

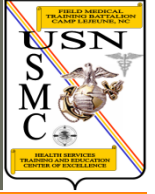


WATER PURIFICATION



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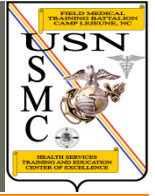
Water Purification



Water Video.wmv



OVERVIEW



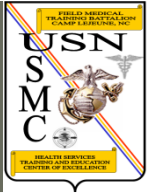
- Water Sources and Characteristics
- Factors Affecting Sources of Water
- Procedures for Water Purification
- Water Testing



LEARNING OBJECTIVES



Please read your
Terminal and Enabling
Learning Objectives



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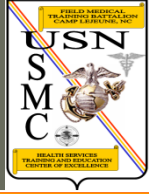
Water Purification



BACKGROUND



- Safe water is essential
- Insufficient quantity or quality can affect operational readiness
- All personnel must be familiar with proper water discipline

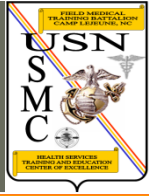


WATER SOURCES AND CHARACTERISTICS





SALT WATER

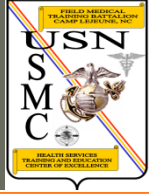


- SOURCES
 - Ocean, sea
- CHARACTERISTICS
 - Less contaminated
 - Unlimited supply
 - Best source of water if a ROWPU is available





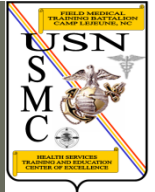
GROUND WATER



- SOURCES
 - Wells & Springs
- CHARACTERISTICS
 - Best source of water during an NBC attack
 - Less chemical & biological pollution
 - Quantity is hard to determine



SURFACE WATER



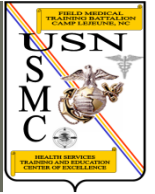
- SOURCES
 - Rivers, lakes, ponds, streams
- CHARACTERISTICS
 - Larger sources less contaminated
 - Moving water is preferable
 - Easiest to procure for individual use
 - Readily accessible



RAIN WATER

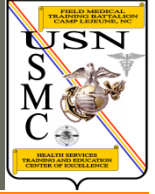


- Not a reliable source
- May not provide an adequate supply



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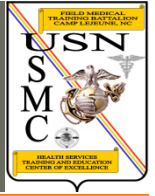
Water Purification



FACTORS AFFECTING SOURCES OF WATER



QUANTITY



- Source should provide adequate for all troops
- Must last for the duration of operations



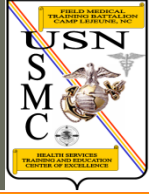
QUALITY



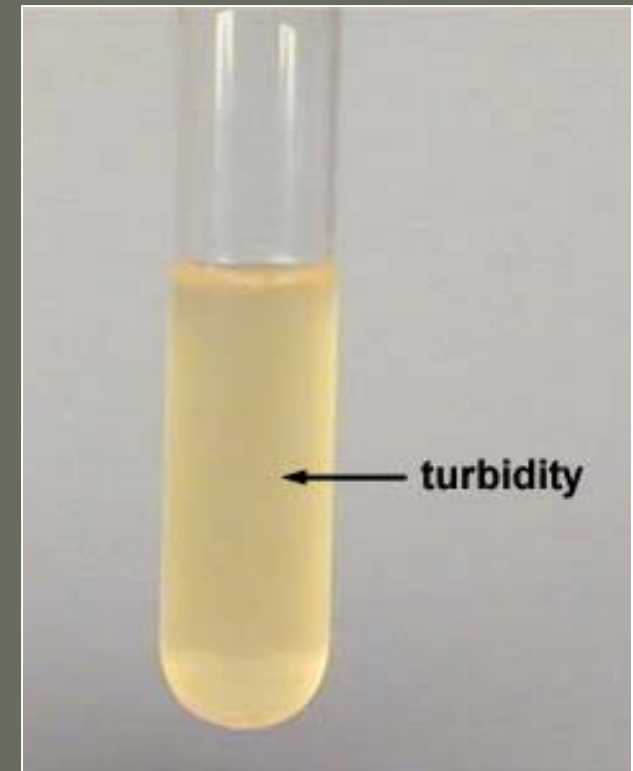
- Free of contamination from sewage, toxic elements and NBC agents
- Source protected from runoff from latrines, showers, motor pools, etc.
- Should be clear/colorless



QUALITY

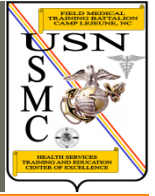


- Water should not be objectionable due to taste and/or odors
- Remove turbidity to reduce contamination
 - Suspended particles often contain organisms that cause disease
 - Particles decrease effectiveness of chlorine





QUALITY



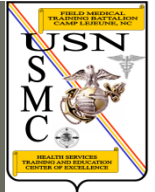
- Temperature



- Warm water is not a palatable
- Consumption rate decreases as water gets warmer
- Cool water retains chlorine longer

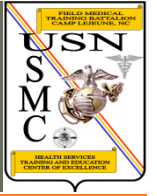


ACCESSIBILITY



- Must be easily ACCESSIBLE to water purification and transport equipment



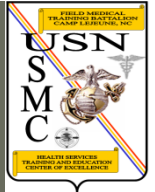


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PROCEDURES FOR WATER PURIFICATION



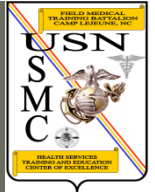
TYPES OF CONTAINERS

- Canteen
 - Individual use
 - 1 qt
- Jerry Can
 - 5 gallon container
 - Must be labeled
“POTABLE WATER ONLY”





TYPES OF CONTAINERS



- Lyster Bag
 - 36 gallon capacity
 - Used for hand washing stations





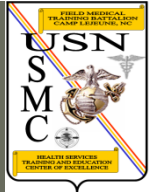
TYPES OF CONTAINERS

- Water Bull
 - 400 gallon capacity
 - Mobile potable water
 - Easily accessible





IODINE TABLETS

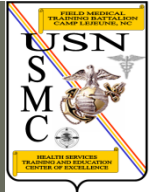


- Inspect tablets for signs of deterioration
- Should be solid and steel gray in color
- Tablets that are yellow or brown, that stick together or crumble easily are no longer effective





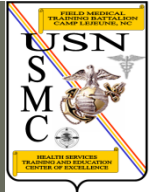
IODINE TABLETS



- Purifying water in canteens:
 - Fill canteen with cleanest water possible
 - Add two iodine tablets to 1 quart canteen
 - If using tincture of iodine, five drops are equal to one tablet
 - Replace cap and shake to dissolve tablet
 - Wait 5 min, loosen cap and allow leakage around the threads
 - Tighten cap and wait an additional 25 min before drinking



IODINE TABLETS

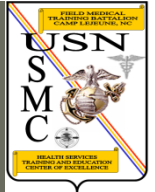


- Purifying water in hydration systems
 - Fill hydration system with cleanest water possible
 - Use four tablets for 70-72 oz system
 - Use six for 100-102 oz system
 - Allow 30 min total contact time





CHLORINE BLEACH

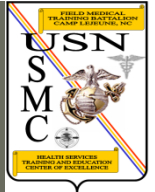


- Add two drops of bleach per quart for canteens
- Use four drops for 70 oz reservoir
- Use six drops for 100 oz reservoir
- Let stand for 30 min before drinking





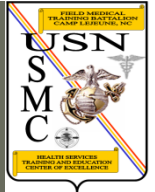
MICROPUR



- Purifying water in canteens:
 - Fill canteen with cleanest water possible
 - Add one tablet to 1 quart canteen
 - Replace cap and shake to dissolve tablet
 - Wait 5 min, loosen cap and allow leakage around the threads
 - Allow 30 min contact time before consuming water, 4 hours for cold or cloudy water



MICROPUR

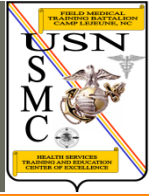


- Purifying water in hydration systems:
 - Fill hydration system with cleanest water possible
 - Use two tablets for 70-72 oz system
 - Use three for 100-102 oz system
 - Allow 30 min contact time before consuming water, 4 hours for cold or cloudy water



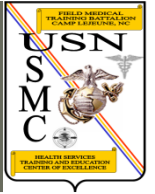


BOILING WATER



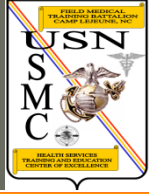
- Used in emergency situations for small amounts of water
- Vigorously boil water for 5 minutes
- Does not provide for residual disinfectant capabilities
- Not to be used to store large quantities of water





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PROCEDURES FOR WATER TESTING

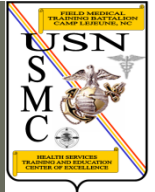


TESTING OF WATER



- All bulk water supplied for drinking must be tested daily for FAC
- Perform weekly bacteriological testing





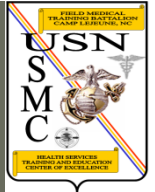
WATER TESTING

- Procedure for water testing
 - Fill sample test tube to line
 - Add (1) DPD #1 tablet, place cap on tube
 - Agitate until tablet is completely dissolved
 - Compare color of water to comparator





TESTING OF WATER



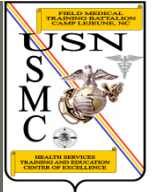
- Range should be between
–2.0 and 5.0 ppm

Chlorine Concentration (ppm)



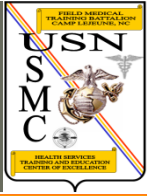
Diagrams are for illustration purposes only.

Always use the color blocks on the
actual bottle label to interpret results.



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DEMONSTRATION

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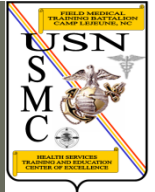


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WATER PURIFICATION



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