RCAC Private Well & Septic Operation and Maintenance Workshops

Rural Community Assistance Partnership, Inc.

Western
Rural Community Assistance Corporation
916/447-2854
www.rcac.org

Midwest
Midwest Assistance Program
952/758-4334
www.map-inc.org

Southern
Communities Unlimited
479/443-2700
www.crg.org

Northeast
RCAP Solutions
800/488-1969
www.rcapsolutions.org

Great Lakes
WSOS Community Action Commission
800/775-9767
www.glrcap.org

Southeast
Southeast Rural Community Assistance Project
866/928-3731
www.southeastrcap.org

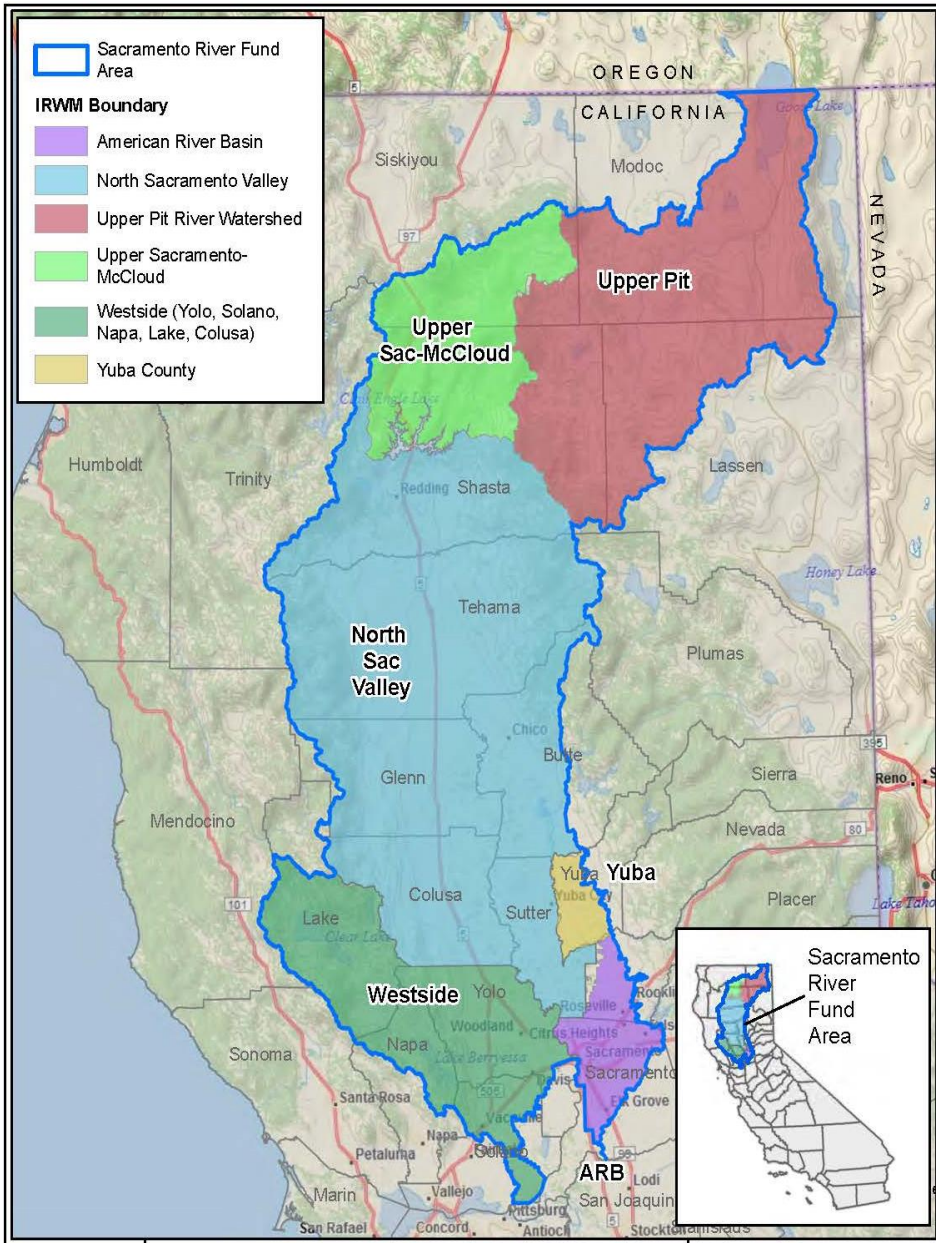
RCAP National Office
1701 K St. NW, Suite 700
Washington, DC 20006
(800) 321-7227
www.rcap.org | info@rcap.org

800/321-7227
www.rcap.org

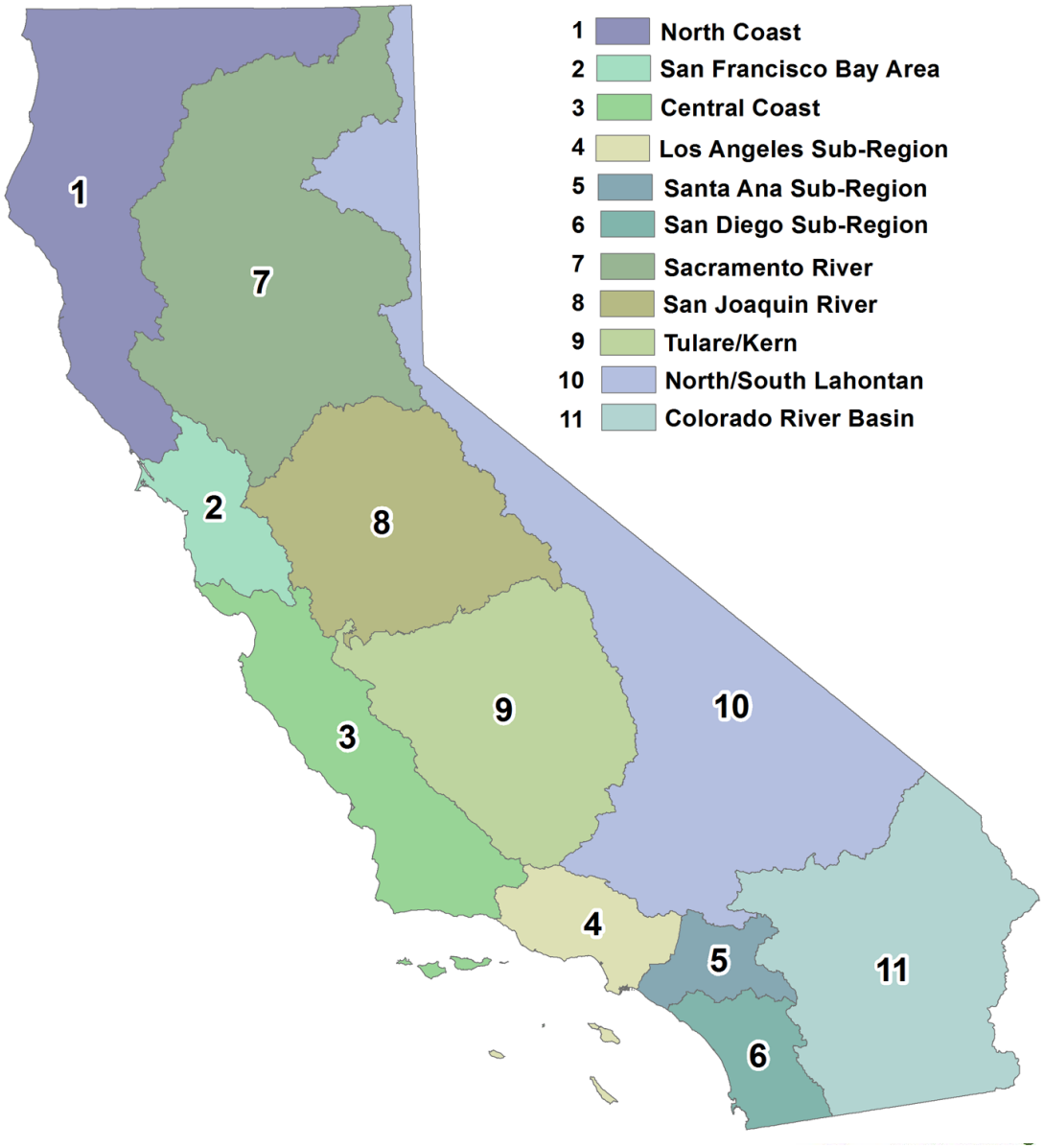
RCAC
www.rcac.org

This Workshop is sponsored by the Sacramento River Funding Area Disadvantaged Community Involvement Program, a grant funded program supported by the California Department of Water Resources' Integrated Regional Water Management Program

For more information on the DWR DACI-Program go to: https://water.ca.gov/Work-With-Us/Grants-And-Loans/IRWM-Grant-Programs/Proposition-1/DAC-Involvement-Program



All Prop 1 Funding Areas



The SRFA-DACI-Program is three-year program specifically targeting the water and wastewater needs of disadvantaged communities within the SRFA boundary.

The goals of the DACI Program are to:

(1) Engage DAC organizations, water purveyors and stakeholders in IRWM

(2) Identify the water and wastewater management needs of DACs

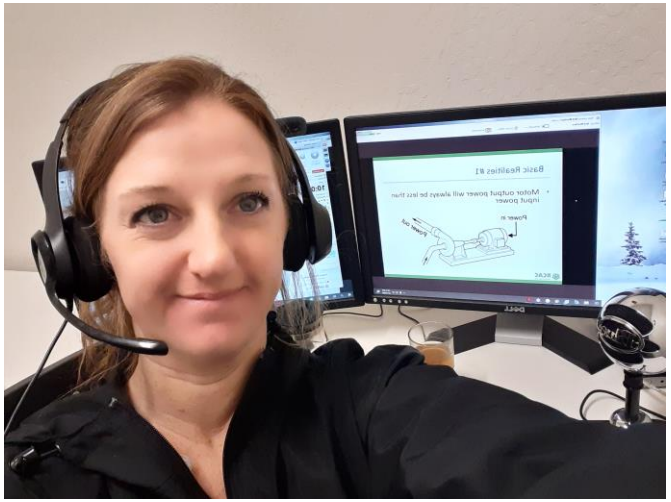
(3) Develop strategies and solutions for DAC water management needs.

This Workshop was developed to address key needs that have been identified for DAC communities and/or water providers in this region.

For questions on the SRFA DACIP Program and how to engage with your IRWM please contact:
JoAnna Lessard (joanna.Lessard@fishsciences.net) or Katie Burdick (katie@burdico.net)

RCAC
www.rcac.org

Today's Trainer and Moderator



Katrina Hiott
Rural Development
Specialist II
Pollock Pines, CA

Phillip Rice
Rural Development
Specialist
West Sacramento, CA

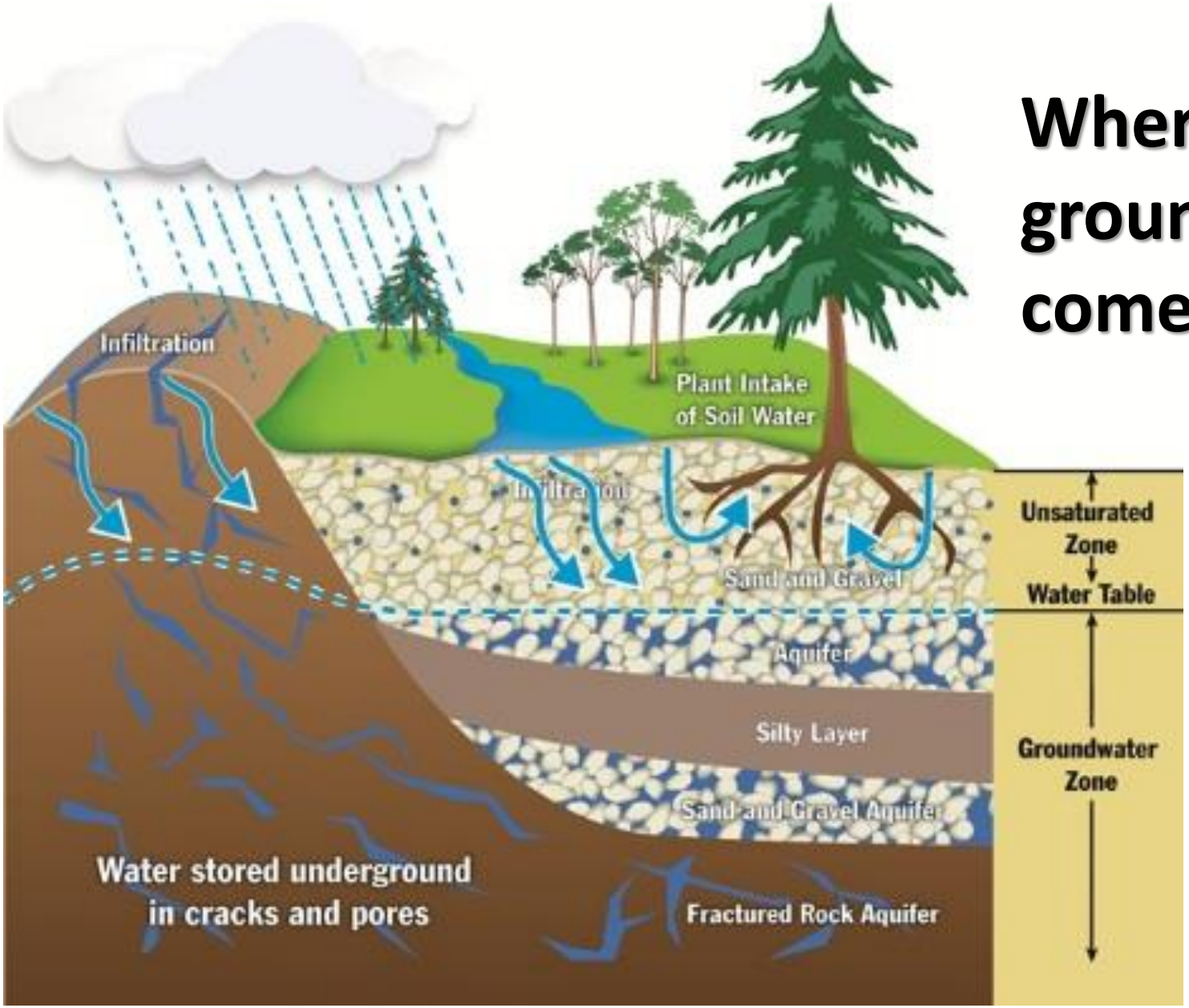
RCAC
www.rcac.org

Workshop Agenda

- Groundwater and Water Cycle
- Well system components and how they work.
  - Surface Features
  - Subsurface Features
- Contaminants and how your well may be vulnerable.
- Importance of water quality.
- Septic System function
- Water conservation
- Do's and Don'ts

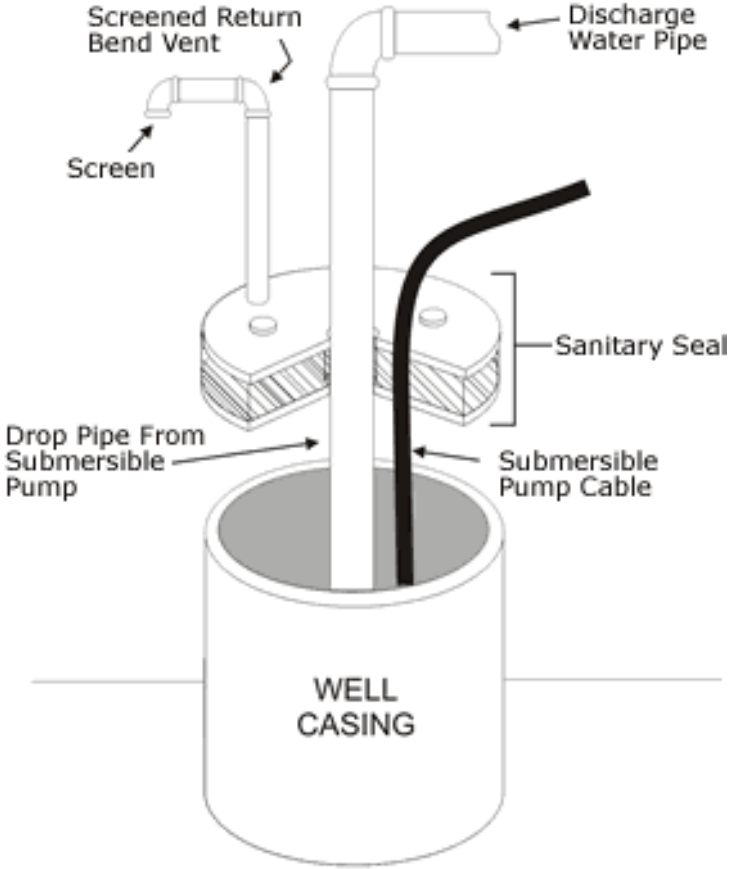
RCAC
www.rcac.org

Where does groundwater come from?



RCAC
www.rcac.org

Well Surface Features



RCAC
www.rcac.org

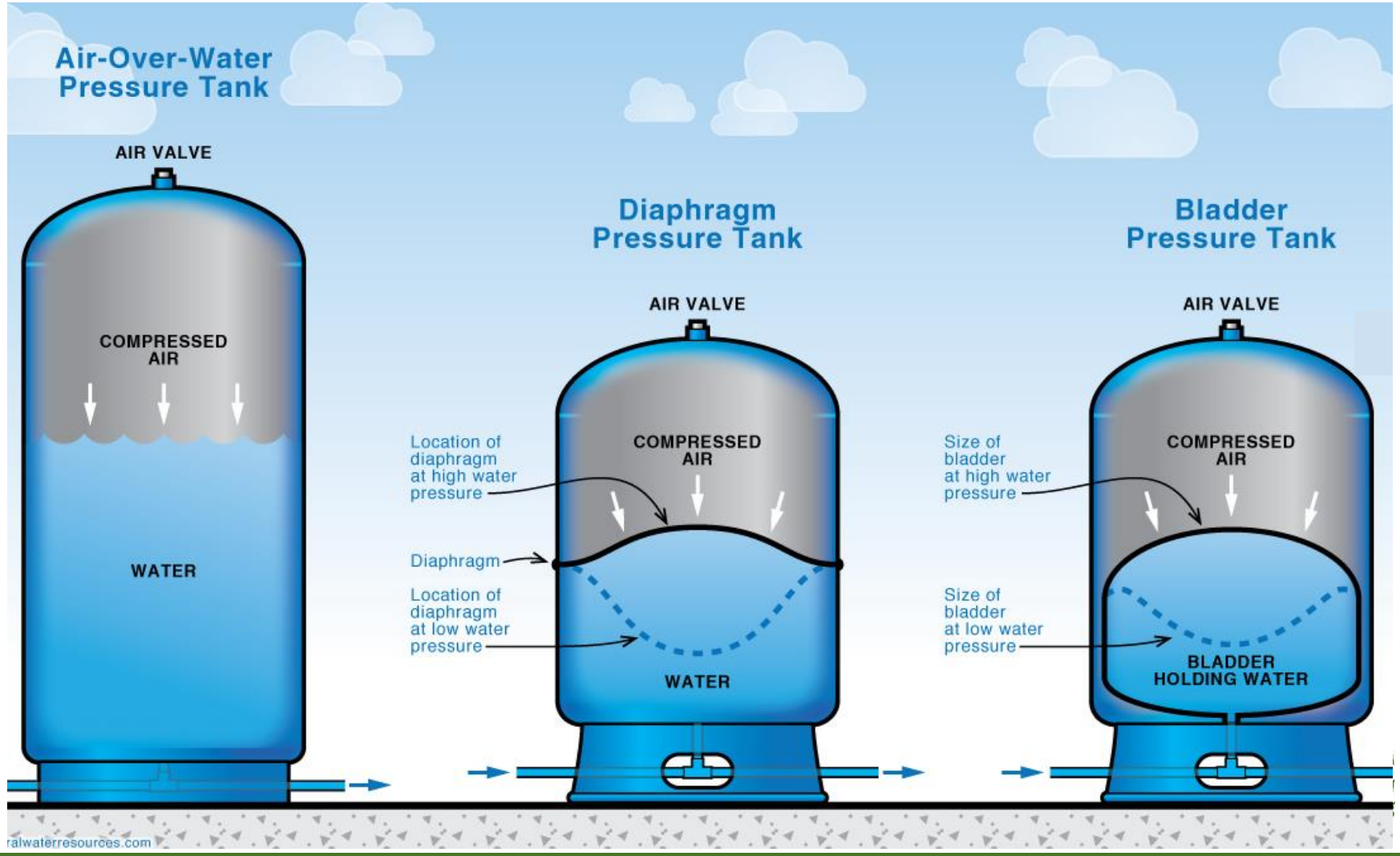
Other Vent Types

Vent Tube

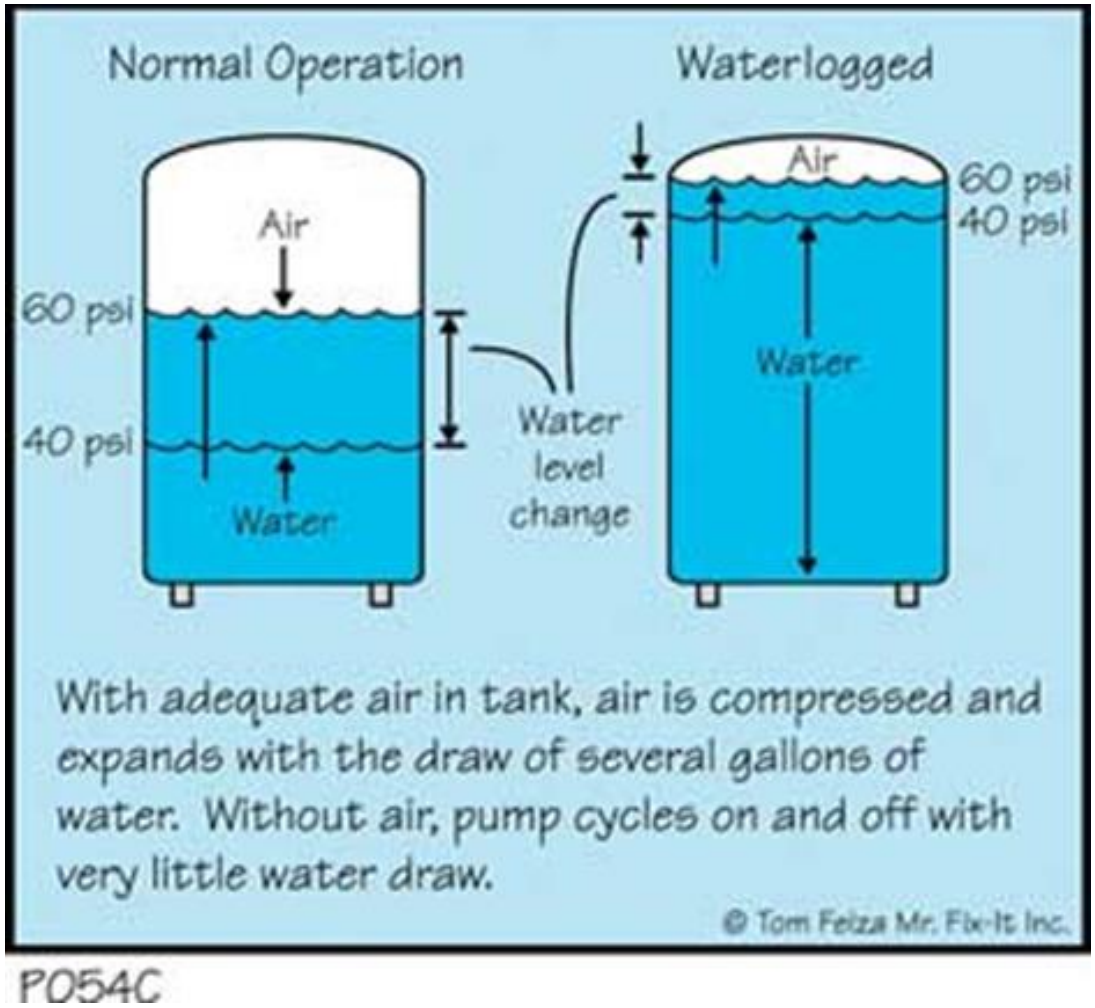
Snifter Valve

RCAC
www.rcac.org

Pressure Storage Tanks



Protect Your Pump



P054C

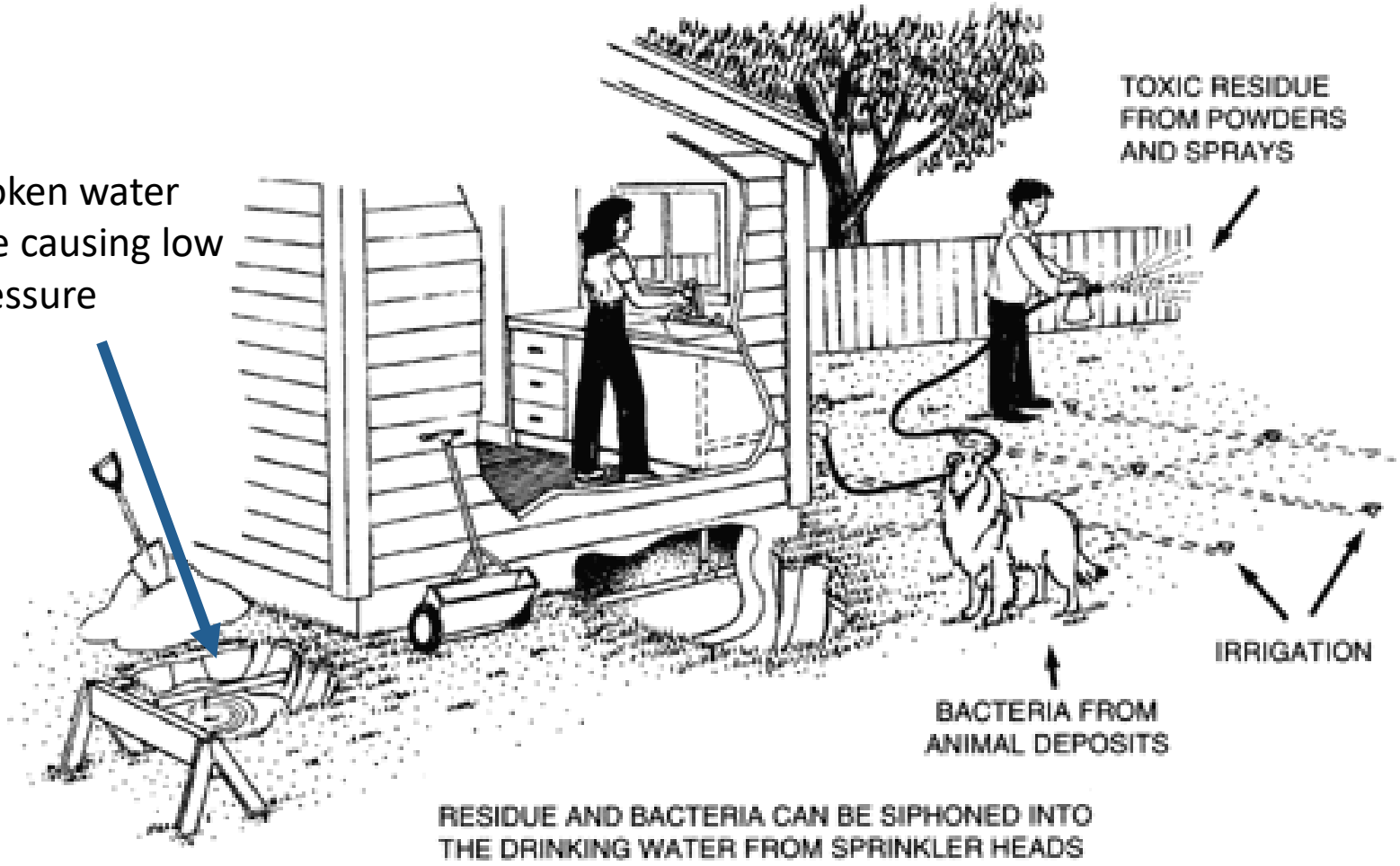
RCAC
www.rcac.org

Inline Jet Pump/ Booster Pump

RCAC
www.rcac.org

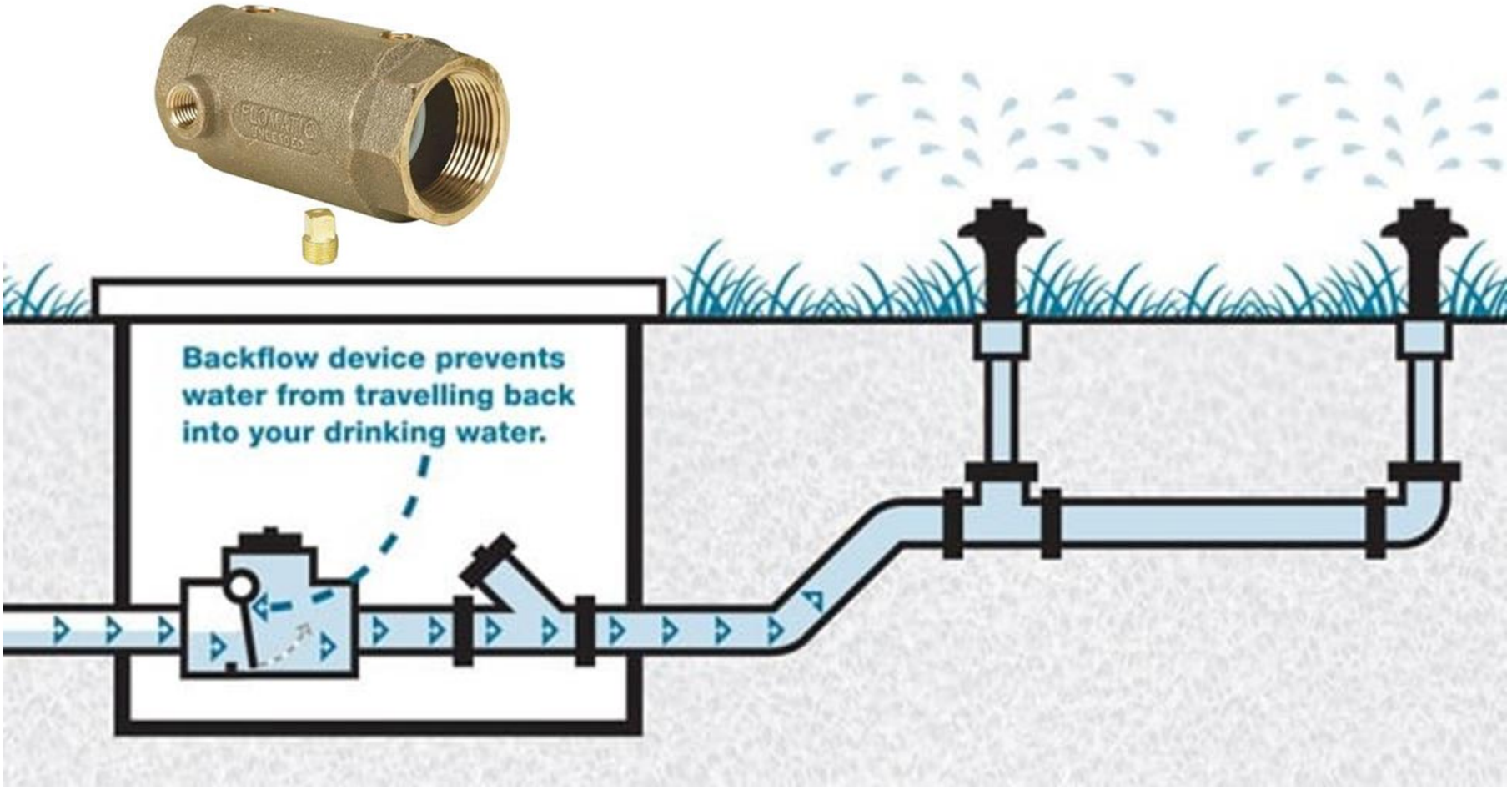
Backflow and Cross Connections

Broken water line causing low pressure



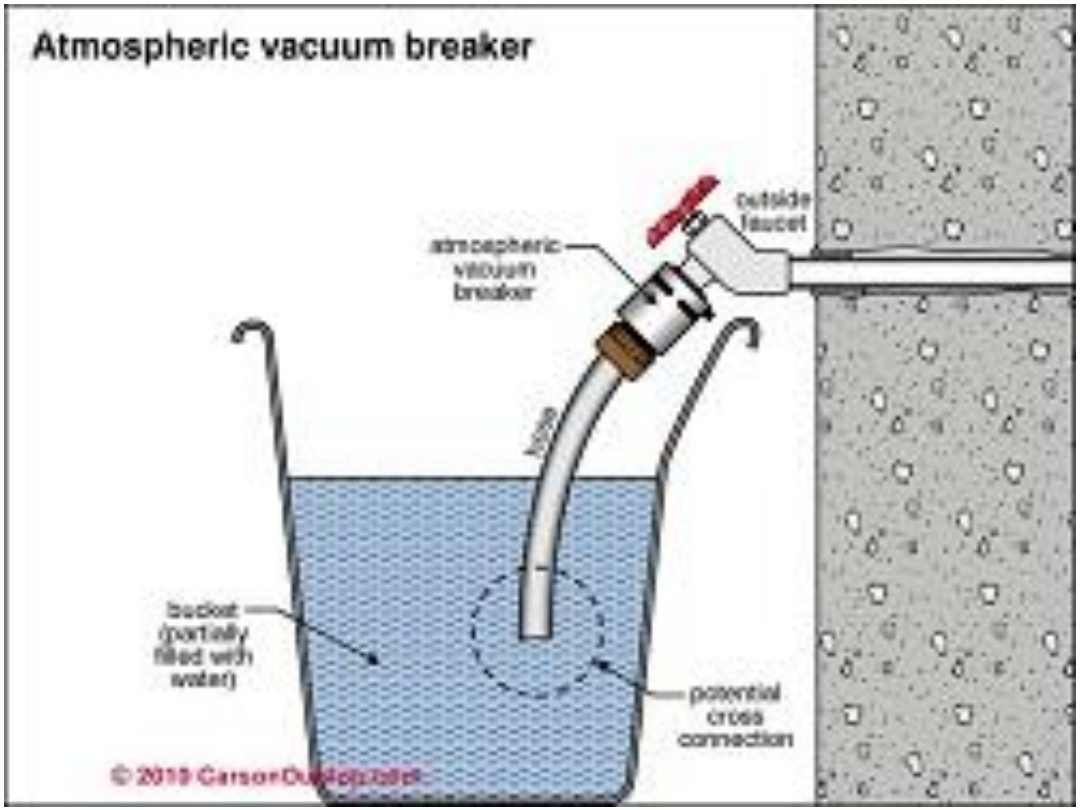
RCAC
www.rcac.org

Prevention is Key!



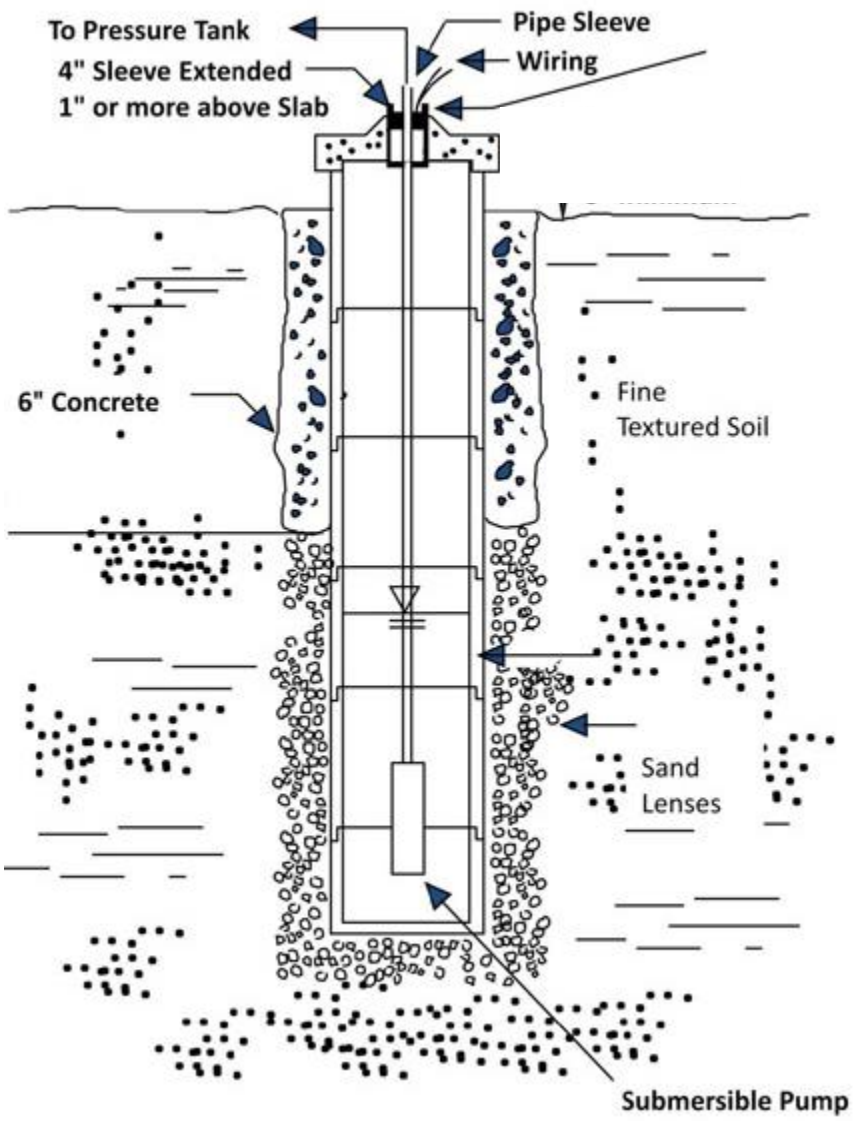
RCAC
www.rcac.org

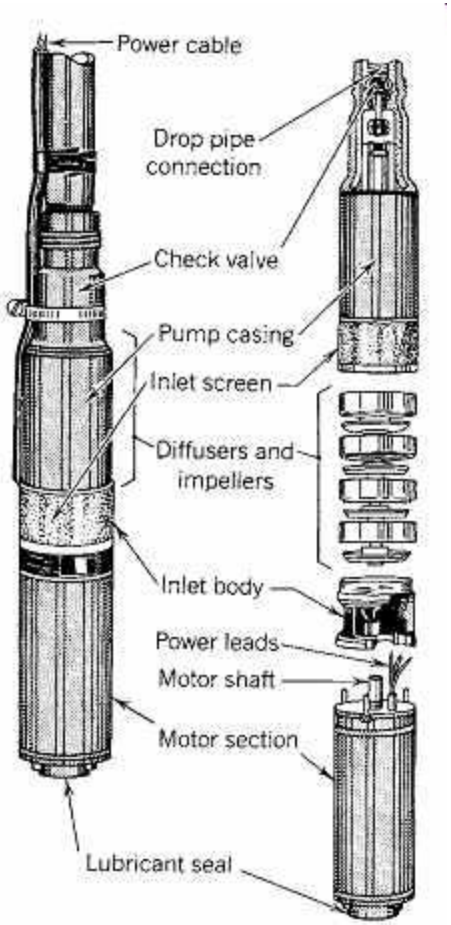
Prevention is Key!



RCAC
www.rcac.org

Well Construction Below the Surface

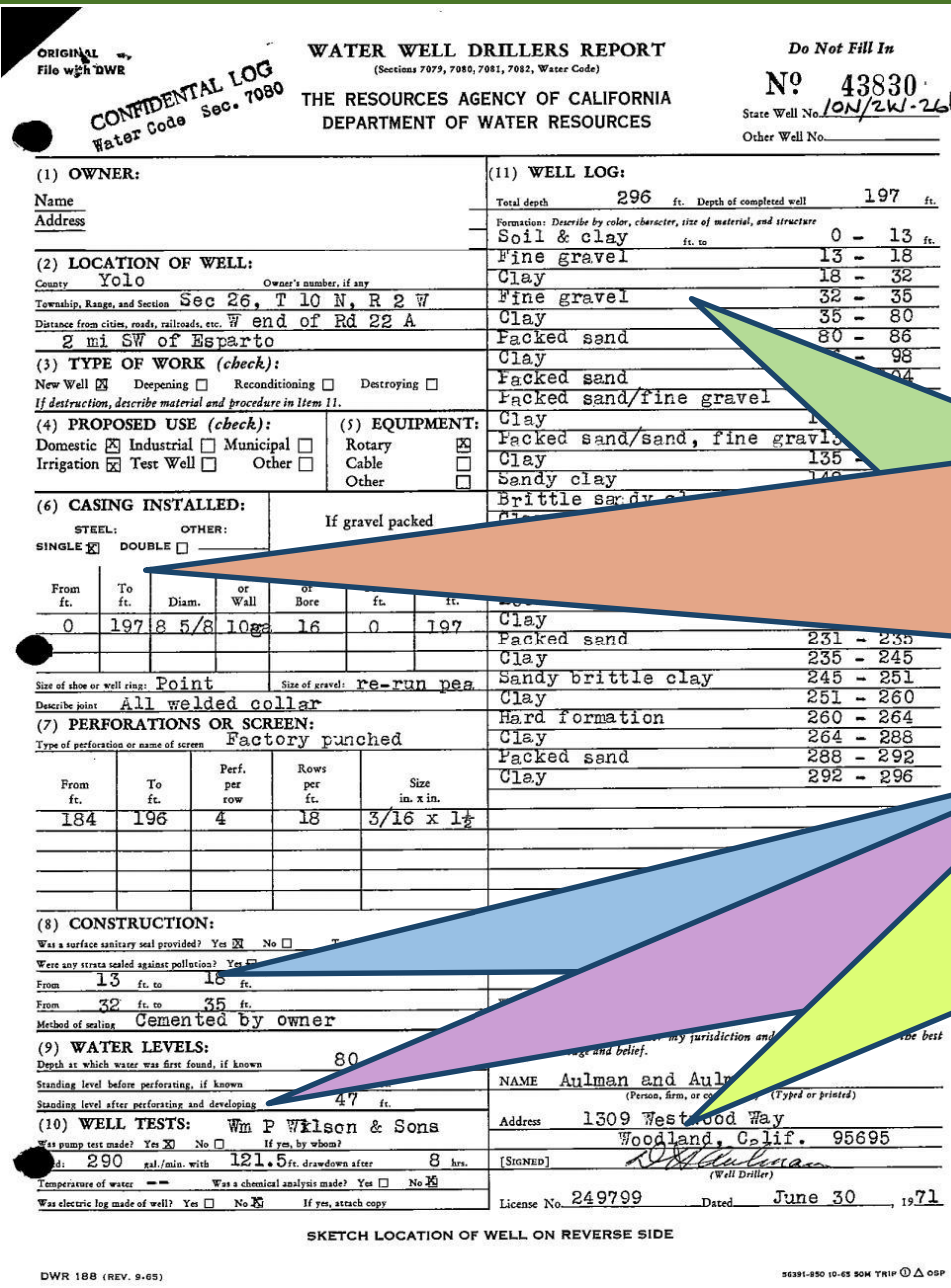




RCAC
www.rcac.org

Well Completion Report

- Contractor name and contact info



ORIGINAL
File with DWR

CONFIDENTIAL LOG
Water Code Sec. 7080

WATER WELL DRILLERS REPORT
(Sections 7079, 7080, 7081, 7082, Water Code)
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In
No 43830
State Well No. 10N/2W-26K
Other Well No.

(1) **OWNER:**
Name
Address

(2) **LOCATION OF WELL:**
County Yolo Owner's number, if any
Township, Range, and Section Sec 26, T 10 N, R 2 W
Distance from cities, roads, railroads, etc. W end of Rd 22 A
2 mi SW of Esparto

(3) **TYPE OF WORK** *(check)*:
New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐
If destruction, describe material and procedure in Item 11.

(4) **PROPOSED USE** *(check)*:
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

(5) **EQUIPMENT:**
Rotary ☒
Cable ☐
Other ☐

(6) **CASING INSTALLED:**
STEEL: OTHER:
SINGLE ☒ DOUBLE ☐

From ft.	To ft.	Diam.	or Wall	of Bore	ft.	ft.
0	197	8 5/8	10ga	16	0	197

If gravel packed
Size of shoe or well ring: Point
Size of gravel: re-run pea
Describe joint All welded collar

(7) **PERFORATIONS OR SCREEN:**
Type of perforation or name of screen Factory punched

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
184	196	4	18	3/16 x 1½

(8) **CONSTRUCTION:**
Was a surface sanitary seal provided? Yes ☒ No ☐
Were any strata sealed against pollution? Yes ☐
From 13 ft. to 18 ft.
From 32 ft. to 35 ft.
Method of sealing Cemented by owner

(9) **WATER LEVELS:**
Depth at which water was first found, if known 80
Standing level before perforating, if known
Standing level after perforating and developing 47 ft.

(10) **WELL TESTS:** Wm P Wilson & Sons
Was pump test made? Yes ☒ No ☐ If yes, by whom?
290 gal./min. with 121.5 ft. drawdown after 8 hrs.
Temperature of water -- Was a chemical analysis made? Yes ☐ No ☒
Was electric log made of well? Yes ☐ No ☒ If yes, attach copy

(11) **WELL LOG:**
Total depth 296 ft. Depth of completed well 197 ft.
Formation: *Describe by color, character, size of material, and structure*

	ft. to	
Soil & clay	0 -	13 ft.
Fine gravel	13 -	18
Clay	18 -	32
Fine gravel	32 -	35
Clay	35 -	80
Packed sand	80 -	86
Clay	-	98
Packed sand	-	04
Packed sand/fine gravel		
Clay		
Packed sand/sand, fine gravel		
Clay	135 -	
Sandy clay		
Brittle sandy cl		
Clay		
Packed sand	231 -	235
Clay	235 -	245
Sandy brittle clay	245 -	251
Clay	251 -	260
Hard formation	260 -	264
Clay	264 -	288
Packed sand	288 -	292
Clay	292 -	296

...my jurisdiction and ... the best ...ge and belief.

NAME Aulman and Aul...
(Person, firm, or co... (Typed or printed)
Address 1309 Westwood Way
Woodland, Calif. 95695
[SIGNED] D. A. Aulman
(Well Driller)
License No. 249799 Dated June 30, 1971

SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-65)

56391-850 10-65 50M TRIP ⓘ △ OSP

Work started 8/1 19 69, Completed 8/8 19 69

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Aulman and Aulman
(Person, firm, or corporation) (Typed or printed)
Address 1309 Westwood Way
Woodland, Calif. 95695
[SIGNED] D. A. Aulman
(Well Driller)
License No. 249799 Dated June 30, 1971

RCAC
www.rcac.org

Effect of Pumping on Groundwater

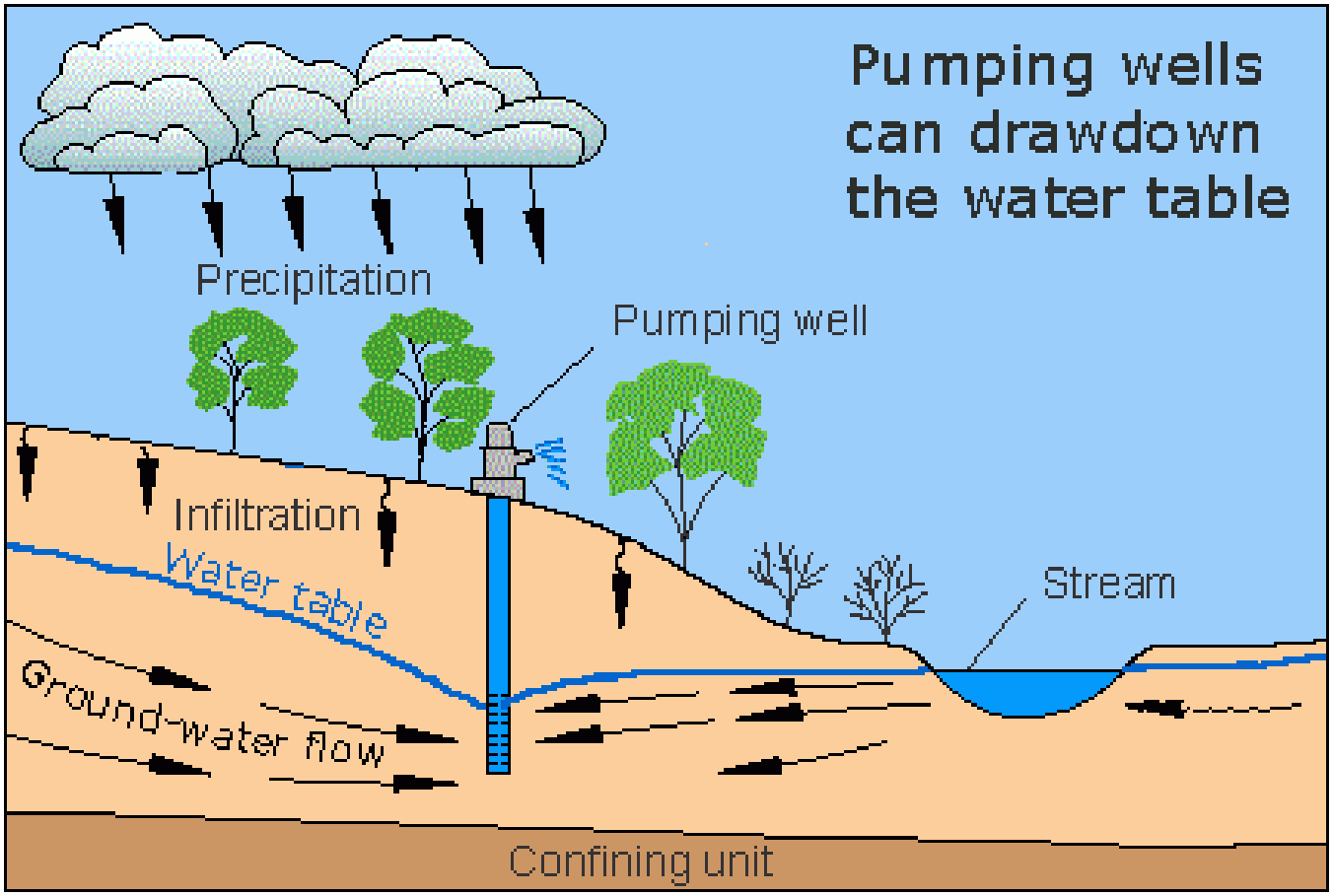
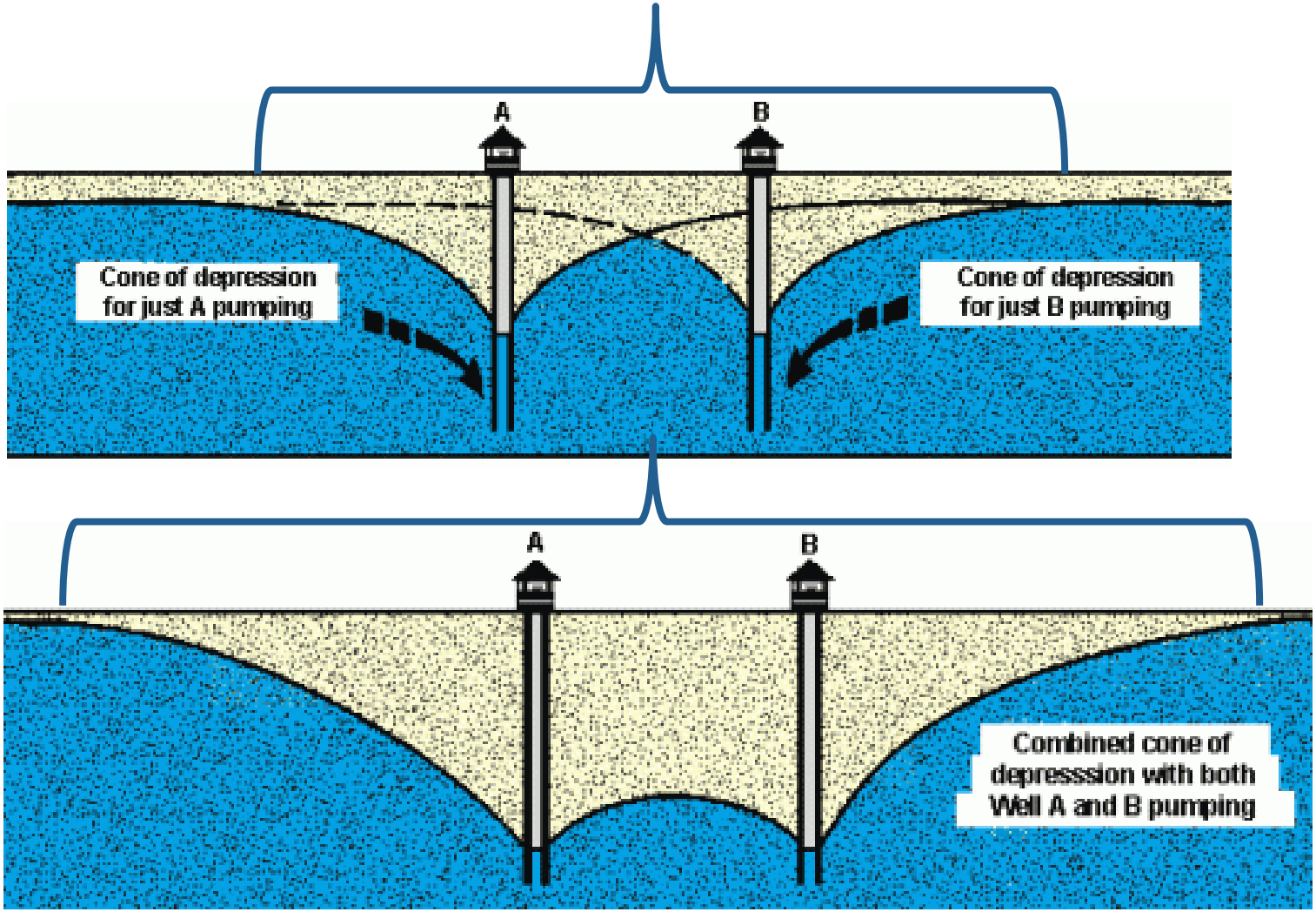


Image Courtesy of https://water.usgs.gov

RCAC
www.rcac.org

Area of Influence



http://wellwater.oregonstate.edu

RCAC
www.rcac.org

Contamination

How does it happen?

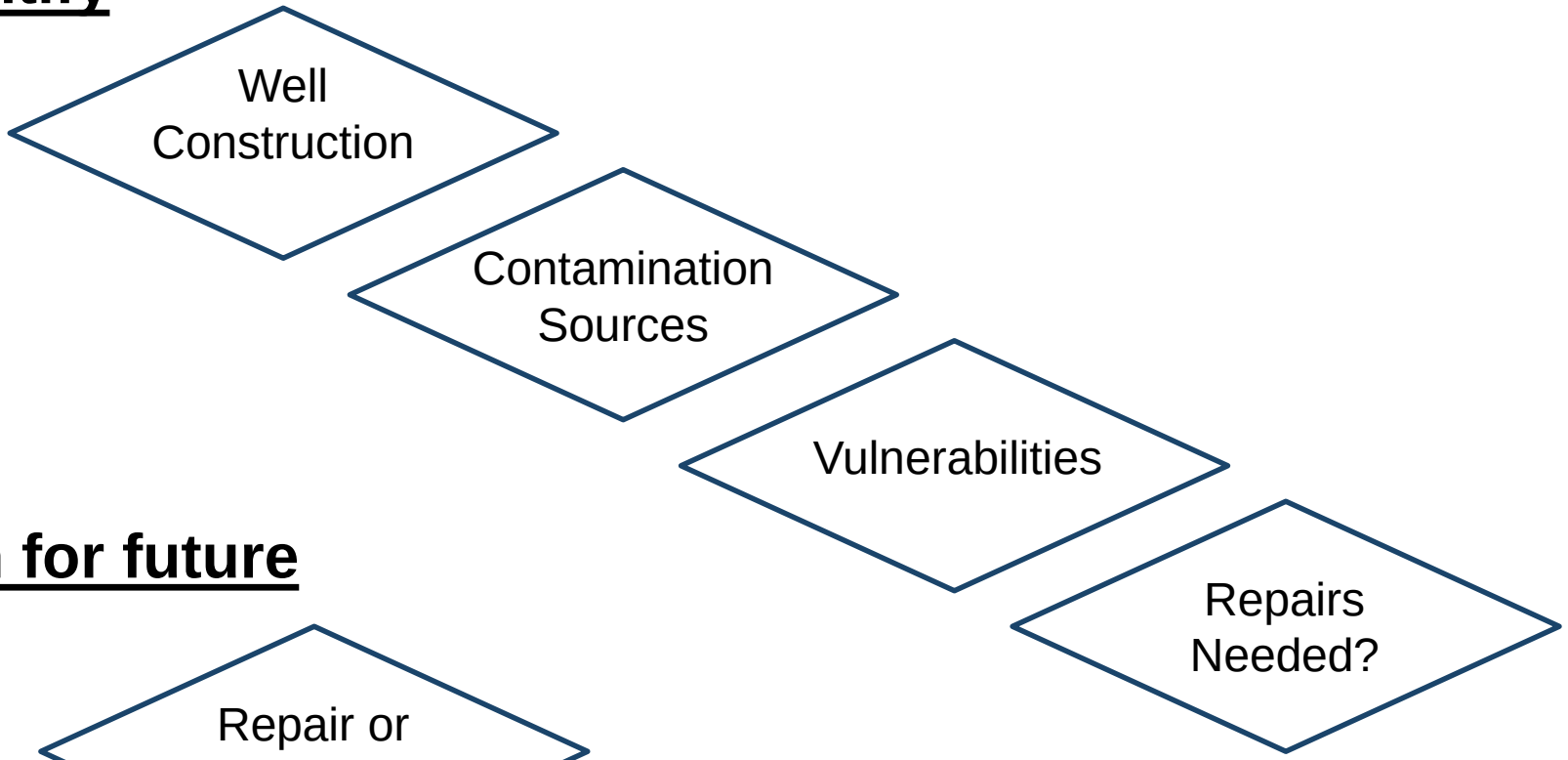
What can get in my well?

Why is it a problem?

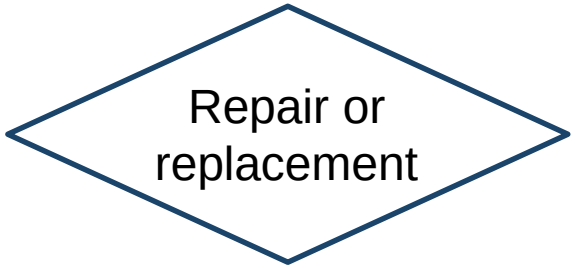
RCAC
www.rcac.org

How do you protect your well?

Identify



Plan for future



RCAC
www.rcac.org

Well Vulnerabilities

Well construction deficiencies and environmental conditions that allow potential contamination to enter the well.

RCAC
www.rcac.org

Well Vulnerabilities

Openings in well cap and/or sanitary seal can allow contaminants to enter the well.

RCAC
www.rcac.org

Well Vulnerabilities

Soap Test:
Dilute dish soap into water and pour over the well head.
Open valve until the pump turns on, then close.
Watch for bubbles when the pump turns on and off.

RCAC
www.rcac.org

Well Vulnerabilities

No cement base or insufficient/damaged base.

RCAC
www.rcac.org

Well Vulnerabilities

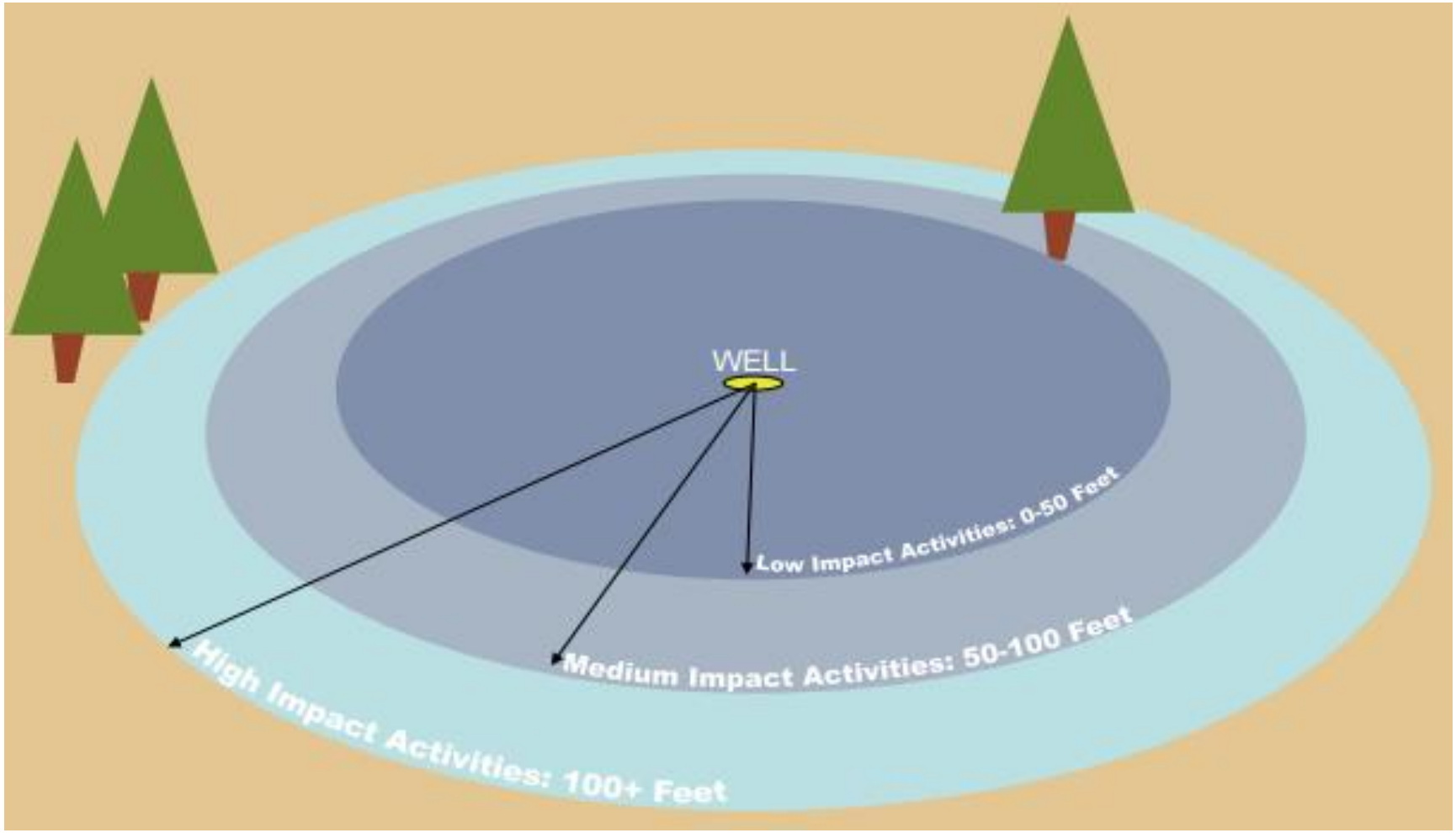
Inactive Wells

- Direct conduit for surface contaminates to enter your aquifer.
- Safety hazard for people and animals.

Abandoned wells should be destroyed under county permit.

RCAC
www.rcac.org

Contamination Source Set-back Distances



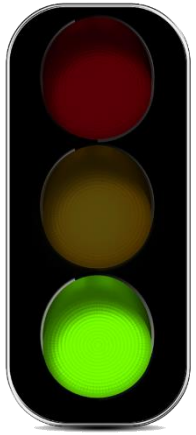
RCAC
www.rcac.org

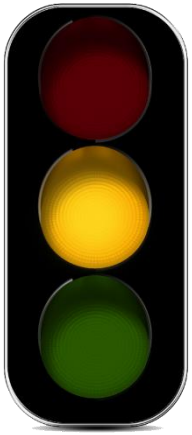
"A Guide for Private Domestic Well Owners", March 2015, California Water Boards

Land Use Considerations

Low Impact (0-50 feet)

- Recreation area
- House
- Outdoor furniture and play areas





Medium Impact

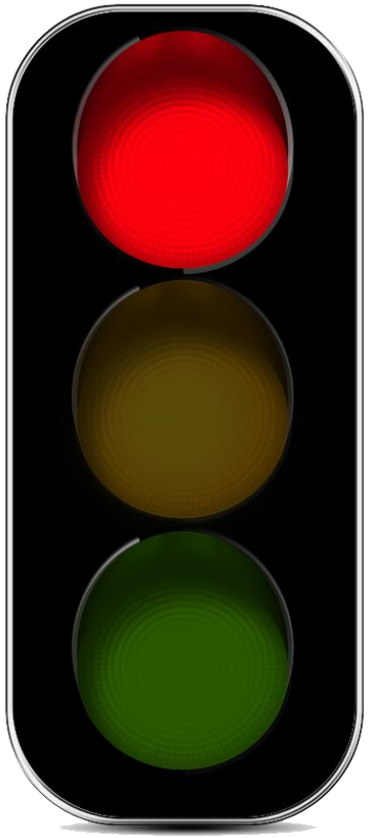
- Garage
- Boat
- City Sewer lines

RCAC
www.rcac.org

Land Use Considerations

High Impact

- **Chemical storage**
- **Animal enclosures**
- **Manure/compost piles**
- **Machine/ auto repair**
- **Septic system**



RCAC
www.rcac.org

Contamination Source Set-back Distances

Potential Pollution or Contamination Source	Minimum Horizontal Separation Distance Between Well and Known or Potential Source
Any sewer (sanitary, industrial, or storm; main or lateral)	50 feet
Watertight septic tank or subsurface sewage leaching field	100 feet
Cesspool or seepage pit	150 feet
Animal or fowl enclosure	100 feet

Well house or storage shed?

- Pesticides
- Motor oil
- Sharp tools
- Paint
- Other chemicals

RCAC
www.rcac.org

Contamination Sources

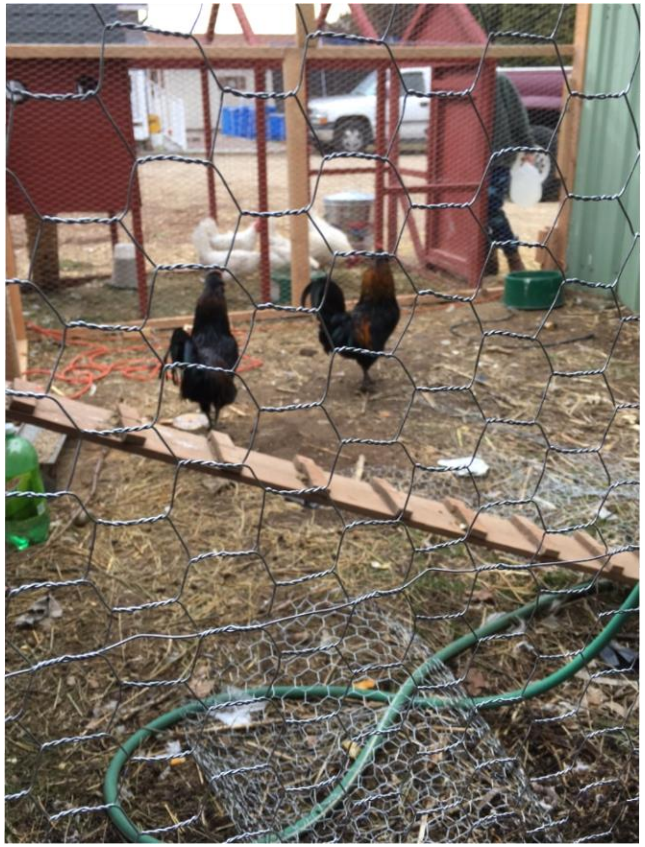
Well Location: Near Storage Tanks

- Hazardous waste and fuel storage tank should be kept at least 100 feet away from your well.
- Any leaking or spills could lead to gasoline products, VOCs and pesticide chemicals in your water.

RCAC
www.rcac.org

"A Guide for Private Domestic Well Owners", March 2015, California Water Boards

Contamination Sources



- Animal enclosures should be 100 feet away from the well system.
- Animal feces are a potential source of high nitrate in your water.

RCAC
www.rcac.org

Contamination Sources

- Overgrowth of vegetation can lead to root intrusion of annular seal.
- Unable to see leaks or damage under leaves.
- Cut or pull vegetation, do not use pesticides or herbicides.

"A Guide for Private Domestic Well Owners", March 2015, California Water Boards

RCAC
www.rcac.org

Signs of Trouble

- High Iron => Red/orange color
- High Copper => Bluish color
- Sulfur => Rotten Egg Smell

But …"Our water tastes great!"

Many of the most acute contaminants cannot be seen, smelled or tasted.

Nitrate - Arsenic - Bacteria

RCAC
www.rcac.org

Test your water!!!

- Test at least annually for Total Coliform and Nitrate. Other constituents of concern, test every 3 – 5 years.
- Less than $100 a year to avoid costly illness.
- Ask your local health department if there are any other chemicals of concern in your area.

RCAC
www.rcac.org

Positive chemical test results, what now?

1. Compare your results to the EPA Maximum Contaminant Level (MCL) for each contaminant.

2. Determine what you need to remove and match the technology which is most effective.

3. Compare options: Costs and complexity (purchase, installation, maintenance and operation) & water waste.

4. Where do you need treated water? Drinking only? Whole house? Multiple buildings?

RCAC
www.rcac.org

Morbidity and Mortality Weekly Report – Nov 10, 2017

Surveillance for Waterborne Disease Outbreaks Associated with Drinking Water – US, 2013-2014

Public health agencies report waterborne disease outbreaks to CDC through the National Outbreak Reporting System (NORS).

First illness occurred in 2013-2014:

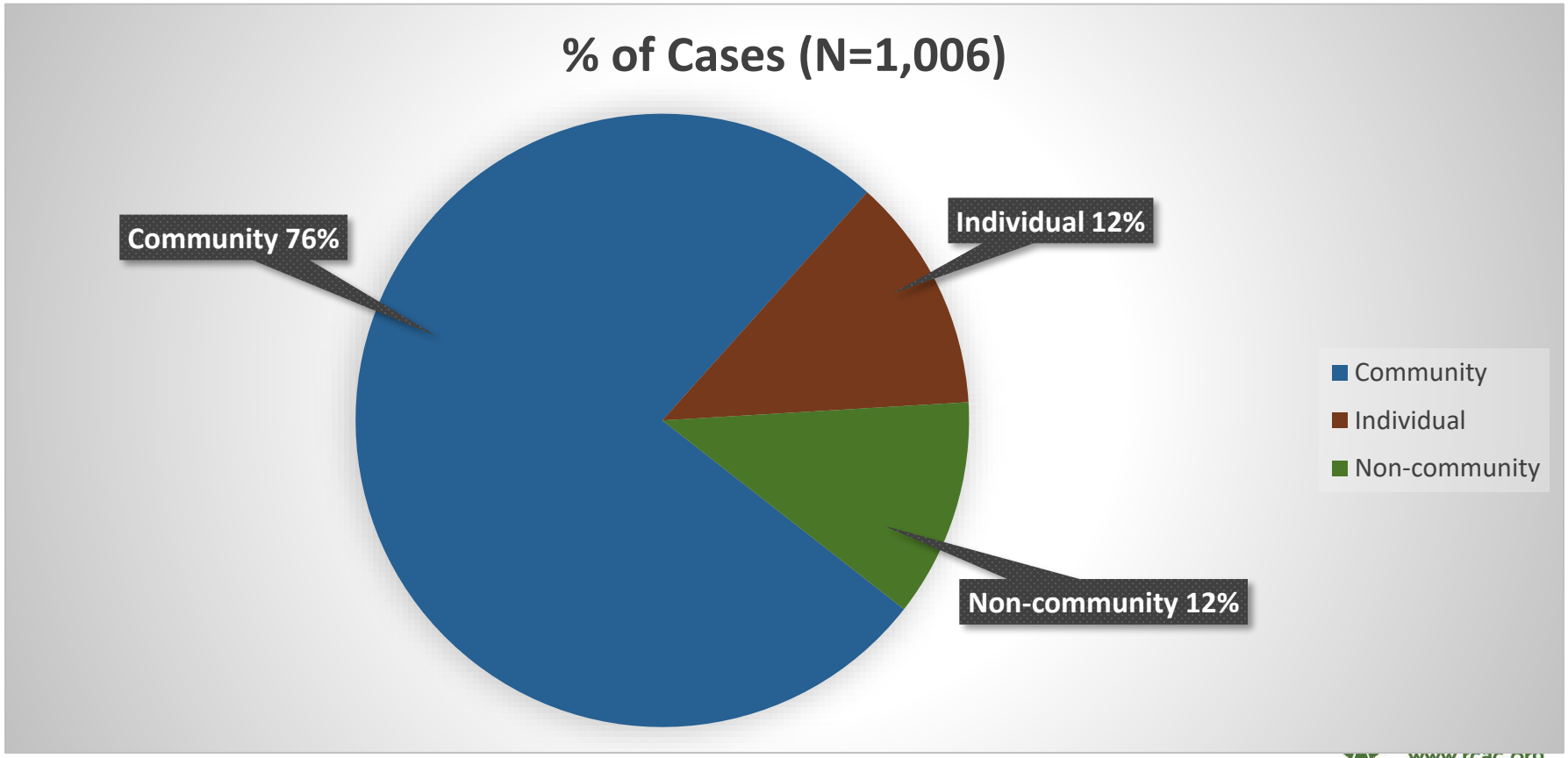
- 42 drinking water-associated outbreaks were reported
- 1,006 cases of illness, 124 hospitalizations and 13 deaths

RCAC www.rcac.org

Morbidity and Mortality Weekly Report – Nov 10, 2017

Surveillance for Waterborne Disease Outbreaks Associated with Drinking Water – US, 2013-2014

- Water system type was individual wells in 124 cases of illness.



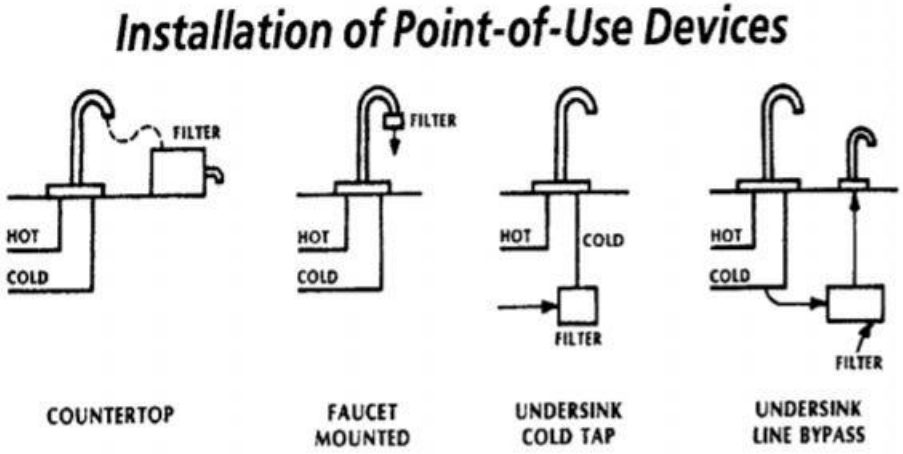
Not All Treatments Are Created Equal

Cases (N = 1,006)	
Category	**No. (%)**
Treatment not expected to remove contaminant	485 (48.2)
Unknown/Insufficient information	143 (14.2)
Legionella spp. in drinking water system	126 (12.5)
Treatment deficiency	119 (11.8)
Untreated ground water	70 (7.0)
Multiple	42 (4.2)
Premise plumbing system	14 (1.4)
Distribution system	7 (0.7)

Benedict KM, Reses H, Vigar M, et al. Surveillance for Waterborne Disease Outbreaks Associated with Drinking Water — United States, 2013–2014. MMWR Morb Mortal Wkly Rep 2017;66:1216–1221. DOI: http://dx.doi.org/10.15585/mmwr.mm6644a3

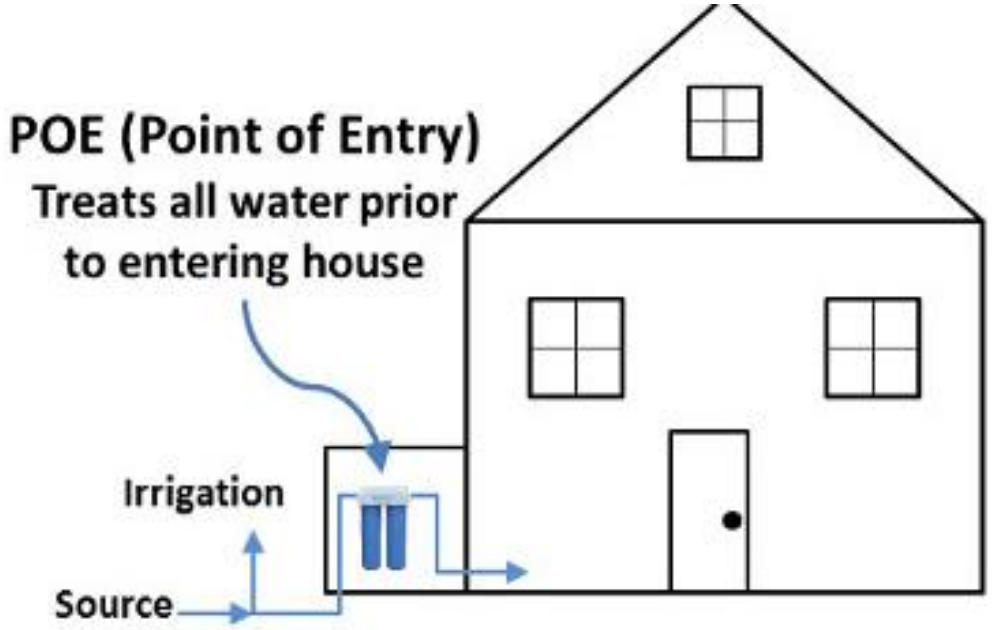
RCAC
www.rcac.org

Point of Use (POU)



RCAC
www.rcac.org

Point of Entry (POE)

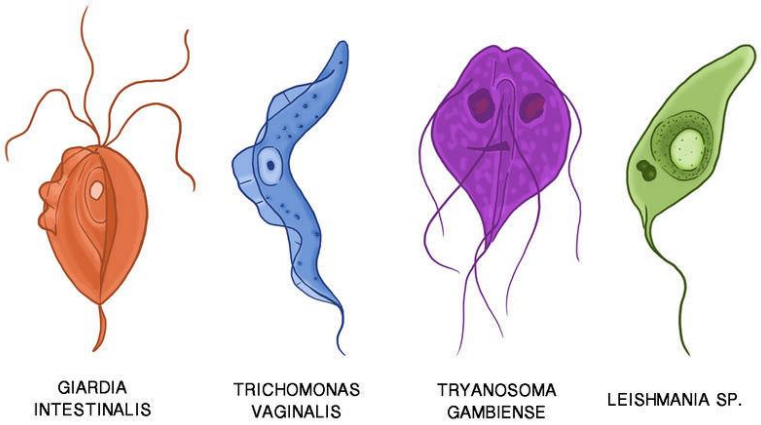


RCAC
www.rcac.org

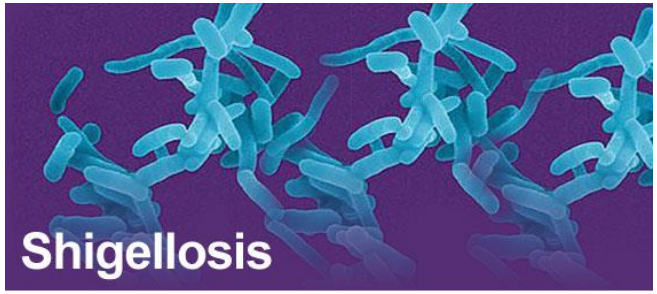
Treatment Techniques - Filtration

Microfiltration (pore size≈ 0.1 micron)

Highly Effective for Protozoa



Moderately Effective for Bacteria

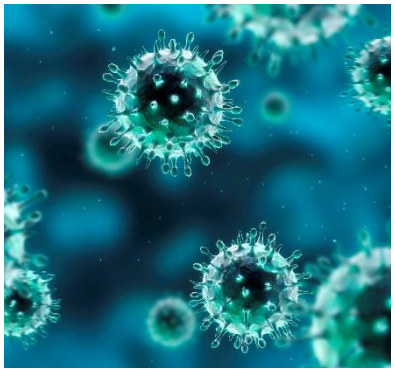


Effectiveness

Size

NOT Effective for:

Viruses



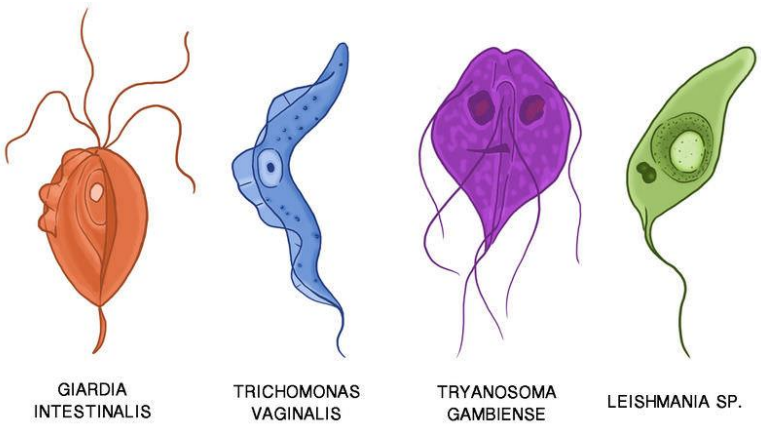
Chemicals

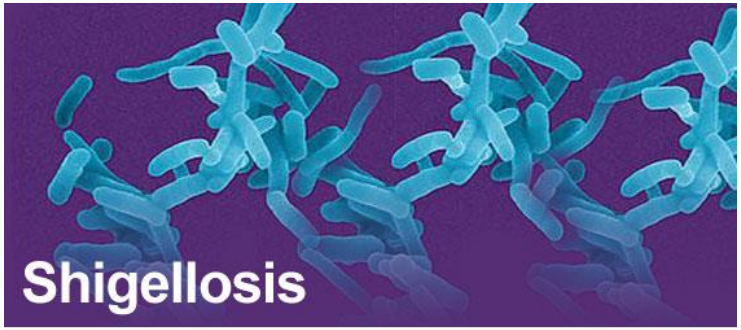
RCAC
www.rcac.org

Treatment Techniques - Filtration

Ultrafiltration (pore size≈ 0.01 micron)

Highly Effective for Protozoa & Bacteria

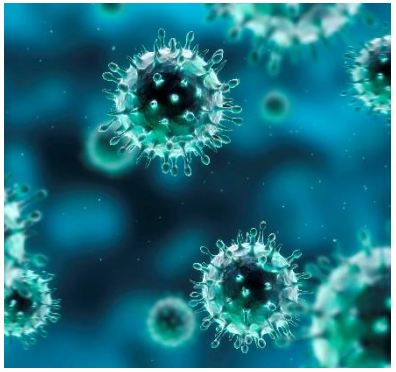




Effectiveness

Size

Moderately Effective for Viruses



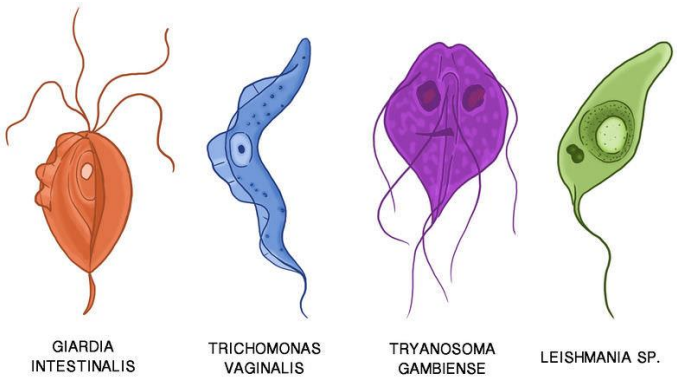
Low Effectiveness for Chemicals

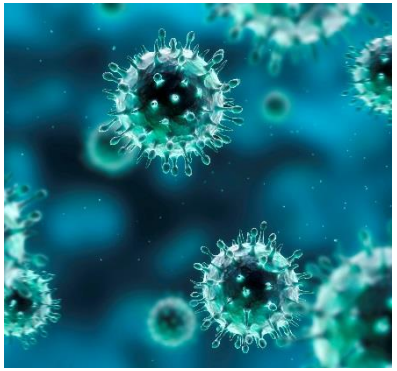
RCAC
www.rcac.org

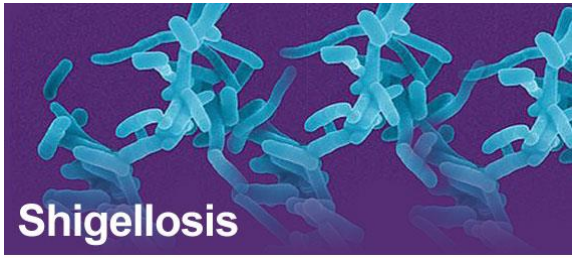
Treatment Techniques - Filtration

Nanofiltration (pore size≈ 0.001 micron)

Very High Effective for Protozoa, Bacteria & Viruses





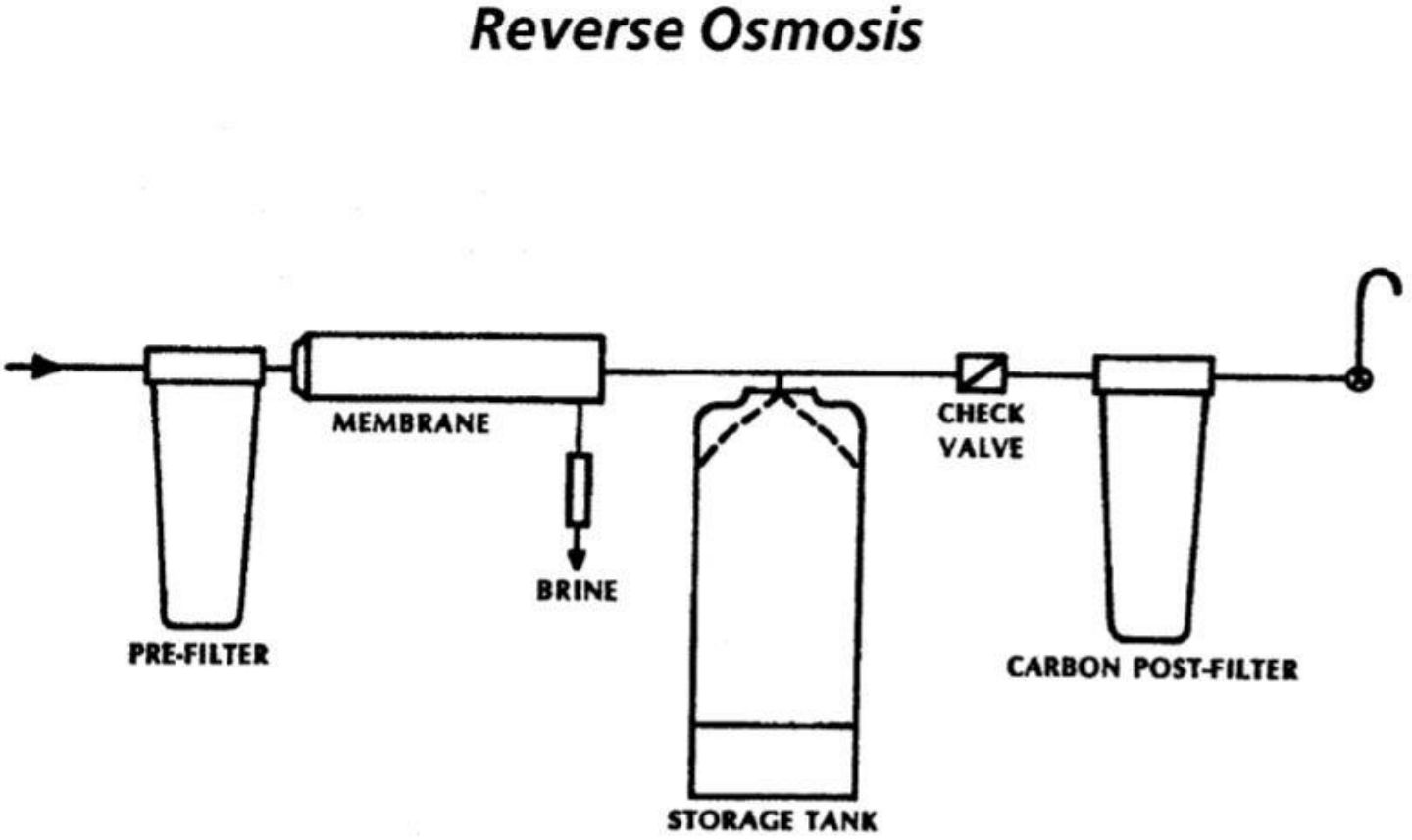


Moderate Effectiveness for Chemicals

RCAC
www.rcac.org

Treatment Techniques – Reverse Osmosis

Semi-permeable Membrane (pore size≈ 0.0001 micron)

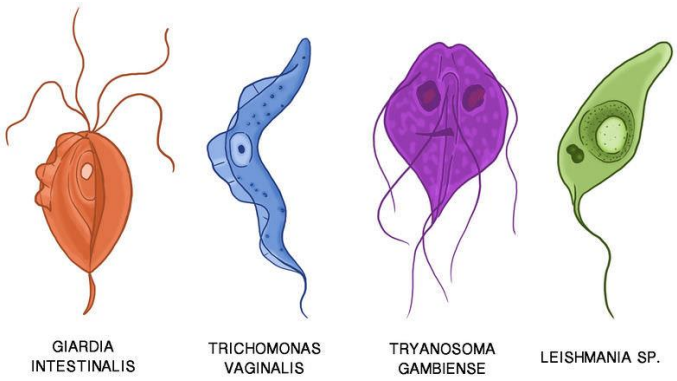


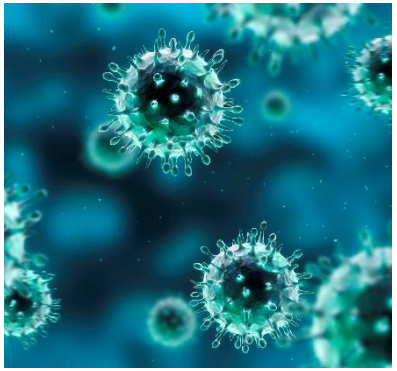
RCAC
www.rcac.org

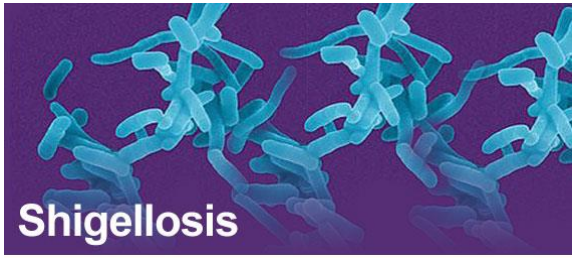
Treatment Techniques – Reverse Osmosis

Semi-permeable Membrane (pore size≈ 0.0001 micron)

Very Highly Effective for Protozoa, Bacteria & Viruses







Effective Removal of Common Contaminants:

- Sodium
- Chloride
- Copper
- Chromium
- Lead

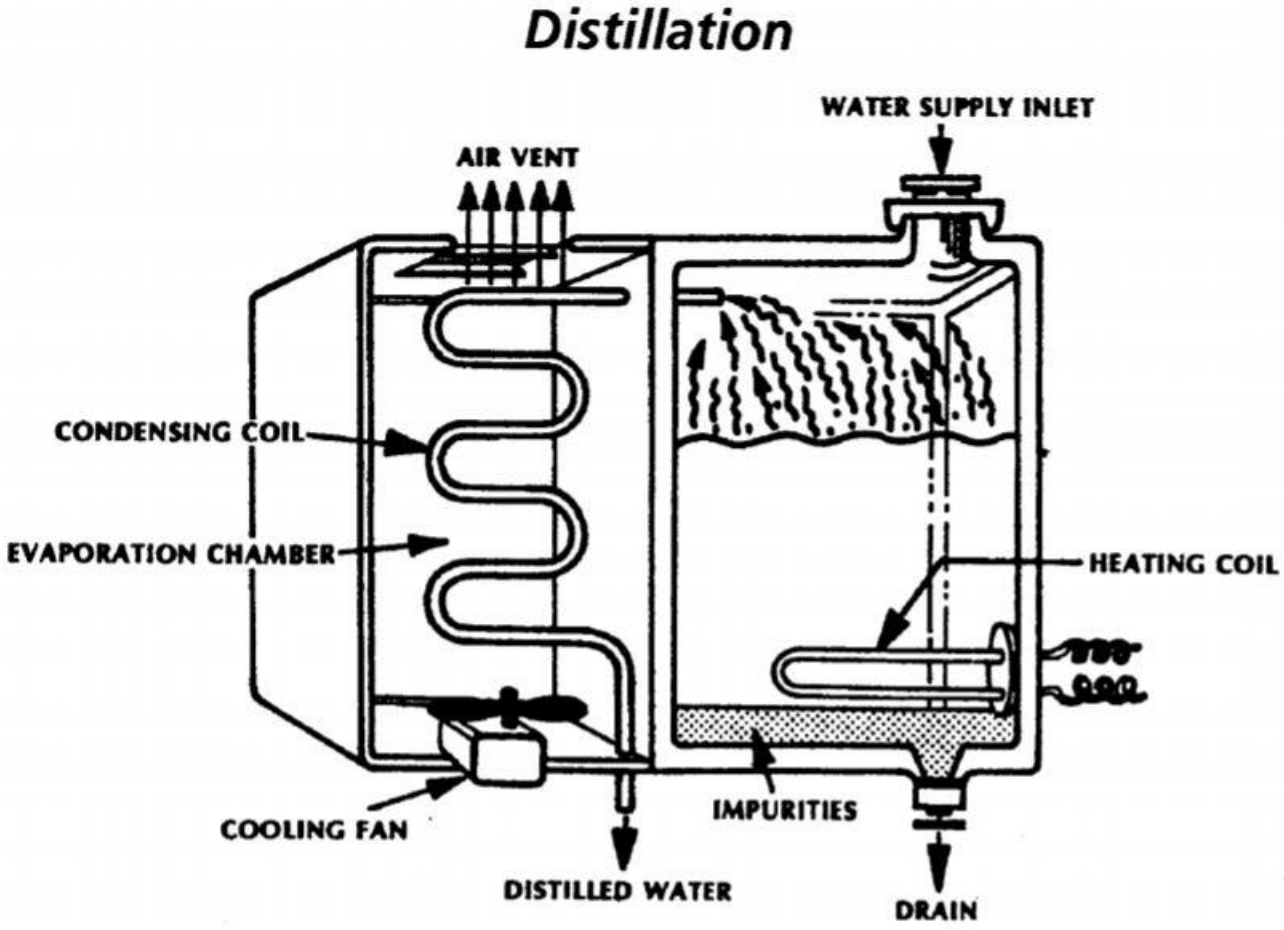
MAY Remove:

- Arsenic
- Fluoride
- Radium
- Sulfate
- Calcium
- Magnesium
- Potassium
- Nitrate
- Phosphorus

RCAC
www.rcac.org

Treatment Techniques – Distillation

Heat liquid water to vapor, then condense and collect

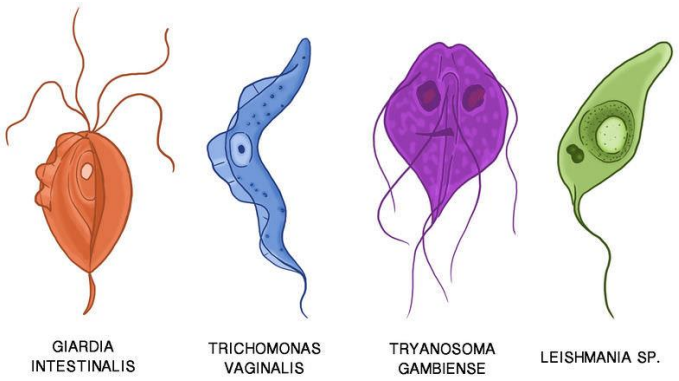


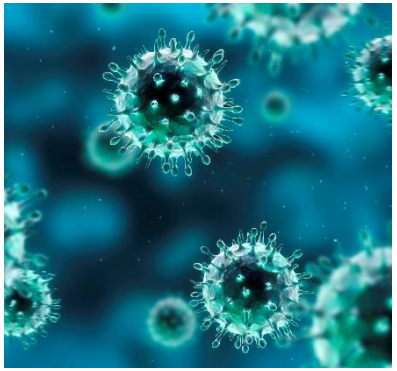
RCAC
www.rcac.org

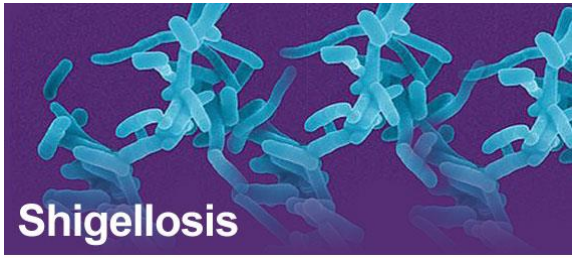
Treatment Techniques – Distillation

Heat liquid water to vapor, then condense and collect

Very High Effective for Protozoa, Bacteria & Viruses







Effective Removal of Common Contaminants Including:

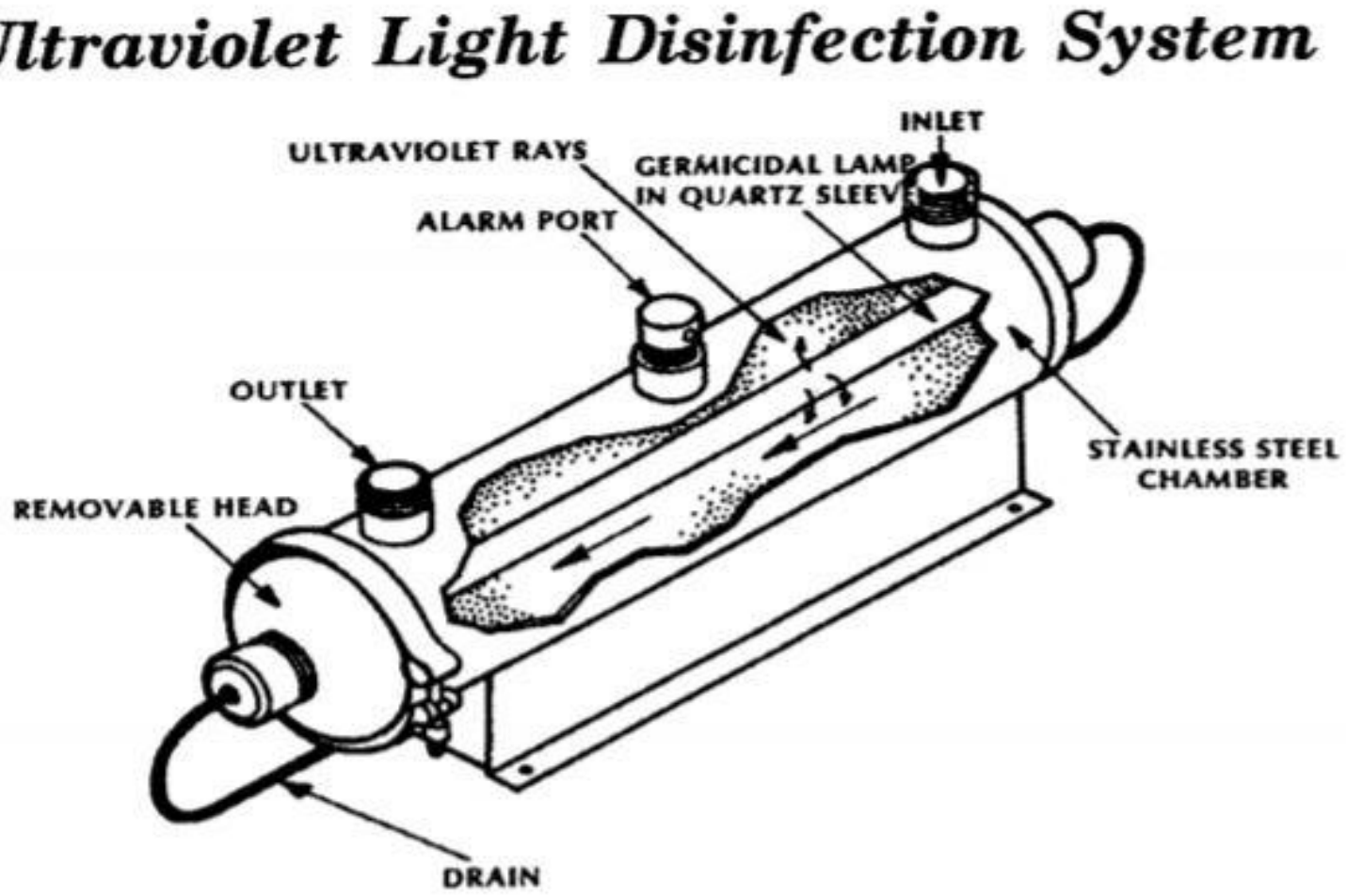
- Sodium
- Chloride
- Copper
- Chromium
- Lead

- Arsenic
- Fluoride
- Radium
- Sulfate
- Calcium

- Magnesium
- Potassium
- Nitrate
- Phosphorus

RCAC
www.rcac.org

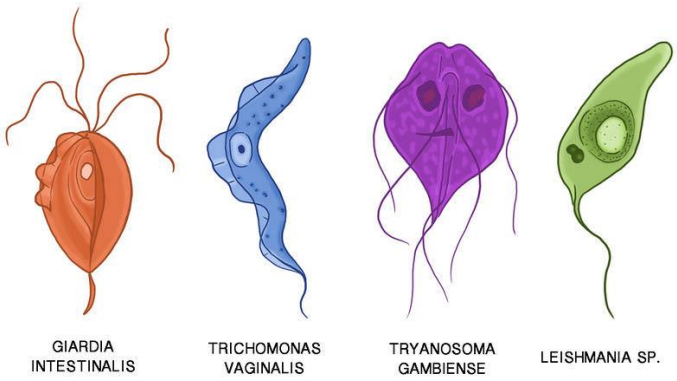
Treatment Techniques – Ultraviolet

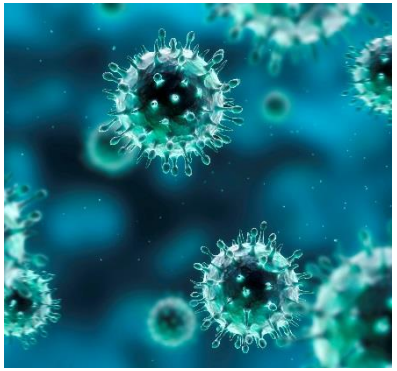


Treatment Techniques – Ultraviolet

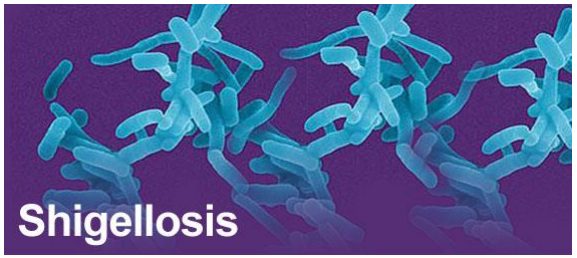
Pre-filtered, then passes by an ultraviolet lamp

Very High Effectiveness for Protozoa & Bacteria





High Effectiveness for Viruses



Not Effective Removal of Common Contaminants:

- Sodium
- Chloride
- Copper
- Chromium
- Lead

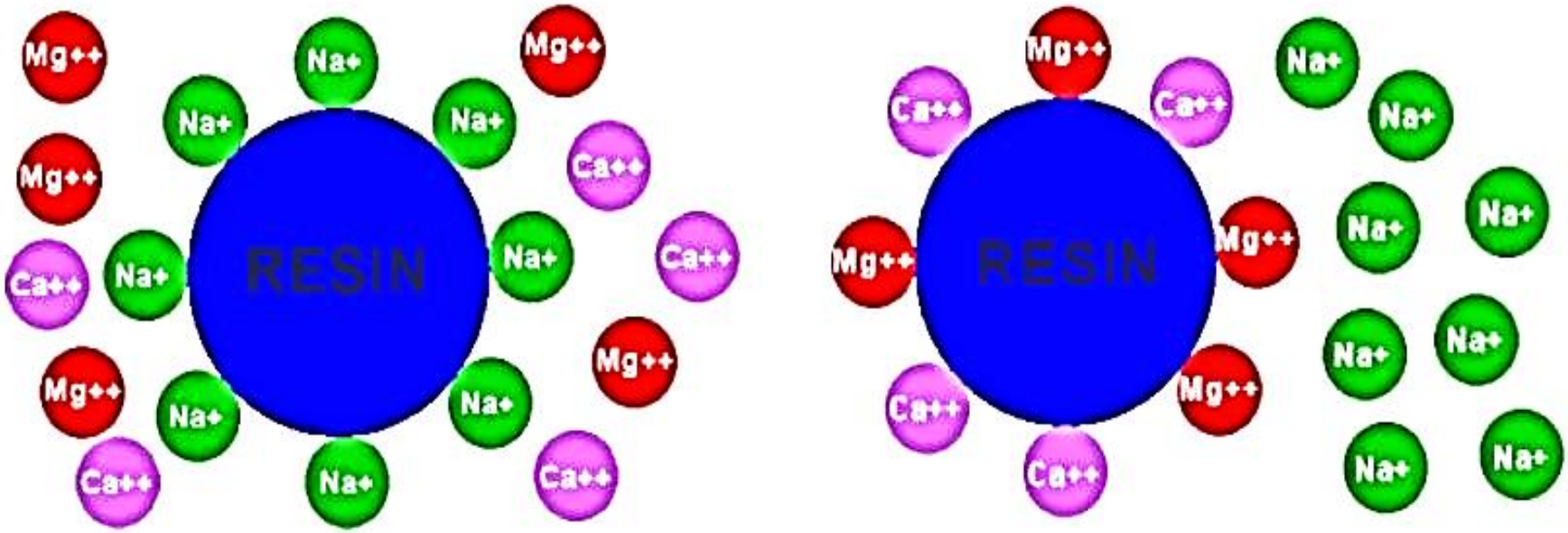
- Arsenic
- Fluoride
- Radium
- Sulfate
- Calcium

- Magnesium
- Potassium
- Nitrate
- Phosphorus

RCAC
www.rcac.org

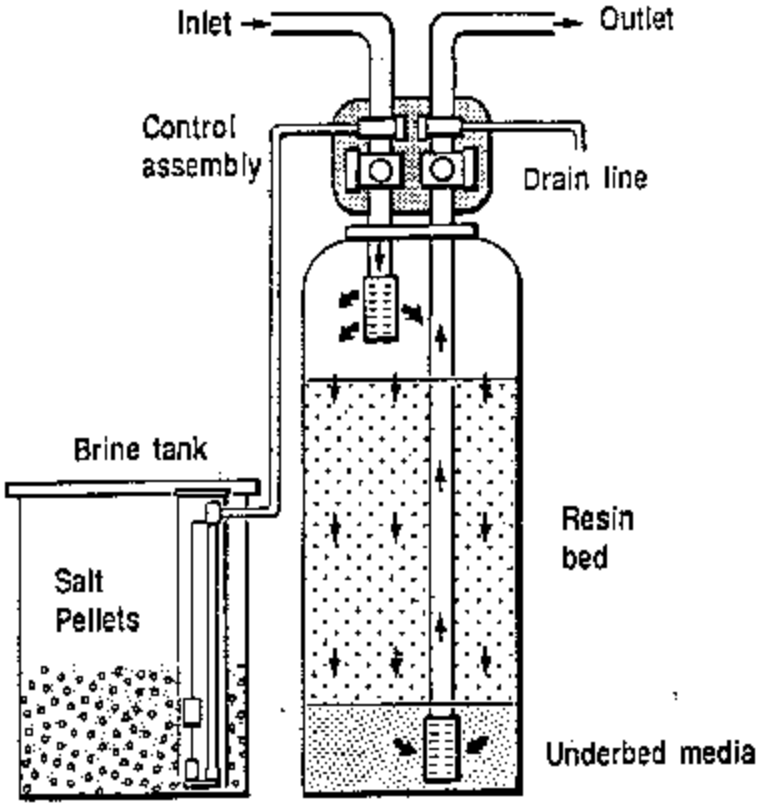
Treatment Techniques – Water Softners

Ion-exchange (exchanges hardness/chemicals for salts)



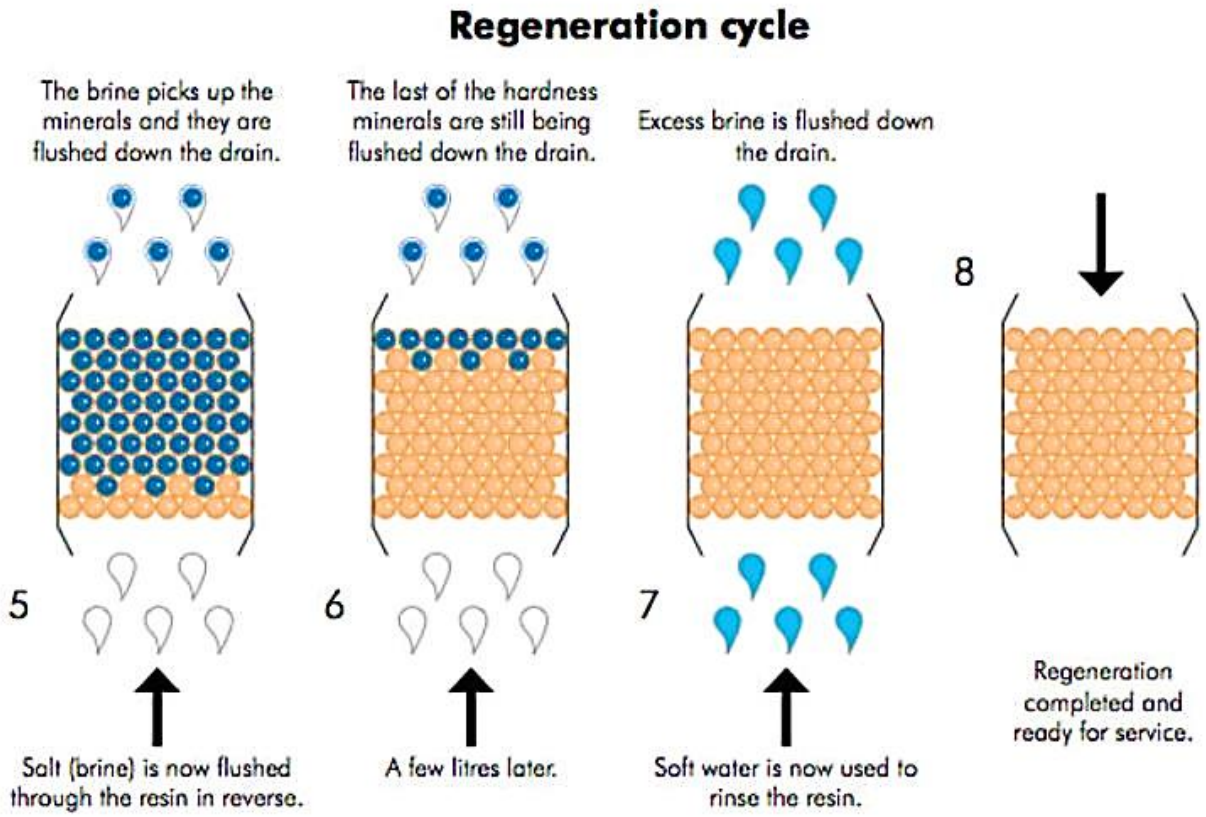
Treatment Techniques – Water Softners

Ion-exchange (exchanges hardness/chemicals for salts)



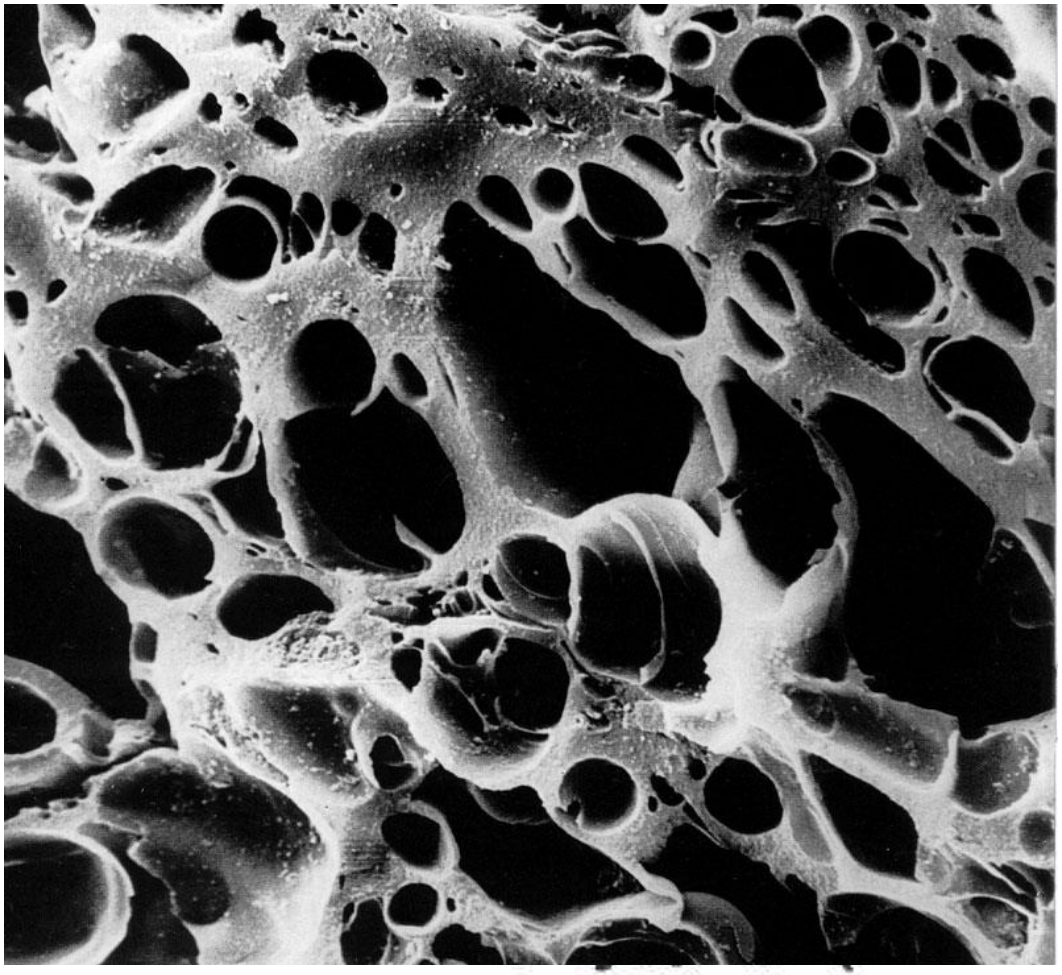
Treatment Techniques – Water Softners

Ion-exchange (exchanges hardness/chemicals for salts)



Treatment Techniques – Activated Carbon

Adsorption – Porous media attracts organic molecules

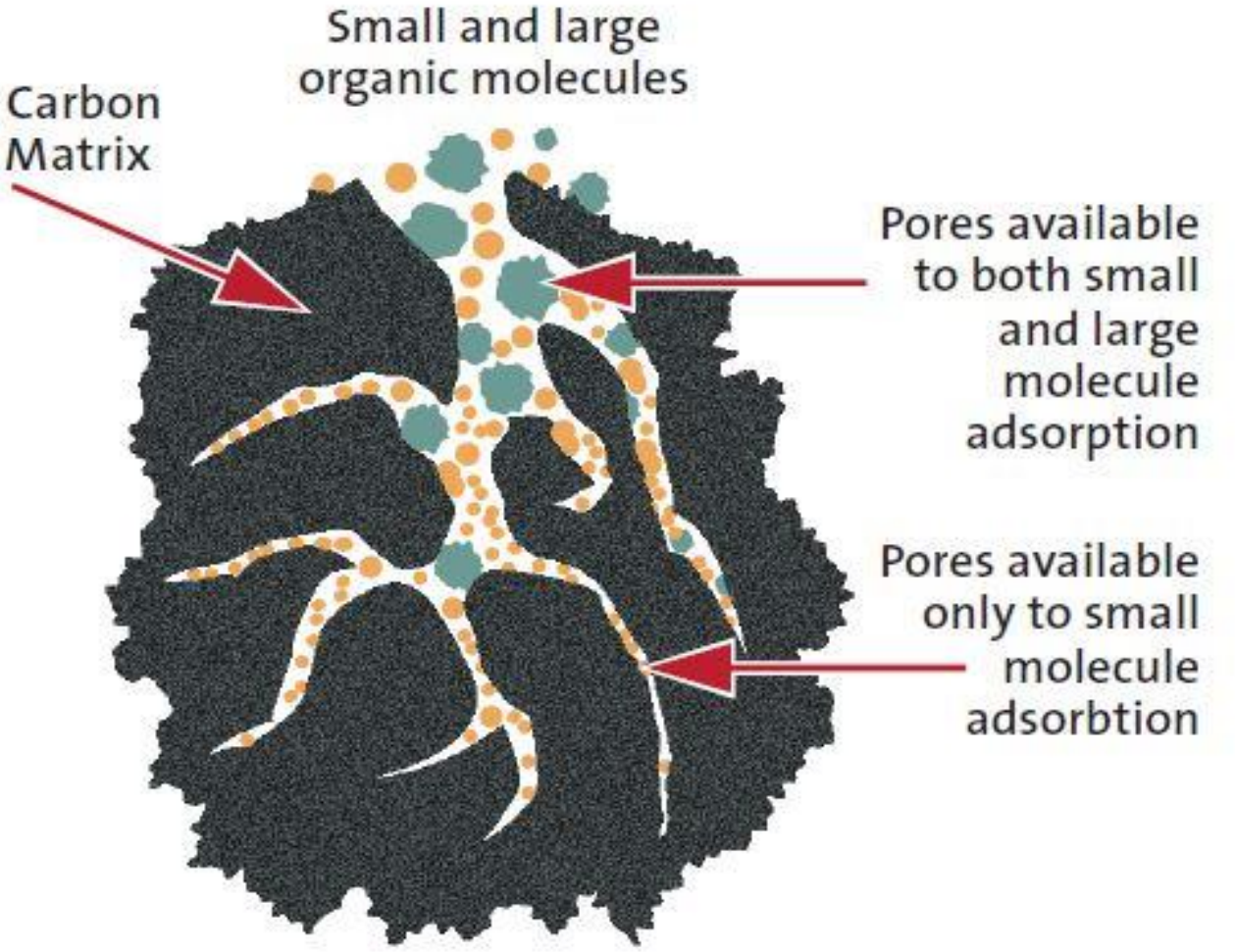


- Carbon is “activated” by chemical or steam processing to create a media with extensive surface area.
- Carbon surfaces and nearby molecules from the water are attracted and form weak bonds.
- Media can be regenerated using heat to break the bond.

RCAC
www.rcac.org

Treatment Techniques – Activated Carbon

Adsorption – Porous media attracts organic molecules

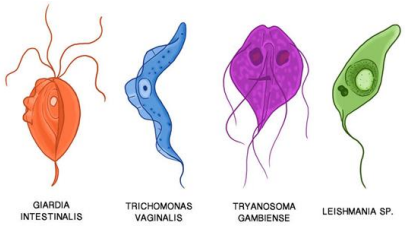


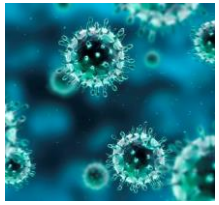
RCAC
www.rcac.org

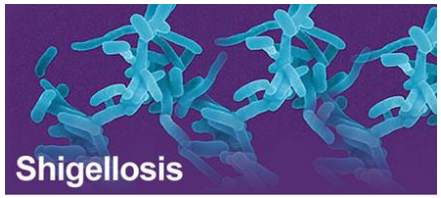
Treatment Techniques – Activated Carbon

Adsorption – Porous media attracts organic molecules

Not Effective for Particle Removal







Effective Removal of SOME Contaminants:

- Radon
- Chlorine
- Dissolved organic material

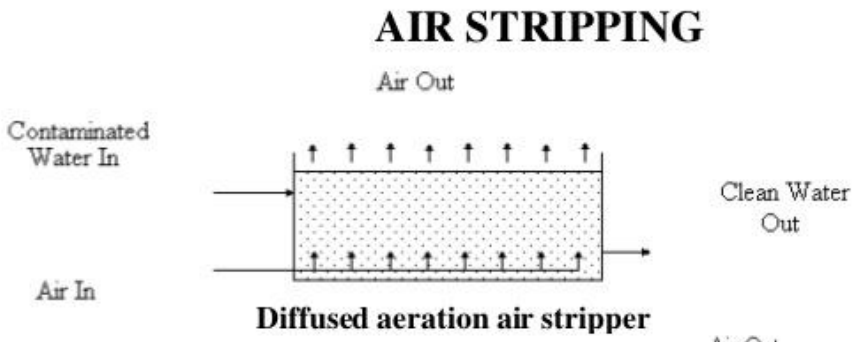
Most Effective For Removal of Aesthetic Issues:

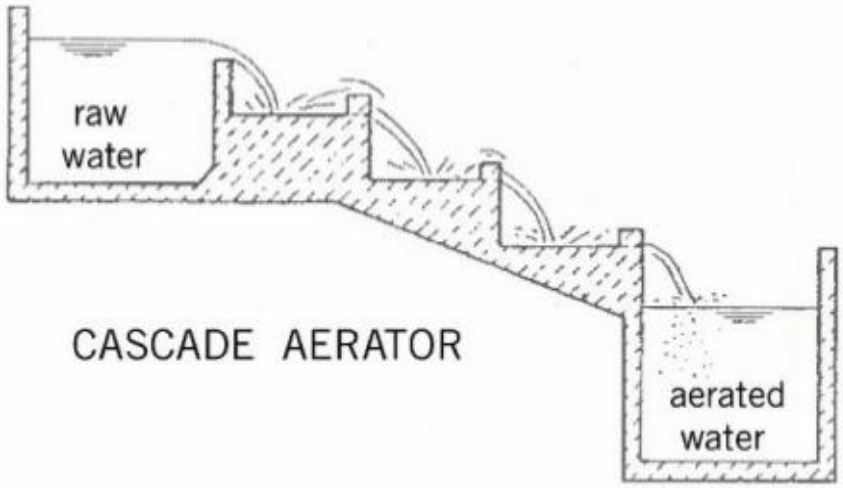
- Taste
- Odor
- Color

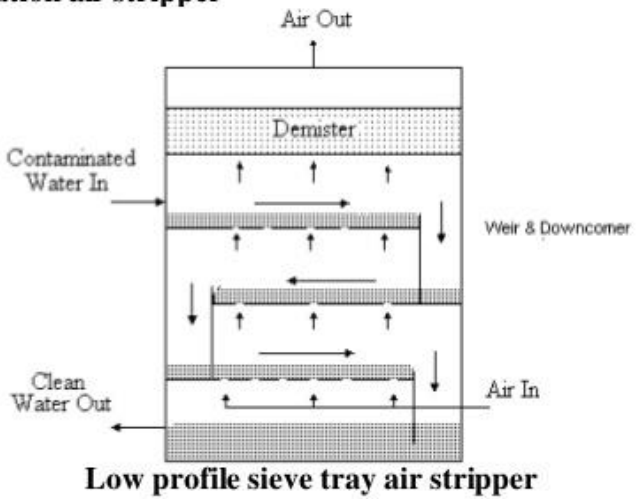
RCAC
www.rcac.org

Treatment Techniques – Aeration

Introduction of Air to Volatilize Radon & VOCs



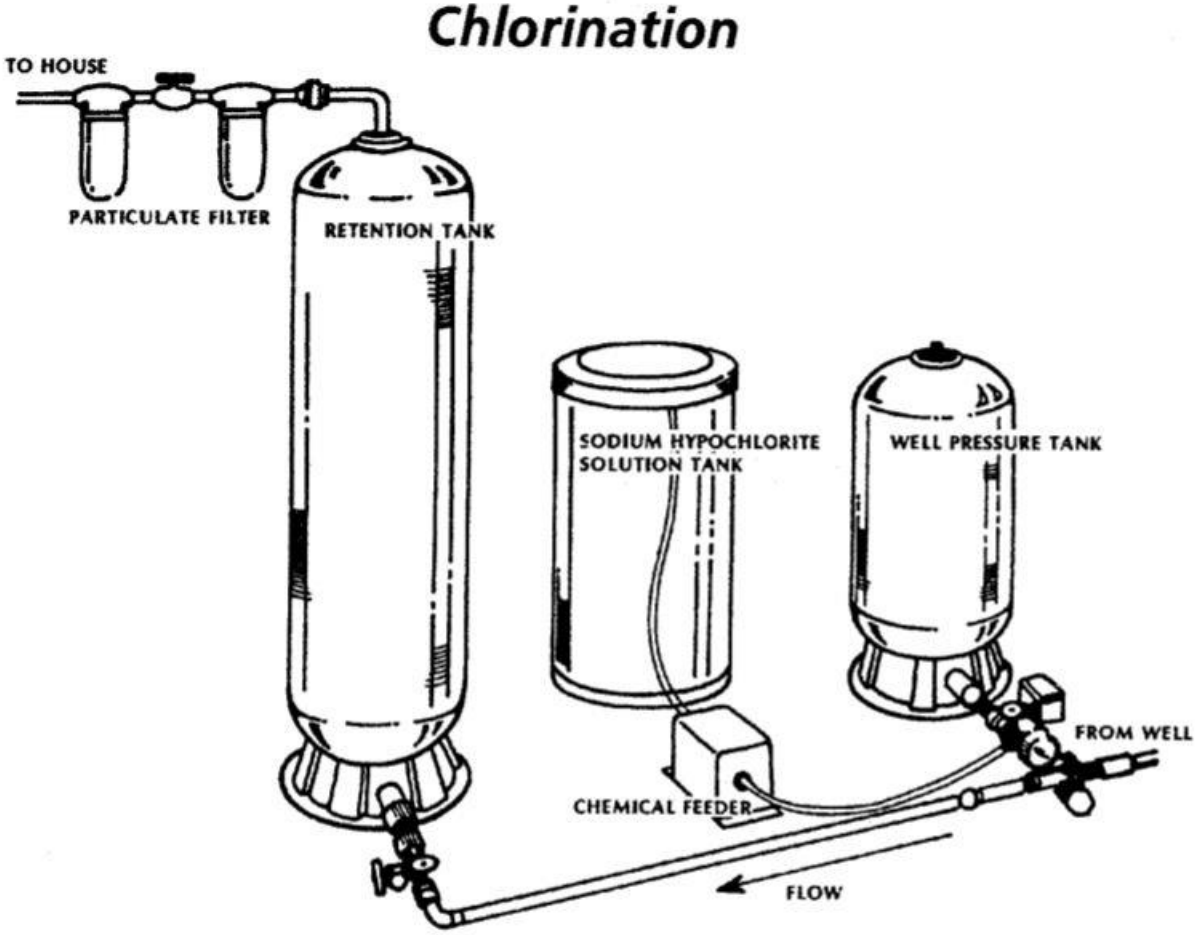




RCAC
www.rcac.org

Treatment Techniques – Chlorination

Liquid or Gaseous Chlorine Disinfection



RCAC
www.rcac.org

Treatment Techniques – Chlorination

Liquid Chlorine Oxidation - Disinfection

Factors which determine chlorine disinfection effectivity:
Chlorine concentrations, contact time, temperature, pH, number and types of microorganisms, concentrations of organic matter in the water.

Table 1: disinfection time for several different types of pathogenic microorganisms with chlorinated water, containing a chlorine concentration of 1 mg/L (1 ppm) when pH = 7,5 and T = 25 °C

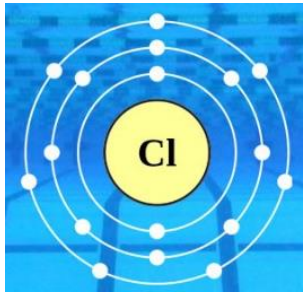
Disinfection time of fecal pollutants with chlorinated water	
E. coli 0157 H7 bacterium	< 1 minute
Hepatitis A virus	about 16 minutes
Giardia parasite	about 45 minutes
Cryptosporidium	about 9600 minutes (6,7 days)

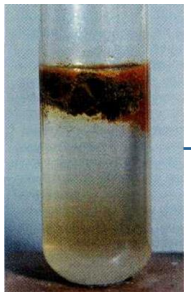
https://www.lenntech.com/processes/disinfection/chemical/disinfectants-chlorine.htm

RCAC
www.rcac.org

Treatment Techniques – Chlorination

Liquid Chlorine Oxidation - Iron Removal





1. Chloride ion combines with Ferric iron to form Ferric Chloride precipitate (rust).
2. Suspended particles pass through filtration media to remove solids.

RCAC
www.rcac.org

How can I tell if a treatment system will do what it says it will?

ANSI/NSF 42: Drinking Water Treatment Units - Aesthetic Effects
ANSI/NSF 44: Cation Exchange Water Softeners
ANSI/NSF 53: Drinking Water Treatment Units - Health Effects
ANSI/NSF 55: Ultraviolet Microbiological Water Treatment Systems
ANSI/NSF 58: Reverse Osmosis Drinking Water Treatment Systems
ANSI/NSF 62: Drinking Water Distillation Systems

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

NSF®

ANSI
American National Standards Institute

https://www.cdc.gov/healthywater/drinking/index.html

RCAC
www.rcac.org

Questions???

RCAC
www.rcac.org

How to Register for the Well Assessment:

1. Mail in the bottom slip of the well assessment form.

2. Call Paula Thorpe, RCAC Staff to apply for well assessment at (916) 447–9832, ext. 1049.

3. Apply online for the well assessment at:

http://www.rcac.org/environmental/individual-well-program/

RCAC
www.rcac.org

References

- “A Guide for Private Domestic Well Owners,” March 2015, California State Water Resources Control Board.

http://www.waterboards.ca.gov/gama/docs/wellowner_guide.pdf

- The Private Well Class – Free audio podcasts, videos and webinars:

Privatewellclass.org

RCAC
www.rcac.org

RCAC

On-site Wastewater Treatment Systems

GET PUMPED!

Overview

- Properly functioning septic systems are highly effective in treating wastewater
- 25% of the U.S. population utilizes a septic or on-site treatment system (National Small Flows Clearinghouse)
- Maintenance will help to:
  - Protect your family's health
  - Save you money
  - Protect the environment
  - Protect your home's value

RCAC
www.rcac.org

Overview

- Septic system ownership = responsibility
- Learn more about:
  - System operation
  - Last inspection
  - Last pumping
  - Area certified contractors
- There is NO substitute for regular septic system maintenance.

RCAC
www.rcac.org

Septic System Basics

- What is it?
  - Uses natural processes
  - Helps reduce health risks, contamination
  - Proper design, installation, operation, and maintenance are critical
- How does it work?
  - Two components:
    - Septic tank
    - Drainfield

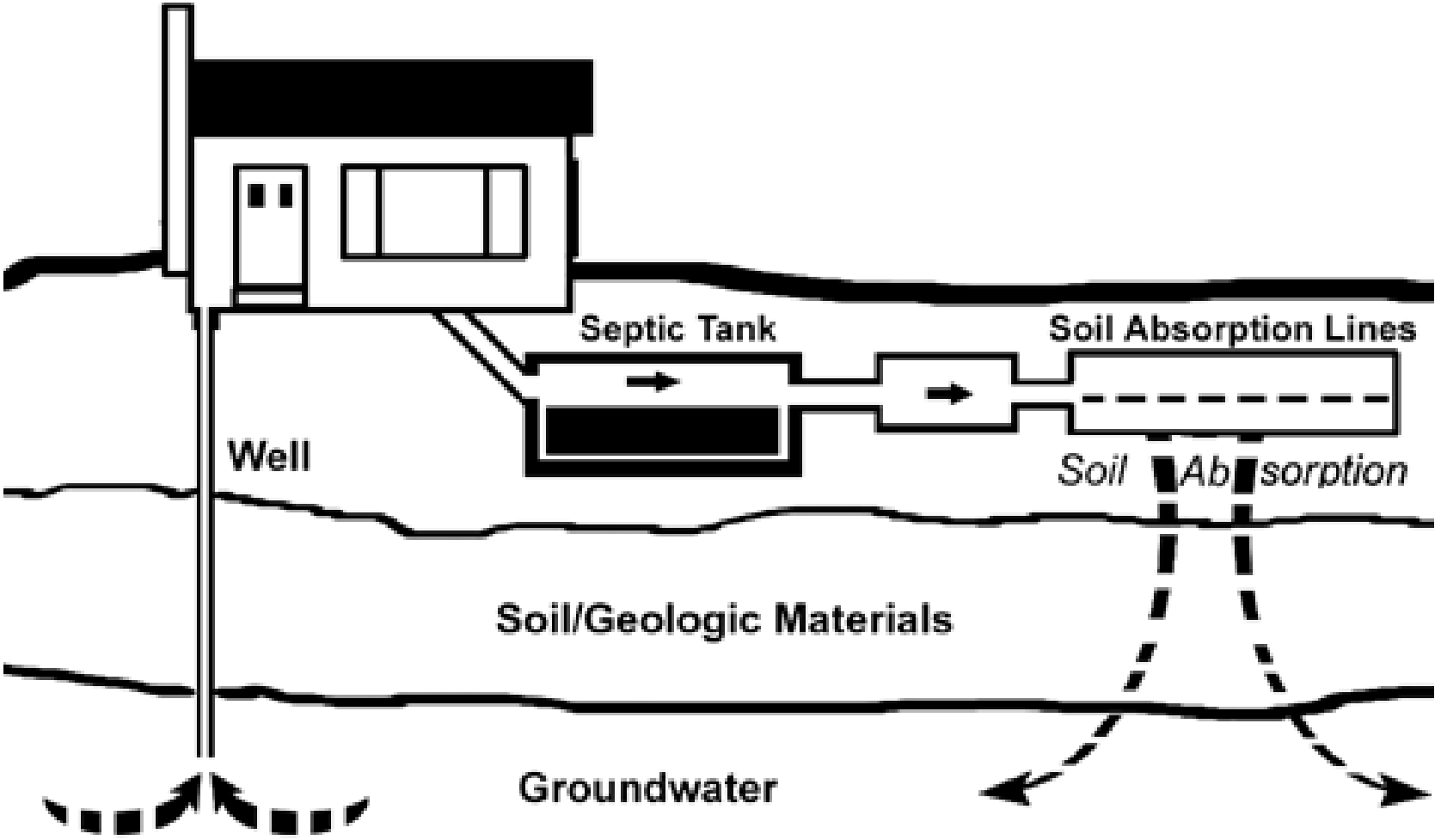
RCAC
www.rcac.org

Did You Know?

- Everything flushed down the toilet or drain ends up in the septic system.
- Improper maintenance is the most common cause of septic system failure.
- More than 4 billion gallons of wastewater/day are discharged per day through septic systems.

RCAC
www.rcac.org

Septic System



RCAC
www.rcac.org

Did You Know?

- Systems should be inspected every three years and pumped as necessary.
- Regulations often dictate minimum setback distances to drinking water sources.
- Failing septic systems can cause increased levels of bacteria, viruses, and nitrate.
- Inspections cost between $50-$150, pumpings between $100-$400, and system replacement $3,000-$5,000 and up.

RCAC
www.rcac.org

Treat It Right!

- Proper and regular maintenance will:
  - Save you money
  - Protect your family's health
  - Protect the environment

- Your septic system reacts to how you treat it!

RCAC
www.rcac.org

What NOT to Do:

- **DON'T** drive or park anything heavier than a lawnmower over any part of your septic system.
- **DON'T** plant trees or shrubs near/over your system.
- **DON'T** dump grease or fats down the kitchen drain.

RCAC
www.rcac.org

What NOT to Do:

- **DON'T** rely on commercial septic tank additives, cleaners, feeders, starters, etc. as a substitute for regular system maintenance.

- **DON'T** put items such as feminine hygiene products, facial tissue, diapers, cotton swabs, coffee grounds, latex paint, pesticides or other hazardous materials into the system.

RCAC
www.rcac.org

What NOT to Do:

- **DON'T** wait for the system to have problems before pumping the tank!
- **DON'T** flush prescription or over-the-counter medications down the drain or toilet.
- **DON'T** allow chlorine-treated water from swimming pools and hot tubs to enter the drainfield.
- **DON'T** ignore your septic system!

RCAC
www.rcac.org

What TO Do:

- **DO** direct all household wastewater into the system, including all sink, shower, toilet, washing machine, and dishwasher wastewater, all of which can contain pollutants.
- **DO** conserve water to avoid overloading the septic system.
- **DO** use chemical cleaners and detergents in moderation.

RCAC
www.rcac.org

What TO Do:

- **DO** learn the location of your septic system, and keep a sketch of its components.
- **DO** keep records of any repair, pumping, inspection, or any other maintenance activity.
- **DO** have your system inspected every few years and pumped periodically by a licensed professional.

RCAC
www.rcac.org

What TO do:

- **DO** know your system's capacity.
- **DO** make sure your system is properly sited and constructed by having an initial inspection.
- **DO** divert surface water runoff from roofs, driveways, downspouts, etc. away from the drainfield.

RCAC
www.rcac.org

RCAC

Water Conservation and Septic Systems

GET PUMPED!

Overview

- Conservation and efficient water use are important aspects of septic system ownership.
- Too much water entering the tank/drainfield at once can cause inadequate treatment.
- Average water use in a single-family home is around 70 gallons/person/day. (U.S. EPA)

RCAC
www.rcac.org

Typical Ranges of Water Used (in gallons)

Action	Typical Use	Conservative Use
Toilet flushing	6 (old standard)	1.5-3 (low flow)
Tub bath	30 (half filled)	15 (quarter filled)
Shower (10 min.)	50 (5 gal/min flow)	25 (2.5 gal/min flow)
Shower (3 min.)	15 (5 gal/min flow)	7.5 (2.5 gal/min flow)
Laundry (top load)	50-60 (older models)	40 (newer models)
Laundry (front load)	33 (older models)	17-28 (newer models)

Source: University of Minnesota Cooperative Extension Service

RCAC
www.rcac.org

Typical Ranges of Water Used (in gallons)

Action	Typical Use	Conservative Use
Dishwashing (machine)	12-15 (old model regular cycle)	6-9 (new model regular cycle)
Dishwashing (hand)	16 (faucet rinse)	6 (basin rinse)
Teeth brushing	2 (faucet running)	1/8 (wet brush, brief rinse)
Hand washing	2 (faucet running)	1 (basin, brief rinse)
Shaving	3-5 (faucet running)	1 (basin, brief rinse)

Source: University of Minnesota Cooperative Extension Service

RCAC
www.rcac.org

Did You Know?

- Leaky toilets can waste up to 200 gallons of water each day.
- Early morning and bedtime are peak water use times.
- Runoff from roofs, driveways, and roads onto the drainfield can overload the system.

RCAC
www.rcac.org

What NOT to Do:

- **DON'T** allow leaky faucets and toilets to go unrepaired.
- **DON'T** let faucets run when not in use.

RCAC
www.rcac.org

What TO do:

- **DO** consider installing high-efficiency water fixtures.
- **DO** run full loads in the dish and clothes washers.
- **DO** distribute wash loads evenly throughout the week.
- **DO** install aerators on all household faucets.

RCAC
www.rcac.org

Overview

- Improper/infrequent maintenance is the most common cause of system failure.

- Even systems that appear to be working may be contaminating groundwater or surface water supplies.

RCAC
www.rcac.org

Overview – Causes of Failure

- When the amount of wastewater entering the system is more than it can handle, inadequately treated wastewater enters the drainfield.
- Other causes:
  - Improper design/installation
  - Household toxics
  - Household cleaners
  - Garbage disposals

RCAC
www.rcac.org

Overview – Symptoms/Effects

Signs of failure:

- Unpleasant odor inside or outside
- Sewage backup into the house
- Soggy soil, visible liquid waste flow, excessive grass growth over the drainfield
- Noticeable weed or algae growth near shorelines
- High levels of coliform bacteria or nitrate in nearby wells or waterbodies.

RCAC
www.rcac.org

Did You Know?

- Diseases like hepatitis and dysentery can result from bacteria and viruses from failing septic systems.

- Surface water supplies can also be affected by failing septic systems.

RCAC
www.rcac.org

Did You Know?

- Failing drainfields can lead to high nitrate levels in groundwater, which can cause “blue baby syndrome” in infants.

- Partially treated wastewater from the septic tank can still contain harmful bacteria and/or viruses.

RCAC
www.rcac.org

If Your System Fails…

- **DON'T** cover the drainfield with additional soil if wastewater surfaces.
- **DON'T** dump chemicals like pesticides, paint thinner, or auto products down the drain.
- **DON'T** overuse detergents, bleaches, drain cleaners, and other household products.
- **DON'T** pipe wastewater to a road ditch, storm sewer, or nearby surface water body.
- **DON'T** wait for the system to have problems before pumping the tank!

RCAC
www.rcac.org

Preventative Measures

- **DO** have your septic tank tested for watertightness during installation and inspection.
- **DO** plant a buffer strip of grass or other small, short-rooted vegetation between your drainfield and the shoreline of any nearby water body.
- **DO** have your private drinking water well tested annually for contaminants.
- **DO** ensure your septic system has been designed and installed properly.

RCAC
www.rcac.org

Questions?

RCAC
www.rcac.org