



**Laboratory Report Number:** L12010767

Mark Lyon  
Environmental Waste Solutions  
2440 Louisiana Blvd  
Albuquerque, NM 87110

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:  
Stephanie Mossburg – Team Chemist/Data Specialist  
(740) 373-4071  
Stephanie.Mossburg@microbac.com

*I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.*

This report was certified on February 13 2012

David Vandenberg – Managing Director

State of Origin: NM  
Accrediting Authority: N/A ID:N/A  
QAPP: DOD Ver 4.1



## Record of Sample Receipt and Inspection

### Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

### Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #
0016953	H	4.0		1002241144060004575000874824307407

### Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	NA

**Lab Report #:** L12010767

**Lab Project #:** 3005.011

**Project Name:** White Sands MR

**Lab Contact:** Stephanie Mossburg

**Samples Received**

<b>Client ID</b>	<b>Laboratory ID</b>	<b>Date Collected</b>	<b>Date Received</b>
MPL-21-0112-1	L12010767-01	01/27/2012 14:45	01/28/2012 08:46
MPL-21-0112-MS	L12010767-02	01/27/2012 14:45	01/28/2012 08:46
MPL-21-0112-MSD	L12010767-03	01/27/2012 14:45	01/28/2012 08:46



**Login Number:** L12010767  
**Department:** Conventionals  
**Analyst:** Deanna Hesson

**METHOD**

**Analysis** SW846 9040C,9045D/EPA 150.1/SM4500-H B (pH)

**HOLDING TIMES**

**Sample Analysis:** All holding times were met.

**PREPARATION**

Sample preparation proceeded normally.

**BATCH QA/QC**

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Matrix Spikes:** All acceptance criteria were met.

**Duplicates:** All acceptance criteria were met.

**SAMPLES**

**Samples:** All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

**Narrative ID:** 42084

**Approved By:** Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



**Login Number:** L12010767  
**Department:** Metals  
**Analyst:** Erin Long

**METHOD**

**Preparation:** SW-846 3005

**Analysis:** SW-846 6010

**HOLDING TIMES**

**Sample Preparation:** All holding times were met.

**Sample Analysis:** All holding times were met.

**PREPARATION**

Sample preparation proceeded normally.

**CALIBRATION**

**Initial Calibration:** All acceptance criteria were met.

**Alternate Source Standards:** All acceptance criteria were met.

**Interference Check Standards:** All acceptance criteria were met.

**Continuing Calibration Verification:** All acceptance criteria were met.

**Continuing Calibration Blank:** All acceptance criteria were met.

**BATCH QA/QC**

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Serial Dilution/Post Digestion Spikes:** WG388487 - All acceptance criteria were met.

**Matrix Spikes:** WG388487 - Sample 01 was chosen by the client for MS/MSD analysis. Samples 02(MS) and 03(MSD) yielded noncompliant recoveries for calcium.

**SAMPLES**

**Samples:** All acceptance criteria were met.

**Narrative ID:** 41834

**Approved By:** Maren Beery

*Maren Beery*



**Login Number:** L12010767  
**Department:** Metals  
**Analyst:** Ji Hu

**METHOD**

**Preparation:** SW-846 3015

**Analysis:** SW-846 6020

**HOLDING TIMES**

**Sample Preparation:** All holding times were met.

**Sample Analysis:** All holding times were met.

**PREPARATION**

Sample preparation proceeded normally.

**CALIBRATION**

**Initial Calibration:** All acceptance criteria were met.

**Alternate Source Standards:** All acceptance criteria were met.

**Interference Check Standards:** All acceptance criteria were met.

**Continuing Calibration:** All acceptance criteria were met.

**Continuing Calibration Blank:** All acceptance criteria were met.

**Low Level Check:** All acceptance criteria were met.

**BATCH QA/QC**

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Serial Dilution/Post Digestion Spikes:** WG388420 - All acceptance criteria were met.

**Matrix Spikes:** WG388420 - Sample 01 was chosen by the client for MS/MSD analysis. Samples 02(MS) and 03(MSD) yielded a noncompliant recovery and a noncompliant RPD for copper.

**SAMPLES**

**Samples:** All acceptance criteria were met.

**Narrative ID:** 41610

**Approved By:** Maren Beery

*Maren Beery*



**Login Number:** L12010767  
**Department:** Metals - AA  
**Analyst:** Pierce Morris

#### **METHOD**

**Preparation:** SW-846 7470

**Analysis:** SW-846 7470

#### **HOLDING TIMES**

**Sample Preparation:** All holding times were met.

**Sample Analysis:** All holding times were met.

#### **PREPARATION**

Sample preparation proceeded normally.

#### **CALIBRATION**

**Initial Calibration:** All acceptance criteria were met.

**Alternate Source Standards:** All acceptance criteria were met.

**Interference Check Standards:** All acceptance criteria were met.

**Continuing Calibration Verification:** All acceptance criteria were met.

**Continuing Calibration Blank:** All acceptance criteria were met.

#### **BATCH QA/QC**

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Serial Dilution/Post Digestion Spikes:** WG388471 - All acceptance criteria were met.

**Matrix Spikes:** WG388471 - Sample 01 was chosen by the client for MS/MSD analysis. Samples 02(MS) and 03(MSD) met all acceptance criteria.

#### **SAMPLES**

**Samples:** All acceptance criteria were met.

**Narrative ID:** 41638

**Approved By:** Maren Beery

*Maren Beery*



**Login Number:** L12010767  
**Department:** General Chromatography  
**Analyst:** Jeremy Kinney

## METHOD

**Analysis** SW-846 9056/300.0

## HOLDING TIMES

**Sample Preparation:** All holding times were met.

**Sample Analysis:** All holding times were met.

## PREPARATION

Sample preparation proceeded normally.

## CALIBRATION

**Initial Calibration:** All acceptance criteria were met.

**Alternate Source Standards:** All acceptance criteria were met.

**Continuing Calibration and Tune:** All acceptance criteria were met.

## BATCH QA/QC

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Matrix Spikes:** Recoveries out of range were observed for the following analytes: Chloride. Please see the applicable QC report for a detailed presentation of the failures.

## SAMPLES

**Samples:** All acceptance criteria were met.

**Surrogates:** All acceptance criteria were met.

## Manual Integration Reason Codes

**Reason #1: Data System Fails to Select Correct Peak** In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

**Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak** This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

**Reason #3: Improperly Integrated Isomers and/or coeluting compounds.** This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

**Reason #4: System Establishes Incorrect Baseline** There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

**Reason #5: Miscellaneous** Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor

will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

**Narrative ID:** 41599

**Approved By:** Jeremy Kinney





**Login Number:** L12010767  
**Department:** Conventionals  
**Analyst:** Deanna Hesson

**METHOD**

**Analysis** EPA 310.2 (Alkalinity)

**HOLDING TIMES**

**Sample Analysis:** All holding times were met.

**PREPARATION**

Sample preparation proceeded normally.

**BATCH QA/QC**

**Method Blank:** The blank result was greater than the absolute value of the LOD.

**Laboratory Control Sample:** All acceptance criteria were met.

**Matrix Spikes:** Recoveries out of range were observed for the following analytes: Alkalinity, Carbonate (as CaCO<sub>3</sub>). Please see the applicable QC report for a detailed presentation of the failures.

**Duplicates:** All acceptance criteria were met.

**SAMPLES**

**Samples:** All acceptance criteria were met.

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**Narrative ID:** 41629

**Approved By:** Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



**Login Number:** L12010767  
**Department:** Conventionals  
**Analyst:** Dorothy Payne

**METHOD**

**Analysis** SW846 9014/9010C/SM4500-CN-C,E-20th (Cyanide)

**HOLDING TIMES**

**Sample Analysis:** All holding times were met.

**PREPARATION**

Sample preparation proceeded normally.

**BATCH QA/QC**

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** Cyanide-Ammonable is the difference between the total cyanide and the treated cyanide. The LCS is analyzed to show that all of the cyanide is ammonable (the treated portion is ND). The LCS forms cannot calculate cyanide ammonable. The LCS is acceptable.

**Matrix Spikes:** All acceptance criteria were met.

**Duplicates:** All acceptance criteria were met.

**SAMPLES**

**Samples:** All acceptance criteria were met.

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**Narrative ID:** 41782

**Approved By:** Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



**Login Number:** L12010767  
**Department:** Conventionals  
**Analyst:** Dorothy Payne

**METHOD**

**Analysis** EPA 120.1/SM2510 B (Conductivity)

**HOLDING TIMES**

**Sample Analysis:** All holding times were met.

**PREPARATION**

Sample preparation proceeded normally.

**BATCH QA/QC**

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Duplicates:** All acceptance criteria were met.

**Matrix Spikes:** Recoveries out of range were observed for the following analytes: Conductivity. Please see the applicable QC report for a detailed presentation of the failures.

**SAMPLES**

**Samples:** All acceptance criteria were met.

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**Narrative ID:** 42083

**Approved By:** Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



**Login Number:** L12010767  
**Department:** Conventionals  
**Analyst:** Deanna Hesson

**METHOD**

**Analysis** EPA 350.1/SM4500-NH3 B(NH3)

**HOLDING TIMES**

**Sample Analysis:** All holding times were met.

**PREPARATION**

Sample preparation proceeded normally.

**BATCH QA/QC**

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Duplicates:** All acceptance criteria were met.

**Matrix Spikes:** Recoveries out of range were observed for the following analytes: Nitrogen, Ammonia. Please see the applicable QC report for a detailed presentation of the failures.

**SAMPLES**

**Samples:** All acceptance criteria were met.

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**Narrative ID:** 42085

**Approved By:** Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



**Login Number:** L12010767  
**Department:** Conventionals  
**Analyst:** Deanna Hesson

**METHOD**

**Analysis** EPA 353.2/SM4500-NO3 F (Nitrate)

**HOLDING TIMES**

**Sample Analysis:** Nitrate is reported as the difference of nitrate-nitrite (28 day hold) and nitrite (48 hour hold). Both analysis were analyzed within the appropriate hold time. The nitrate hold time is within compliance.

**PREPARATION**

Sample preparation proceeded normally.

**BATCH QA/QC**

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Matrix Spikes:** All acceptance criteria were met.

**Duplicates:** All acceptance criteria were met.

**SAMPLES**

**Samples:** All acceptance criteria were met.

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**Narrative ID:** 42086

**Approved By:** Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



**Login Number:** L12010767  
**Department:** Conventionals  
**Analyst:** Deanna Hesson

**METHOD**

**Analysis** EPA 365.2/SM4500-P E (Orthophosphate)

**HOLDING TIMES**

**Sample Analysis:** All holding times were met.

**PREPARATION**

Sample preparation proceeded normally.

**BATCH QA/QC**

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Matrix Spikes:** All acceptance criteria were met.

**Duplicates:** All acceptance criteria were met.

**SAMPLES**

**Samples:** All acceptance criteria were met.

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**Narrative ID:** 42087

**Approved By:** Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



**Login Number:** L12010767  
**Department:** Conventionals  
**Analyst:** Holly Reed

**METHOD**

**Analysis** EPA 160.1/SM2540 C(Total Dissolved Solids)

**HOLDING TIMES**

**Sample Analysis:** All holding times were met.

**PREPARATION**

Sample preparation proceeded normally.

**BATCH QA/QC**

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Duplicates:** All acceptance criteria were met.

**Matrix Spikes:** All acceptance criteria were met.

**SAMPLES**

**Samples:** All acceptance criteria were met.

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**Narrative ID:** 42090

**Approved By:** Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



**Login Number:** L12010767  
**Department:** Conventionals  
**Analyst:** Jeremy Kinney

**METHOD**

**Analysis Water:** EPA 415.1/SM5310C/SW846 9060 (Total Organic Carbon)  
**Soil:** Lloyd-Khan Methodology

**HOLDING TIMES**

**Sample Analysis:** All holding times were met.

**PREPARATION**

Sample preparation proceeded normally.

**BATCH QAI/QC**

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Duplicates:** All acceptance criteria were met.

**Matrix Spikes:** All acceptance criteria were met.

**SAMPLES**

**Samples:** All acceptance criteria were met.

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**Narrative ID:** 42088

**Approved By:** Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



**Login Number:** L12010767  
**Department:** Conventionals  
**Analyst:** Holly Reed

**METHOD**

**Analysis** EPA 160.2/SM2540 D (Total Suspended Solids)

**HOLDING TIMES**

**Sample Analysis:** All holding times were met.

**PREPARATION**

Sample preparation proceeded normally.

**BATCH QA/QC**

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Duplicates:** All acceptance criteria were met.

**Matrix Spikes:** All acceptance criteria were met.

**SAMPLES**

**Samples:** All acceptance criteria were met.

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**Narrative ID:** 42089

**Approved By:** Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".

### Certificate of Analysis

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> ICP-THERMO2
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 3005A	<b>Prep Date:</b> 02/01/2012 06:13
<b>Matrix:</b> Water	<b>Analytical Method:</b> 6010B	<b>Cal Date:</b> 02/07/2012 08:55
<b>Workgroup #:</b> WG388487	<b>Analyst:</b> EDL	<b>Run Date:</b> 02/07/2012 10:37
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> T2.020712.103731
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Calcium, Total	7440-70-2	35.5		0.200	0.100
Magnesium, Total	7439-95-4	5.32		0.500	0.250
Manganese, Total	7439-96-5		U	0.0100	0.00500
Potassium, Total	7440-09-7	2.28		1.00	0.500
Sodium, Total	7440-23-5	21.8		0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2	0.00833	J	0.0100	0.00500
Zinc, Total	7440-66-6	0.0227		0.0200	0.0100
J	Estimated value ; the analyte concentration was less than the LOQ.				
U	Analyte was not detected. The concentration is below the reported LOD.				

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> ELAN-ICP
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 3015	<b>Prep Date:</b> 01/31/2012 11:34
<b>Matrix:</b> Water	<b>Analytical Method:</b> 6020	<b>Cal Date:</b> 01/31/2012 10:51
<b>Workgroup #:</b> WG388420	<b>Analyst:</b> JYH	<b>Run Date:</b> 01/31/2012 17:35
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> EL.013112.173502
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00250		0.00100	0.000500
Barium, Total	7440-39-3	0.0567		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3	0.00479		0.00200	0.00100
Cobalt, Total	7440-48-4		U	0.00100	0.000500
Copper, Total	7440-50-8	0.00132	J	0.00200	0.00100
Lead, Total	7439-92-1		U	0.00100	0.000500
Nickel, Total	7440-02-0		U	0.00400	0.00200
Selenium, Total	7782-49-2	0.00120		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100
J	Estimated value ; the analyte concentration was less than the LOQ.				

## Certificate of Analysis

U	Analyte was not detected. The concentration is below the reported LOD.
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<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> HYDRA
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 7470A	<b>Prep Date:</b> 01/31/2012 10:10
<b>Matrix:</b> Water	<b>Analytical Method:</b> 7470A	<b>Cal Date:</b> 02/01/2012 12:42
<b>Workgroup #:</b> WG388471	<b>Analyst:</b> PDM	<b>Run Date:</b> 02/01/2012 13:23
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> HY.020112.132301
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6		U	0.000200	0.000100
U	Analyte was not detected. The concentration is below the reported LOD.				

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> IC2
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 300.0	<b>Prep Date:</b> 01/31/2012 16:00
<b>Matrix:</b> Water	<b>Analytical Method:</b> 300.0	<b>Cal Date:</b> 12/21/2011 13:49
<b>Workgroup #:</b> WG388430	<b>Analyst:</b> JBK	<b>Run Date:</b> 01/31/2012 21:31
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> I20131122131.21
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	12.2		0.200	0.100
Fluoride	16984-48-8	0.312		0.200	0.100
Sulfate	14808-79-8	45.0		1.00	0.500

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> ORION-4STAR
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 9040C	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 9040C	<b>Cal Date:</b>
<b>Workgroup #:</b> WG388300	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/29/2012 09:25
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> OS12013112270201
<b>Sample Tag:</b>	<b>Units:</b> UNITS	

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.80		0.000	0.000

## Certificate of Analysis

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 310.2	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 310.2	<b>Cal Date:</b> 01/31/2012 08:52
<b>Workgroup #:</b> WG388329	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/31/2012 09:08
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC120131001.035
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)			U	20.0	10.0
U	Analyte was not detected. The concentration is below the reported LOD.				

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 310.2	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 310.2	<b>Cal Date:</b> 01/31/2012 08:52
<b>Workgroup #:</b> WG388329	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/31/2012 09:08
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC120131001.035
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		101		20.0	10.0

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 310.2	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 310.2	<b>Cal Date:</b> 01/31/2012 08:52
<b>Workgroup #:</b> WG388329	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/31/2012 09:08
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC120131001.035
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		101		20.0	10.0

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> UV-120-1V
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> SM4500-CN-I	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> SM4500-CN-I	<b>Cal Date:</b> 01/30/2012 15:15
<b>Workgroup #:</b> WG388302	<b>Analyst:</b> DLP	<b>Run Date:</b> 01/30/2012 18:00
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 1V.1201301800-17
<b>Sample Tag:</b> D01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5		U	0.0100	0.00500
U	Analyte was not detected. The concentration is below the reported LOD.				

## Certificate of Analysis

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> UV-120-1V
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> SM4500-CN-C,G	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> SM4500-CN-C,G	<b>Cal Date:</b> 02/03/2012 13:25
<b>Workgroup #:</b> WG388635	<b>Analyst:</b> JBK	<b>Run Date:</b> 02/03/2012 14:10
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 1V.1202031410-06
<b>Sample Tag:</b> CN-A	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5		U	0.0100	0.00500
U	Analyte was not detected. The concentration is below the reported LOD.				

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> UV-120-1V
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 9014-9010C	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 9014-9010C	<b>Cal Date:</b> 01/30/2012 15:15
<b>Workgroup #:</b> WG388303	<b>Analyst:</b> DLP	<b>Run Date:</b> 01/30/2012 18:30
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 1V.1201301830-10
<b>Sample Tag:</b> D02	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5		U	0.0100	0.00500
U	Analyte was not detected. The concentration is below the reported LOD.				

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> YSI-32
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 120.1	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 120.1	<b>Cal Date:</b>
<b>Workgroup #:</b> WG388884	<b>Analyst:</b> DLP	<b>Run Date:</b> 02/06/2012 14:30
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 32.1202061430-03
<b>Sample Tag:</b>	<b>Units:</b> umhos/cm	

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		328		1.00	0.500

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 350.1	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 350.1	<b>Cal Date:</b> 01/31/2012 11:41
<b>Workgroup #:</b> WG388370	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/31/2012 12:01
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC120131002.028
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.0823	J	0.100	0.0500
J	Estimated value ; the analyte concentration was less than the LOQ.				

## Certificate of Analysis

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 353.2	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 353.2	<b>Cal Date:</b> 01/30/2012 09:15
<b>Workgroup #:</b> WG388287	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/30/2012 14:40
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC12013112384201
<b>Sample Tag:</b>	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		1.52		0.0500	0.0250

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> UV-120-1V
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> SM4500-P-E-20th	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> SM4500-P-E-20th	<b>Cal Date:</b> 12/21/2011 14:35
<b>Workgroup #:</b> WG388301	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/29/2012 09:30
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 1V.1201290930-05
<b>Sample Tag:</b>	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2		U	0.0500	0.0250
U	Analyte was not detected. The concentration is below the reported LOD.				

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> OVEN
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 160.1/SM2540C	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 160.1	<b>Cal Date:</b>
<b>Workgroup #:</b> WG388361	<b>Analyst:</b> HJR	<b>Run Date:</b> 01/31/2012 10:48
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> EN.1201311048-12
<b>Sample Tag:</b>	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		208		20.0	10.0

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> TOC-VWP
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 415.1	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 415.1	<b>Cal Date:</b> 12/06/2011 09:40
<b>Workgroup #:</b> WG388455	<b>Analyst:</b> JBK	<b>Run Date:</b> 02/01/2012 11:33
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> TC02012012.008
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		1.53		1.00	0.500

### Certificate of Analysis

<b>Sample #:</b> L12010767-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> OVEN
<b>Client ID:</b> MPL-21-0112-1	<b>Prep Method:</b> 160.2/SM2540D	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 160.2	<b>Cal Date:</b>
<b>Workgroup #:</b> WG388360	<b>Analyst:</b> HJR	<b>Run Date:</b> 01/31/2012 10:46
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> EN.1201311046-21
<b>Sample Tag:</b>	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids			U	5.00	2.50

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> ICP-THERMO2
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 3005A	<b>Prep Date:</b> 02/01/2012 06:13
<b>Matrix:</b> Water	<b>Analytical Method:</b> 6010B	<b>Cal Date:</b> 02/07/2012 08:55
<b>Workgroup #:</b> WG388487	<b>Analyst:</b> EDL	<b>Run Date:</b> 02/07/2012 10:40
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> T2.020712.104051
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7	0.0249		0.00200	0.00100
Calcium, Total	7440-70-2	39.3		0.200	0.100
Magnesium, Total	7439-95-4	10.0		0.500	0.250
Manganese, Total	7439-96-5	0.243		0.0100	0.00500
Potassium, Total	7440-09-7	26.8		1.00	0.500
Sodium, Total	7440-23-5	46.5		0.500	0.250
Tin, Total	7440-31-5	0.524		0.500	0.250
Vanadium, Total	7440-62-2	0.507		0.0100	0.00500
Zinc, Total	7440-66-6	0.509		0.0200	0.0100

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> ELAN-ICP
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 3015	<b>Prep Date:</b> 01/31/2012 11:34
<b>Matrix:</b> Water	<b>Analytical Method:</b> 6020	<b>Cal Date:</b> 01/31/2012 10:51
<b>Workgroup #:</b> WG388420	<b>Analyst:</b> JYH	<b>Run Date:</b> 01/31/2012 17:42
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> EL.013112.174250
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0	0.0633		0.00100	0.000500
Arsenic, Total	7440-38-2	0.0635		0.00100	0.000500
Barium, Total	7440-39-3	0.117		0.00300	0.00150
Cadmium, Total	7440-43-9	0.0616		0.000600	0.000300
Chromium, Total	7440-47-3	0.0680		0.00200	0.00100
Cobalt, Total	7440-48-4	0.0633		0.00100	0.000500

### Certificate of Analysis

Analyte	CAS #	Result	Qual	LOQ	LOD
Copper, Total	7440-50-8	0.0641		0.00200	0.00100
Lead, Total	7439-92-1	0.0663		0.00100	0.000500
Nickel, Total	7440-02-0	0.0628		0.00400	0.00200
Selenium, Total	7782-49-2	0.0564		0.00100	0.000500
Silver, Total	7440-22-4	0.0651		0.00100	0.000500
Thallium, Total	7440-28-0	0.0649		0.000200	0.000100

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> HYDRA
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 7470A	<b>Prep Date:</b> 01/31/2012 10:10
<b>Matrix:</b> Water	<b>Analytical Method:</b> 7470A	<b>Cal Date:</b> 02/01/2012 12:42
<b>Workgroup #:</b> WG388471	<b>Analyst:</b> PDM	<b>Run Date:</b> 02/01/2012 13:26
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> HY.020112.132638
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6	0.00488		0.000222	0.000111

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> IC2
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 300.0	<b>Prep Date:</b> 01/31/2012 16:00
<b>Matrix:</b> Water	<b>Analytical Method:</b> 300.0	<b>Cal Date:</b> 12/21/2011 13:49
<b>Workgroup #:</b> WG388430	<b>Analyst:</b> JBK	<b>Run Date:</b> 01/31/2012 22:08
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> I20131122208.23
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	19.1		0.200	0.100
Fluoride	16984-48-8	7.52		0.200	0.100
Sulfate	14808-79-8	86.5		1.00	0.500

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> ORION-4STAR
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 9040C	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 9040C	<b>Cal Date:</b>
<b>Workgroup #:</b> WG388300	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/29/2012 09:25
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> OS12013112270501
<b>Sample Tag:</b>	<b>Units:</b> UNITS	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.76		0.000	0.000

### Certificate of Analysis

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 310.2	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 310.2	<b>Cal Date:</b> 01/31/2012 08:52
<b>Workgroup #:</b> WG388329	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/31/2012 09:09
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC120131001.036
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		187		20.0	10.0

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 310.2	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 310.2	<b>Cal Date:</b> 01/31/2012 08:52
<b>Workgroup #:</b> WG388329	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/31/2012 09:09
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC120131001.036
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)			U	20.0	10.0
U	Analyte was not detected. The concentration is below the reported LOD.				

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 310.2	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 310.2	<b>Cal Date:</b> 01/31/2012 08:52
<b>Workgroup #:</b> WG388329	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/31/2012 09:09
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC120131001.036
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		187		20.0	10.0

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> UV-120-1V
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 9014-9010C	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 9014-9010C	<b>Cal Date:</b> 01/30/2012 15:00
<b>Workgroup #:</b> WG388303	<b>Analyst:</b> DLP	<b>Run Date:</b> 01/30/2012 18:30
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 1V.1201301830-11
<b>Sample Tag:</b> D02	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.194		0.0100	0.00500

### Certificate of Analysis

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> UV-120-1V
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> SM4500-CN-C,G	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> SM4500-CN-C,G	<b>Cal Date:</b> 02/03/2012 13:25
<b>Workgroup #:</b> WG388635	<b>Analyst:</b> JBK	<b>Run Date:</b> 02/03/2012 14:10
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 1V.1202031410-07
<b>Sample Tag:</b> CN-A	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5		U	0.0100	0.00500
U	Analyte was not detected. The concentration is below the reported LOD.				

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> UV-120-1V
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> SM4500-CN-I	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> SM4500-CN-I	<b>Cal Date:</b> 01/30/2012 15:00
<b>Workgroup #:</b> WG388302	<b>Analyst:</b> DLP	<b>Run Date:</b> 01/30/2012 18:00
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 1V.1201301800-18
<b>Sample Tag:</b> D01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5	0.202		0.0100	0.00500

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> YSI-32
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 120.1	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 120.1	<b>Cal Date:</b>
<b>Workgroup #:</b> WG388884	<b>Analyst:</b> DLP	<b>Run Date:</b> 02/06/2012 14:30
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 32.1202061430-04
<b>Sample Tag:</b>	<b>Units:</b> umhos/cm	

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		326		1.00	0.500

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 350.1	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 350.1	<b>Cal Date:</b> 01/31/2012 11:41
<b>Workgroup #:</b> WG388370	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/31/2012 12:01
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC120131002.029
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.927		0.100	0.0500

### Certificate of Analysis

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 353.2	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 353.2	<b>Cal Date:</b> 01/30/2012 09:15
<b>Workgroup #:</b> WG388287	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/30/2012 14:40
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC12013112384501
<b>Sample Tag:</b>	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		1.90		0.0500	0.0250

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> UV-120-1V
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> SM4500-P-E-20th	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> SM4500-P-E-20th	<b>Cal Date:</b> 12/21/2011 14:35
<b>Workgroup #:</b> WG388301	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/29/2012 09:30
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 1V.1201290930-06
<b>Sample Tag:</b>	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2	0.366		0.0500	0.0250

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> OVEN
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 160.1/SM2540C	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 160.1	<b>Cal Date:</b>
<b>Workgroup #:</b> WG388361	<b>Analyst:</b> HJR	<b>Run Date:</b> 01/31/2012 10:48
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> EN.1201311048-13
<b>Sample Tag:</b>	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		718		20.0	10.0

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> TOC-VWP
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 415.1	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 415.1	<b>Cal Date:</b> 12/06/2011 09:40
<b>Workgroup #:</b> WG388455	<b>Analyst:</b> JBK	<b>Run Date:</b> 02/01/2012 11:58
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> TC02012012.010
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		11.4		1.00	0.500

### Certificate of Analysis

<b>Sample #:</b> L12010767-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> OVEN
<b>Client ID:</b> MPL-21-0112-MS	<b>Prep Method:</b> 160.2/SM2540D	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 160.2	<b>Cal Date:</b>
<b>Workgroup #:</b> WG388360	<b>Analyst:</b> HJR	<b>Run Date:</b> 01/31/2012 10:46
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> EN.1201311046-22
<b>Sample Tag:</b>	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids		26.0		5.00	2.50

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> ICP-THERMO2
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 3005A	<b>Prep Date:</b> 02/01/2012 06:13
<b>Matrix:</b> Water	<b>Analytical Method:</b> 6010B	<b>Cal Date:</b> 02/07/2012 08:55
<b>Workgroup #:</b> WG388487	<b>Analyst:</b> EDL	<b>Run Date:</b> 02/07/2012 10:44
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> T2.020712.104406
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7	0.0238		0.00200	0.00100
Calcium, Total	7440-70-2	38.9		0.200	0.100
Magnesium, Total	7439-95-4	10.0		0.500	0.250
Manganese, Total	7439-96-5	0.246		0.0100	0.00500
Potassium, Total	7440-09-7	27.0		1.00	0.500
Sodium, Total	7440-23-5	46.3		0.500	0.250
Tin, Total	7440-31-5	0.530		0.500	0.250
Vanadium, Total	7440-62-2	0.483		0.0100	0.00500
Zinc, Total	7440-66-6	0.510		0.0200	0.0100

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> ELAN-ICP
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 3015	<b>Prep Date:</b> 01/31/2012 11:34
<b>Matrix:</b> Water	<b>Analytical Method:</b> 6020	<b>Cal Date:</b> 01/31/2012 10:51
<b>Workgroup #:</b> WG388420	<b>Analyst:</b> JYH	<b>Run Date:</b> 01/31/2012 17:50
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> EL.013112.175036
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0	0.0628		0.00100	0.000500
Arsenic, Total	7440-38-2	0.0646		0.00100	0.000500
Barium, Total	7440-39-3	0.121		0.00300	0.00150
Cadmium, Total	7440-43-9	0.0589		0.000600	0.000300
Chromium, Total	7440-47-3	0.0700		0.00200	0.00100
Cobalt, Total	7440-48-4	0.0636		0.00100	0.000500

## Certificate of Analysis

Analyte	CAS #	Result	Qual	LOQ	LOD
Copper, Total	7440-50-8	0.217		0.00200	0.00100
Lead, Total	7439-92-1	0.0672		0.00100	0.000500
Nickel, Total	7440-02-0	0.0646		0.00400	0.00200
Selenium, Total	7782-49-2	0.0579		0.00100	0.000500
Silver, Total	7440-22-4	0.0623		0.00100	0.000500
Thallium, Total	7440-28-0	0.0662		0.000200	0.000100

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> HYDRA
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 7470A	<b>Prep Date:</b> 01/31/2012 10:10
<b>Matrix:</b> Water	<b>Analytical Method:</b> 7470A	<b>Cal Date:</b> 02/01/2012 12:42
<b>Workgroup #:</b> WG388471	<b>Analyst:</b> PDM	<b>Run Date:</b> 02/01/2012 13:28
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> HY.020112.132825
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6	0.00484		0.000222	0.000111

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> IC2
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 300.0	<b>Prep Date:</b> 01/31/2012 16:00
<b>Matrix:</b> Water	<b>Analytical Method:</b> 300.0	<b>Cal Date:</b> 12/21/2011 13:49
<b>Workgroup #:</b> WG388430	<b>Analyst:</b> JBK	<b>Run Date:</b> 01/31/2012 22:26
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> I20131122226.24
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	19.1		0.200	0.100
Fluoride	16984-48-8	7.48		0.200	0.100
Sulfate	14808-79-8	86.1		1.00	0.500

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> ORION-4STAR
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 9040C	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 9040C	<b>Cal Date:</b>
<b>Workgroup #:</b> WG388300	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/29/2012 09:25
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> OS12013112270901
<b>Sample Tag:</b>	<b>Units:</b> UNITS	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.77		0.000	0.000

### Certificate of Analysis

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 310.2	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 310.2	<b>Cal Date:</b> 01/31/2012 08:52
<b>Workgroup #:</b> WG388329	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/31/2012 09:10
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC120131001.037
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		187		20.0	10.0

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 310.2	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 310.2	<b>Cal Date:</b> 01/31/2012 08:52
<b>Workgroup #:</b> WG388329	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/31/2012 09:10
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC120131001.037
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)			U	20.0	10.0
U	Analyte was not detected. The concentration is below the reported LOD.				

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 310.2	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 310.2	<b>Cal Date:</b> 01/31/2012 08:52
<b>Workgroup #:</b> WG388329	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/31/2012 09:10
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC120131001.037
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		187		20.0	10.0

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> UV-120-1V
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> SM4500-CN-C,G	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> SM4500-CN-C,G	<b>Cal Date:</b> 02/03/2012 13:25
<b>Workgroup #:</b> WG388635	<b>Analyst:</b> JBK	<b>Run Date:</b> 02/03/2012 14:10
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 1V.1202031410-08
<b>Sample Tag:</b> CN-A	<b>Units:</b> mg/L	

  

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5		U	0.0100	0.00500
U	Analyte was not detected. The concentration is below the reported LOD.				

## Certificate of Analysis

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> UV-120-1V
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> SM4500-CN-I	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> SM4500-CN-I	<b>Cal Date:</b> 01/30/2012 15:00
<b>Workgroup #:</b> WG388302	<b>Analyst:</b> DLP	<b>Run Date:</b> 01/30/2012 18:00
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 1V.1201301800-19
<b>Sample Tag:</b> D01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5	0.193		0.0100	0.00500

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> UV-120-1V
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 9014-9010C	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 9014-9010C	<b>Cal Date:</b> 01/30/2012 15:00
<b>Workgroup #:</b> WG388303	<b>Analyst:</b> DLP	<b>Run Date:</b> 01/30/2012 18:30
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 1V.1201301830-12
<b>Sample Tag:</b> D02	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.192		0.0100	0.00500

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> YSI-32
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 120.1	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 120.1	<b>Cal Date:</b>
<b>Workgroup #:</b> WG388884	<b>Analyst:</b> DLP	<b>Run Date:</b> 02/06/2012 14:30
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 32.1202061430-05
<b>Sample Tag:</b>	<b>Units:</b> umhos/cm	

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		332		1.00	0.500

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 350.1	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 350.1	<b>Cal Date:</b> 01/31/2012 11:41
<b>Workgroup #:</b> WG388370	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/31/2012 12:04
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC120131002.032
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.901		0.100	0.0500

## Certificate of Analysis

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> SMARTCHEM
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 353.2	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 353.2	<b>Cal Date:</b> 01/30/2012 09:15
<b>Workgroup #:</b> WG388287	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/30/2012 14:40
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> SC12013112391801
<b>Sample Tag:</b>	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		2.03		0.0500	0.0250

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> UV-120-1V
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> SM4500-P-E-20th	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> SM4500-P-E-20th	<b>Cal Date:</b> 12/21/2011 14:35
<b>Workgroup #:</b> WG388301	<b>Analyst:</b> DIH	<b>Run Date:</b> 01/29/2012 09:30
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> 1V.1201290930-07
<b>Sample Tag:</b>	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2	0.378		0.0500	0.0250

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> OVEN
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 160.1/SM2540C	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 160.1	<b>Cal Date:</b>
<b>Workgroup #:</b> WG388361	<b>Analyst:</b> HJR	<b>Run Date:</b> 01/31/2012 10:48
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> EN.1201311048-14
<b>Sample Tag:</b>	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		720		20.0	10.0

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> TOC-VWP
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 415.1	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 415.1	<b>Cal Date:</b> 12/06/2011 09:40
<b>Workgroup #:</b> WG388455	<b>Analyst:</b> JBK	<b>Run Date:</b> 02/01/2012 12:11
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> TC02012012.011
<b>Sample Tag:</b> 01	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		11.3		1.00	0.500

## Certificate of Analysis

<b>Sample #:</b> L12010767-03	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> OVEN
<b>Client ID:</b> MPL-21-0112-MSD	<b>Prep Method:</b> 160.2/SM2540D	<b>Prep Date:</b> N/A
<b>Matrix:</b> Water	<b>Analytical Method:</b> 160.2	<b>Cal Date:</b>
<b>Workgroup #:</b> WG388360	<b>Analyst:</b> HJR	<b>Run Date:</b> 01/31/2012 10:46
<b>Collect Date:</b> 01/27/2012 14:45	<b>Dilution:</b> 1	<b>File ID:</b> EN.1201311046-23
<b>Sample Tag:</b>	<b>Units:</b> mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids		26.0		5.00	2.50

Microbac Laboratories Inc.  
Ohio Valley Division Analyst List  
February 13, 2012

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ADC - ANTHONY D. CANTER	AJF - AMANDA J. FICKIESEN	ALB - ANNIE L. BROWN
ALV - AMY L. VALENTINE	AML - TONY M. LONG	AZH - AFTER HOURS
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CS - CODY M. STRAHLER	CSH - CHRIS S. HILL	DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG	DGB - DOUGLAS G. BUTCHER	DHG - DEBORAH H. GRIFFITHS
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE
DLR - DIANNA L. RAUCH	DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EDL - ERIN D. LONG	ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
HAV - HEMA VILASAGAR	HJR - HOLLY J. REED	JAL - JOHN A. LENT
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON	JKS - JANE K. SCHAAD
JLL - JOHN L. LENT	JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KRA - KATHY R. ALBERTSON	LKN - LINDA K. NEDEFF	LSB - LESLIE S. BUCINA
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS	PWD - PAUL W. DENT	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN	RLK - ROBIN L. KLINGER
RWC - RODNEY W. CAMPBELL	SJP - SUZANNE J. PAUGH	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TIP - TAE I. PARRISH	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WTD - WADE T. DELONG		

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Result is greater than the associated numerical value.
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentatively identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL).
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
UJ	Undetected; the analyte was analyzed for, but not detected.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

## \*\*\*Special Notes for Organic Analytes



Qualkey: DOD

1. Acrolein and acrylonitrile by method 624 are semi-quantitative screens only.
2. 1,2-Diphenylhydrazine is unstable and is reported as azobenzene.
3. N-nitrosodiphenylamine cannot be separated from diphenylamine.
4. 3-Methylphenol and 4-Methylphenol are unresolvable compounds.
5. m-Xylene and p-Xylene are unresolvable compounds.
6. The reporting limits for Appendix II/IX compounds by method 8270 are based on EPA estimated PQLs referenced in 40 CFR Part 264, Appendix IX. They are not always achievable for every compound and are matrix dependent.





## Internal Chain of Custody Report

Login: L12010767

Account: 3005

Project: 3005.011

Samples: 3

Due Date: 10-FEB-2012

**Samplenum**            **Container ID**    **Products**  
**L12010767-01**        **932473**                **300**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	30-JAN-2012 10:06	RLK		
2	STORE	WET	A1	03-FEB-2012 11:24	RLK	JBK	

**Samplenum**            **Container ID**    **Products**  
**L12010767-01**        **932474**                **ALK ALK-B ALK-C**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	31-JAN-2012 08:15	DIH	RLK	
3	STORE	WET	A1	02-FEB-2012 07:37	AZH	DIH	

**Samplenum**            **Container ID**    **Products**  
**L12010767-01**        **932475**                **COND COR-PH PO4**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	30-JAN-2012 11:32	DLP	RLK	
3	STORE	WET	A1	08-FEB-2012 08:07	JKS	DLP	

**Samplenum**            **Container ID**    **Products**  
**L12010767-01**        **932476**                **TDS TSS**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	31-JAN-2012 08:55	HJR	RLK	
3	STORE	WET	A1	01-FEB-2012 14:59	RLK	HJR	

**Samplenum**            **Container ID**    **Products**  
**L12010767-01**        **932477**                **NH3 NO3NO2 TOC**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		<2
2	ANALYZ	W1	WET	30-JAN-2012 11:32	DLP	RLK	

A1 - Sample Archive (COLD)  
A2 - Sample Archive (AMBIENT)  
F1 - Volatiles Freezer in Login  
V1 - Volatiles Refrigerator in Login  
W1 - Walkin Cooler in Login



## Internal Chain of Custody Report

Login: L12010767

Account: 3005

Project: 3005.011

Samples: 3

Due Date: 10-FEB-2012

**Samplenum**            **Container ID**    **Products**  
**L12010767-01**    932478            AG-MS AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-MS C

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	DIG	30-JAN-2012 13:49	ERP	JKS	
3	STORE	DIG	A1	01-FEB-2012 14:35	RLK	ERP	

**Samplenum**            **Container ID**    **Products**  
**L12010767-01**    932479            CN CN-A CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	30-JAN-2012 11:32	DLP	RLK	

**Samplenum**            **Container ID**    **Products**  
**L12010767-02**    932480            300

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	31-JAN-2012 10:30	JBK	RLK	
3	STORE	SEM	A1	03-FEB-2012 11:19	RLK	JBK	

**Samplenum**            **Container ID**    **Products**  
**L12010767-02**    932481            ALK ALK-B ALK-C

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	31-JAN-2012 08:15	DIH	RLK	
3	STORE	WET	A1	02-FEB-2012 07:37	AZH	DIH	

**Samplenum**            **Container ID**    **Products**  
**L12010767-02**    932482            COND COR-PH PO4

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	30-JAN-2012 11:32	DLP	RLK	
3	STORE	WET	A1	08-FEB-2012 08:07	JKS	DLP	

A1 - Sample Archive (COLD)  
A2 - Sample Archive (AMBIENT)  
F1 - Volatiles Freezer in Login  
V1 - Volatiles Refrigerator in Login  
W1 - Walkin Cooler in Login



## Internal Chain of Custody Report

Login: L12010767

Account: 3005

Project: 3005.011

Samples: 3

Due Date: 10-FEB-2012

**Samplenum**            **Container ID**    **Products**  
**L12010767-02**        932483            TDS TSS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	31-JAN-2012 08:55	HJR	RLK	
3	STORE	WET	A1	01-FEB-2012 14:59	RLK	HJR	

**Samplenum**            **Container ID**    **Products**  
**L12010767-02**        932484            NH3 NO3NO2 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		<2
2	ANALYZ	W1	WET	30-JAN-2012 11:32	DLP	RLK	

**Samplenum**            **Container ID**    **Products**  
**L12010767-02**        932485            AG-MS AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-MS C

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	DIG	30-JAN-2012 13:49	ERP	JKS	
3	STORE	DIG	A1	01-FEB-2012 14:35	RLK	ERP	

**Samplenum**            **Container ID**    **Products**  
**L12010767-02**        932486            CN CN-A CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	30-JAN-2012 11:32	DLP	RLK	

**Samplenum**            **Container ID**    **Products**  
**L12010767-03**        932487            300

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	31-JAN-2012 10:30	JBK	RLK	
3	STORE	SEM	A1	03-FEB-2012 11:19	RLK	JBK	

A1 - Sample Archive (COLD)  
A2 - Sample Archive (AMBIENT)  
F1 - Volatiles Freezer in Login  
V1 - Volatiles Refrigerator in Login  
W1 - Walkin Cooler in Login



## Internal Chain of Custody Report

Login: L12010767

Account: 3005

Project: 3005.011

Samples: 3

Due Date: 10-FEB-2012

**Samplenum**            **Container ID**    **Products**  
**L12010767-03**        932488            ALK ALK-B ALK-C

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	31-JAN-2012 08:15	DIH	RLK	
3	STORE	WET	A1	02-FEB-2012 07:37	AZH	DIH	

**Samplenum**            **Container ID**    **Products**  
**L12010767-03**        932489            COND COR-PH PO4

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	30-JAN-2012 11:32	DLP	RLK	
3	STORE	WET	A1	08-FEB-2012 08:07	JKS	DLP	

**Samplenum**            **Container ID**    **Products**  
**L12010767-03**        932490            TDS TSS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	31-JAN-2012 08:55	HJR	RLK	
3	STORE	WET	A1	01-FEB-2012 14:59	RLK	HJR	

**Samplenum**            **Container ID**    **Products**  
**L12010767-03**        932491            NH3 NO3NO2 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		<2
2	ANALYZ	W1	WET	30-JAN-2012 11:32	DLP	RLK	

**Samplenum**            **Container ID**    **Products**  
**L12010767-03**        932492            AG-MS AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-MS (

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	DIG	30-JAN-2012 13:49	ERP	JKS	
3	STORE	DIG	A1	01-FEB-2012 14:35	RLK	ERP	

A1 - Sample Archive (COLD)  
A2 - Sample Archive (AMBIENT)  
F1 - Volatiles Freezer in Login  
V1 - Volatiles Refrigerator in Login  
W1 - Walkin Cooler in Login



Microbac Laboratories Inc.  
Internal Chain of Custody Report

**Login:** L12010767  
**Account:** 3005  
**Project:** 3005.011  
**Samples:** 3  
**Due Date:** 10-FEB-2012

**Samplenum**      **Container ID**      **Products**  
L12010767-03      932493      CN CN-A CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JAN-2012 10:06	RLK		
2	ANALYZ	W1	WET	30-JAN-2012 11:32	DLP	RLK	

A1 - Sample Archive (COLD)  
A2 - Sample Archive (AMBIENT)  
F1 - Volatiles Freezer in Login  
V1 - Volatiles Refrigerator in Login  
W1 - Walkin Cooler in Login

