



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

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

Date Reported 1/29/2010
 Date Received 1/4/2010
 Cust P.O.
 Invoice No. 77988
 Cust # C120
 Sample Date 1/4/2010
 Permit No. 0000360

Work Order Number: 1001-00001

Subject: KINGSTON WTP RAW AND FINISHED WATER SAMPLES

Test	Method	Result	Qual	Date	Time	Tech
001 RAW 1/4/10 0630						
[TAL METALS]				01/07/2010	13:12	SRR
ALUMINUM	EPA 200.7	0.267 MG/L		01/06/2010	11:41	SRR
ANTIMONY	EPA 200.8	<0.005 MG/L		01/07/2010	13:12	MCD
ARSENIC	EPA 200.8	<0.005 MG/L		01/07/2010	13:12	MCD
BARIUM	EPA 200.7	0.0213 MG/L		01/06/2010	11:41	SRR
BERYLLIUM	EPA 200.7	<0.0010 MG/L		01/06/2010	11:41	SRR
CADMIUM	EPA 200.7	<0.0010 MG/L		01/06/2010	11:41	SRR
CHROMIUM	EPA 200.7	<0.0010 MG/L		01/06/2010	11:41	SRR
COBALT	EPA 200.7	<0.0010 MG/L		01/06/2010	11:41	SRR
COPPER	EPA 200.7	<0.0010 MG/L		01/06/2010	11:41	SRR
IRON	EPA 200.7	0.319 MG/L		01/06/2010	11:41	SRR
LEAD	EPA 200.8	<0.005 MG/L		01/07/2010	13:12	MCD
MAGNESIUM	EPA 200.7	4.07 MG/L	*	01/05/2010	13:48	SRR
MANGANESE	EPA 200.7	0.0336 MG/L		01/06/2010	11:41	SRR
MOLYBDENUM	EPA 200.7	<0.0010 MG/L		01/06/2010	11:41	SRR
MERCURY	EPA 245.1	<0.0002 MG/L		01/06/2010	12:09	SRR
NICKEL	EPA 200.7	<0.0010 MG/L		01/06/2010	11:41	SRR
SELENIUM	EPA 200.8	<0.005 MG/L		01/07/2010	13:12	MCD
SILVER	EPA 200.7	<0.0010 MG/L	J+	01/06/2010	11:41	SRR
TIN	EPA 200.7	<0.0010 MG/L		01/06/2010	11:41	SRR
TITANIUM	EPA 200.7	0.0053 MG/L		01/06/2010	11:41	SRR
THALLIUM	EPA 200.8	<0.001 MG/L		01/07/2010	13:12	MCD
ZINC	EPA 200.7	0.0148 MG/L		01/06/2010	11:41	SRR
BORON	EPA 200.7	0.0080 MG/L		01/06/2010	11:41	SRR
SOLIDS, TOTAL SUSPENDED	SM 2540,D.	6.45 MG/L		01/04/2010	09:00	KDW
HARDNESS, TOTAL AS CaCO3	EPA 200.7;2340,B.	58.8 MG/L	J+,*	01/05/2010	13:48	SRR

002 RAW 1/4/10 0630 DISSOLVED METALS





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Table with 7 columns: Test, Method, Result, Qual, Date, Time, Tech. Contains data for RAW 1/4/10 0630 DISSOLVED METALS and TAL METALS.

003 FINISHED 1/4/10 0630





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Table with 7 columns: Test, Method, Result, Qual, Date, Time, Tech. Contains data for various metals and solids tests.

004 FINISHED 1/4/10 0630 DISSOLVED METALS





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Table with 7 columns: Test, Method, Result, Qual, Date, Time, Tech. Row 1: 004 FINISHED 1/4/10 0630 DISSOLVED METALS. Rows 2-33: List of metals (ALUMINUM, ANTIMONY, ARSENIC, etc.) with their respective test methods, results, and dates.

REVISED REPORT TO CONTAIN BACK-UP STATE CERTIFIED DATA FOR SB, AS, PB, SE AND TL. ANALYSIS SUBCONTRACTED TO MICROBAC LABORATORIES CHICAGOLAND DIVISION (TN LAB ID#04017). LL 01-29-10.





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Test	Method	Result	Qual	Date	Time	Tech
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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.





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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 = Inter-element correction applied due to high concentration of non-target analyte
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

