

HOLMES LABORATORY INC.
 3559 US 62
 Millersburg, OH 44654
 www.facebook.com/holmeslab

WATER
ANALYSIS REPORT
 [A Vital Key to Today's Agriculture]
 (330) 893-2933 * www.holmeslab.com
Test Performed: S

Customer: Rain Fresh Harvest

Barry Alder
 9559 Industrial Parkway
 Plain City, OH 43064

Date Reported: 03/03/2017
Lab Number: 17-763
 SAMPLE I.D.: Water
 5. LTW Fish Tank

Parameter	Units	Your Results	Ideal Water Suitability levels should be less than these values.
pH		6.9	6.5-7.5 is Ideal
Hardness (CaCO3 Equiv.)	ppm	1196	200
Hardness	grains per gal.	70	12
Total Dissolved Solids (TDS)	ppm	1420	500
Calcium (Ca)	ppm	301	50
Magnesium (Mg)	ppm	108	50
Potassium (K)	ppm	19	20
Sulfate (SO4)	ppm	1260	50
Sodium (Na)	ppm	49	50
Chloride (Cl)	ppm	85	50
Copper (Cu)	ppm	.01	.20
Manganese (Mn)	ppm	.01	.05
Zinc (Zn)	ppm	.01	1.50
Iron (Fe)	ppm	.01	.20
Lead (Pb)	ppm		.02
Phosphorus (P)	ppm		.70
Nitrate-Nitrogen (NO3-N)	ppm	8.4	4
Nitrate (NO3)	ppm	37	20
Electrical Conductivity (EC)	dS/m	1.78	.78
Barium (Ba)	ppm		2.00
Fluoride (F)	ppm		2.00
Free Chlorine (Cl)	ppm		.50
Total Chlorine (Cl)	ppm		2.00

Total Coliform
 E-Coli
 Pseudomonas Aeruginosa

Four(4) or less Total Coliform
 and <1 (less than 1) of E-Coli
 is safe for Drinking*

*Ohio Department of Health Standards for Private Water Systems.

Dissolved Oxygen (O2)	ppm
Bicarbonate Alkalinity	ppm
Carbonate Alkalinity	ppm
Total Alkalinity (as CaCO3)	ppm
Total Acidity (as CaCO3)	ppm
Ammonia (NH3)	ppm
Nitrite (NO2)	ppm
Carbon Dioxide (CO2)	ppm

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Test Performed: S

Customer: Rain Fresh Harvest

Barry Alder
 9559 Industrial Parkway
 Plain City, OH 43064

Date Reported: 03/03/2017
Lab Number: 17-764
 SAMPLE I.D.: Water
 6. LTE Fish Tank

Parameter	Units	Your Results	Ideal Water Suitability levels should be less than these values.
pH		7.1	6.5-7.5 is Ideal
Hardness (CaCO3 Equiv.)	ppm	1175	200
Hardness	grains per gal.	68	12
Total Dissolved Solids (TDS)	ppm	1410	500
Calcium (Ca)	ppm	302	50
Magnesium (Mg)	ppm	103	50
Potassium (K)	ppm	10	20
Sulfate (SO4)	ppm	1620	50
Sodium (Na)	ppm	49	50
Chloride (Cl)	ppm	80	50
Copper (Cu)	ppm	.01	.20
Manganese (Mn)	ppm	.01	.05
Zinc (Zn)	ppm	.01	1.50
Iron (Fe)	ppm	.01	.20
Lead (Pb)	ppm		.02
Phosphorus (P)	ppm		.70
Nitrate-Nitrogen (NO3-N)	ppm	3.4	4
Nitrate (NO3)	ppm	15	20
Electrical Conductivity (EC)	dS/m	1.75	.78
Barium (Ba)	ppm		2.00
Fluoride (F)	ppm		2.00
Free Chlorine (Cl)	ppm		.50
Total Chlorine (Cl)	ppm		2.00

Total Coliform Four(4) or less Total Coliform
 E-Coli and <1 (less than 1) of E-Coli
 Pseudomonas Aeruginosa is safe for Drinking*

*Ohio Department of Health Standards for Private Water Systems.

Dissolved Oxygen (O2)	ppm
Bicarbonate Alkalinity	ppm
Carbonate Alkalinity	ppm
Total Alkalinity (as CaCO3)	ppm
Total Acidity (as CaCO3)	ppm
Ammonia (NH3)	ppm
Nitrite (NO2)	ppm
Carbon Dioxide (CO2)	ppm

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**IRRIGATION WATER
 ANALYSIS REPORT**
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 (330) 893-2933 * www.holmeslab.com
Test Performed: I

Customer : Rain Fresh Harvest

Barry Alder
 9559 Industrial Parkway
 Plain City, OH 43064

Date Reported: 03/08/2017
 Lab Number: 17-766
SAMPLE I.D.:Water
 8. Well

Analysis of Chemical Properties	Unit of Measure	Your Results	Optimum Range
WATER CHARACTERISITICS			
	pH	7.0	5 - 7
Hardness (as CaCO ₃)	ppm	1596	20 - 100
Hardness grains per gal		93	0 - 6
Bicarbonate	ppm	221	30 - 50
Carbonate	ppm	0	0 - 15
Total Alkalinity (as CaCO ₃)	ppm	181	0 - 100
IMPACT ON PLANT GROWTH			
Electrical Conductivity (EC)	dS/m	2.06	0 - 0.75
Total Dissolved Salts (TDS)	ppm	1810	0 - 480
IMPACT FROM LEAF & ROOT CONTACT			
Sodium (Na)	ppm	5	0 - 30
Chloride (Cl)	ppm	85	0 - 50
Boron (B)	ppm	.69	0.2 - 0.5
IMPACT ON SOIL STRUCTURE			
Sodium Adsorbtion Ratio (SAR)	meg/l	.06	0 - 4
Sodium Adsorbtion Ratio (Adj)	meg/l	.47	0 - 10
Residual Sodium Carbonate (RSC)	---	-20.00	0 - 2.5
Electrical Conductivity (EC)	dS/m	2.06	0 - 0.75
Total Dissolved Salts (TDS)	ppm	1810	0 - 480

Total Coliform E-Coli Four(4) or less Total Coliform and <1 (less than 1) of E-Coli is safe for Drinking*

*Ohio Department of Health Standards for Private Water Systems.

Plant Nutrients in Irrig. Water	Results ppm	Optimum Range	Nutrients Converted to Fertilizer Forms	lbs. per acre inch
Nitrate (NO ₃ -N)	3.64	0-5	Nitrate (NO ₃ -N)	.82
Phosphorus (P)	1.60	0-1	Phosphate (P ₂ O ₅)	.83
Potassium (K)	2.50	0.5-10	Potassium (K ₂ O)	.68
Calcium (Ca)	432.5	40-100	Calcium (Ca)	97.87
Magnesium (Mg)	124.0	6-24	Magnesium (MgO)	46.52
Sulfate (SO ₄)	1680.0	24-200	Sulfur (S)	126.59
Iron (Fe)	3.17	0-1	Iron (Fe)	.72
Manganese (Mn)	.66	0-1	Manganese (Mn)	.15
Boron (B)	.69	0.2-0.5	Boron (B)	.16
Zinc (Zn)	.01	0-0.2	Zinc (Zn)	.00
Copper (Cu)	.01	0.08-0.15	Copper (Cu)	.00

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 (330) 893-2933 * www.holmeslab.com
 Test Performed: S

Customer: Barry Adler

Barry Adler
 9559 Industrial Parkway
 Plain City, OH 43064

Date Reported: 06/13/2017
 Lab Number: 17-1532
 SAMPLE I.D.: Water
 LTW Fish Tank

Parameter	Units	Your Results	Ideal Water Suitability levels should be less than these values.
pH		7.8	6.5-7.5 is Ideal
Hardness (CaCO3 Equiv.)	ppm	1062	200
Hardness	grains per gal.	62	12
Total Dissolved Solids (TDS)	ppm	1310	500
Calcium (Ca)	ppm	266	50
Magnesium (Mg)	ppm	97	50
Potassium (K)	ppm	27	20
Sulfate (SO4)	ppm	980	50
Sodium (Na)	ppm	57	50
Chloride (Cl)	ppm	38	50
Copper (Cu)	ppm	.01	.20
Manganese (Mn)	ppm	.02	.05
Zinc (Zn)	ppm	.01	1.50
Iron (Fe)	ppm	.02	.20
Lead (Pb)	ppm		.02
Phosphorus (P)	ppm		.70
Nitrate-Nitrogen (NO3-N)	ppm	8.6	4
Nitrate (NO3)	ppm	38	20
Electrical Conductivity (EC)	dS/m	1.66	.78
Barium (Ba)	ppm		2.00
Fluoride (F)	ppm		2.00
Free Chlorine (Cl)	ppm		.50
Total Chlorine (Cl)	ppm		2.00

Total Coliform
 E-Coli
 Pseudomonas Aeruginosa

Four (4) or less Total Coliform and <1 (less than 1) of E-Coli is safe for Drinking*

*Ohio Department of Health Standards for Private Water Systems.

Dissolved Oxygen (O2)	ppm
Bicarbonate Alkalinity	ppm
Carbonate Alkalinity	ppm
Total Alkalinity (as CaCO3)	ppm
Total Acidity (as CaCO3)	ppm
Ammonia (NH3)	ppm
Nitrite (NO2)	ppm
Carbon Dioxide (CO2)	ppm

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Customer: Barry Adler

Barry Adler
 9559 Industrial Parkway
 Plain City, OH 43064

Date Reported: 06/13/2017
 Lab Number: 17-1533
 SAMPLE I.D.: Water
 LTE Fish Tank

Parameter	Units	Your Results	Ideal Water Suitability levels should be less than these values.
pH		7.6	6.5-7.5 is Ideal
Hardness (CaCO3 Equiv.)	ppm	1045	200
Hardness	grains per gal.	61	12
Total Dissolved Solids (TDS)	ppm	1190	500
Calcium	(Ca) ppm	262	50
Magnesium	(Mg) ppm	95	50
Potassium	(K) ppm	6	20
Sulfate	(SO4) ppm	920	50
Sodium	(Na) ppm	50	50
Chloride	(Cl) ppm	45	50
Copper	(Cu) ppm	.01	.20
Manganese	(Mn) ppm	.01	.05
Zinc	(Zn) ppm	.01	1.50
Iron	(Fe) ppm	.03	.20
Lead	(Pb) ppm		.02
Phosphorus	(P) ppm		.70
Nitrate-Nitrogen	(NO3-N) ppm	3.4	4
Nitrate	(NO3) ppm	15	20
Electrical Conductivity (EC)	dS/m	1.58	.78
Barium	(Ba) ppm		2.00
Fluoride	(F) ppm		2.00
Free Chlorine	(Cl) ppm		.50
Total Chlorine	(Cl) ppm		2.00

Total Coliform Four (4) or less Total Coliform
 E-Coli and <1 (less than 1) of E-Coli
 Pseudomonas Aeruginosa is safe for Drinking*

*Ohio Department of Health Standards for Private Water Systems.

Dissolved Oxygen	(O2)	ppm
Bicarbonate Alkalinity		ppm
Carbonate Alkalinity		ppm
Total Alkalinity	(as CaCO3)	ppm
Total Acidity	(as CaCO3)	ppm
Ammonia	(NH3)	ppm
Nitrite	(NO2)	ppm
Carbon Dioxide	(CO2)	ppm

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Barry Adler
 9559 Industrial Parkway
 Plain City, OH 43064

Date Reported: 07/25/2017
 Lab Number: 17-1918
 SAMPLE I.D.: Water
 Pond

Parameter	Units	Your Results	Ideal Water Suitability levels should be less than these values.
pH		7.0	6.5-7.5 is Ideal
Hardness (CaCO3 Equiv.)	ppm	902	200
Hardness	grains per gal.	53	12
Total Dissolved Solids (TDS)	ppm	1110	500
Calcium (Ca)	ppm	237	50
Magnesium (Mg)	ppm	76	50
Potassium (K)	ppm	8	20
Sulfate (SO4)	ppm	980	50
Sodium (Na)	ppm	34	50
Chloride (Cl)	ppm	30	50
Copper (Cu)	ppm	.01	.20
Manganese (Mn)	ppm	1.13	.05
Zinc (Zn)	ppm	.01	1.50
Iron (Fe)	ppm	.19	.20
Lead (Pb)	ppm		.02
Phosphorus (P)	ppm		.70
Nitrate-Nitrogen (NO3-N)	ppm	2.3	4
Nitrate (NO3)	ppm	10	20
Electrical Conductivity (EC)	dS/m	1.41	.78
Barium (Ba)	ppm		2.00
Fluoride (F)	ppm		2.00
Free Chlorine (Cl)	ppm		.50
Total Chlorine (Cl)	ppm		2.00

Total Coliform
 E-Coli
 Pseudomonas Aeruginosa

Four (4) or less Total Coliform and <1 (less than 1) of E-Coli is safe for Drinking*

*Ohio Department of Health Standards for Private Water Systems.

Dissolved Oxygen (O2)	ppm
Bicarbonate Alkalinity	ppm
Carbonate Alkalinity	ppm
Total Alkalinity (as CaCO3)	ppm
Total Acidity (as CaCO3)	ppm
Ammonia (NH3)	ppm
Nitrite (NO2)	ppm
Carbon Dioxide (CO2)	ppm

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Barry Adler
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 Plain City, OH 43064

Date Reported: 07/25/2017
 Lab Number: 17-1919
 SAMPLE I.D.: Water
 Long Tank West

Parameter	Units	Your Results	Ideal Water Suitability levels should be less than these values.
pH		7.2	6.5-7.5 is Ideal
Hardness (CaCO3 Equiv.)	ppm	1000	200
Hardness	grains per gal.	58	12
Total Dissolved Solids (TDS)	ppm	1350	500
Calcium (Ca)	ppm	267	50
Magnesium (Mg)	ppm	81	50
Potassium (K)	ppm	22	20
Sulfate (SO4)	ppm	1220	50
Sodium (Na)	ppm	45	50
Chloride (Cl)	ppm	45	50
Copper (Cu)	ppm	.01	.20
Manganese (Mn)	ppm	.01	.05
Zinc (Zn)	ppm	.01	1.50
Iron (Fe)	ppm	.01	.20
Lead (Pb)	ppm		.02
Phosphorus (P)	ppm		.70
Nitrate-Nitrogen (NO3-N)	ppm	7.5	4
Nitrate (NO3)	ppm	33	20
Electrical Conductivity (EC)	dS/m	1.69	.78
Barium (Ba)	ppm		2.00
Fluoride (F)	ppm		2.00
Free Chlorine (Cl)	ppm		.50
Total Chlorine (Cl)	ppm		2.00

Total Coliform
 E-Coli
 Pseudomonas Aeruginosa

Four (4) or less Total Coliform and <1 (less than 1) of E-Coli is safe for Drinking*

*Ohio Department of Health Standards for Private Water Systems.

Dissolved Oxygen (O2)	ppm
Bicarbonate Alkalinity	ppm
Carbonate Alkalinity	ppm
Total Alkalinity (as CaCO3)	ppm
Total Acidity (as CaCO3)	ppm
Ammonia (NH3)	ppm
Nitrite (NO2)	ppm
Carbon Dioxide (CO2)	ppm

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 Plain City, OH 43064

Date Reported: 07/25/2017
 Lab Number: 17-1920
 SAMPLE I.D.: Water
 Long Tank East

Parameter	Units	Your Results	Ideal Water Suitability levels should be less than these values.
pH		7.4	6.5-7.5 is Ideal
Hardness (CaCO3 Equiv.)	ppm	966	200
Hardness	grains per gal.	56	12
Total Dissolved Solids (TDS)	ppm	1300	500
Calcium (Ca)	ppm	263	50
Magnesium (Mg)	ppm	76	50
Potassium (K)	ppm	6	20
Sulfate (SO4)	ppm	1120	50
Sodium (Na)	ppm	44	50
Chloride (Cl)	ppm	38	50
Copper (Cu)	ppm	.01	.20
Manganese (Mn)	ppm	.13	.05
Zinc (Zn)	ppm	.01	1.50
Iron (Fe)	ppm	.01	.20
Lead (Pb)	ppm		.02
Phosphorus (P)	ppm		.70
Nitrate-Nitrogen (NO3-N)	ppm	1.4	4
Nitrate (NO3)	ppm	6	20
Electrical Conductivity (EC)	dS/m	1.61	.78
Barium (Ba)	ppm		2.00
Fluoride (F)	ppm		2.00
Free Chlorine (Cl)	ppm		.50
Total Chlorine (Cl)	ppm		2.00

Total Coliform Four (4) or less Total Coliform
 E-Coli and <1 (less than 1) of E-Coli
 Pseudomonas Aeruginosa is safe for Drinking*

*Ohio Department of Health Standards for Private Water Systems.

Dissolved Oxygen (O2)	ppm
Bicarbonate Alkalinity	ppm
Carbonate Alkalinity	ppm
Total Alkalinity (as CaCO3)	ppm
Total Acidity (as CaCO3)	ppm
Ammonia (NH3)	ppm
Nitrite (NO2)	ppm
Carbon Dioxide (CO2)	ppm

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Customer: Rainfresh Harvests

Barry Adler
 9559 Industrial Parkway
 Plain City, OH 43064

Date Reported: 11/21/2017
Lab Number: 17-2602
 SAMPLE I.D.: Water
 LTW-Fish Tank West

Parameter	Units	Your Results	Ideal Water Suitability levels should be less than these values.
pH		8.0	6.5-7.5 is Ideal
Hardness (CaCO3 Equiv.)	ppm	1168	200
Hardness	grains per gal.	68	12
Total Dissolved Solids (TDS)	ppm	1320	500
Calcium (Ca)	ppm	272	50
Magnesium (Mg)	ppm	119	50
Potassium (K)	ppm	6	20
Sulfate (SO4)	ppm	1220	50
Sodium (Na)	ppm	32	50
Chloride (Cl)	ppm	65	50
Copper (Cu)	ppm	.04	.20
Manganese (Mn)	ppm	.01	.05
Zinc (Zn)	ppm	.01	1.50
Iron (Fe)	ppm	.03	.20
Lead (Pb)	ppm		.02
Phosphorus (P)	ppm		.70
Nitrate-Nitrogen (NO3-N)	ppm	4.1	4
Nitrate (NO3)	ppm	18	20
Electrical Conductivity (EC)	dS/m	1.69	.78
Barium (Ba)	ppm		2.00
Fluoride (F)	ppm		2.00
Free Chlorine (Cl)	ppm		.50
Total Chlorine (Cl)	ppm		2.00

Total Coliform
 E-Coli
 Pseudomonas Aeruginosa

Four(4) or less Total Coliform
 and <1 (less than 1) of E-Coli
 is safe for Drinking*

*Ohio Department of Health Standards for Private Water Systems.

Dissolved Oxygen (O2)	ppm
Bicarbonate Alkalinity	ppm
Carbonate Alkalinity	ppm
Total Alkalinity (as CaCO3)	ppm
Total Acidity (as CaCO3)	ppm
Ammonia (NH3)	ppm
Nitrite (NO2)	ppm
Carbon Dioxide (CO2)	ppm

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Customer: Rainfresh Harvests

Barry Adler
 9559 Industrial Parkway
 Plain City, OH 43064

Date Reported: 11/21/2017
Lab Number: 17-2603
 SAMPLE I.D.: Water
 LTE-Fish Tank East

Parameter	Units	Your Results	Ideal Water Suitability levels should be less than these values.
pH		8.2	6.5-7.5 is Ideal
Hardness (CaCO3 Equiv.)	ppm	1101	200
Hardness	grains per gal.	64	12
Total Dissolved Solids (TDS)	ppm	1280	500
Calcium (Ca)	ppm	272	50
Magnesium (Mg)	ppm	103	50
Potassium (K)	ppm	1	20
Sulfate (SO4)	ppm	1160	50
Sodium (Na)	ppm	35	50
Chloride (Cl)	ppm	55	50
Copper (Cu)	ppm	.07	.20
Manganese (Mn)	ppm	.01	.05
Zinc (Zn)	ppm	.01	1.50
Iron (Fe)	ppm	.01	.20
Lead (Pb)	ppm		.02
Phosphorus (P)	ppm		.70
Nitrate-Nitrogen (NO3-N)	ppm	2.5	4
Nitrate (NO3)	ppm	11	20
Electrical Conductivity (EC)	dS/m	1.69	.78
Barium (Ba)	ppm		2.00
Fluoride (F)	ppm		2.00
Free Chlorine (Cl)	ppm		.50
Total Chlorine (Cl)	ppm		2.00

Total Coliform
 E-Coli
 Pseudomonas Aeruginosa

Four(4) or less Total Coliform
 and <1 (less than 1) of E-Coli
 is safe for Drinking*

*Ohio Department of Health Standards for Private Water Systems.

Dissolved Oxygen (O2)	ppm
Bicarbonate Alkalinity	ppm
Carbonate Alkalinity	ppm
Total Alkalinity (as CaCO3)	ppm
Total Acidity (as CaCO3)	ppm
Ammonia (NH3)	ppm
Nitrite (NO2)	ppm
Carbon Dioxide (CO2)	ppm