21.7		mg/kg dry dry	8.96	1	ASTM D515-88(A)	18-Sep-10	20-Sep-10	JOC	1019771	
	Loosely-sorbed Phosphorus as P	BRL		mg/kg dry dry	1.79	1	"	"	20-Sep-10	"	1019770	
	Total Volatile Solids	21.4	HT2	%		1	SM2540 G	15-Sep-10	15-Sep-10	BD	1019558	

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* Reportable Detection Limit

BRL = Below Reporting Limit

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Sample Identification

6 Center SB17881-04	<u>Client Project #</u> [none]	<u>Matrix</u> Sediment	<u>Collection Date/Time</u> 16-Aug-10 11:30	<u>Received</u> 08-Sep-10
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<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
Total Metals by EPA 6000/7000 Series Methods												
7429-90-5	Aluminum	17,700		mg/kg dry	18.7	1	SW846 6010B	17-Sep-10	20-Sep-10	JB	1019492	X
7439-89-6	Iron	13,300		mg/kg dry	14.9	1	"	"	"	"	"	X
7723-14-0	Phosphorus as P	1,140		mg/kg dry	392	1	"	"	"	"	"	
General Chemistry Parameters												
	% Solids	25.3		%		1	SM2540 G Mod.	17-Sep-10	17-Sep-10	AB	1019753	
	Moisture	88.6		%		1	SM2540 G Mod. calculation	14-Sep-10	14-Sep-10	BD	1019479	
	Iron bound Phosphorus as P	27.5		mg/kg dry dry	9.88	1	ASTM D515-88(A)	18-Sep-10	20-Sep-10	JOC	1019771	
	Loosely-sorbed Phosphorus as P	BRL		mg/kg dry dry	1.98	1	"	"	20-Sep-10	"	1019770	
	Total Volatile Solids	24.3	HT2	%		1	SM2540 G	15-Sep-10	15-Sep-10	BD	1019558	

Sample Identification

Nearshore SB17881-05	<u>Client Project #</u> [none]	<u>Matrix</u> Sediment	<u>Collection Date/Time</u> 16-Aug-10 13:27	<u>Received</u> 08-Sep-10
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<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
Total Metals by EPA 6000/7000 Series Methods												
7429-90-5	Aluminum	2,170		mg/kg dry	4.50	1	SW846 6010B	17-Sep-10	20-Sep-10	JB	1019492	X
7439-89-6	Iron	4,320		mg/kg dry	3.60	1	"	"	"	"	"	X
7723-14-0	Phosphorus as P	BRL		mg/kg dry	94.6	1	"	"	"	"	"	
General Chemistry Parameters												
	% Solids	94.2		%		1	SM2540 G Mod.	17-Sep-10	17-Sep-10	AB	1019753	
	Moisture	28.7		%		1	SM2540 G Mod. calculation	14-Sep-10	14-Sep-10	BD	1019479	
	Iron bound Phosphorus as P	3.63		mg/kg dry dry	2.66	1	ASTM D515-88(A)	18-Sep-10	20-Sep-10	JOC	1019771	
	Loosely-sorbed Phosphorus as P	BRL		mg/kg dry dry	0.53	1	"	"	20-Sep-10	"	1019770	
	Total Volatile Solids	1.41	HT2	%		1	SM2540 G	15-Sep-10	15-Sep-10	BD	1019558	

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BRL = Below Reporting Limit

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1019492 - SW846 3050B										
<u>Blank (1019492-BLK1)</u>					<u>Prepared: 17-Sep-10 Analyzed: 20-Sep-10</u>					
Phosphorus as P	BRL		mg/kg wet	99.7						
Iron	BRL		mg/kg wet	3.80						
Aluminum	BRL		mg/kg wet	4.75						
<u>Duplicate (1019492-DUP1)</u>					<u>Source: SB17881-01 Prepared: 17-Sep-10 Analyzed: 20-Sep-10</u>					
Iron	12600		mg/kg dry	6.72		12800			1	20
Phosphorus as P	1550		mg/kg dry	176		1570			1	20
Aluminum	18700		mg/kg dry	8.40		18900			0.8	20
<u>Matrix Spike (1019492-MS1)</u>					<u>Source: SB17881-05 Prepared: 17-Sep-10 Analyzed: 20-Sep-10</u>					
Iron	4570	QM2	mg/kg dry	3.83	120	4320	214	75-125		
Phosphorus as P	213		mg/kg dry	100	120	92.2	101	75-125		
Aluminum	8370	QM2	mg/kg dry	4.78	120	2170	5190	75-125		
<u>Matrix Spike Dup (1019492-MSD1)</u>					<u>Source: SB17881-05 Prepared: 17-Sep-10 Analyzed: 20-Sep-10</u>					
Phosphorus as P	205		mg/kg dry	93.7	112	92.2	101	75-125	4	20
Iron	4830	QM2	mg/kg dry	3.57	112	4320	461	75-125	6	20
Aluminum	8280	QM2	mg/kg dry	4.46	112	2170	5480	75-125	1	20
<u>Post Spike (1019492-PS1)</u>					<u>Source: SB17881-05 Prepared: 17-Sep-10 Analyzed: 20-Sep-10</u>					
Iron	4660	QM2	mg/kg dry	4.05	127	4320	276	80-120		
Phosphorus as P	240		mg/kg dry	106	127	92.2	117	80-120		
Aluminum	2440	QM2	mg/kg dry	5.06	127	2170	211	80-120		
<u>Reference (1019492-SRM1)</u>					<u>Prepared: 17-Sep-10 Analyzed: 20-Sep-10</u>					
Iron	11100		mg/kg wet	4.00	9740		114	50.5-149.2		
Aluminum	6920		mg/kg wet	5.00	5450		127	47.5-152.3		
<u>Reference (1019492-SRM2)</u>					<u>Prepared: 17-Sep-10 Analyzed: 20-Sep-10</u>					
Iron	10900		mg/kg wet	4.00	9840		110	50.5-149.2		
Aluminum	6720		mg/kg wet	5.00	5510		122	47.5-152.3		
<u>Reference (1019492-SRM3)</u>					<u>Prepared: 17-Sep-10 Analyzed: 20-Sep-10</u>					
Phosphorus as P	330		mg/kg wet	105	300		110	55-144		
<u>Reference (1019492-SRM4)</u>					<u>Prepared: 17-Sep-10 Analyzed: 20-Sep-10</u>					
Phosphorus as P	328		mg/kg wet	105	309		106	55-144		

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BRL = Below Reporting Limit

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1019479 - General Preparation										
<u>Duplicate (1019479-DUP1)</u>			<u>Source: SB17881-01</u>		<u>Prepared & Analyzed: 14-Sep-10</u>					
Moisture	91.4		%			91.5			0.03	20
Batch 1019558 - General Preparation										
<u>Duplicate (1019558-DUP1)</u>			<u>Source: SB17881-01</u>		<u>Prepared & Analyzed: 15-Sep-10</u>					
Total Volatile Solids	22.3	HT2	%			23.2			4	20
Batch 1019753 - General Preparation										
<u>Duplicate (1019753-DUP1)</u>			<u>Source: SB17881-05</u>		<u>Prepared & Analyzed: 17-Sep-10</u>					
% Solids	94.3		%			94.2			0.1	20
<u>Duplicate (1019753-DUP2)</u>			<u>Source: SB17881-05</u>		<u>Prepared & Analyzed: 17-Sep-10</u>					
% Solids	94.2		%			94.2			0.09	20
<u>Duplicate (1019753-DUP3)</u>			<u>Source: SB17881-05</u>		<u>Prepared & Analyzed: 17-Sep-10</u>					
% Solids	94.4		%			94.2			0.2	20
Batch 1019770 - Phosphorus Fractionation										
<u>Blank (1019770-BLK1)</u>					<u>Prepared: 18-Sep-10 Analyzed: 20-Sep-10</u>					
Loosely-sorbed Phosphorus as P	BRL		ng/kg dry we	0.50						
<u>LCS (1019770-BS1)</u>					<u>Prepared: 18-Sep-10 Analyzed: 20-Sep-10</u>					
Loosely-sorbed Phosphorus as P	47.5		ng/kg dry we	0.50	50.1	95	80-120			
<u>Duplicate (1019770-DUP1)</u>			<u>Source: SB17881-03</u>		<u>Prepared: 18-Sep-10 Analyzed: 20-Sep-10</u>					
Loosely-sorbed Phosphorus as P	0.15	J,QR4	ng/kg dry dry	1.79		0.00				35
<u>Matrix Spike (1019770-MS1)</u>			<u>Source: SB17881-03</u>		<u>Prepared: 18-Sep-10 Analyzed: 20-Sep-10</u>					
Loosely-sorbed Phosphorus as P	0.64	QM5	ng/kg dry dry	1.79	160	0.00	0.4	80-120		
<u>Matrix Spike Dup (1019770-MSD1)</u>			<u>Source: SB17881-03</u>		<u>Prepared: 18-Sep-10 Analyzed: 20-Sep-10</u>					
Loosely-sorbed Phosphorus as P	0.59	QM5	ng/kg dry dry	1.79	147	0.00	0.4	80-120	8	35
Batch 1019771 - Phosphorus Fractionation										
<u>Blank (1019771-BLK1)</u>					<u>Prepared: 18-Sep-10 Analyzed: 20-Sep-10</u>					
Iron bound Phosphorus as P	BRL		ng/kg dry we	2.50						
<u>LCS (1019771-BS1)</u>					<u>Prepared: 18-Sep-10 Analyzed: 20-Sep-10</u>					
Iron bound Phosphorus as P	54.8		ng/kg dry we	2.50	50.1	109	80-120			
<u>Duplicate (1019771-DUP2)</u>			<u>Source: SB17881-03</u>		<u>Prepared: 18-Sep-10 Analyzed: 20-Sep-10</u>					
Iron bound Phosphorus as P	24.3		ng/kg dry dry	8.96		21.7			11	35
<u>Matrix Spike (1019771-MS2)</u>			<u>Source: SB17881-03</u>		<u>Prepared: 18-Sep-10 Analyzed: 20-Sep-10</u>					
Iron bound Phosphorus as P	56.6	QM5	ng/kg dry dry	8.96	160	21.7	22	80-120		
<u>Matrix Spike Dup (1019771-MSD2)</u>			<u>Source: SB17881-03</u>		<u>Prepared: 18-Sep-10 Analyzed: 20-Sep-10</u>					
Iron bound Phosphorus as P	51.5	QM5	ng/kg dry dry	8.96	147	21.7	20	80-120	9	35

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* Reportable Detection Limit

BRL = Below Reporting Limit

Notes and Definitions

HT2	This sample was received outside the EPA recommended holding time for the analysis specified.
QM2	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
QM5	The spike recovery was outside acceptance limits for the MS, MSD and/or PS due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
QR4	Analyses are not controlled on RPD values from sample concentrations less than the reporting limit. QC batch accepted based on LCS and/or LCSD QC results
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic

Validated by:
Hanibal C. Tayeh, Ph.D.
June O'Connor
Kimberly Wisk
Rebecca Merz

UNH Center for Freshwater Biology

Chain of Custody

Project: Lake Wentworth Watershed Management Plan

Sampled By: Bob Craycraft

Phone #: 603 862-3696

Site Name and Sample ID	Date of Sample	Time of Sample	Matrix	Type of Container	Sampler's Name	Analysis/ Analytes	Preservative Used
1 Fullers 43° 35' 15.2" 71° 10' 08.1"	8/16/10	09:32 hrs	Benthic Sediment Core	18 oz Nasco Whirl-Pak Bag	Bob Craycraft	Analyses per RQN / Quote # 6882 : Al total ICP 6010B Fe total ICP 6010B	Refrigerated @ 4°C
2 Triggs 43° 36' 10.4" 71° 09' 12.6"	8/16/10	12:25 hrs	Benthic Sediment Core	18 oz Nasco Whirl-Pak Bag	Bob Craycraft	Loss on Ignition Percent Moisture Phosphorus, Total 6010B	Refrigerated @ 4°C
12 Gov Deep 43° 35' 28.0" 71° 07' 56.0"	8/16/10	10:37 hrs	Benthic Sediment Core	18 oz Nasco Whirl-Pak Bag	Bob Craycraft	Phosphorus, Iron bound as P Loosely-bound as P	Refrigerated @ 4°C
6 Center 43° 35' 12.7" 71° 11' 43.8"	8/16/10	11:30 hrs	Benthic Sediment Core	18 oz Nasco Whirl-Pak Bag	Bob Craycraft		Refrigerated @ 4°C
Nearshore 43° 36' 03.4" 71° 11' 09.9"	8/16/10	13:27 hrs	Benthic Sediment Core	18 oz Nasco Whirl-Pak Bag	Bob Craycraft		Refrigerated @ 4°C

Relinquished By: 

Date: 9/2/10 Time: 14:16 hrs

Received By:  9/8/10 14:30

Note: each benthic sediment core should be analyzed for the suite of analytes at a total cost of \$304/sample per RQN/Quote # 6882

Project Contact: **Bob Craycraft**

University of New Hampshire

38 Academic Way

Spaulding Hall Room G18

Durham NH 03824

bob.craycraft@unh.edu

603 862-3696

20.1°C ice packs

SB 17881 Bq

17881-01

02

03

04

05

From: Origin ID: PSMA (603) 862-3696
Bob Craycraft
UNH Cooperative Extension
G18 Spaulding Hall
38 Academic Way
Durham, NH 03824



Ship Date: 07SEP10
ActWgt: 15.0 LB
CAD: 100892821/MNET3080
Dims: 16 X 12 X 14 IN

SHIP TO: (800) 789-9115

BILL SENDER

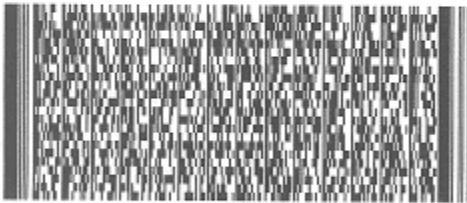
Sample Receiving
Spectrum Analytical, Inc
830 Silver Street

Agawam, MA 01001

Delivery Address Bar Code



Ref # Bob Craycraft - LLMP
Invoice #
PO #
Dept #



TRK# 7938 8859 7209
0201

WED - 08 SEP A2
STANDARD OVERNIGHT

01001

MA-US

BDL

00 EHTA



50033078A24

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