

Basic Class Review Points

Math

- Convert between different units of measurement.
- Calculate total exhaustion of a water softener
- Calculate volume of both rectangular and circular tanks
- Make various disinfection calculations using the last four formulas

Chapter 1 – Licensing and Regulatory Requirements

- Licensing Authority and definition of water treatment
- Standards of qualifications for your license class
- Differences between license classes
- Application procedure for a license
- Causes for denial/suspension of a license and field citations
- Exemptions from license requirements
- Public Water Systems: regulatory requirements and safe practices
 - Pressure Requirements
 - Disinfection Residuals
 - Lead Restrictions
 - Cross Connections
 - Air gaps

Chapter 2 – Water Quality Problems

- Values for density, freezing, and boiling
- Unique Properties of Water:
 - High Heat Absorbing Capacity
 - High Surface Tension
 - Universal Solvent
 - Highly Polar
 - Very Stable
 - Freezing and Expansion
- Different uses of water and quality standards
- Natural water cycle processes
- General Water Quality indicators
- Differences between water sources
- Common Water Problems

Stephanie Layfield

817-223-8873

IonicoTechnicalServices@gmail.com

IonicoTechnicalServices.com

Chapter 3 – Waterborne Disease

- Microorganisms, waterborne infections, and pathogens
- How to reduce or eliminate waterborne diseases
- Identify common diseases
- Coliform bacteria – Indicator organism
- Bacteriological test procedures
- Interpretation of results
- Purpose of disinfection
- CT values
- Disinfection with chlorine, ozone, and UV

Chapter 4 – General Water Quality

- Different units of measurements for impurities
- Physical Descriptions of water quality and standards
 - Turbidity
 - Color
 - Temperature
 - Odor
 - Taste
- Chemical characteristics of water and standards
 - pH
 - Total Dissolved Solids
 - Alkalinity
 - Conductivity
 - Hardness
- Differences between Dissolving, Ionization, Ions, Cations, Anions
- Clean water act, Safe Drinking Water Act, Maximum Contaminant Levels, Secondary Standards
- Common contaminants: source, effects, and standards
 - Fluoride
 - Nitrogen
 - Trihalomethanes

Chapter 5 – Water Treatment Technologies

- Factors to consider

Stephanie Layfield

817-223-8873

IonicoTechnicalServices@gmail.com

IonicoTechnicalServices.com

- **Common Treatment processes: purpose, method, and limitations**
 - **Aeration**
 - **Filtration**
 - **Adsorption**
 - **Activated Carbon**
 - **Chemical Oxidation**
 - **Distillation**
- **Ion Exchange: resin, softening, and deionization**
- **R.O.: Natural osmosis and membranes**

Chapter 6 – Public Relations and Safety

- **Customer confidence and satisfaction**
- **Written safety program**
- **Safety precautions**
- **Unsafe acts and unsafe work conditions**
- **Rolling tanks on wood or carpet floors**