



OREGON

Environmental Laboratory Accreditation Program



State Hygienic Laboratory at the Univ. of Iowa - Ankeny

NELAP Recognized

4013

2220 South Ankeny Blvd.

Ankeny, IA 50023

IS GRANTED APPROVAL BY ORELAP UNDER THE 2009 TNI STANDARDS, TO PERFORM ANALYSES ON ENVIRONMENTAL SAMPLES IN MATRICES AS LISTED BELOW :

<i>Air</i>	<i>Drinking Water</i>	<i>Non Potable Water</i>	<i>Solids and Chem. Waste</i>	<i>Tissue</i>
	Chemistry	Chemistry	Chemistry	
	Microbiology	Microbiology		
		Toxicity Testing		

AND AS RECORDED IN THE LIST OF APPROVED ANALYTES, METHODS, ANALYTICAL TECHNIQUES, AND FIELDS OF TESTING ISSUED CONCURRENTLY WITH THIS CERTIFICATE AND REVISED AS NECESSARY.

ACCREDITED STATUS DEPENDS ON SUCCESSFUL ONGOING PARTICIPATION IN THE PROGRAM AND CONTINUED COMPLIANCE WITH THE STANDARDS.

CUSTOMERS ARE URGED TO VERIFY THE LABORATORY'S CURRENT ACCREDITATION STATUS IN OREGON.

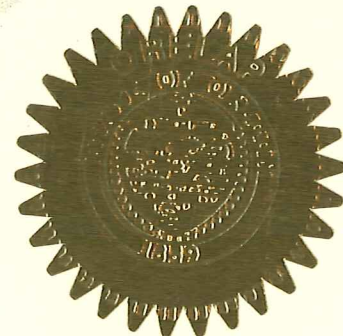
Allia Servin

Allia D. Servin, Ph.D.
Oregon State Public Health Laboratory
ORELAP Program Manager
7202 NE Evergreen Parkway, Suite 100
Hillsboro, OR 97124

EFFECTIVE DATE : 01/25/2019

EXPIRATION DATE : 01/24/2020

Certificate No : 4013 - 007





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ORELAP Fields of Accreditation

ORELAP ID: 4013

EPA CODE: IA00016

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MATRIX	Reference	Code	Analyte	Code	Description
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Drinking Water

EPA 200.7 4.4

10013806

ICP - metals

- 1000 Aluminum
- 1015 Barium
- 1025 Boron
- 1035 Calcium
- 1040 Chromium
- 1050 Cobalt
- 1055 Copper
- 1760 Hardness (calc.)
- 1070 Iron
- 1080 Lithium
- 1085 Magnesium
- 1090 Manganese
- 1100 Molybdenum
- 1105 Nickel
- 1125 Potassium
- 1155 Sodium
- 1160 Strontium
- 1175 Tin
- 1180 Titanium
- 1185 Vanadium
- 1190 Zinc

EPA 200.8 5.4

10014605

Metals by ICP-MS

- 1000 Aluminum
- 1005 Antimony
- 1010 Arsenic
- 1015 Barium
- 1020 Beryllium
- 1030 Cadmium
- 1040 Chromium
- 1050 Cobalt
- 1055 Copper
- 1070 Iron
- 1075 Lead
- 1090 Manganese
- 1095 Mercury
- 1100 Molybdenum
- 1105 Nickel
- 1140 Selenium



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Drinking Water

EPA 200.8 5.4	1150	Silver		
	1160	Strontium		
	1165	Thallium		
	1175	Tin		
	1180	Titanium		
	3035	Uranium		
	1185	Vanadium		
	1190	Zinc		
EPA 245.2 4.1			10271406	Mercury by Cold Vapor Atomic Absorption
	1095	Mercury		
EPA 300.0 2.1			10053200	Methods for the Determination of Inorganic Substances in Environmental Samples
	1540	Bromide		
	1570	Chlorate		
	1575	Chloride		
	1595	Chlorite		
	1730	Fluoride		
	1810	Nitrate as N		
	1840	Nitrite as N		
	2000	Sulfate		
EPA 300.1 1.0			10275602	Determination of Inorganic Anions in Drinking Water by Ion Chromatography
	1535	Bromate		
	1540	Bromide		
	1570	Chlorate		
	1595	Chlorite		
EPA 350.1 2			10063602	Ammonia Nitrogen - Colorimetric, Auto Phenate
	1515	Ammonia as N		
EPA 365.1 2			10070005	Phosphorous - Colorimetric, Automated persulfate
	1870	Orthophosphate as P		
SM 2130 B 21st ED			20042608	Turbidity by Nephelometric Method
	2055	Turbidity		
SM 2320 B 22nd Ed			20045414	Alkalinity by Titration
	1505	Alkalinity as CaCO ₃		
SM 2340 B 22nd Ed			20046417	Hardness - Hardness by Calculation
	1760	Hardness (calc.)		
SM 2340 C 21st ED			20047409	Hardness by EDTA Titration Method
	1750	Hardness		



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Drinking Water

SM 2510 B-2011	1610	Conductivity	20048617	Conductivity by Probe
SM 2540 C 21st ED	1955	Residue-filterable (TDS)	20050208	Total Dissolved Solids Dried at 180C
SM 4500-F C 22nd Ed	1730	Fluoride	20102210	Fluoride by Ion Selective Electrode
SM 4500-H+ B 21st ED	1900	pH	20105004	pH Value by Electrometric Method .
SM 4500-NO2 ⁻ B 20th ED	1840	Nitrite as N	20112601	Nitrite by Colorimetric Determination
SM 4500-P F 21st ED	1870	Orthophosphate as P	20124805	Phosphorus by Automated Ascorbic Acid Reduction Method
SM 4500-SiO2 C 20th ED	1990	Silica as SiO2	20128205	Silicon by Molybdosilicate Method
SM 5310 B-2000	1710	Dissolved organic carbon (DOC)	20137819	Total Organic Carbon (TOC) by Combustion Infra-red Method
	2040	Total organic carbon		
SM 9215 B (PCA) 21st ED	2555	Heterotrophic plate count	20181402	Heterotrophic Plate Count Pour Plate (plate count agar): Heterotrophic Bacteria
SM 9223 B (Colilert® Quanti-Tray®) 21st ED	2525	Escherichia coli	20211409	Chromogenic/Fluorogenic Quantitative (Colilert®): Total Coliform and E. coli
	2500	Total coliforms		
SM 9223 B (Colilert®) 21st ED	2525	Escherichia coli	20212402	Chromogenic/Fluorogenic Qualitative (Colilert®): Total Coliform and E. coli
	2500	Total coliforms		
SM 9223 B (Colilert®-18 Quanti-Tray®) 21st ED	2525	Escherichia coli	20213405	Chromogenic/Fluorogenic Quantitative (Colilert®-18): Total Coliform and E. coli
	2500	Total coliforms		
SM 9223 B (Colilert®-18) 21st ED	2525	Escherichia coli	20214408	Chromogenic/Fluorogenic Qualitative (Colilert®-18): Total Coliform and E. coli
	2500	Total coliforms		

Non-Potable Water

EPA 160.4	1970	Residue-volatile	10010409	Total Volatile Solids, ignition @ 550 C.
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Non-Potable Water

EPA 200.2	10013000	Sample Preparation Procedure for Spectrochemical Determination of Total Recoverable Elements - Revision 2.8
8031		Extraction/Preparation
EPA 200.7 4.4	10013806	ICP - metals
1000		Aluminum
1015		Barium
1020		Beryllium
1025		Boron
1030		Cadmium
1035		Calcium
1040		Chromium
1050		Cobalt
1055		Copper
1760		Hardness (calc.)
1070		Iron
1075		Lead
1085		Magnesium
1090		Manganese
1100		Molybdenum
1105		Nickel
1125		Potassium
1155		Sodium
1160		Strontium
1175		Tin
1180		Titanium
1185		Vanadium
1190		Zinc
EPA 200.8 5.4	10014605	Metals by ICP-MS
1000		Aluminum
1005		Antimony
1010		Arsenic
1015		Barium
1020		Beryllium
1030		Cadmium
1040		Chromium
1050		Cobalt
1055		Copper
1070		Iron
1075		Lead
1090		Manganese
1100		Molybdenum
1105		Nickel



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Non-Potable Water

EPA 200.8 5.4	1140	Selenium		
	1150	Silver		
	1160	Strontium		
	1165	Thallium		
	1175	Tin		
	1180	Titanium		
	3035	Uranium		
	1185	Vanadium		
	1190	Zinc		
EPA 2000 Fathead minnow Acute MHSF 25°C	3410	Pimephales promelas	10213602	Fathead Minnow Acute MHSF 25°
EPA 2002 Ceriodaphnia dubia Acute MHSF 25°C	3315	Ceriodaphnia dubia	10214809	Ceriodaphnia Acute MHSF 25°
EPA 245.2 4.1	1095	Mercury	10271406	Mercury by Cold Vapor Atomic Absorption
EPA 300.0 2.1	1540	Bromide	10053200	Methods for the Determination of Inorganic Substances in Environmental Samples
	1575	Chloride		
	1810	Nitrate as N		
	1840	Nitrite as N		
	2000	Sulfate		
EPA 3010A	8031	Extraction/Preparation	10133605	Acid Digestion of Aqueous samples and Extracts for Total Metals
EPA 350.1 2	1515	Ammonia as N	10063602	Ammonia Nitrogen - Colorimetric, Auto Phenate
EPA 351.2 2	1795	Kjeldahl nitrogen - total	10065404	Total Kjeldahl Nitrogen - Block Digest, Phenate
EPA 353.2 2	1825	Total nitrate+nitrite	10067604	Nitrate/Nitrite Nitrogen - Automated, Cadmium
EPA 365.1 2	1870	Orthophosphate as P	10070005	Phosphorous - Colorimetric, Automated persulfate
EPA 365.4	1910	Phosphorus, total	10071202	Phosphorous - Colorimetric, automated block.



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Non-Potable Water

EPA 410.4	10077006	Chemical Oxygen Demand - Colorimetric, Automated.
1565		Chemical oxygen demand
EPA 6010D 4	10155916	Metals by ICP - AES
1000		Aluminum
1015		Barium
1020		Beryllium
1025		Boron
1030		Cadmium
1035		Calcium
1040		Chromium
1050		Cobalt
1055		Copper
1760		Hardness (calc.)
1070		Iron
1075		Lead
1080		Lithium
1085		Magnesium
1090		Manganese
1100		Molybdenum
1105		Nickel
1125		Potassium
1155		Sodium
1160		Strontium
1175		Tin
1180		Titanium
1185		Vanadium
1190		Zinc
EPA 6020B 2	10156420	Inductively Coupled Plasma-Mass Spectrometry
1000		Aluminum
1005		Antimony
1010		Arsenic
1015		Barium
1020		Beryllium
1030		Cadmium
1040		Chromium
1050		Cobalt
1055		Copper
1070		Iron
1075		Lead
1090		Manganese
1100		Molybdenum
1105		Nickel



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EPA 6020B 2	1140	Selenium		
	1150	Silver		
	1160	Strontium		
	1165	Thallium		
	1175	Tin		
	1180	Titanium		
	3035	Uranium		
	1185	Vanadium		
	1190	Zinc		
EPA 7470A			10165807	Mercury in Liquid Waste by Cold Vapor Atomic Absorption
	1095	Mercury		
SM 2130 B 21st ED			20042608	Turbidity by Nephelometric Method
	2055	Turbidity		
SM 2320 B 21st ED			20045403	Alkalinity by Titration Method
	1505	Alkalinity as CaCO3		
SM 2340 B 21st ED			20046406	Hardness by calculation
	1750	Hardness		
SM 2340 C 21st ED			20047409	Hardness by EDTA Titration Method
	1750	Hardness		
SM 2510 B 21st ED			20048402	Conductivity by Probe
	1610	Conductivity		
SM 2540 B 21st ED			20049201	Total Solids Dried at 103 - 105C
	1950	Residue-total		
SM 2540 C 21st ED			20050208	Total Dissolved Solids Dried at 180C
	1955	Residue-filterable (TDS)		
SM 2540 F 21st ED			20052000	Settleable Solids
	1965	Residue-settleable		
SM 4500-Cl G 22nd Ed			20081418	Chlorine (Residual) - DPD Colorimetric Method
	1940	Total residual chlorine		
SM 4500-F ⁻ C 21st ED			20102209	Fluoride by Ion-Selective Electrode Method
	1730	Fluoride		
SM 4500-H ⁺ B 21st ED			20105004	pH Value by Electrometric Method .
	1900	pH		
SM 4500-NO ₂ ⁻ B 20th ED			20112601	Nitrite by Colorimetric Determination
	1840	Nitrite as N		
SM 4500-P F 21st ED			20124805	Phosphorus by Automated Ascorbic Acid Reduction Method
	1870	Orthophosphate as P		



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SM 4500-S2 F-2011	2005	Sulfide	20126663	Sulfide by Iodometric Method
SM 4500-SiO2 C 20th ED	1990	Silica as SiO2	20128205	Silicon by Molybdosilicate Method
SM 5210 B 20th ED	1530	Biochemical oxygen demand	20134809	Biochemical Oxygen Demand, 5-Day (BOD5)
	1555	Carbonaceous BOD, CBOD		
SM 5220 D 20th ED	1565	Chemical oxygen demand	20136407	Chemical Oxygen Demand by Closed Reflux and Colorimetric Determination
SM 5310 B-2000	1710	Dissolved organic carbon (DOC)	20137819	Total Organic Carbon (TOC) by Combustion Infra-red Method
	2040	Total organic carbon		
SM 9222 D (m-FC) 21st ED	2530	Fecal coliforms	20209807	Membrane Filtration Quantitative (m-FC): Fecal Coliform
SM 9223 B (Colilert® Quanti-Tray®) 21st ED	2525	Escherichia coli	20211409	Chromogenic/Fluorogenic Quantitative (Colilert®): Total Coliform and E. coli
	2500	Total coliforms		
SM 9223 B (Colilert®-18 Quanti-Tray®) 21st ED	2525	Escherichia coli	20213405	Chromogenic/Fluorogenic Quantitative (Colilert®-18): Total Coliform and E. coli
	2500	Total coliforms		
USGS I-3765-85	1960	Residue-nonfilterable (TSS)	40011209	Solids, residue suspended evaporation 105 deg C

Solids

EPA 1311	8031	Extraction/Preparation	10118806	Toxicity Characteristic Leaching Procedure
EPA 1312	8031	Extraction/Preparation	10119003	Synthetic Precipitation Leaching Procedure
EPA 160.4	1970	Residue-volatile	10010409	Total Volatile Solids, ignition @ 550 C.
EPA 300.0 2.1	1540	Bromide	10053200	Methods for the Determination of Inorganic Substances in Environmental Samples
	1575	Chloride		
	1810	Nitrate as N		
	1840	Nitrite as N		



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Solids

EPA 300.0 2.1	1870	Orthophosphate as P		
	2000	Sulfate		
EPA 3050B			10135601	Acid Digestion of Sediments, Sludges, and soils
	8031	Extraction/Preparation		
EPA 350.1 2			10063602	Ammonia Nitrogen - Colorimetric, Auto Phenate
	1515	Ammonia as N		
EPA 351.2 2			10065404	Total Kjeldahl Nitrogen - Block Digest, Phenate
	1795	Kjeldahl nitrogen - total		
EPA 365.4			10071202	Phosphorous - Colorimetric, automated block.
	1910	Phosphorus, total		
EPA 6010D 4			10155916	Metals by ICP - AES
	1000	Aluminum		
	1015	Barium		
	1020	Beryllium		
	1025	Boron		
	1030	Cadmium		
	1035	Calcium		
	1040	Chromium		
	1050	Cobalt		
	1055	Copper		
	1070	Iron		
	1075	Lead		
	1085	Magnesium		
	1090	Manganese		
	1100	Molybdenum		
	1105	Nickel		
	1125	Potassium		
	1155	Sodium		
	1160	Strontium		
	1175	Tin		
	1180	Titanium		
	1185	Vanadium		
	1190	Zinc		
EPA 6020B 2			10156420	Inductively Coupled Plasma-Mass Spectrometry
	1000	Aluminum		
	1005	Antimony		
	1010	Arsenic		
	1015	Barium		
	1020	Beryllium		



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Solids

EPA 6020B 2	1030	Cadmium		
	1040	Chromium		
	1050	Cobalt		
	1055	Copper		
	1070	Iron		
	1075	Lead		
	1090	Manganese		
	1095	Mercury		
	1100	Molybdenum		
	1105	Nickel		
	1140	Selenium		
	1150	Silver		
	1160	Strontium		
	1165	Thallium		
	1175	Tin		
	1180	Titanium		
	1185	Vanadium		
	1190	Zinc		
EPA 7471B			10166402	Mercury by Cold Vapor Atomic Absorption
	1095	Mercury		
EPA 9045D			10244607	Soil and Waste pH
	1900	pH		
SM 2540 G-2011 SM 2540 G-2011			20005270	Total, Fixed, and Volatile Solids
	1725	Total, fixed, and volatile residue		