

March 07, 2013

Mitchell Mysliwicz  
 Larry Walker Associates  
 707 Fourth Street  
 Suite 200  
 Davis, CA 95616-

Project Name: Machado Lake Nutrients TMDL  
 Physis Project ID: 1206006-006

Dear Mitchell,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 2/20/2013. A total of 6 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

Conventionals
Total Suspended Solids by SM 2540 D
Total Phosphorus by SM 4500-P E
Total Orthophosphate (as P) by SM 4500-P E
Total Nitrogen by TKN+NO <sub>3</sub> +NO <sub>2</sub> (Client calc.)
Total Dissolved Solids by SM 2540 C
Total Dissolved Phosphorus by SM 4500-P E
Nitrite by EPA 300.0
Nitrate by EPA 300.0
Ammonia by SM 4500-NH <sub>3</sub> D
Subcontract
Total Kjeldahl Nitrogen by EPA 351.2

Analytical results in this report apply only to samples submitted to PHYSIS in accordance with the COC and are intended to be considered in their entirety.

Please feel free to contact me at any time with any questions. PHYSIS appreciates the opportunity to provide you with our analytical and support services.

Regards,

Misty Mercier  
 Extension 202  
 714-335-5918 cell



mistymercier@physislabs.com

## ABBREVIATIONS and ACRONYMS

QM	Quality Manual
QA	Quality Assurance
QC	Quality Control
MDL	method detection limit
RL	reporting limit
R1	project sample
R2	project sample replicate
MS1	matrix spike
MS2	matrix spike replicate
B1	procedural blank
B2	procedural blank replicate
BS1	blank spike
BS2	blank spike replicate
LCS1	laboratory control spike
LCS2	laboratory control spike replicate
LCM1	laboratory control material
LCM2	laboratory control material replicate
CRM1	certified reference material
CRM2	certified reference material replicate
RPD	relative percent difference
LMW	low molecular weight
HMW	high molecular weight

## QUALITY ASSURANCE SUMMARY

**LABORATORY BATCH:** Physis' QM defines a laboratory batch as a group of 20 or fewer project samples of similar matrix, processed together under the same conditions and with the same reagents. QC samples are associated with each batch and are used to assess the validity of the sample analyses.

**PROCEDURAL BLANK:** Laboratory contamination introduced during method use was assessed through the analysis of procedural blanks at a minimum frequency of one per batch. Physis' QM requires that all procedural blanks be below 10 times the MDL and all detectable constituents in the procedural blanks be flagged in the project sample results with a B qualifier.

**ACCURACY:** Accuracy of analytical measurements is the degree of closeness based on percent recovery calculations between measured values and the actual or true value and includes a combination of reproducibility error and systematic bias due to sampling and analytical operations. Accuracy of the project data was indicated by analysis of MS, BS, LCS, LCM, CRM, and/or surrogate spikes on a minimum frequency of one per batch. Physis' QM requires that 95% of the target compounds greater than 10 times the MDL be within the specified acceptance limits.

**PRECISION:** Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS<sub>1</sub>/MS<sub>2</sub>, BS<sub>1</sub>/BS<sub>2</sub>, LCS<sub>1</sub>/LCS<sub>2</sub>, LCM<sub>1</sub>/LCM<sub>2</sub>, CRM<sub>1</sub>/CRM<sub>2</sub>, surrogate spikes and/or replicate project sample analysis (R<sub>1</sub>/R<sub>2</sub>) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

**MATRIX SPIKES:** MS samples were employed to assess the effect a particular project sample matrix has on the accuracy of a measurement. It is prepared by adding a known amount of the target analyte(s) to an aliquot of the project sample. Matrix spikes indicate the bias of analytical measurements due to chemical interferences inherent in the sample matrix. If the matrix spike recovery does not fall within the specified acceptance limits, it may be an indication of sample matrix interference in the specific project sample used for the MS. Intrinsic target analyte concentration in the specific project sample can also significantly impact MS recovery.

**BLANK SPIKES:** BS demonstrates performance of the preparation and analytical methods on a clean matrix void of potential matrix related interferences. The BS is performed in laboratory deionized water, making these recoveries a better indicator of the efficiency of the laboratory method per se.

**CERTIFIED REFERENCE MATERIALS:** CRMs are pre-homogenized materials of various matrices for which analytical information has been determined and certified by a recognized authority. These are used to provide a quantitative assessment of the accuracy of a preparation and analytical method. CRMs are analyzed to provide evidence that the laboratory method produces results that are comparable to those obtained by an independent organization.

**SURROGATES:** Where CRMs are unavailable, target analyte recovery can be assessed by monitoring added surrogate compounds/elements. A surrogate is a pure analyte unlikely to be found in any project sample and most often used with organic analytical procedures. Percent recovery is calculated for each surrogate and is used to monitor method performance within each discrete sample and is indicative of the procedure's ability to recover the actual analytes of interest.

**HOLDING TIME:** Method recommended holding times are the length of time a project sample can be stored under specific conditions after collection and prior to analysis without significantly affecting the analyte's

concentration. Holding times can be extended if preservation techniques are employed to reduce biodegradation, volatilization, oxidation, sorption, precipitation, and other physical and chemical processes. Physis' QM requires that all samples analyzed beyond the method recommended holding time be flagged in the sample results with an H qualifier.

**TOTAL/DISSOLVED FRACTION:** In some instances, the results for the dissolved fraction may be higher than the total fraction for a particular analyte (e.g. trace metals). This is typically caused by the analytical variation for each result and indicates that the target analyte is primarily in the dissolved phase, within the sample.

**PHYSIS QUALIFIER CODES**

CODE	DEFINITION
*	see Case Narrative
ND	analyte not detected at or above the MDL
B	analyte was detected in the procedural blank greater than 10 times the MDL
E	analyte concentration exceeds the upper limit of the linear calibration range, reported value is estimated
H	sample received and/or analyzed past the recommended holding time
J	analyte was detected at a concentration below the RL and above the MDL, reported value is estimated
N	insufficient sample, analysis could not be performed
M	analyte was outside the specified recovery and/or RPD acceptance limits due to matrix interference. The associated B/BS were within limits, therefore the sample data was reported without further clarification
SH	analyte concentration in the project sample exceeded the spike concentration, therefore MS recovery and/or RPD acceptance limits do not apply
SL	analyte results for R1 and/or R2 were lower than 10 times the MDL, therefore RPD acceptance limits do not apply
NH	project sample was heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices, therefore MS recovery and/or RPD were outside the specified acceptance limits
R	Physis' QM allows for 5% of the target compounds greater than 10 times the MDL to be outside the specified acceptance limits for precision and/or accuracy. This is often due to random error and does not indicate any significant problems with the analysis of these project samples

# PHYSICS

# **PANALYTICAL**

# **REPORT**

TERRA AURA  
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CA ELAP #2769

## Conventionals

## ANALYTICAL REPORT

ANALYTE	FRACTION	RESULT	MDL	RL	UNITS	QA CODE
<b>Sample ID: 19773-R1</b>	<b>MLMRP-006-10_ACAD-01 Surface Water</b>	<b>Matrix: Surface water</b>				
	Method: EPA 300.0	Batch ID: C-10154				
				Sampled: 20-Feb-13 0:21		Received: 20-Feb-13
				Prepared: 22-Feb-13		Analyzed: 22-Feb-13
Nitrate-N by IC	NA	1.05	0.01	0.05	mg/L	
Nitrite-N by IC	NA	ND	0.01	0.05	mg/L	
	Method: SM 4500-P E	Batch ID: C-11047				
Total Orthophosphate as P	NA	0.18	0.01	0.02	mg/L	Analyzed: 22-Feb-13
	Method: SM 2540 D	Batch ID: C-11051				
Total Suspended Solids	NA	22.7	0.5	0.5	mg/L	Analyzed: 25-Feb-13
	Method: SM 2540 C	Batch ID: C-11059				
Total Dissolved Solids	NA	620	0.1	5	mg/L	Analyzed: 02-Mar-13
	Method: SM 4500-P E	Batch ID: C-11060				
Total Dissolved Phosphorus	NA	0.118	0.016	0.05	mg/L	Analyzed: 04-Mar-13
Total Phosphorus	NA	0.267	0.016	0.05	mg/L	
	Method: SM 4500-NH3 D	Batch ID: C-11070				
Ammonia-N	NA	0.22	0.02	0.05	mg/L	Analyzed: 05-Mar-13
<b>Sample ID: 19774-R1</b>	<b>MLMRP-006-30-VAND-02 Surface Water</b>	<b>Matrix: Surface water</b>				
	Method: EPA 300.0	Batch ID: C-10154				
				Sampled: 20-Feb-13 1:10		Received: 20-Feb-13
				Prepared: 22-Feb-13		Analyzed: 22-Feb-13
Nitrate-N by IC	NA	2.04	0.01	0.05	mg/L	
Nitrite-N by IC	NA	0.13	0.01	0.05	mg/L	
	Method: SM 4500-P E	Batch ID: C-11047				
Total Orthophosphate as P	NA	0.13	0.01	0.02	mg/L	Analyzed: 22-Feb-13
	Method: SM 2540 D	Batch ID: C-11051				
Total Suspended Solids	NA	63.3	0.5	0.5	mg/L	Analyzed: 25-Feb-13
	Method: SM 2540 C	Batch ID: C-11059				
Total Dissolved Solids	NA	208	0.1	5	mg/L	Analyzed: 02-Mar-13
	Method: SM 4500-P E	Batch ID: C-11060				
Total Dissolved Phosphorus	NA	0.24	0.016	0.05	mg/L	Analyzed: 04-Mar-13
Total Phosphorus	NA	0.515	0.016	0.05	mg/L	
	Method: SM 4500-NH3 D	Batch ID: C-11070				
Ammonia-N	NA	2.88	0.02	0.05	mg/L	Analyzed: 05-Mar-13



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## Conventionals

## ANALYTICAL REPORT

ANALYTE	FRACTION	RESULT	MDL	RL	UNITS	QA CODE
<b>Sample ID: 19775-R1</b>	<b>MLMRP-006-TAHOE-03 Surface Water</b>	<b>Matrix: Surface water</b>				
	Method: EPA 300.0	Batch ID: C-10154				
				<b>Sampled: 20-Feb-13 1:45</b>		<b>Received: 20-Feb-13</b>
				Prepared: 22-Feb-13		Analyzed: 22-Feb-13
Nitrate-N by IC	NA	0.01	0.01	0.05	mg/L	J
Nitrite-N by IC	NA	ND	0.01	0.05	mg/L	
	Method: SM 4500-P E	Batch ID: C-11047				
				Prepared: 22-Feb-13		Analyzed: 22-Feb-13
Total Orthophosphate as P	NA	ND	0.01	0.02	mg/L	
	Method: SM 4500-P E	Batch ID: C-11060				
				Prepared: 01-Mar-13		Analyzed: 04-Mar-13
Total Dissolved Phosphorus	NA	ND	0.016	0.05	mg/L	
<b>Sample ID: 19777-R1</b>	<b>MLMRP-006-TAHOE-05 Surface Water</b>	<b>Matrix: Surface water</b>				
	Method: SM 4500-P E	Batch ID: C-11060				
				<b>Sampled: 20-Feb-13 1:45</b>		<b>Received: 20-Feb-13</b>
				Prepared: 01-Mar-13		Analyzed: 04-Mar-13
Total Phosphorus	NA	ND	0.016	0.05	mg/L	
	Method: SM 4500-NH3 D	Batch ID: C-11070				
				Prepared: 05-Mar-13		Analyzed: 05-Mar-13
Ammonia-N	NA	ND	0.02	0.05	mg/L	
<b>Sample ID: 19778-R1</b>	<b>MLMRP-006-DUPREE-06 Surface Water</b>	<b>Matrix: Surface water</b>				
	Method: EPA 300.0	Batch ID: C-10154				
				<b>Sampled: 20-Feb-13 1:10</b>		<b>Received: 20-Feb-13</b>
				Prepared: 22-Feb-13		Analyzed: 22-Feb-13
Nitrate-N by IC	NA	2.04	0.01	0.05	mg/L	
Nitrite-N by IC	NA	0.13	0.01	0.05	mg/L	
	Method: SM 4500-P E	Batch ID: C-11047				
				Prepared: 22-Feb-13		Analyzed: 22-Feb-13
Total Orthophosphate as P	NA	0.11	0.01	0.02	mg/L	
	Method: SM 2540 D	Batch ID: C-11051				
				Prepared: 25-Feb-13		Analyzed: 25-Feb-13
Total Suspended Solids	NA	61.2	0.5	0.5	mg/L	
	Method: SM 2540 C	Batch ID: C-11059				
				Prepared: 25-Feb-13		Analyzed: 02-Mar-13
Total Dissolved Solids	NA	204	0.1	5	mg/L	
	Method: SM 4500-P E	Batch ID: C-11060				
				Prepared: 01-Mar-13		Analyzed: 04-Mar-13
Total Dissolved Phosphorus	NA	0.251	0.016	0.05	mg/L	
Total Phosphorus	NA	0.468	0.016	0.05	mg/L	
	Method: SM 4500-NH3 D	Batch ID: C-11070				
				Prepared: 05-Mar-13		Analyzed: 05-Mar-13
Ammonia-N	NA	2.67	0.02	0.05	mg/L	

# QUALITY CONTROL

# REPORT

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## Conventionals

## QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	LIMITS	PRECISION %	LIMITS	QA CODE
<b>Ammonia-N</b>		<b>Method: SM 4500-NH<sub>3</sub> D</b>			<b>Fraction: NA</b>		<b>Prepared: 05-Mar-13</b>			<b>Analyzed: 05-Mar-13</b>		
19771-B1	QAQC Procedural Blank	C-11070	ND	0.02	0.05	mg/L						
19771-BS1	QAQC Procedural Blank	C-11070	0.22	0.02	0.05	mg/L	0.25	0	88	70 - 130%	PASS	
19771-BS2	QAQC Procedural Blank	C-11070	0.21	0.02	0.05	mg/L	0.25	0	84	70 - 130%	PASS	5 30 PASS
19774-MS1	MLMRP-006-30-VAND-0	C-11070	5.65	0.02	0.05	mg/L	1.25	2.74	233	70 - 130%	FAIL	SH
19774-MS2	MLMRP-006-30-VAND-0	C-11070	5.3	0.02	0.05	mg/L	1.25	2.74	205	70 - 130%	FAIL	13 30 PASS SH
19774-R2	MLMRP-006-30-VAND-0	C-11070	2.62	0.02	0.05	mg/L				9	30	PASS
<b>Nitrate-N by IC</b>		<b>Method: EPA 300.0</b>			<b>Fraction: NA</b>		<b>Prepared: 22-Feb-13</b>			<b>Analyzed: 22-Feb-13</b>		
19771-B1	QAQC Procedural Blank	C-10154	ND	0.01	0.05	mg/L						
19771-BS1	QAQC Procedural Blank	C-10154	0.12	0.01	0.05	mg/L	0.11	0	109	70 - 130%	PASS	
19771-BS2	QAQC Procedural Blank	C-10154	0.12	0.01	0.05	mg/L	0.11	0	109	70 - 130%	PASS	0 30 PASS
19774-MS1	MLMRP-006-30-VAND-0	C-10154	2.62	0.01	0.05	mg/L	0.56	2.06	100	70 - 130%	PASS	
19774-MS2	MLMRP-006-30-VAND-0	C-10154	2.62	0.01	0.05	mg/L	0.56	2.06	100	70 - 130%	PASS	0 30 PASS
19774-R2	MLMRP-006-30-VAND-0	C-10154	2.07	0.01	0.05	mg/L				1	30	PASS
<b>Nitrite-N by IC</b>		<b>Method: EPA 300.0</b>			<b>Fraction: NA</b>		<b>Prepared: 22-Feb-13</b>			<b>Analyzed: 22-Feb-13</b>		
19771-B1	QAQC Procedural Blank	C-10154	ND	0.01	0.05	mg/L						
19771-BS1	QAQC Procedural Blank	C-10154	0.15	0.01	0.05	mg/L	0.15	0	100	70 - 130%	PASS	
19771-BS2	QAQC Procedural Blank	C-10154	0.15	0.01	0.05	mg/L	0.15	0	100	70 - 130%	PASS	0 30 PASS
19774-MS1	MLMRP-006-30-VAND-0	C-10154	0.27	0.01	0.05	mg/L	0.15	0.13	93	70 - 130%	PASS	
19774-MS2	MLMRP-006-30-VAND-0	C-10154	0.27	0.01	0.05	mg/L	0.15	0.13	93	70 - 130%	PASS	0 30 PASS
19774-R2	MLMRP-006-30-VAND-0	C-10154	0.13	0.01	0.05	mg/L				0	30	PASS
<b>Total Dissolved Phosphorus</b>		<b>Method: SM 4500-P E</b>			<b>Fraction: NA</b>		<b>Prepared: 01-Mar-13</b>			<b>Analyzed: 04-Mar-13</b>		
19771-B1	QAQC Procedural Blank	C-11060	ND	0.016	0.05	mg/L						
19771-BS1	QAQC Procedural Blank	C-11060	0.297	0.016	0.05	mg/L	0.3	0	99	70 - 130%	PASS	
19771-BS2	QAQC Procedural Blank	C-11060	0.299	0.016	0.05	mg/L	0.3	0	100	70 - 130%	PASS	1 30 PASS
19774-MS1	MLMRP-006-30-VAND-0	C-11060	0.545	0.016	0.05	mg/L	0.3	0.238	102	70 - 130%	PASS	
19774-MS2	MLMRP-006-30-VAND-0	C-11060	0.544	0.016	0.05	mg/L	0.3	0.238	102	70 - 130%	PASS	0 30 PASS
19774-R2	MLMRP-006-30-VAND-0	C-11060	0.235	0.016	0.05	mg/L				2	30	PASS



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## Conventionals

## QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE	
<b>Total Dissolved Solids</b>		<b>Method: SM 2540 C</b>			<b>Fraction: NA</b>		<b>Prepared: 25-Feb-13</b>		<b>Analyzed: 02-Mar-13</b>		
19771-B1	QAQC Procedural Blank	C-11059	ND	0.1	5	mg/L					
19771-BS1	QAQC Procedural Blank	C-11059	24740	0.1	5	mg/L	24959	0	99	70 - 130% PASS	
19771-BS2	QAQC Procedural Blank	C-11059	69900	0.1	5	mg/L	69684	0	100	70 - 130% PASS	
<b>Total Orthophosphate as P</b>		<b>Method: SM 4500-P E</b>			<b>Fraction: NA</b>		<b>Prepared: 22-Feb-13</b>		<b>Analyzed: 22-Feb-13</b>		
19771-B1	QAQC Procedural Blank	C-11047	ND	0.01	0.02	mg/L					
19771-BS1	QAQC Procedural Blank	C-11047	0.18	0.01	0.02	mg/L	0.2	0	90	70 - 130% PASS	
19771-BS2	QAQC Procedural Blank	C-11047	0.18	0.01	0.02	mg/L	0.2	0	90	70 - 130% PASS	
19774-MS1	MLMRP-006-30-VAND-0	C-11047	0.33	0.01	0.02	mg/L	0.2	0.14	95	70 - 130% PASS	
19774-MS2	MLMRP-006-30-VAND-0	C-11047	0.34	0.01	0.02	mg/L	0.2	0.14	100	70 - 130% PASS	
19774-R2	MLMRP-006-30-VAND-0	C-11047	0.14	0.01	0.02	mg/L				7 30 PASS	
<b>Total Phosphorus</b>		<b>Method: SM 4500-P E</b>			<b>Fraction: NA</b>		<b>Prepared: 01-Mar-13</b>		<b>Analyzed: 04-Mar-13</b>		
19771-B1	QAQC Procedural Blank	C-11060	ND	0.016	0.05	mg/L					
19771-BS1	QAQC Procedural Blank	C-11060	0.297	0.016	0.05	mg/L	0.3	0	99	70 - 130% PASS	
19771-BS2	QAQC Procedural Blank	C-11060	0.299	0.016	0.05	mg/L	0.3	0	100	70 - 130% PASS	
19774-MS1	MLMRP-006-30-VAND-0	C-11060	0.792	0.016	0.05	mg/L	0.3	0.528	88	70 - 130% PASS	
19774-MS2	MLMRP-006-30-VAND-0	C-11060	0.842	0.016	0.05	mg/L	0.3	0.528	105	70 - 130% PASS	
19774-R2	MLMRP-006-30-VAND-0	C-11060	0.541	0.016	0.05	mg/L				5 30 PASS	
<b>Total Suspended Solids</b>		<b>Method: SM 2540 D</b>			<b>Fraction: NA</b>		<b>Prepared: 25-Feb-13</b>		<b>Analyzed: 25-Feb-13</b>		
19771-B1	QAQC Procedural Blank	C-11051	ND	0.5	0.5	mg/L					

# **SUBCONTRACT**

# **REPORT**

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

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## Associated Laboratories

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Client: PHYSIS Environmental Laboratories, Inc.  
Address: 1904 E. Wright Circle  
Anaheim, CA 92806  
Attn: Misty Mercier

Lab Request: 318980  
Report Date: 03/05/2013  
Date Received: 02/22/2013  
Client ID: 13622

Comments: #1206006-006

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods. Methods accredited by NELAC are indicated on the report. This cover letter is an integral part of the final report.

<u>Sample #</u>	<u>Client Sample ID</u>
318980-001	MLMRP-006-10_ACAD-01
318980-002	MLMRP-006-30_VAND-02
318980-003	MLMRP-006-TAHOE-04
318980-004	MLMRP-006-DUPREE-06

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Nina Prasad  
President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 45 days from date reported.

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TESTING & CONSULTING  
Chemical  
Microbiological  
Environmental

Matrix: Water Client: PHYSIS Environmental Laboratories, Inc. Collector: Client  
 Sampled: 02/20/2013 00:21 Site: Notes:  
 Sample #: 318980-001 Client Sample #: MLMRP-006-10\_ACAD-01

Analyte	Result	DF	RDL	Units	Analyzed	By	Notes
Method: EPA 351.2	Prep Method: Method		QCBatchID: QC1134328				
Total Kjeldahl Nitrogen	1.16	1	0.4	mg/L	02/26/13	trinh	

Matrix: Water Client: PHYSIS Environmental Laboratories, Inc. Collector: Client  
 Sampled: 02/20/2013 01:10 Site: Notes:  
 Sample #: 318980-002 Client Sample #: MLMRP-006-30\_VAND-02

Analyte	Result	DF	RDL	Units	Analyzed	By	Notes
Method: EPA 351.2	Prep Method: Method		QCBatchID: QC1134328				
Total Kjeldahl Nitrogen	4.34	1	0.4	mg/L	02/26/13	trinh	

Matrix: Water Client: PHYSIS Environmental Laboratories, Inc. Collector: Client  
 Sampled: 02/20/2013 01:45 Site: Notes:  
 Sample #: 318980-003 Client Sample #: MLMRP-006-TAHOE-04

Analyte	Result	DF	RDL	Units	Analyzed	By	Notes
Method: EPA 351.2	Prep Method: Method		QCBatchID: QC1134328				
Total Kjeldahl Nitrogen	ND	1	0.4	mg/L	02/26/13	trinh	

Matrix: Water Client: PHYSIS Environmental Laboratories, Inc. Collector: Client  
 Sampled: 02/20/2013 01:10 Site: Notes:  
 Sample #: 318980-004 Client Sample #: MLMRP-006-DUPREE-06

Analyte	Result	DF	RDL	Units	Analyzed	By	Notes
Method: EPA 351.2	Prep Method: Method		QCBatchID: QC1134328				
Total Kjeldahl Nitrogen	4.51	1	0.4	mg/L	02/26/13	trinh	

ND = Not Detected or < RDL

RDL = Reporting Detection Limit DF = Dilution Factor



## ASSOCIATED LABORATORIES QC SUMMARY FOR LAB REQUEST #318980

QCBatchID: <b>QC1134328</b>	Analyst: <b>trinh</b>	Method: <b>EPA 351.2</b>	
Matrix: <b>Water</b>	Analyzed: <b>02/26/2013</b>	Instrument: <b>CHEM (group)</b>	

### Blank Summary

Analyte	Blank Result	Units	RDL	Notes
<b>QC1134328MB1</b>				
Total Kjeldahl Nitrogen	ND	mg/L	0.4	

### Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount		Spike Result		Units	Recoveries			Limits		Notes
	LCS	LCSD	LCS	LCSD		LCS	LCSD	RPD	%Rec	RPD	
<b>QC1134328LCS1</b>											
Total Kjeldahl Nitrogen	2.5		2.64		mg/L	106			80-120		

### Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount		Spike Result		Units	Recoveries			Limits		Notes
		MS	MSD	MS	MSD		MS	MSD	RPD	%Rec	RPD	
<b>QC1134328MS1, QC1134328MSD1</b>												
Total Kjeldahl Nitrogen	ND	12.5	12.5	12.6	13.0	mg/L	101	104	3.1	80-120	20	<b>Source: 318989-005</b>

ND = Not Detected or < RDL    MDL = Method Detection Limit    RDL = Reporting Detection Limit    DF = Dilution Factor



## Notes and Definitions

<b>B</b>	Analyte was present in an associated method blank. Associated sample data was reported with qualifier.
<b>C</b>	Laboratory Contamination.
<b>D</b>	The sample duplicate RPD was not within control limits, the sample data was reported without further clarification.
<b>DF</b>	Dilution Factor
<b>DW</b>	Sample result is calculated on a dry weigh basis
<b>J</b>	Reported value is estimated
<b>L</b>	The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample data was reported with qualifier.
<b>M</b>	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits due to matrix interference. The associated LCS and/or LCSD was within control limits and the sample data was reported without further clarification.
<b>MDL</b>	Method Detection Limit
<b>NC</b>	The analyte concentration in the sample exceeded the spike level by a factor of four or greater, spike recovery and limits do not apply.
<b>ND</b>	Analyte was not detected or was less than the detection limit.
<b>P</b>	Sample was received without proper preservation according to EPA guidelines.
<b>RDL</b>	Reporting Detection Limit
<b>S</b>	The surrogate recovery was out of control limits due to matrix interference. The associated method blank surrogate recovery was within control limits and the sample data was reported without further clarification.
<b>T</b>	Sample was extracted/analyzed past the holding time.
<b>T2</b>	Sample was analyzed ASAP but received and analyzed past the 15 minute holding time.



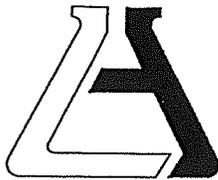
COMPANY NAME: Physis Environmental Laboratories, Inc. EMAIL: sc@physislabs.com  
 PROJECT MANAGER: Misty Mercier PHONE: 714 602-5321  
 COMPANY ADDRESS: 1904 E. Wright Circle office  
 Anaheim, CA 92806 cell: 714 335-5918  
 TURNAROUND TIME:  STANDARD  RUSH business days  
 REPORT FORMAT:  PDF/EDD  SWAMP EDD  other  
 SPECIAL INSTRUCTIONS: please report down the MDL

PHYSIS MATRIX CODES: SW = seawater FW = freshwater RW = rainwater  
WW = wastewater DW = drinking water  
S = sediment I = tissue E = extract O = other (specify)

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLE date	SAMPLE time	physis matrix code	physis #	physis # 2	physis # 3
1	MLMRP-006-10_ACAD-01	2/20/13	0:21	FW	1		
2	MLMRP-006-30_VAND-02	2/20/13	1:10	FW	1		
3	MLMRP-006-TAHOE-04	2/20/13	1:45	FW	1		
4	MLMRP-006-DUPREE-06	2/20/13	1:10	FW	1		
5							
6							
7							
8							
9							
10							

PROJECT NAME / NUMBER: 1206006-006  
 PHYSIS SOS #: 1206006  
 SHIPPED VIA:  WET  BLUE  DRY  
 FEDEX  UPS  USPS  
 Client  Physis  other  
**REQUESTED ANALYSES**

RELINQUISHED BY: *Misty Mercier* signature  
 print: Misty Mercier  
 date & time: 2/22/13 15:45  
 RECEIVED BY: *Kevin Nguyen* signature  
 print: Kevin Nguyen  
 date & time: 2/22/13 15:05  
 company: Associated



**ASSOCIATED LABORATORIES**

806 North Batavia – Orange, California 92868 – 714-771-6900

FAX 714-538-1209

**SAMPLE ACCEPTANCE CHECKLIST**

**Section 1**  
 Client: Physis Project: \_\_\_\_\_  
 Date Received: 02-22-13 Sampler's Name: (Yes) No  
 Sample(s) received in cooler: (Yes) No (Skip Section 2)  
 Shipping Information: \_\_\_\_\_

**Section 2**  
 Was the cooler packed with:  Ice  Ice Packs  Bubble Wrap  Styrofoam  
 Paper  None  Other \_\_\_\_\_  
 Sample temperature: 4.0C  
 (Acceptance range is 0 to 6 Deg. C. or arrival on ice.)

Section 3	YES	NO	N/A
Was a COC received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is it properly completed? (IDs, sampling date and time, signature, test)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were custody seals present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If Yes – were they intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Were all samples sealed in plastic bags?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Did all samples arrive intact? If no, indicate below.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did all bottle labels agree with COC? (ID, dates and times)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were correct containers used for the tests required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was a sufficient amount of sample sent for tests indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was there headspace in VOA vials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Were the containers labeled with correct preservatives?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Was total residual chlorine measured (Fish Bioassay samples only)?*	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

\*: If the answer is no, please inform Fish Bioassay Dept, immediately.

**Section 4**  
 Explanations/Comments  
 \_\_\_\_\_  
 \_\_\_\_\_

**Section 5**  
 Was Project Manager notified of discrepancies: Y / N N/A

Completed By: M. Gubert Date: 02/22/13

**PHYSICS**  
**CHAIN OF**  
**CUSTODY**

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

*Innovative Solutions for Nature*

# Larry Walker Associates

707 Fourth Street, Suite 200 Davis, CA 95616 530-753-6400 530-753-7030 Fax

1206006-006  
301/1500

## CHAIN-OF-CUSTODY RECORD

Date: 02/20/13

Lab ID:

Destination Lab: Physis Environmental Laboratories, I Misty Mercier Address: 1904 East Wright Circle Anaheim, CA 92806 Phone: (714) 602-5320 x202 Fax: (714) 602-5321							Ammonia-N (EPA 350.1)	Total Phosphate (SM 4500-P E or F)	Total Dissolved Solids (SM 2540C)	Total Suspended Solids (SM 2540D)	Total Kjeldahl Nitrogen (EPA 351.1)	Nitrate-N (EPA 300.0)	Nitrite-N (EPA 300.0)	Total Nitrogen (Calc)	Dissolved Phosphorus (SM 450-P E or F)	Total Orthophosphate as P (SM 450-P E or F)	10 Business day TAT
Sampled By: BA, GR, JL																	
LWA Contact: Mitch Mysliwiec																	
Project: Machado Lake Nutrient TMDL Sampling																	
Client Sample Id	Sample Date	Sample Time	Sample Matrix	Container												Notes	
				#	Type	Pres.											
MLMRP-006-10_ACAD-01	02/20/13	0021	Surface Water	1	10-Liter PE	None	X	X	X	X	X	X	X	X	X		
MLMRP-006-30_VAND-02	02/20/13	0110	Surface Water	1	10-Liter PE	None	X	X	X	X	X	X	X	X	X	MS/MSD	
MLMRP-006-TAHOE-03	02/20/13	0145	Surface Water	1	250-mL PE	None					X	X	X	X	X	Field Blank	
MLMRP-006-TAHOE-04	02/20/13	0145	Surface Water	1	250-mL PE	H2SO4				X						Field Blank	
MLMRP-006-TAHOE-05	02/20/13	0145	Surface Water	1	500-mL Amber	H2SO4	X	X								Field Blank	
MLMRP-006-DUPREE-06	02/20/13	0110	Surface Water	1	10-Liter PE	None	X	X	X	X	X	X	X	X	X	Field Duplicate	
MLMRP-006-20_SCBG-07			Surface Water	1	10-Liter PE	None	X	X	X	X	X	X	X	X	X		
Sender Comments: Please PDF signed COC's upon completion of sample login to Greg Reide at gregr@lwa.com  PLEASE CALL IF THERE ANY QUESTIONS				Relinquished By (1):						Relinquished By (2):							
				Signature: <i>Bryant Alvarado</i> Print: Bryant Alvarado Organization: LWA Date: 02/20/13 Time: 0155													
Laboratory Comments:				Received By (1):						Received By (2):							
				Signature: <i>Mark Bator</i> Print: MARK BATOR Organization: PHYSIS Date: 2/20/13 Time: 0155													

## SAMPLE RECEIPT SUMMARY

CLIENT: LWA Machado Lake      Date Received: 2/20/13      Received By: MB      Inspected By: AI

**COURIER**

PHYSIS     CLIENT     FEDEX     UPS

start \_\_\_\_\_ end \_\_\_\_\_     OTHER: \_\_\_\_\_

**COOLER**

COOLER     BOX    total #

OTHER: \_\_\_\_\_    4

**TEMPERATURE**

6.0 °C     WET ICE     BLUE ICE

DRY ICE     NONE

**SAMPLE INTEGRITY UPON RECEIPT**

1. COC(s) included and completely filled out..... **YES**
2. All sample containers arrived intact..... **YES**
3. All samples listed on COC(s) are present..... **YES**
4. Information on containers consistent with information on COC(s)..... **YES**
5. Correct containers and volume for all analyses indicated..... **YES**
6. All samples received within method holding time..... **YES**
7. Correct preservation used for all analyses indicated..... **YES**

**NOTES**

split samples out of three plastic carboys, then clean & return