

KNOXVILLE DIVISION  
 505 EAST BROADWAY AVE.  
 MARYVILLE, TN 37804  
 (865) 977-1200 FAX (865) 984-8616  
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STATE CERT ID.

TN 02017

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

## CERTIFICATE OF ANALYSIS

COVE SYSTEMS, INC.  
 JAMES WORDEN  
 310 WICKCLIFFE CT  
 SEVIERVILLE, TN 37876

Date Reported 7/28/2006  
 Date Received 6/14/2006  
 Cust P.O.  
 Invoice No. 33140  
 Cust # C088  
 Sample Date 6/28/2006  
 Permit No.

Work Order Number 0607-00846

Subject: CARBON FILTER VALIDATION

Test	Method	Result	Qual	Date	Time	Tech
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001 FILTER 2 BEFORE FILTRATION (REPLICATE #1)

CHLORINE, TOTAL RESIDUAL	SM 4500-Cl.G.	2.35 MG/L		6/23/2006	17:00	KPL
[ Trihalomethanes ]	EPA 524			6/28/2006	6:00	JLB
CHLOROFORM		0.0191 MG/L		6/28/2006	6:00	JLB
BROMODICHLOROMETHANE		0.0035 MG/L		6/28/2006	6:00	JLB
DIBROMOCHLOROMETHANE		<0.0005 MG/L		6/28/2006	6:00	JLB
BROMOFORM		<0.0005 MG/L		6/28/2006	6:00	JLB
TOTAL TRIHALOMETHANES		0.0226 MG/L		6/28/2006	6:00	JLB
LEAD	EPA 200.7	25.8 MG/L		6/26/2006	13:43	PAP

002 FILTER 2 BEFORE FILTRATION (REPLICATE #2)

CHLORINE, TOTAL RESIDUAL	SM 4500-Cl.G.	2.40 MG/L		6/23/2006	17:00	KPL
[ Trihalomethanes ]	EPA 524			6/28/2006	6:00	JLB
CHLOROFORM		0.0204 MG/L		6/28/2006	6:00	JLB
BROMODICHLOROMETHANE		0.0037 MG/L		6/28/2006	6:00	JLB
DIBROMOCHLOROMETHANE		<0.0005 MG/L		6/28/2006	6:00	JLB
BROMOFORM		<0.0005 MG/L		6/28/2006	6:00	JLB
TOTAL TRIHALOMETHANES		0.0241 MG/L		6/28/2006	6:00	JLB
LEAD	EPA 200.7	25.8 MG/L		6/26/2006	13:43	PAP

003 FILTER 2 BEFORE FILTRATION (REPLICATE #3)

CHLORINE, TOTAL RESIDUAL	SM 4500-Cl.G.	2.33 MG/L		6/23/2006	17:00	KPL
[ Trihalomethanes ]	EPA 524			6/28/2006	6:00	JLB
CHLOROFORM		0.0193 MG/L		6/28/2006	6:00	JLB
BROMODICHLOROMETHANE		0.0035 MG/L		6/28/2006	6:00	JLB
DIBROMOCHLOROMETHANE		<0.0005 MG/L		6/28/2006	6:00	JLB
BROMOFORM		<0.0005 MG/L		6/28/2006	6:00	JLB
TOTAL TRIHALOMETHANES		0.0228 MG/L		6/28/2006	6:00	JLB
LEAD	EPA 200.7	25.8 MG/L		6/26/2006	13:43	PAP

004 FILTER 2 AFTER FILTRATION (REPLICATE #1)

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004 FILTER 2 AFTER FILTRATION (REPLICATE #1)

CHLORINE, TOTAL RESIDUAL	SM 4500-Cl.G.	<0.02 MG/L		6/23/2006	17:00	KPL
[ Trihalomethanes ]	EPA 524			6/28/2006	6:00	JLB
CHLOROFORM		<0.0005 MG/L		6/28/2006	6:00	JLB
BROMODICHLOROMETHANE		<0.0005 MG/L		6/28/2006	6:00	JLB
DIBROMOCHLOROMETHANE		<0.0005 MG/L		6/28/2006	6:00	JLB
BROMOFORM		<0.0005 MG/L		6/28/2006	6:00	JLB
TOTAL TRIHALOMETHANES		<0.0005 MG/L		6/28/2006	6:00	JLB
LEAD	EPA 200.7	<0.020 MG/L		6/26/2006	13:43	PAP

005 FILTER 2 AFTER FILTRATION (REPLICATE #2)

CHLORINE, TOTAL RESIDUAL	SM 4500-Cl.G.	0.02 MG/L		6/23/2006	17:00	KPL
[ Trihalomethanes ]	EPA 524			6/28/2006	6:00	JLB
CHLOROFORM		<0.0005 MG/L		6/28/2006	6:00	JLB
BROMODICHLOROMETHANE		<0.0005 MG/L		6/28/2006	6:00	JLB
DIBROMOCHLOROMETHANE		<0.0005 MG/L		6/28/2006	6:00	JLB
BROMOFORM		<0.0005 MG/L		6/28/2006	6:00	JLB
TOTAL TRIHALOMETHANES		<0.0005 MG/L		6/28/2006	6:00	JLB
LEAD	EPA 200.7	0.052 MG/L		6/26/2006	13:43	PAP

006 FILTER 2 AFTER FILTRATION (REPLICATE #3)

CHLORINE, TOTAL RESIDUAL	SM 4500-Cl.G.	0.02 MG/L		6/23/2006	17:00	KPL
[ Trihalomethanes ]	EPA 524			6/28/2006	6:00	JLB
CHLOROFORM		<0.0005 MG/L		6/28/2006	6:00	JLB
BROMODICHLOROMETHANE		<0.0005 MG/L		6/28/2006	6:00	JLB
DIBROMOCHLOROMETHANE		<0.0005 MG/L		6/28/2006	6:00	JLB
BROMOFORM		<0.0005 MG/L		6/28/2006	6:00	JLB
TOTAL TRIHALOMETHANES		<0.0005 MG/L		6/28/2006	6:00	JLB
LEAD	EPA 200.7	0.041 MG/L		6/26/2006	13:43	PAP

# Microbac Laboratories, Inc.

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THE WATER USED FOR ANALYSIS WAS TYPICAL DRINKING (TAP) WATER CONTAINING OCCURRING AMOUNTS OF CHLORINE AND DISINFECTION BYPRODUCTS (TRIHALOMETHANES). TO ASSESS THE FILTER'S LEAD REDUCTION CAPACITY, SOLUBLE LEAD WAS SPIKED INTO AN ALIQUOT OF THE TAP WATER. THE FLOW RATE OF WATER PASSING THROUGH THE SINGLE FILTER WAS CALCULATED AT 2.44 GPM WHILE THE SAMPLES WERE BEING COLLECTED.

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](mailto:rmorgan@microbac.com) or the CEO, Trevor Boyce, at [tboyce@microbac.com](mailto:tboyce@microbac.com) with any comments or suggestions.*

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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.

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### QUALIFIER DEFINITIONS:

- B = Detected in the associated Method Blank
- C = As Tons CaCO<sub>3</sub>, 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
- J1 = Value below quantitation range
- J2 = Value above quantitation range
- 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)
- 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)
- Positive = Bacteria or target analyte detected
- MG/KG = Milligrams per Kilogram (PPM)
- CFU = Colony Forming Unit
- ND = Not Detected at or below the reporting limit
- TIC = Tentatively Identified Compound
- Negative = Bacteria or target analyte not detected