



Regulations Basics: Operator Certification



WELCOME!

This training is presented by RCAC with funding provided by the California State Revolving Fund (SRFCA) from the California State Water Resources Control Board, Division of Drinking Water (DDW)





Your Moderator Today...

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The Rural Community Assistance Partnership





RCAC Programs

- ◆ Affordable housing
- ◆ Community facilities
- ◆ Water and wastewater infrastructure financing (Loan Fund)
- ◆ Classroom and online training
- ◆ On-site technical assistance
- ◆ Median Household Income (MHI) surveys



Performance Assessment Rating Tool (PART)



- 4 to 6 weeks from today
- Email w/ today's workshop in subject line
- 3 questions – 3 minutes maximum
- How did you use the information that was presented today?
- Funders are looking for positive changes
- Help us continue these free workshops!



Questions?



**Text your questions and comments
anytime during the session**



Your Presenter Today...



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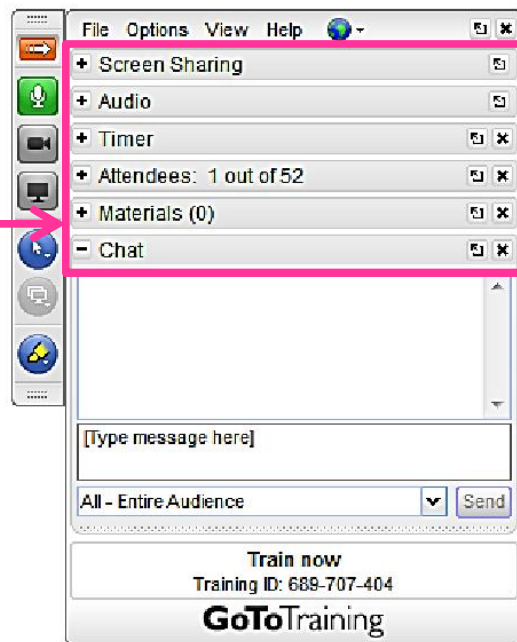


Housekeeping

- ◆ Participation / attentiveness
- ◆ Evaluation
- ◆ Certificates for contact hours



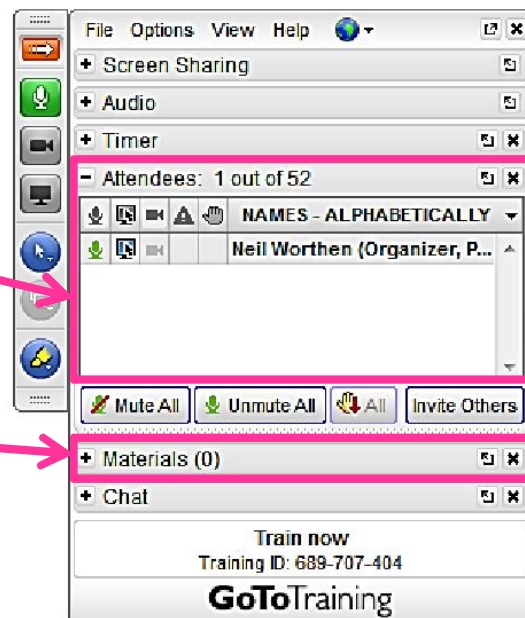
Control Tabs



Audio Controls



Attendee List



Today's Materials



Questions?



**Text your questions and comments
anytime during the session**



Regulations Basics: Operator Certification



Today's Agenda

- ◆ Importance of Operator Certification
- ◆ Requirements of Operator Certification
 - ▶ Operator certification testing requirement
 - ▶ Operator certification renewal
 - ▶ Water system classification
- ◆ Additional Resources



The Walkerton Incident

- ◆ Operated by Stan Koebel (GM) and his brother Frank (foreman)
- ◆ Grandfathered operators, no training





The Contamination Spring 2000

- ◆ Farmer spreads manure on his property for crops
- ◆ Heavy rains totaling 5.25 inches
- ◆ Well was contaminated, operators did not have training to deal with it



Results of this contamination

- ◆ 7 people die
- ◆ 2300 people become ill
- ◆ Many have permanent organ damage
- ◆ Could have been prevented = trained operators!





Poll Time!

Question 1: What is your level of certification?



California Water Systems

Type of System	Approximate #
COMMUNITY	3,000
Large (>3,000 people)	700
Small (>15 connection, <3,000 people)	2,300
NON-COMMUNITY	4,500
Nontransient	1,500
Transient	3,000
Total	7,500

Population Served	Population / %
LWS (9.3% of PWS)	37 m / 99%
SWS (90.7% of PWS)	400,000 / 1%



California Certification By the Numbers

- ◆ 34,495 water operator certificates
- ◆ 14,085 water treatment certificates
- ◆ 20,410 water distribution certificates
- ◆ 21,953 individual water operators
- ◆ 1/3 of operators hold both treatment and distribution certification



Regulations

- ◆ Congress approved the Federal Safe Drinking Water Act (SDWA) in 1974, implemented 1977
- ◆ All states *with primacy* implemented water treatment operator program
- ◆ The 1996 amendments to the Federal SDWA require distribution certification
- ◆ California adopted distribution regulations effective 1/1/01





Who Is Required To Have A Certified Water Operator?

- ◆ A public water system serves the same 15 service connections OR same 25 people at least 60 days per year
- ◆ Community Water System – at least 15 connections or 25 people year round
- ◆ Nontransient Noncommunity Water System – Same 25 people over 6 months per year
- ◆ Transient Noncommunity Water System – NA



Poll Time!

Question 2: What type of system do you operate?





State Regulations – Title 22

- ◆ Only **certified** treatment operators shall operate a treatment plant when:
- ◆ Chemicals are used to meet primary or secondary standards
- ▶ Filtration is required for water quality to meet California or federal SDWA
 - ▶ Multi media or slow sand
 - ▶ Membrane etc



State Regulations – Title 22

- ◆ Distribution certification:
 - ▶ Disinfects water as precaution only
 - ▶ Ground water systems not needing any treatment
 - ▶ Systems that deliver water to consumers after treatment
 - ▶ Community & Nontransient water systems





Purpose of Operator Certification

- ◆ Operator certification ensures the delivery of safe drinking water
- ◆ Operator certification sets standards for education, training, and experience
- ◆ Standards are set by a stakeholders committee in California



Requirements Operator Certification

- ◆ **Every public water system is required to have a certified operator**
- ◆ Requirements for obtaining certification
- ◆ Requirements for maintaining certification
- ◆ Water system classification





Requirements Operator Certification

- ◆ **Every public water system is required to have a certified operator**
 - ▶ Treatment operators
 - ▶ Distribution operators



Definitions

- ◆ Chief Operator – Operator designated who has overall responsibility for the day-to-day, hands-on, operation of a water treatment facility or the person who has overall responsibility for the day-to-day, hands-on, operation of a distribution system.





Definitions

- ◆ Shift Operator -- person in direct charge of the operation of a water treatment facility or distribution system for a specified period of the day



Definitions

- ◆ Water Treatment Facility – a system that affects the physical, chemical, or bacteriological quality of water distributed.

Facilities consisting of only disinfection for which no Giardia or virus reduction is required which are under the control of a certified distribution operator are not included as water treatment facilities.

(If you have a water treatment facility, you must have a water treatment certified operator)





Definitions

- ◆ Distribution system -- means any combination of pipes, tanks, pumps, etc., which delivers drinking water from a source or treatment facility to the consumer and includes: disinfection facilities for which no Giardia or virus reduction is required



Treatment Certification Requirements

If you have a treatment facility you must have a treatment certified operator

Minimum Certification Requirements for Chief and Shift Operators

<i>Treatment Facility Classification</i>	<i>Minimum Certification of Chief Operator</i>	<i>Minimum Certification of Shift Operator</i>
T1	T1	T1
T2	T2	T1
T3	T3	T2
T4	T4	T3
T5	T5	T3

Operators other than the Chief and Shift Operators can be treatment certified at any grade level





Distribution Certification Requirements

All public water systems must have a distribution certified operator

Minimum Certification Requirements for Chief and Shift Operators

<i>Distribution System Classification</i>	<i>Minimum Certification of Chief Operator</i>	<i>Minimum Certification of Shift Operator</i>
D1	D1	D1
D2	D2	D1
D3	D3	D2
D4	D4	D3
D5	D5	D3



Distribution Certification Requirements

- ◆ Water systems shall utilize only certified distribution operators to make decisions addressing the following operational activities:
 - ▶ Install, tap, re-line, disinfect, test and connect water mains and appurtenances.
 - ▶ Shutdown, repair, disinfect and test broken water mains.
 - ▶ Oversee the flushing, cleaning, and pigging of existing water mains.
 - ▶ Pull, reset, rehabilitate, disinfect and test domestic water wells.
 - ▶ Stand-by emergency response duties for after hours distribution system operational emergencies.
 - ▶ Drain, clean, disinfect, and maintain distribution reservoirs.





Distribution Certification Requirements

- ◆ Water systems shall utilize either certified distribution operators or treatment operators that have been trained to make decisions addressing the following operational activities:
 - ▶ Operate pumps and related flow and pressure control and storage facilities manually or by using a system control and data acquisition (SCADA) system.
 - ▶ Maintain and/or adjust system flow and pressure requirements, control flows to meet consumer demands including fire flow demands and minimum pressure requirements.



QUIZ Time!

Question 3: What skills should an operator have?





Questions?



*Text your questions and comments
anytime during the session*



Requirements Operator Certification

- ◆ Every public water system is required to have a certified operator
- ◆ **Requirements for obtaining certification**
- ◆ Requirements for maintaining certification
- ◆ Water system classification





Obtaining Certification – General Requirements

- ◆ Education
 - ▶ High School, GED or *equivalent*
 - ▶ Specialized training
- ◆ Experience (Grades 3, 4 and 5)
- ◆ Exam
- ◆ Fee (\$\$\$) to SWRCB for cert



To Take Treatment Exam...

Grade	Minimum Qualifications for Examination
T1	<ul style="list-style-type: none"> High School or GED*
T2	<ul style="list-style-type: none"> High School or GED* AND One 3-unit (or One 36-hour) course of specialized training covering the fundamentals of drinking water treatment
T3	<ul style="list-style-type: none"> High School or GED AND Two 3-unit (or two 36-hour) courses of specialized training that includes one course covering the fundamentals of drinking water treatment
T4	<ul style="list-style-type: none"> Possession of a valid T3 certificate AND Three 3-unit (or three 36-hour) courses of specialized training that includes at least 2 courses in drinking water treatment
T5	<ul style="list-style-type: none"> Possession of a valid T4 certificate AND Four 3-unit (or four 36-hour) courses of specialized training that includes at least 2 courses in drinking water treatment

To Get Treatment Cert...

Minimum Qualifications for Certification

- Successful completion of the T1 exam
- Successful completion of the T2 exam
- Successful completion of the T3 exam
- 1 year of operator experience working as a certified T2 operator for a T2 facility or higher (may be substituted for (3) below) **AND**
- 1 additional year of operator experience working as a certified treatment operator (may be substituted with (1), (2), or (4) below)
- Successful completion of the T4 exam
- 1 year of operator experience working as a shift or chief operator, while holding a valid T3 operator certificate, at a T3 facility or higher (may be substituted with (3) below) **AND**
- 3 additional years of operator experience working as a certified treatment operator (may be substituted with (1) or (4) below)
- Successful completion of the T5 exam
- 2 years of operator experience working as a shift or chief operator, while holding a valid T4 operator certificate, at a T4 facility or higher (no substitutions) **AND**
- 3 additional years of operator experience working as a certified treatment operator (may be substituted with (1) or (4) below)



Substitutions For Experience

- ◆ Associates Degree
- ◆ Bachelors Degree
- ◆ Masters Degree, Etc.
- ◆ Have your argument prepared, contact DDW to make sure education counts!



Grade	Minimum Qualifications for Examination
1	<ul style="list-style-type: none"> High School or GED
D2	<ul style="list-style-type: none"> High School or GED AND One 36 contact hour (3-unit) course of specialized training covering the <u>fundamentals of water supply principles</u>.
D3	<ul style="list-style-type: none"> A valid Grade D2 or interim Grade D3 or higher operator certificate. AND Two 36 contact hour (3-unit) courses of specialized training that includes at least one course covering the <u>fundamentals of water supply principles</u>.
D4	<ul style="list-style-type: none"> A valid Grade D3 or interim Grade D4 or higher operator certificate AND Three 36 contact hour (3-unit) courses of specialized training that includes at least two courses in <u>water supply principles</u>.
D5	<ul style="list-style-type: none"> A valid Grade D4 or interim Grade D5 operator certificate AND Four 36 contact hour (3-unit) courses of specialized training that includes at least two courses in <u>water supply principles</u>.

Distribution

Distribution	Minimum Qualifications for Certification
	<ul style="list-style-type: none"> Successful completion of the Grade D1 operator examination within the three years prior to submitting the application for certification.
	<ul style="list-style-type: none"> Successful completion of the Grade D2 operator examination within the three years prior to submitting the application for certification.
	<ul style="list-style-type: none"> Successful completion of the Grade D3 operator examination within the three years prior to submitting the application for certification AND: One year of operator experience working as a certified D2 operator, interim D3 or higher operator, or temporary D3 operator for a D2 system or higher, or a system that prior to January 1, 2001 would have met the criteria for classification as a D2 system or higher AND: At least one additional years of operator experience working as a distribution operator.
	<ul style="list-style-type: none"> Successful completion of the Grade D4 operator examination within the three years prior to submitting the application for certification AND: At least one year of operator experience working as a certified D3, interim D4 or higher operator, or temporary D4 operator for a D3 system or higher, or a system that, prior to January 1, 2001 would have met the criteria for classification as a D3 facility or higher. AND: At least three additional years of operator experience working as a water distribution operator.
	<ul style="list-style-type: none"> Successful completion of the Grade D5 operator examination within the three years prior to submitting the application for certification AND: At least two years of operator experience working as a certified D4, interim D5 operator, or temporary D5 operator for a D4 or D5 system, or a system that prior to January 1, 2001 would have met the criteria for classification as a D4 or D5 system. AND: At least three additional years of operator experience working as a distribution operator.



Substitutions For Experience

- ◆ Associates Degree
- ◆ Bachelors Degree
- ◆ Masters Degree, Etc.

- ◆ Have your argument prepared, contact DDW to make sure education counts!



Don't Forget the EXAM!





State Water Resources Control Board

Drinking Water Treatment Exams Expected Range of Knowledge

Exam Content Grade	Number of questions			
	T1	T2	T3	T4
Source Water	25	25	20	15
Water Treatment Processes	25	25	35	20
Operation/Maintenance	20	20	15	15
Laboratory Procedures	15	15	15	15
Regulations/Administrative Duties	15	15	15	35



Source Water

Watershed Protection, Wells / Groundwater, Surface Water / Reservoirs, Raw Water Storage, Clear Well Storage

Water Treatment Processes

Coagulation/Flocculation/ Sedimentation, Filtration, Disinfection, Demineralization, Corrosion Control, Iron and Manganese removal, Fluoridation, Water Softening, BAT, (Best Available Technology)

Operation / Maintenance

Chemical feeders, Pumps and Motors, Blowers and Compressors, Water meters, Pressure gauges, Electrical generators, Safety, SCADA systems

Laboratory Procedures

Sampling, General Lab Practices, Disinfectant analysis, Alkalinity analysis, pH analysis, Turbidity analysis, Specific conductance, Hardness, Fluoride analysis, Color analysis, Taste and Odor analysis, Dissolved Oxygen analysis, Algae Count, Bacteriological analysis

Regulations/Administrative Duties

Planning, Organizing, Directing, Controlling, Staffing, Implementing Regulations, Record keeping, Safe Drinking Water Act and amendments, Surface Water Treatment Rule and amendments, Primary Contaminants, Secondary Contaminants, Lead and Copper Rule, Fluoride Regulations, Operator Certification Regulations

EXPECTED RANGE OF KNOWLEDGE WATER TREATMENT EXAMS

(Items marked "T1-T4" may be on the T1 – T4 exams)

(Items marked "T2-T4" may be on the T2 – T4 exams but not on the T1 exam)

Source Water

Wells/Groundwater

T1-T4	Knowledge of the characteristics of aquifers
T1-T4	Knowledge of the chemical components of groundwater
T1-T4	Knowledge of potential contamination in groundwater
T1-T4	Knowledge of well sampling techniques
T1-T4	Knowledge of groundwater characteristics
T1-T4	Ability to analyze water quality characteristics
T1-T4	Ability to calculate well drawdown
T2-T4	Ability to recognize hydrological changes
T2-T4	Ability to calculate a disinfectant dosage in a well
T2-T4	Ability to recognize the influence of surface water on a groundwater source
T2-T4	Ability to calculate well specific capacity
T3-T4	Knowledge of the source water assessment process
T3-T4	Ability to recognize abnormal chemical characteristics of water
T3-T4	Ability to calculate well head pressure

Surface Water/Reservoirs

T1-T4	Knowledge of microbial contamination
T1-T4	Knowledge of flow measurement devices
T1-T4	Ability to recognize potential sources of contamination in surface water
T1-T4	Ability to calculate flow rates



Water Treatment Exam Math

T1-T4	Ability to calculate well drawdown
T1-T4	Ability to calculate flow rates, water velocity
T1-T4	Ability to calculate the volume of water contained in a storage facility
T1-T4	Ability to calculate a chemical, disinfectant dosage
T1-T4	Ability to determine water level
T1-T4	Ability to calculate volumes, dilution factors, feed rates, and chemical concentrations
T1-T4	Ability to calculate a de-chlorination dosage
T1-T4	Ability to calculate chlorine residual
T1-T4	Ability to convert a head pressure to water elevation
T2-T4	Ability to calculate well specific capacity
T2-T4	Ability to calculate detention time
T2-T4	Ability to calculate chemical solution concentration
T2-T4	Ability to calculate filter-aid dosage
T2-T4	Ability to calculate filter backwash rate
T2-T4	Ability to calculate an ammonia/chlorine ratio
T2-T4	Ability to calculate a chemical feed rate (dose) for corrosion control
T2-T4	Ability to calculate a chemical dosage for Fe/Mn removal, fluoridation
T2-T4	Ability to calculate a dosage on a chemical feeder
T3-T4	Ability to calculate well head pressure
T3-T4	Ability to calculate a coagulant dosage
T3-T4	Ability to perform a jar test
T3-T4	Ability to calculate filter media volume and capacity
T3-T4	Ability to calculate a filtration rate



**WATER TREATMENT
OPERATOR CERTIFICATION PROGRAM**

<u>Final Filing Date</u>	<u>T1 - T4 Test Dates</u>	<u>T5 Test Dates</u>
September 1, 2015	November 21, 2015	December 2015*
March 1, 2016	May 21, 2016	June 2016*
September 1, 2016	November 19, 2016	December 2016*
March 1, 2017	May 20, 2017	June 2017*
September 1, 2017	November 18, 2017	December 2017*

Exam dates are subject to State Water Board approval.

Applications must be **POSTMARKED ON OR BEFORE** the final filing date to be considered for the current examination period. All minimum education qualifications must be met by the final filing date of the exam in which you wish to participate. Incomplete or illegible applications will result in a delay in the evaluation of your qualifications and scheduling of examination.



Treatment Testing Locations

* Grade 5 oral exams will be held in two locations ONLY – Northern California and Southern California (usually Sacramento and Lakewood)

PROPOSED EXAM SITES (Grade T1 – T4)

Central Coast	Redding	San Diego
Fresno	Sacramento	San Jose
Los Angeles	San Bernardino	Vallejo/Concord

Exam sites are in the general vicinity of the cities listed above and are subject to change.



Water Distribution Exam Expected Range of Knowledge

Exam Content Grade	number of questions				
	D1	D2	D3	D4	D5
DISINFECTION	15	20	20	15	10
DISTRIBUTION SYSTEM DESIGN / HYDRAULICS	20	20	15	10	10
EQUIPMENT OPERATION / MAINTENANCE / INSPECTIONS	20	20	25	20	15
DRINKING WATER REGULATIONS / MANAGEMENT / SAFETY	15	10	15	35	45
WATER MAINS AND PIPING	20	20	15	5	5
WATER QUALITY/WATER SOURCE	10	10	10	15	15
	100	100	100	100	100

Disinfection

Water Main Disinfection, Well Disinfection, Disinfectant By-Products, Chloramination, Chlorine Curve Chemistry, Storage Reservoir Disinfection, Types of Disinfectants

Distribution System Design / Hydraulics

System Layout, Storage Facilities, Cross-Connection and Backflow Devices, Service Connections, Systems Map, Assess System Demand, Flow Rates and Velocity, Head Loss, Cavitation, Water Hammer, Water Pressure and Volume, Static and Dynamic Pressure

Drinking Water Regulations/Management / Safety

Disinfection-By-Product Rule, Lead and Copper Rule, MCLs, Monitoring and Sampling Requirements, Public Notification, Safe Drinking Water Act, Total Coliform Rule, Operator Certification Regulations, Administer Compliance, Budgets, Emergency Response Planning, Future Planning, Maintenance Plan, Safety Plan, Water Conservation Planning, Water Rates

Equipment Operation / Maintenance / Inspections

Valves, Water Meters, Hydrants, Chemical Feeders, Corrosion, In-Line Sensors, Power Generators, SCADA, Pump Types, Uses, and Sizes, Troubleshoot and Repair Pumps and Motors, Water Horsepower, Inspection of Water Mains, Piping, Storage Tanks, and Equipment Installation and Repair, Wells (new and abandoned)

Water Mains and Piping

Cleaning and Maintenance, Excavation, Installation, and Repair, Joints and Fittings, Leak Detection and Repair, Pipe Selection, Service Line Installation

Water Quality / Water Sources

Coliform Group, Corrosivity, Heterotrophic Bacteria, Organic and Inorganic Contaminants, pH, Conductivity, Hardness, and Turbidity, Unidirectional Flushing, Waterborne Diseases, Groundwater, Wells, Sanitary Survey

*(Items marked "1-5" may be on the D1 – D5 exams)

** (Items marked "2-5" may be on the D2 – D5 exams but not on the D1 exam)

Disinfection

Water Main Disinfection

- 1-5 Knowledge of water main disinfectant techniques
- 1-5 Knowledge of dechlorination techniques
- 1-5 Ability to apply disinfectant
- 1-5 Knowledge of AWWA disinfection standards for water mains

Well Disinfection

- 1-5 Knowledge of contamination sources in a well
- 1-5 Ability to calculate a disinfectant dosage
- 1-5 Knowledge of well disinfection techniques
- 1-5 Knowledge of water depth measurement techniques
- 1-5 Knowledge of AWWA disinfection standards for wells
- 1-5 Ability to measure the water depth in a well
- 1-5 Ability to calculate the volume of a well

Storage Reservoir Disinfection

- 1-5 Knowledge of water storage contamination sources
- 1-5 Ability to calculate the volume of a storage reservoir

Water Math

- 1-5 Ability to convert water units
- 1-5 Ability to convert units of volume, area, pressure and time
- 1-5 Ability to convert pressure to feet of head
- 1-5 Ability to calculate a disinfectant dosage
- 1-5 Ability to measure the water depth in a well
- 1-5 Ability to calculate well draw down
- 1-5 Ability to calculate the volume of a cylinder, rectangle and square
- 1-5 Ability to calculate the volume of a well, storage reservoir, pipe, trench
- 1-5 Ability to calculate flow rates
- 1-5 Ability to calculate the area of a pipe cross-section
- 1-5 Ability to calculate the surface area of a valve face
- 2-5 Ability to calculate total force on a valve
- 2-5 Ability to calculate water velocity
- 2-5 Ability to calculate pipe capacity
- 2-5 Ability to calculate the surface area of the interior walls of a storage reservoir
- 2-5 Ability to convert a scale to actual distance
- 2-5 Ability to convert a pressure reading to depth of water
- 2-5 Ability to calculate chlorine/ammonia ratio for chloramination
- 2-5 Ability to calculate thrust block size
- 3-5 Ability to calculate specific yield of a well
- 3-5 Ability to calculate CT



**WATER DISTRIBUTION
OPERATOR CERTIFICATION PROGRAM**

Final Filing Date

January 4, 2016

July 1, 2016

January 2, 2017

July 3, 2017

Test Dates

March 19, 2016

September 17, 2016

March 18, 2017

September 16, 2017

Exam dates are subject to Department approval.



**Distribution Testing
Locations**

PROPOSED EXAM SITES (Grade D1 – D5)

Central Coast
Fresno
Los Angeles

Redding
Sacramento
San Bernardino

San Diego
San Jose
Vallejo/Concord

Exit sites are in the general vicinity of the cities listed and are subject to change.





Books for Treatment Exam Prep

- ◆ Water Treatment Plant Operations, Volume 1 (CSUS 916-278-6142)
- ◆ Water Treatment Plant Operations, Volume 2 (CSUS 916-278-6142)
- ◆ Water Treatment Operator Training Handbook (AWWA 800-926-7337)



Books for Distribution Exam Prep

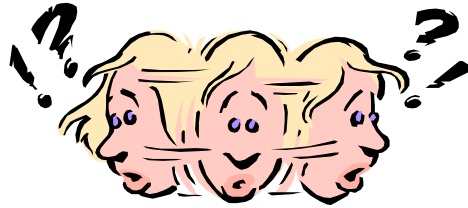
- ◆ Water Distribution System Operation and Maintenance (CSUS 916-278-6142)
- ◆ Small Water System Operation and Maintenance (CSUS 916-278-6142)
- ◆ Water Distribution Operator Training Handbook (AWWA 800-926-7337)





Information Overload!

- ◆ **Expected range of knowledge!!!**
- ◆ Water language
- ◆ Safety
- ◆ Disinfection
- ◆ Water math
- ◆ Attend exam prep workshop



The Tests!

- ◆ 85 multiple choice questions
- ◆ 15 multiple choice math problems
- ◆ Conversion sheet provided
- ◆ Questions can be confusing
- ◆ Must be completed within 3 hours

Test Day

- ◆ The day before...
- ◆ Arrive early the day of the test
- ◆ Bring ID, admittance card, calculator and #2 pencils ONLY
- ◆ Follow proctors directions

Test Day

- ◆ Scan the test briefly
- ◆ Read first 6 questions without answering
- ◆ Eliminate answers that are wrong
- ◆ Pick best response of the remaining answers



Test day

- ◆ Understand exactly what the question is asking
- ◆ Do not leave unanswered questions
No answer = wrong answer
- ◆ Mark guesses & come back to them



Test day

- ◆ Math problems
 - ▶ Show your work (write it down!)
 - ▶ Enter into calculator, write down answer, clear, repeat
 - ▶ Calculator requirements
- ◆ Pace yourself
- ◆ Do not cheat!





Requirements Operator Certification

- ◆ Every public water system is required to have a certified operator
- ◆ Requirements for obtaining certification
- ◆ **Requirements for maintaining certification**
- ◆ Water system classification



Maintaining Certification

- ◆ Certification renewal every 3 years
- ◆ Continuing education required for renewal
 - ▶ Necessary to upgrade/maintain skills
- ◆ Fee (\$\$\$) required for renewal
- ◆ Non-renewal requires retest





Required Continuing Education

Required Continuing Education Contact Hours for Certificate Renewal

<i>Water Treatment Operators</i>	<i>Contact Hours Required</i>
Grade T1	12
Grade T2	16
Grade T3	24
Grade T4	36
Grade T5	36
<i>Distribution Operators</i>	
Grade D1	12
Grade D2	16
Grade D3	24
Grade D4	36
Grade D5	36



And Don't Forget the Fees

Operator Fee Schedule

<i>Grade</i>	<i>Examination Fee (\$)</i>	<i>Reexamination Fee (\$)</i>	<i>Certification Fee (\$)</i>	<i>Triennial Renewal Fee (\$)</i>
D1 or T1	50	30	70	70
D2 or T2	65	45	80	80
D3 or T3	100	70	120	120
D4 or T4	130	95	140	140
D5 or T5	155	120	140	140





Tips for Maintaining Certification

- ◆ Notify DDW within 60 days of any change of address
- ◆ Keep records of continuing education, including:
 - ▶ Title,
 - ▶ name of the instructor,
 - ▶ location,
 - ▶ date(s), and
 - ▶ number of contact hours



QUIZ Time!

Question 5: Which of the following is not true?





Questions?



*Text your questions and comments
anytime during the session*



Requirements Operator Certification

- ◆ Every public water system is required to have a certified operator
- ◆ Requirements for obtaining certification
- ◆ Requirements for maintaining certification
- ◆ **Water system classification**





Water System Classification

- ◆ Every water system is classified to determine required operator certification grade

Water System Classification

1 2 3 4 5



Smallest, least complex

Largest, most complex



Water System Classification

- ◆ Every water system is classified for:
 - ▶ Distribution system
 - ▶ Treatment facility (N/A for systems that don't treat their water)
- ◆ DDW has classified all water systems in CA





Distribution Classification

- ◆ Based on population served with upgrade of classification for more complex systems (multiple pressure zones, tanks, disinfectants used, PRVs...)

Distribution System Classifications

<i>Population Served</i>	<i>Class</i>
1,000 or less	D1
1,001 through 10,000	D2
10,001 through 50,000	D3
50,001 through 5 million	D4
Greater than 5 million	D5



Treatment System Classification

- ◆ Treatment System Classification is based on:
 - ▶ Raw water quality
 - ▶ Treatment technology used
 - ▶ Disinfectant used
 - ▶ Plant flow (capacity)





Poll Time!

Question 6: At what level is your water system classified?



Resources

- ◆ California Drinking Water Regulations
http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/lawbook/dwregulations-2014-07-01.pdf
- ◆ Water Board web site
http://www.waterboards.ca.gov/drinking_water/programs/index.shtml





**TEST
YOURSELF!**

Test your OpCert knowledge

Test 1: Example of test questions on the state exam.



Session Evaluation

- ◆ Go to file, click on “close or leave session”
- ◆ Evaluation automatically pops up
- ◆ If it does not, one will be e-mailed to you within 24 hours
- ◆ We need these for your contact hours!





To contact the trainers...

- ◆ nworthen@rcac.org
- ◆ kbaughman@rcac.org



**5 minute
break**

