



State of Rhode Island and Providence Plantations
DEPARTMENT OF HEALTH

Certifies

LAI00179

ESS LABORATORY
185 FRANCES AVENUE
CRANSTON RI 02910

Laboratory Director: LAUREL STODDARD

for the analysis of: Potable Water Organic Chemistry - Potable Water Inorganic Chemistry - Non-potable Water Organic Chemistry - Non-potable Water Inorganic Chemistry -

This certification, pursuant to Rhode Island General Laws 23-16.2 supersedes, all previous Rhode Island certificates issued to this laboratory. Certification is no guarantee of the validity of the laboratory results.

This certificate is valid only when accompanied by the latest dated Appendix which lists the analytes and methods for which certification has been granted. Contact the Laboratory Certification Officer to verify the current certification status of this laboratory.

David R. Gifford, MD, MPH
Director of Health

Expires: 12/30/2011

THIS CERTIFICATE IS TO BE CONSPICUOUSLY DISPLAYED AT THE LABORATORY IN A LOCATION VISABLE TO THE PUBLIC



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ESS Laboratory
185 Frances Avenue
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401-461-7181

APPENDIX TO ANALYTICAL LABORATORY CERTIFICATE No. LAI00179

Expiration date: December 31, 2011

Issued: January 1, 2011

Potable Water - Organic Chemistry

Benzene	EPA Method 524.2
1,2-Dichlorobenzene	EPA Method 524.2
1,4-Dichlorobenzene	EPA Method 524.2
1,1-Dichloroethene	EPA Method 524.2
1,2-Dichloroethane	EPA Method 524.2
1,2-Dichloroethene (cis)	EPA Method 524.2
1,2-Dichloroethene (trans)	EPA Method 524.2
1,2-Dichloropropane	EPA Method 524.2
Carbon Tetrachloride	EPA Method 524.2
Chlorobenzene	EPA Method 524.2
Ethylbenzene	EPA Method 524.2
Methylene Chloride	EPA Method 524.2
Styrene	EPA Method 524.2
Tetrachloroethene	EPA Method 524.2
Toluene	EPA Method 524.2
1,2,4-Trichlorobenzene	EPA Method 524.2
1,1,1-Trichloroethane	EPA Method 524.2
1,1,2-Trichloroethane	EPA Method 524.2
Trichloroethene	EPA Method 524.2
Vinyl Chloride	EPA Method 524.2
Xylenes (total)	EPA Method 524.2
MTBE	EPA Method 524.2
Bromobenzene	EPA Method 524.2
Bromochloromethane	EPA Method 524.2
Bromomethane	EPA Method 524.2
Chloroethane	EPA Method 524.2
Chloromethane	EPA Method 524.2
2-Chlorotoluene	EPA Method 524.2
4-Chlorotoluene	EPA Method 524.2
Dibromomethane	EPA Method 524.2
1,3-Dichlorobenzene	EPA Method 524.2
Dichlorodifluoromethane	EPA Method 524.2
1,1-Dichloroethane	EPA Method 524.2
1,3-Dichloropropane	EPA Method 524.2
2,2-Dichloropropane	EPA Method 524.2
1,1-Dichloropropene	EPA Method 524.2
cis-1,3-Dichloropropene	EPA Method 524.2
trans-1,3-Dichloropropene	EPA Method 524.2
Hexachlorobutadiene	EPA Method 524.2
Isopropylbenzene	EPA Method 524.2
n-Butylbenzene	EPA Method 524.2
n-Propylbenzene	EPA Method 524.2
p-Isopropyltoluene	EPA Method 524.2



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sec-Butylbenzene	EPA Method 524.2
tert-Butylbenzene	EPA Method 524.2
1,2,3-Trichlorobenzene	EPA Method 524.2
1,1,1,2-Tetrachloroethane	EPA Method 524.2
1,1,2,2-Tetrachloroethane	EPA Method 524.2
Trichlorofluoromethane	EPA Method 524.2
1,2,3-Trichloropropane	EPA Method 524.2
1,2,4-Trimethylbenzene	EPA Method 524.2
1,3,5-Trimethylbenzene	EPA Method 524.2
Bromoform	EPA Method 524.2
Bromodichloromethane	EPA Method 524.2
Chloroform	EPA Method 524.2
Dibromochloromethane	EPA Method 524.2
TTHM'S	EPA Method 524.2
EDB (Ethylene dibromide)	EPA Method 504.1
DBCP (Dibromochloropropane)	EPA Method 504.1
Bromochloroacetic Acid	EPA Method 552.1
Dibromoacetic Acid	EPA Method 552.2
Dichloroacetic Acid	EPA Method 552.2
Monobromoacetic Acid	EPA Method 552.2
Monochloroacetic Acid	EPA Method 552.2
Trichloroacetic Acid	EPA Method 552.2

Potable Water - Inorganic Chemistry

Alkalinity	SM2320B
Aluminum	EPA Method 200.7
Antimony	EPA Method 200.9
Arsenic	EPA Method 200.7
Arsenic	EPA Method 200.9
Barium	EPA Method 200.7
Beryllium	EPA Method 200.7
Boron	EPA Method 200.7
Cadmium	EPA Method 200.7
Calcium	EPA Method 200.7
Chloride	EPA Method 300.0
Chromium	EPA Method 200.7
Conductivity	SM 2510B
Copper	EPA Method 200.7
Cyanide	SM 4500CN-E
Fluoride	EPA Method 300.0
Calcium Hardness	EPA Method 200.7
Hardness	SM 2340B
Iron	EPA Method 200.7
Lead	EPA Method 200.9
Magnesium	EPA Method 200.7
Manganese	EPA Method 200.7



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Mercury	EPA Method 245.1
Molybdenum	EPA Method 200.7
Nickel	EPA Method 200.7
Nitrate	EPA Method 353.2
Nitrate	EPA Method 300.0
Nitrite	EPA Method 353.2
Nitrite	EPA Method 300.0
Orthophosphate	EPA Method 365.1
Orthophosphate	EPA Method 300.0
pH	SM4500 H+ B
pH	EPA Method 150.1
Potassium	EPA Method 200.7
Selenium	EPA Method 200.9
Silver	EPA Method 200.7
Sodium	EPA Method 200.7
Sulfate	EPA Method 300.0
Sulfate	SM 4500SO4-E
Thallium	EPA Method 200.9
Total Dissolved Solids	SM 2540C
Turbidity	EPA Method 180.1
Vanadium	EPA Method 200.7
Zinc	EPA Method 200.7
Total Residual Chlorine	SM 4500Cl-G
Free Residual Chlorine	SM 4500Cl-G
Total Residual Chlorine	SM 4500Cl-D

Non-Potable Water - Organic Chemistry

Acetone	EPA Method 624
Acrolein	EPA Method 624
Acrylonitrile	EPA Method 624
Benzene	EPA Method 624
Bromomethane	EPA Method 624
Bromoform	EPA Method 624
2-Butanone	EPA Method 624
Carbon Disulfide	EPA Method 624
Carbon Tetrachloride	EPA Method 624
Chlorobenzene	EPA Method 624
Chlorodibromomethane	EPA Method 624
Chloroethane	EPA Method 624
Chloromethane	EPA Method 624
2-Chloroethylvinyl Ether	EPA Method 624
Chloroform	EPA Method 624
Dibromomethane	EPA Method 624
Dichlorobromomethane	EPA Method 624
Dichlorodifluoromethane	EPA Method 624
1,1-Dichloroethane	EPA Method 624
1,2-Dichloroethane	EPA Method 624
1,1-Dichloroethene	EPA Method 624
1,2-Dichloropropane	EPA Method 624
cis-1,3-Dichloropropene	EPA Method 624
trans-1,3-Dichloropropene	EPA Method 624



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Ethylbenzene	EPA Method 624
2-Hexanone	EPA Method 624
Methylene Chloride	EPA Method 624
Styrene	EPA Method 624
1,1,1,2-Tetrachloroethane	EPA Method 624
1,1,2,2-Tetrachloroethane	EPA Method 624
Tetrachloroethene	EPA Method 624
Toluene	EPA Method 624
cis-1,2-Dichloroethene	EPA Method 624
trans-1,2-Dichloroethene	EPA Method 624
1,1,1-Trichloroethane	EPA Method 624
1,1,2-Trichloroethane	EPA Method 624
Trichloroethene	EPA Method 624
Trichlorofluoromethane	EPA Method 624
1,2,3-Trichloropropane	EPA Method 624
Vinyl acetate	EPA Method 624
Vinyl Chloride	EPA Method 624
Xylenes (total)	EPA Method 624
Aniline	EPA Method 625
Acenaphthene	EPA Method 625
Acenaphthylene	EPA Method 625
Anthracene	EPA Method 625
Benidine	EPA Method 625
Benzo(a)anthracene	EPA Method 625
Benzo(a)pyrene	EPA Method 625
Benzo(b)fluoranthene	EPA Method 625
Benzo(k)fluoranthene	EPA Method 625
Benzo(g,h,i)perylene	EPA Method 625
Bis(2-Chloroethoxy)Methane	EPA Method 625
Bis(2-chloroethyl)Ether	EPA Method 625
Bis(2-chloroisopropyl) Ether	EPA Method 625
Bis(2-ethylhexyl) Phthalate	EPA Method 625
4-Bromophenyl Phenyl Ether	EPA Method 625
Butylbenzyl Phthalate	EPA Method 625
Carbazole	EPA Method 625
2-Chloronaphthalene	EPA Method 625
4-Chloroaniline	EPA Method 625
4-Chlorophenyl Phenyl Ether	EPA Method 625
Chrysene	EPA Method 625
Dibenz[a,h]anthracene	EPA Method 625
1,2-Dichlorobenzene	EPA Method 624
1,2-Dichlorobenzene	EPA Method 625
1,3-Dichlorobenzene	EPA Method 624
1,3-Dichlorobenzene	EPA Method 625
1,4-Dichlorobenzene	EPA Method 624
1,4-Dichlorobenzene	EPA Method 625
3,3'-Dichlorobenzidine	EPA Method 625
Diethyl Phthalate	EPA Method 625
Dimethyl Phthalate	EPA Method 625
Di-n-butyl Phthalate	EPA Method 625
2,4-Dinitrotoluene	EPA Method 625
2,6-Dinitrotoluene	EPA Method 625
Di-n-octyl Phthalate	EPA Method 625



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Fluoranthene	EPA Method 625
Fluorene	EPA Method 625
Hexachlorobenzene	EPA Method 625
Hexachlorobutadiene	EPA Method 625
Hexachlorocyclopentadiene	EPA Method 625
Hexachloroethane	EPA Method 625
Indeno[1,2,3-cd]pyrene	EPA Method 625
Isophorone	EPA Method 625
Naphthalene	EPA Method 625
Nitrobenzene	EPA Method 625
2-Nitroaniline	EPA Method 625
3-Nitroaniline	EPA Method 625
4-Nitroaniline	EPA Method 625
N-Nitrosodimethylamine	EPA Method 625
N-Nitrosodi-n-propylamine	EPA Method 625
N-Nitrosodiphenylamine	EPA Method 625
Phenanthrene	EPA Method 625
Pyridine	EPA Method 625
Pyrene	EPA Method 625
1,2,4-Trichlorobenzene	EPA Method 625
2-Chlorophenol	EPA Method 625
2,4-Dichlorophenol	EPA Method 625
2,4-Dimethylphenol	EPA Method 625
2-Methyl-4,6-dinitrophenol	EPA Method 625
2,4-Dinitrophenol	EPA Method 625
2-Nitrophenol	EPA Method 625
4-Nitrophenol	EPA Method 625
4-Chlorophenol-3-methylphenol	EPA Method 625
Pentachlorophenol	EPA Method 625
Phenol	EPA Method 625
2,4,5-Trichlorophenol	EPA Method 625
2,4,6-Trichlorophenol	EPA Method 625
Aldrin	EPA Method 608
alpha-BHC	EPA Method 608
beta-BHC	EPA Method 608
gamma-BHC (Lindane)	EPA Method 608
delta-BHC	EPA Method 608
Chlordane (technical)	EPA Method 608
4,4'-DDT	EPA Method 608
4,4'-DDE	EPA Method 608
4,4'-DDD	EPA Method 608
Dieldrin	EPA Method 608
Endosulfan I	EPA Method 608
Endosulfan II	EPA Method 608
Endosulfan Sulfate	EPA Method 608
Endrin	EPA Method 608
Endrin Aldehyde	EPA Method 608
Heptachlor	EPA Method 608
Heptachlor Epoxide	EPA Method 608
Methoxychlor	EPA Method 608



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PCB-1016	EPA Method 608
PCB-1221	EPA Method 608
PCB-1232	EPA Method 608
PCB-1242	EPA Method 608
PCB-1248	EPA Method 608
PCB-1254	EPA Method 608
PCB-1260	EPA Method 608
PCB-1016 in Oil	EPA Method 600187014, 600481045
PCB-1221 in Oil	EPA Method 600187014, 600481045
PCB-1232 in Oil	EPA Method 600187014, 600481045
PCB-1242 in Oil	EPA Method 600187014, 600481045
PCB-1248 in Oil	EPA Method 600187014, 600481045
PCB-1254 in Oil	EPA Method 600187014, 600481045
PCB-1260 in Oil	EPA Method 600187014, 600481045
Toxaphene	EPA Method 608

Non-Potable Water - Inorganic Chemistry

Alkalinity	SM2320B
Aluminum	EPA Method 200.7
Ammonia	SM 4500 NH3 D E
Ammonia	EPA Method 350.1
Antimony	EPA Method 200.7
Antimony	SM3113B
Arsenic	SM3113B
Arsenic	EPA Method 200.7
Barium	EPA Method 200.7
Beryllium	EPA Method 200.7
Boron	EPA Method 200.7
Cadmium	EPA Method 200.7
Cadmium	SM3113B
Calcium	EPA Method 200.7
Chloride	SM4500-Cl
Chloride	EPA Method 300.0
Chromium (total)	EPA Method 200.7
Hexavalent chromium	SM 3500-Cr-D
Cobalt	EPA Method 200.7
Copper	SM3113B
Copper	EPA Method 200.7
Calcium Hardness	EPA 200.7
Hardness	EPA Method 200.7
Iron	EPA Method 200.7
Lead	SM3113B
Lead	EPA Method 200.7



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Magnesium	EPA Method 200.7
Manganese	EPA Method 200.7
Mercury	EPA Method 245.1
Molybdenum	EPA Method 200.7
Nickel	EPA Method 200.7
Nitrate	EPA Method 353.2
Nitrate	EPA Method 300.0
Nitrite	EPA Method 353.2
Nitrite	EPA Method 300.0
Orthophosphate	EPA Methods 365.3
Orthophosphate	EPA Method 300.0
Total Phosphorous	EPA Method 365.1
Total Phosphorous	EPA Method 365.3
Potassium	EPA Method 200.7
Selenium	EPA Method 200.7
Selenium	SM3113B
Silver	SM3113B
Silver	EPA Method 200.7
Silica	SM 4500-SiO ₂ D
Sodium	EPA Method 200.7
Strontium	EPA Method 200.7
Sulfate	EPA Method 300.0
Sulfide	SM4500-S ₂ -D
Thallium	EPA Method 200.7
Vanadium	EPA Method 200.7
Zinc	EPA Method 200.7
Total Cyanide	EPA Method 335.4
Total Cyanide	SM4500-CN ⁻ C, E
Kjeldahl Nitrogen	EPA Method 351.2
Kjeldahl Nitrogen	SM4500-NH ₃ D
Oil and Grease	SM1664A
pH	SM4500 H ⁺ B
Phenols	EPA Method 420.1
5-Day BOD	SM5210 B
cBOD	SM5210B
COD	EPA Method 410.4
Specific Conductance	EPA Method 120.1
Settleable solids	SM2540 F
Total Suspended Solids	SM 2540D
Total Solids	SM2540B