

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 11/1/2009
 Cust P.O.
 Invoice No.
 Cust # C120
 Sample Date 11/1/2009
 Permit No. 0000360

Work Order Number: 0911-00001

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

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

001 **RAW 11/1/09 0630**

[TAL METALS]

| Test | Method | Result | Qual | Date | Time | Tech |
|--------------------------|-------------------|--------------|-------|------------|-------|------|
| ALUMINUM | EPA 200.7 | 0.0938 MG/L | | 11/03/2009 | 19:55 | SRR |
| ANTIMONY | EPA 200.7 | <0.0020 MG/L | M | 11/03/2009 | 19:55 | SRR |
| ARSENIC | EPA 200.7 | <0.0010 MG/L | M, J- | 11/03/2009 | 19:55 | SRR |
| BARIUM | EPA 200.7 | 0.0225 MG/L | | 11/03/2009 | 19:55 | SRR |
| BERYLLIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 19:55 | SRR |
| CADMIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 19:55 | SRR |
| CHROMIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 19:55 | SRR |
| COBALT | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 19:55 | SRR |
| COPPER | EPA 200.7 | 0.0011 MG/L | | 11/03/2009 | 19:55 | SRR |
| IRON | EPA 200.7 | 0.120 MG/L | | 11/03/2009 | 19:55 | SRR |
| LEAD | EPA 200.7 | <0.0010 MG/L | M | 11/03/2009 | 19:55 | SRR |
| MAGNESIUM | EPA 200.7 | 4.63 MG/L | J+ | 11/03/2009 | 18:02 | SRR |
| MANGANESE | EPA 200.7 | 0.0302 MG/L | J- | 11/03/2009 | 19:55 | SRR |
| MOLYBDENUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 19:55 | SRR |
| MERCURY | EPA 245.1 | <0.0002 MG/L | | 11/03/2009 | 13:44 | SRR |
| NICKEL | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 19:55 | SRR |
| SELENIUM | EPA 200.7 | <0.0020 MG/L | M | 11/03/2009 | 19:55 | SRR |
| SILVER | EPA 200.7 | <0.0010 MG/L | J- | 11/03/2009 | 19:55 | SRR |
| TIN | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 19:55 | SRR |
| TITANIUM | EPA 200.7 | 0.0016 MG/L | | 11/03/2009 | 19:55 | SRR |
| THALLIUM | EPA 200.7 | <0.0020 MG/L | M | 11/03/2009 | 19:55 | SRR |
| ZINC | EPA 200.7 | 0.0226 MG/L | | 11/03/2009 | 19:55 | SRR |
| BORON | EPA 200.7 | 0.0108 MG/L | | 11/03/2009 | 19:55 | SRR |
| SOLIDS, TOTAL SUSPENDED | SM 2540.D. | 4.55 MG/L | | 11/03/2009 | 08:45 | KDW |
| HARDNESS, TOTAL AS CaCO3 | EPA 200.7;2340.B. | 65.9 MG/L | J+ | 11/03/2009 | 18:02 | SRR |

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 11/1/2009
 Cust P.O.
 Invoice No.
 Cust # C120
 Sample Date 11/1/2009
 Permit No. 0000360

Work Order Number: 0911-00001

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

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

002 **RAW 11/1/09 0630 DISSOLVED METALS**

| Test | Method | Result | Qual | Date | Time | Tech |
|----------------|-----------|--------------|-------|------------|-------|------|
| [TAL METALS] | | | | | 00:00 | |
| ALUMINUM | EPA 200.7 | 0.0164 MG/L | | 11/03/2009 | 20:11 | SRR |
| ANTIMONY | EPA 200.7 | <0.0020 MG/L | M | 11/03/2009 | 20:11 | SRR |
| ARSENIC | EPA 200.7 | <0.0010 MG/L | M, J- | 11/03/2009 | 20:11 | SRR |
| BARIUM | EPA 200.7 | 0.0211 MG/L | | 11/03/2009 | 20:11 | SRR |
| BERYLLIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:11 | SRR |
| CADMIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:11 | SRR |
| CHROMIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:11 | SRR |
| COBALT | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:11 | SRR |
| COPPER | EPA 200.7 | 0.0010 MG/L | | 11/03/2009 | 20:11 | SRR |
| IRON | EPA 200.7 | <0.0060 MG/L | | 11/03/2009 | 20:11 | SRR |
| LEAD | EPA 200.7 | <0.0010 MG/L | M | 11/03/2009 | 20:11 | SRR |
| MAGNESIUM | EPA 200.7 | 4.56 MG/L | J+ | 11/03/2009 | 18:18 | SRR |
| MANGANESE | EPA 200.7 | <0.0050 MG/L | J- | 11/03/2009 | 20:11 | SRR |
| MOLYBDENUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:11 | SRR |
| MERCURY | EPA 245.1 | <0.0002 MG/L | | 11/03/2009 | 13:48 | SRR |
| NICKEL | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:11 | SRR |
| SELENIUM | EPA 200.7 | <0.0020 MG/L | M | 11/03/2009 | 20:11 | SRR |
| SILVER | EPA 200.7 | <0.0010 MG/L | J- | 11/03/2009 | 20:11 | SRR |
| TIN | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:11 | SRR |
| TITANIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:11 | SRR |
| THALLIUM | EPA 200.7 | <0.0020 MG/L | M | 11/03/2009 | 20:11 | SRR |
| ZINC | EPA 200.7 | 0.0224 MG/L | | 11/03/2009 | 20:11 | SRR |
| BORON | EPA 200.7 | 0.0148 MG/L | | 11/03/2009 | 20:11 | SRR |
| SILICA (SiO2) | EPA 200.7 | 5.20 MG/L | | 11/03/2009 | 18:18 | SRR |

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 11/1/2009
 Cust P.O.
 Invoice No.
 Cust # C120
 Sample Date 11/1/2009
 Permit No. 0000360

Work Order Number: 0911-00001

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

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

003 **FINISHED 11/1/09 0630**

| Test | Method | Result | Qual | Date | Time | Tech |
|-------------------------|------------|--------------|-------|------------|-------|------|
| [TAL METALS] | | | | | 00:00 | |
| ALUMINUM | EPA 200.7 | 0.0245 MG/L | | 11/03/2009 | 20:03 | SRR |
| ANTIMONY | EPA 200.7 | <0.0020 MG/L | M | 11/03/2009 | 20:03 | SRR |
| ARSENIC | EPA 200.7 | <0.0010 MG/L | M, J- | 11/03/2009 | 20:03 | SRR |
| BARIUM | EPA 200.7 | 0.0203 MG/L | | 11/03/2009 | 20:03 | SRR |
| BERYLLIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:03 | SRR |
| CADMIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:03 | SRR |
| CHROMIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:03 | SRR |
| COBALT | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:03 | SRR |
| COPPER | EPA 200.7 | 0.0020 MG/L | | 11/03/2009 | 20:03 | SRR |
| IRON | EPA 200.7 | <0.0060 MG/L | | 11/03/2009 | 20:03 | SRR |
| LEAD | EPA 200.7 | <0.0010 MG/L | M | 11/03/2009 | 20:03 | SRR |
| MAGNESIUM | EPA 200.7 | 4.49 MG/L | J+ | 11/03/2009 | 18:10 | SRR |
| MANGANESE | EPA 200.7 | <0.0050 MG/L | J- | 11/03/2009 | 20:03 | SRR |
| MOLYBDENUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:03 | SRR |
| MERCURY | EPA 245.1 | <0.0002 MG/L | | 11/03/2009 | 13:52 | SRR |
| NICKEL | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:03 | SRR |
| SELENIUM | EPA 200.7 | <0.0020 MG/L | M | 11/03/2009 | 20:03 | SRR |
| SILVER | EPA 200.7 | <0.0010 MG/L | J- | 11/03/2009 | 20:03 | SRR |
| TIN | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:03 | SRR |
| TITANIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:03 | SRR |
| THALLIUM | EPA 200.7 | <0.0020 MG/L | M | 11/03/2009 | 20:03 | SRR |
| ZINC | EPA 200.7 | 0.0046 MG/L | | 11/03/2009 | 20:03 | SRR |
| BORON | EPA 200.7 | 0.0112 MG/L | | 11/03/2009 | 20:03 | SRR |
| SOLIDS, TOTAL SUSPENDED | SM 2540,D. | <4.00 MG/L | | 11/03/2009 | 08:45 | 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 11/1/2009
 Cust P.O.
 Invoice No.
 Cust # C120
 Sample Date 11/1/2009
 Permit No. 0000360

Work Order Number: 0911-00001

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

| Test | Method | Result | Qual | Date | Time | Tech |
|---|-------------------|--------------|------|------------|-------|------|
| 003 FINISHED 11/1/09 0630 | | | | | | |
|continued | | | | | | |
| HARDNESS, TOTAL AS CaCO3 | EPA 200.7;2340,B. | 65.0 MG/L | J+ | 11/03/2009 | 18:10 | SRR |
| 004 FINISHED 11/1/09 0630 DISSOLVED METALS | | | | | | |
| [TAL METALS] | | | | | 00:00 | |
| ALUMINUM | EPA 200.7 | 0.0516 MG/L | | 11/03/2009 | 20:19 | SRR |
| ANTIMONY | EPA 200.7 | <0.0020 MG/L | M | 11/03/2009 | 20:19 | SRR |
| ARSENIC | EPA 200.7 | <0.0010 MG/L | M,J- | 11/03/2009 | 20:19 | SRR |
| BARIUM | EPA 200.7 | 0.0206 MG/L | | 11/03/2009 | 20:19 | SRR |
| BERYLLIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:19 | SRR |
| CADMIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:19 | SRR |
| CHROMIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:19 | SRR |
| COBALT | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:19 | SRR |
| COPPER | EPA 200.7 | 0.0022 MG/L | | 11/03/2009 | 20:19 | SRR |
| IRON | EPA 200.7 | 0.0150 MG/L | | 11/03/2009 | 20:19 | SRR |
| LEAD | EPA 200.7 | <0.0010 MG/L | M | 11/03/2009 | 20:19 | SRR |
| MAGNESIUM | EPA 200.7 | 4.42 MG/L | J+ | 11/03/2009 | 18:26 | SRR |
| MANGANESE | EPA 200.7 | <0.0050 MG/L | J- | 11/03/2009 | 20:19 | SRR |
| MOLYBDENUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:19 | SRR |
| MERCURY | EPA 245.1 | <0.0002 MG/L | | 11/03/2009 | 13:56 | SRR |
| NICKEL | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:19 | SRR |
| SELENIUM | EPA 200.7 | <0.0020 MG/L | M | 11/03/2009 | 20:19 | SRR |
| SILVER | EPA 200.7 | <0.0010 MG/L | J- | 11/03/2009 | 20:19 | SRR |
| TIN | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:19 | SRR |
| TITANIUM | EPA 200.7 | <0.0010 MG/L | | 11/03/2009 | 20:19 | SRR |

® **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 11/1/2009
 Cust P.O.
 Invoice No.
 Cust # C120
 Sample Date 11/1/2009
 Permit No. 0000360

Work Order Number: 0911-00001

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

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

004 **FINISHED 11/1/09 0630 DISSOLVED METALS**

.....continued

| | | | | | | |
|---------------|-----------|--------------|---|------------|-------|-----|
| THALLIUM | EPA 200.7 | <0.0020 MG/L | M | 11/03/2009 | 20:19 | SRR |
| ZINC | EPA 200.7 | 0.0132 MG/L | | 11/03/2009 | 20:19 | SRR |
| BORON | EPA 200.7 | 0.0278 MG/L | | 11/03/2009 | 20:19 | SRR |
| SILICA (SiO2) | EPA 200.7 | 5.55 MG/L | | 11/03/2009 | 18:26 | SRR |

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 President, James Nokes, at jnokes@microbac.com with any comments or suggestions.

® **Microbac Laboratories, Inc.**

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 11/1/2009
 Cust P.O.
 Invoice No.
 Cust # C120
 Sample Date 11/1/2009
 Permit No. 0000360

Work Order Number: 0911-00001

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
- Z - The parameter is considered a field analysis with an immediate to 15 minute holding time. Laboratory analysis is confirmatory in nature and is performed outside the preferred holding time window.

ABBREVIATIONS:

- TNTC = Too Numerous To Count
- MG/KG = Milligrams per Kilogram (PPM)
- UG/L = Micrograms per Liter (PPB)
- CFU = Colony Forming Unit



® **Microbac Laboratories, Inc.**

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 11/1/2009
Cust P.O.
Invoice No.
Cust # C120
Sample Date 11/1/2009
Permit No. 0000360

Work Order Number: 0911-00001

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

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

