

Microbac

KNOXVILLE DIVISION
 505 EAST BROADWAY AVE.
 MARYVILLE, TN 37804
 (865) 977-1200 FAX (865) 984-8616
 http://www.microbac.com
 E-Mail: knoxville@microbac.com

STATE CERT ID.
 TN 02017

CHEMISTRY · MICROBIOLOGY · FOOD SAFETY · CONSUMER PRODUCTS
 WATER · AIR · WASTES · FOOD · PHARMACEUTICALS · NUTRACEUTICALS

CERTIFICATE OF ANALYSIS
PRELIMINARY REPORT

CITY OF KINGSTON
 CHUCK MOORE
 125 W. CUMBERLAND ST.
 KINGSTON, TN 37763

Date Reported
 Date Received 7/16/2009
 Cust P.O.
 Invoice No.
 Cust # C120
 Sample Date 7/16/2009
 Permit No.

Work Order Number: 0907-00574

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

Test	Method	Result	Qual	Date	Time	Tech
001 RAW 07/16/09 0630						
[TAL METALS]						
ALUMINUM	EPA 200.7	0.0945 MG/L	J-	07/20/2009	20:30	LL
ANTIMONY	EPA 200.7	<0.0020 MG/L	M	07/20/2009	20:30	LL
ARSENIC	EPA 200.7	<0.0010 MG/L	M,J-	07/20/2009	20:30	LL
BARIUM	EPA 200.7	0.0207 MG/L		07/20/2009	20:30	LL
BERYLLIUM	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	20:30	LL
CADMIUM	EPA 200.7	<0.0010 MG/L		07/20/2009	20:30	LL
CHROMIUM	EPA 200.7	<0.0010 MG/L		07/20/2009	20:30	LL
COBALT	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	20:30	LL
COPPER	EPA 200.7	0.0043 MG/L		07/20/2009	20:30	LL
IRON	EPA 200.7	0.0480 MG/L	J-	07/20/2009	20:30	LL
LEAD	EPA 200.7	<0.0010 MG/L	M,J-	07/20/2009	20:30	LL
MAGNESIUM	EPA 200.7	4.02 MG/L		07/20/2009	18:06	LL
MANGANESE	EPA 200.7	0.0121 MG/L		07/20/2009	20:30	LL
MOLYBDENUM	EPA 200.7	<0.0010 MG/L		07/20/2009	20:30	LL
MERCURY	EPA 245.1	<0.0002 MG/L		07/20/2009	17:00	AHT
NICKEL	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	20:30	LL
SELENIUM	EPA 200.7	<0.0020 MG/L	M,J-	07/20/2009	20:30	LL
SILVER	EPA 200.7	<0.0010 MG/L		07/20/2009	20:30	LL
TIN	EPA 200.7	<0.0010 MG/L		07/20/2009	20:30	LL
TITANIUM	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	20:30	LL
THALLIUM	EPA 200.7	<0.0020 MG/L	M,J-	07/20/2009	20:30	LL
ZINC	EPA 200.7	0.0119 MG/L		07/20/2009	20:30	LL
BORON	EPA 200.7	0.0102 MG/L	J-	07/20/2009	20:30	LL
SOLIDS, TOTAL SUSPENDED	SM 2540,D.	<4.00 MG/L		07/20/2009	10:35	KDW
HARDNESS, TOTAL AS CaCO3	EPA 200.7;2340,B.	65.9 MG/L		07/20/2009	18:06	LL

Microbac

KNOXVILLE DIVISION
 505 EAST BROADWAY AVE.
 MARYVILLE, TN 37804
 (865) 977-1200 FAX (865) 984-8616
 http://www.microbac.com
 E-Mail: knoxville@microbac.com

STATE CERT ID.
 TN 02017

CHEMISTRY · MICROBIOLOGY · FOOD SAFETY · CONSUMER PRODUCTS
 WATER · AIR · WASTES · FOOD · PHARMACEUTICALS · NUTRACEUTICALS

CERTIFICATE OF ANALYSIS
PRELIMINARY REPORT

CITY OF KINGSTON
 CHUCK MOORE
 125 W. CUMBERLAND ST.
 KINGSTON, TN 37763

Date Reported
 Date Received 7/16/2009
 Cust P.O.
 Invoice No.
 Cust # C120
 Sample Date 7/16/2009
 Permit No.

Work Order Number: 0907-00574

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

Test	Method	Result	Qual	Date	Time	Tech
------	--------	--------	------	------	------	------

002 RAW 07/16/09 0630 DISSOLVED METALS

Test	Method	Result	Qual	Date	Time	Tech
[TAL METALS]					00:00	
ALUMINUM	EPA 200.7	0.0125 MG/L		07/20/2009	19:49	LL
ANTIMONY	EPA 200.7	<0.0020 MG/L	M	07/20/2009	19:49	LL
ARSENIC	EPA 200.7	<0.0010 MG/L	M,J-	07/20/2009	19:49	LL
BARIUM	EPA 200.7	0.0215 MG/L		07/20/2009	19:49	LL
BERYLLIUM	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	19:49	LL
CADMIUM	EPA 200.7	<0.0010 MG/L		07/20/2009	19:49	LL
CHROMIUM	EPA 200.7	<0.0010 MG/L		07/20/2009	19:49	LL
COBALT	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	19:49	LL
COPPER	EPA 200.7	0.0031 MG/L		07/20/2009	19:49	LL
IRON	EPA 200.7	<0.0060 MG/L		07/20/2009	19:49	LL
LEAD	EPA 200.7	<0.0010 MG/L	M,J-	07/20/2009	19:49	LL
MAGNESIUM	EPA 200.7	3.88 MG/L	J-	07/20/2009	19:22	LL
MANGANESE	EPA 200.7	<0.0050 MG/L		07/20/2009	19:49	LL
MOLYBDENUM	EPA 200.7	<0.0010 MG/L		07/20/2009	19:49	LL
MERCURY	EPA 245.1	<0.0002 MG/L		07/20/2009	17:00	AHT
NICKEL	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	19:49	LL
SELENIUM	EPA 200.7	<0.0020 MG/L	M,J-	07/20/2009	19:49	LL
SILVER	EPA 200.7	<0.0010 MG/L		07/20/2009	19:49	LL
TIN	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	19:49	LL
TITANIUM	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	19:49	LL
THALLIUM	EPA 200.7	<0.0020 MG/L	M,J-	07/20/2009	19:49	LL
ZINC	EPA 200.7	0.0073 MG/L		07/20/2009	19:49	LL
BORON	EPA 200.7	0.0107 MG/L	J-	07/20/2009	19:49	LL
SILICA (SiO2)	EPA 200.7	2.89 MG/L		07/20/2009	19:22	LL



KNOXVILLE DIVISION
 505 EAST BROADWAY AVE.
 MARYVILLE, TN 37804
 (865) 977-1200 FAX (865) 984-8616
 http://www.microbac.com
 E-Mail: knoxville@microbac.com

STATE CERT ID.
 TN 02017

CHEMISTRY · MICROBIOLOGY · FOOD SAFETY · CONSUMER PRODUCTS
 WATER · AIR · WASTES · FOOD · PHARMACEUTICALS · NUTRACEUTICALS

PRELIMINARY REPORT

CERTIFICATE OF ANALYSIS

CITY OF KINGSTON
 CHUCK MOORE
 125 W. CUMBERLAND ST.
 KINGSTON, TN 37763

Date Reported
 Date Received 7/16/2009
 Cust P.O.
 Invoice No.
 Cust # C120
 Sample Date 7/16/2009
 Permit No.

Work Order Number: 0907-00574

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

Test	Method	Result	Qual	Date	Time	Tech
------	--------	--------	------	------	------	------

003 FINISHED 07/16/09 0630

[TAL METALS]

Test	Method	Result	Qual	Date	Time	Tech
ALUMINUM	EPA 200.7	0.0719 MG/L	J-	07/20/2009	20:37	LL
ANTIMONY	EPA 200.7	<0.0020 MG/L	M	07/20/2009	20:37	LL
ARSENIC	EPA 200.7	<0.0010 MG/L	M,J-	07/20/2009	20:37	LL
BARIUM	EPA 200.7	0.0198 MG/L		07/20/2009	20:37	LL
BERYLLIUM	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	20:37	LL
CADMIUM	EPA 200.7	<0.0010 MG/L		07/20/2009	20:37	LL
CHROMIUM	EPA 200.7	<0.0010 MG/L		07/20/2009	20:37	LL
COBALT	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	20:37	LL
COPPER	EPA 200.7	0.0106 MG/L		07/20/2009	20:37	LL
IRON	EPA 200.7	<0.0060 MG/L	J-	07/20/2009	20:37	LL
LEAD	EPA 200.7	<0.0010 MG/L	M,J-	07/20/2009	20:37	LL
MAGNESIUM	EPA 200.7	4.09 MG/L		07/20/2009	18:13	LL
MANGANESE	EPA 200.7	<0.0050 MG/L		07/20/2009	20:37	LL
MOLYBDENUM	EPA 200.7	<0.0010 MG/L		07/20/2009	20:37	LL
MERCURY	EPA 245.1	<0.0002 MG/L		07/20/2009	17:00	AHT
NICKEL	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	20:37	LL
SELENIUM	EPA 200.7	<0.0020 MG/L	M,J-	07/20/2009	20:37	LL
SILVER	EPA 200.7	<0.0010 MG/L		07/20/2009	20:37	LL
TIN	EPA 200.7	<0.0010 MG/L		07/20/2009	20:37	LL
TITANIUM	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	20:37	LL
THALLIUM	EPA 200.7	<0.0020 MG/L	M,J-	07/20/2009	20:37	LL
ZINC	EPA 200.7	0.0033 MG/L		07/20/2009	20:37	LL
BORON	EPA 200.7	0.0107 MG/L	J-	07/20/2009	20:37	LL
SOLIDS, TOTAL SUSPENDED	SM 2540,D.	<4.00 MG/L		07/20/2009	10:35	KDW



Microbac

KNOXVILLE DIVISION
 505 EAST BROADWAY AVE.
 MARYVILLE, TN 37804
 (865) 977-1200 FAX (865) 984-8616
 http://www.microbac.com
 E-Mail: knoxville@microbac.com

STATE CERT ID.
 TN 02017

CHEMISTRY · MICROBIOLOGY · FOOD SAFETY · CONSUMER PRODUCTS
 WATER · AIR · WASTES · FOOD · PHARMACEUTICALS · NUTRACEUTICALS

CERTIFICATE OF ANALYSIS
PRELIMINARY REPORT

CITY OF KINGSTON
 CHUCK MOORE
 125 W. CUMBERLAND ST.
 KINGSTON, TN 37763

Date Reported
 Date Received 7/16/2009
 Cust P.O.
 Invoice No.
 Cust # C120
 Sample Date 7/16/2009
 Permit No.

Work Order Number: 0907-00574

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

Test	Method	Result	Qual	Date	Time	Tech
003 FINISHED 07/16/09 0630						
.....continued						
HARDNESS, TOTAL AS CaCO3	EPA 200.7;2340,B.	67.1 MG/L		07/20/2009	18:13	LL
004 FINISHED 07/16/09 0630 DISSOLVED METALS						
[TAL METALS]					00:00	
ALUMINUM	EPA 200.7	0.0756 MG/L		07/20/2009	19:56	LL
ANTIMONY	EPA 200.7	<0.0020 MG/L	M	07/20/2009	19:56	LL
ARSENIC	EPA 200.7	<0.0010 MG/L	M,J-	07/20/2009	19:56	LL
BARIUM	EPA 200.7	0.0203 MG/L		07/20/2009	19:56	LL
BERYLLIUM	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	19:56	LL
CADMIUM	EPA 200.7	<0.0010 MG/L		07/20/2009	19:56	LL
CHROMIUM	EPA 200.7	<0.0010 MG/L		07/20/2009	19:56	LL
COBALT	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	19:56	LL
COPPER	EPA 200.7	0.0040 MG/L		07/20/2009	19:56	LL
IRON	EPA 200.7	<0.0060 MG/L		07/20/2009	19:56	LL
LEAD	EPA 200.7	<0.0010 MG/L	M,J-	07/20/2009	19:56	LL
MAGNESIUM	EPA 200.7	4.04 MG/L	J-	07/20/2009	19:29	LL
MANGANESE	EPA 200.7	<0.0050 MG/L		07/20/2009	19:56	LL
MOLYBDENUM	EPA 200.7	<0.0010 MG/L		07/20/2009	19:56	LL
MERCURY	EPA 245.1	<0.0002 MG/L		07/20/2009	17:00	AHT
NICKEL	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	19:56	LL
SELENIUM	EPA 200.7	<0.0020 MG/L	M,J-	07/20/2009	19:56	LL
SILVER	EPA 200.7	<0.0010 MG/L		07/20/2009	19:56	LL
TIN	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	19:56	LL
TITANIUM	EPA 200.7	<0.0010 MG/L	J-	07/20/2009	19:56	LL

® **Microbac Laboratories, Inc.**



KNOXVILLE DIVISION
 505 EAST BROADWAY AVE.
 MARYVILLE, TN 37804
 (865) 977-1200 FAX (865) 984-8616
 http://www.microbac.com
 E-Mail: knoxville@microbac.com

STATE CERT ID.
 TN 02017

CHEMISTRY · MICROBIOLOGY · FOOD SAFETY · CONSUMER PRODUCTS
 WATER · AIR · WASTES · FOOD · PHARMACEUTICALS · NUTRACEUTICALS

PRELIMINARY REPORT

CERTIFICATE OF ANALYSIS

CITY OF KINGSTON
 CHUCK MOORE
 125 W. CUMBERLAND ST.
 KINGSTON, TN 37763

Date Reported
 Date Received 7/16/2009
 Cust P.O.
 Invoice No.
 Cust # C120
 Sample Date 7/16/2009
 Permit No.

Work Order Number: 0907-00574

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

Test	Method	Result	Qual	Date	Time	Tech
004 FINISHED 07/16/09 0630 DISSOLVED METALS						
.....continued						
THALLIUM	EPA 200.7	<0.0020 MG/L	M,J-	07/20/2009	19:56	LL
ZINC	EPA 200.7	0.0076 MG/L		07/20/2009	19:56	LL
BORON	EPA 200.7	0.0110 MG/L	J-	07/20/2009	19:56	LL
SILICA (SiO2)	EPA 200.7	3.00 MG/L		07/20/2009	19:29	LL

M= THESE SAMPLES ARE REPORTED BY METHOD 200.7 FOR INFORMATIONAL PURPOSES TO PROVIDE QUICKER REPORTING. WHILE THESE REPORTED NUMBERS ARE CONSIDERED ACCURATE, TDEC APPROVED METHODS (EITHER 200.8 OR 200.9) ARE ALSO BEING ANALYZED AS VERIFICATION AND THIS REPORT WILL BE MODIFIED TO REFLECT THE METHOD CHANGE WHEN COMPLETE.

RESPECTFULLY SUBMITTED: _____

MICROBAC LABORATORIES, INC.

Thank you for your business. We invite your feedback on our level of service to you. Please contact the Laboratory Director, James Nokes, at 865-977-1200, the COO, Robert Morgan, at rmorgan@microbac.com or the CEO, Trevor Boyce, at tboyce@microbac.com with any comments or suggestions.



CHEMISTRY · MICROBIOLOGY · FOOD SAFETY · CONSUMER PRODUCTS
 WATER · AIR · WASTES · FOOD · PHARMACEUTICALS · NUTRACEUTICALS

PRELIMINARY REPORT

CERTIFICATE OF ANALYSIS

CITY OF KINGSTON
 CHUCK MOORE
 125 W. CUMBERLAND ST.
 KINGSTON, TN 37763

Date Reported
 Date Received 7/16/2009
 Cust P.O.
 Invoice No.
 Cust # C120
 Sample Date 7/16/2009
 Permit No.

Work Order Number: 0907-00574

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

Test	Method	Result	Qual	Date	Time	Tech
------	--------	--------	------	------	------	------

As regulatory limits change frequently, Microbac advises the recipient of this report to confirm such limits with the appropriate Federal, state, or local authorities before acting in reliance on the regulatory limits provided.

Microbac Laboratories, Inc. cannot guarantee the confidentiality of any facsimile or e-mail transmittal. The information in this communication is intended for the exclusive use of the addressee. If you are not the intended recipient, you are notified that any disclosure, copying, distributing, or the taking of any action in reliance on the contents of this information is strictly prohibited. If you received this transmission in error, please notify us immediately.

QUALIFIER DEFINITIONS:

- B = Detected in the associated Method Blank
- C = As Tons CaCO₃, equivalent per 1,000 tons material
- D = Surrogate recoveries not calculated due to matrix interference and resulting sample dilution
- E1 = Elevated detection limits due to sample matrix interference
- E2 = Elevated detection limits due to high analyte concentration
- H = Analyte was prepared and/or analyzed outside of the analytical method holding time
- I = Spike recovery outside control limits due to sample matrix interference or high analyte concentration
- J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample
- J+ = The result is an estimated quantity, but the result may be biased high
- J- = The result is an estimated quantity, but the result may be biased low
- UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise
- K = Analyte concentration estimated due to sample matrix interference and/or high analyte concentration interference
- L1 = Liquid portion of dual phase sample analyzed only
- L2 = Solid portion of dual phase sample analyzed only
- M = Miscellaneous (see entry below analytical results)
- N = Analyte acceptable but matrix spike/matrix spike duplicate outside accepted recovery criteria
- * = Matrix Spike/Matrix Spike Duplicate RPD is outside acceptable limits
- P = Sample received improperly preserved
- R = Relative Percent Duplicate (RPD) outside accepted recovery limits
- S1 = Spike recovery outside recovery limits
- S2 = Surrogate recovery outside of control limits. The data was accepted based on the valid recovery of remaining surrogate.
- U = Undetected
- V = Elevated reporting limits due to insufficient sample volume
- W = Results reports on dry weight basis

ABBREVIATIONS:

- TNTC = Too Numerous To Count
- UG/L = Micrograms per Liter (PPB)
- UG/KG = Micrograms per Kilogram (PPB)
- MG/L = Milligrams per Liter (PPM)
- MG/KG = Milligrams per Kilogram (PPM)
- CFU = Colony Forming Unit
- ND = Not Detected at or below the reporting limit
- TIC = Tentatively Identified Compound



® **Microbac Laboratories, Inc.**

KNOXVILLE DIVISION
 505 EAST BROADWAY AVE.
 MARYVILLE, TN 37804
 (865) 977-1200 FAX (865) 984-8616
<http://www.microbac.com>
 E-Mail: knoxville@microbac.com

STATE CERT ID.
 TN 02017

CHEMISTRY · MICROBIOLOGY · FOOD SAFETY · CONSUMER PRODUCTS
 WATER · AIR · WASTES · FOOD · PHARMACEUTICALS · NUTRACEUTICALS

PRELIMINARY REPORT

CITY OF KINGSTON
 CHUCK MOORE
 125 W. CUMBERLAND ST.
 KINGSTON, TN 37763

Date Reported
 Date Received 7/16/2009
 Cust P.O.
 Invoice No.
 Cust # C120
 Sample Date 7/16/2009
 Permit No.

Work Order Number: 0907-00574

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

Test	Method	Result	Qual	Date	Time	Tech
------	--------	--------	------	------	------	------