Registration Form

Water Treatment CEU Training Course $100.00
48 HOUR RUSH ORDER PROCESSING FEE ADDITIONAL $50.00

Start and Finish Dates: _____ *You will have 90 days from this date in order to complete this course*

Name_____Signature_____
I have read and understood the disclaimer notice on page 2. Digitally sign XXX

Address: _____

City_____State_____Zip_____

Email_____ Fax (____) _____

Phone:
Home (____) _____ Work (____) _____

Operator ID# _____Exp. Date_____

Please circle/check which certification you are applying the course CEU's/PDH's.

Water Treatment _____ Distribution _____ Groundwater _____

Well Drillers_____ Pump Installer_____ Other _____

Your certificate will be mailed to you in about two weeks.

Technical Learning College
PO Box 420, Payson AZ 85547-0420
(928) 468-0665 Fax (928) 272-0747
Toll Free (866) 557-1746 info@tlch2o.com

Discover card **CCV code on card**_____
American Express
Visa or MasterCard #_____**Exp. Date**_____

If you've paid on the Internet, write your Customer #_____

Invoice me, PO # _____

Please provide your e-mail address for we will e-mail the certificate of completion to you.

DISCLAIMER NOTICE
I understand that it is my responsibility to ensure that this CEU course is either approved or accepted in my State for CEU credit. I understand State laws and rules change on a frequent basis and I believe this course is currently accepted in my State for CEU or contact hour credit, if it is not, I will not hold Technical Learning College responsible. I also understand that this type of study program deals with dangerous conditions and that I will not hold Technical Learning College, Technical Learning Consultants, Inc. (TLC) liable for any errors or omissions or advice contained in this CEU education training course or for any violation or injury caused by this CEU education training course material. I will call or contact TLC if I need help or assistance and double-check to ensure my registration page and assignment has been received and graded.

State Approval Listing Link, check to see if your State accepts or has pre-approved this course. Not all States are listed. Not all courses are listed. If the course is not accepted for CEU credit, we will give you the course free if you ask your State to accept it for credit.

Professional Engineers; Most states will accept our courses for credit but we do not officially list the States or Agencies. Please check your State for approval.

State Approval Listing URL…
http://www.tlch2o.com/PDF/CEU%20State%20Approvals.pdf

You can obtain a printed version of the course manual from TLC for an additional $79.95 plus shipping charges.

AFFIDAVIT OF EXAM COMPLETION
I affirm that I personally completed the entire text of the course. I also affirm that I completed the exam without assistance from any outside source. I understand that it is my responsibility to file or maintain my certificate of completion as required by the state or by the designation organization.

Grading Information
In order to maintain the integrity of our courses we do not distribute test scores, percentages or questions missed. Our exams are based upon pass/fail criteria with the benchmark for successful completion set at 70%. Once you pass the exam, your record will reflect a successful completion and a certificate will be issued to you.

For security purposes, please fax or e-mail a copy of your driver's license and always call us to confirm we've received your assignment and to confirm your identity.

We will stop mailing the certificate of completion so we need your e-mail address. We will e-mail the certificate to you, if no e-mail address; we will mail it to you.

Thank you…

Water Treatment Answer Key Name_____

Phone #_____

Please Circle, Underline, X or Bold One answer per question.

1.	A B C D E	43.	A B C D E	85.	A B C D E
2.	A B C D E	44.	A B C D E	86.	A B C D E
3.	A B C D E	45.	A B C D E	87.	A B C D E
4.	A B C D E	46.	A B C D E	88.	A B C D E
5.	A B C D E	47.	A B C D E	89.	A B C D E
6.	A B C D E	48.	A B C D E	90.	A B C D E
7.	A B C D E	49.	A B C D E	91.	A B C D E
8.	A B C D E	50.	A B C D E	92.	A B C D E
9.	A B C D E	51.	A B C D E	93.	A B C D E
10.	A B C D E	52.	A B C D E	94.	A B C D E
11.	A B C D E	53.	A B C D E	95.	A B C D E
12.	A B C D E	54.	A B C D E	96.	A B C D E
13.	A B C D E	55.	A B C D E	97.	A B C D E
14.	A B C D E	56.	A B C D E	98.	A B C D E
15.	A B C D E	57.	A B C D E	99.	A B C D E
16.	A B C D E	58.	A B C D E	100.	A B C D E
17.	A B C D E	59.	A B C D E	101.	A B C D E
18.	A B C D E	60.	A B C D E	102.	A B C D E
19.	A B C D E	61.	A B C D E	103.	A B C D E
20.	A B C D E	62.	A B C D E	104.	A B C D E
21.	A B C D E	63.	A B C D E	105.	A B C D E
22.	A B C D E	64.	A B C D E	106.	A B C D E
23.	A B C D E	65.	A B C D E	107.	A B C D E
24.	A B C D E	66.	A B C D E	108.	A B C D E
25.	A B C D E	67.	A B C D E	109.	A B C D E
26.	A B C D E	68.	A B C D E	110.	A B C D E
27.	A B C D E	69.	A B C D E	111.	A B C D E
28.	A B C D E	70.	A B C D E	112.	A B C D E
29.	A B C D E	71.	A B C D E	113.	A B C D E
30.	A B C D E	72.	A B C D E	114.	A B C D E
31.	A B C D E	73.	A B C D E	115.	A B C D E
32.	A B C D E	74.	A B C D E	116.	A B C D E
33.	A B C D E	75.	A B C D E	117.	A B C D E
34.	A B C D E	76.	A B C D E	118.	A B C D E
35.	A B C D E	77.	A B C D E	119.	A B C D E
36.	A B C D E	78.	A B C D E	120.	A B C D E
37.	A B C D E	79.	A B C D E	121.	A B C D E
38.	A B C D E	80.	A B C D E	122.	A B C D E
39.	A B C D E	81.	A B C D E	123.	A B C D E
40.	A B C D E	82.	A B C D E	124.	A B C D E
41.	A B C D E	83.	A B C D E	125.	A B C D E
42.	A B C D E	84.	A B C D E	126.	A B C D E

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193. A B C D E
194. A B C D E
195. A B C D E
196. A B C D E
197. A B C D E
198. A B C D E
199. A B C D E
200. A B C D E

You are finished with your assignment; please complete the Registration page and the Customer Survey sheet on the rear page.

You can fax this information to us. **(928) 272-0747** *Always call an hour later to make sure we've received it.*

Rush Grading Service
If you need this assignment graded and the results mailed to you within a 48-hour period, prepare to pay an additional rush service handling fee of $50.00. This fee may not cover postage costs. If you need this service, simply write RUSH on the top of your Registration Form. We will place you in the front of the grading and processing line.

Thank you…

Grading Information
In order to maintain the integrity of our courses we do not distribute test scores, percentages or questions missed. Our exams are based upon pass/fail criteria with the benchmark for successful completion set at 70%. Once you pass the exam, your record will reflect a successful completion and a certificate will be issued to you.

Please e- mail or fax this survey along with your final exam

WATER TREATMENT CEU TRAINING COURSE
CUSTOMER SERVICE RESPONSE CARD

NAME: _____

E-MAIL_____PHONE_____

PLEASE COMPLETE THIS FORM BY CIRCLING THE NUMBER OF THE APPROPRIATE ANSWER IN THE AREA BELOW.

1. Please rate the difficulty of your course.
   Very Easy 0 1 2 3 4 5 Very Difficult

2. Please rate the difficulty of the testing process.
   Very Easy 0 1 2 3 4 5 Very Difficult

3. Please rate the subject matter on the exam to your actual field or work.
   Very Similar 0 1 2 3 4 5 Very Different

4. How did you hear about this Course? _____

5. What would you do to improve the Course? _____

_____

How about the price of the course?

Poor_____ Fair ____ Average ____ Good____ Great_____

How was your customer service?

Poor___ Fair ____ Average ____ Good_____ Great_____

Any other concerns or comments.

_____

WATER TREATMENT CEU TRAINING COURSE ASSIGNMENT

You will have 90 days from receipt of this manual to complete it in order to receive your Professional Development Hours (**PDHs**) or Continuing Education Unit (**CEU**). A score of 70 % or better is necessary to pass this course. If you should need any assistance, please email all concerns and the completed answer key to info@tlch2o.com.

Please use the Answer Key and Circle, Bold or X out the answer.

1. The rule specifies maximum contaminant level goals for Giardia lamblia, viruses and Legionella, and promulgated filtration and disinfection requirements for public water systems using surface water sources or by ground water sources under the direct influence of surface water. The regulations also specify water quality, treatment, and watershed protection criteria under which filtration may be avoided.
A. Susceptibility Analysis
B. State Management Plan (SMP) Program
C. Significant Potential Source of Contamination
D. Surface Water Treatment Rule (SWTR)
E. None of the Above

2. A clean, constant supply of drinking water is essential to every community. People in large cities frequently drink water that comes from surface water sources, such as lakes, rivers, and _____.
A. Well
B. Watershed
C. Community
D. Reservoirs
E. Aquifers

3. Sometimes these sources are close to the _____. Other times, drinking water suppliers get their water from sources many miles away.
A. Well
B. Watershed
C. Community
D. Reservoirs
E. Aquifers

4. In either case, when you think about where your drinking water comes from, it's important to consider not just the part of the river or lake that you can see, but the entire _____.
A. Well
B. Watershed
C. Community
D. Reservoirs
E. Aquifers

5. The _____ is the land area over which water flows into the river, lake, or reservoir.
A. Well
B. Watershed
C. Community
D. Reservoirs
E. Aquifers

There are no intentional trick questions.

6. In rural areas, people are more likely to drink ground water that was pumped from a _____.
A. Well
B. Watershed
C. Community
D. Reservoirs
E. Aquifers

7. These wells tap into _____--the natural reservoirs under the earth's surface--that may be only a few miles wide, or may span the borders of many states.
A. Well
B. Watershed
C. Community
D. Reservoirs
E. Aquifers

8. As with _____, it is important to remember that activities many miles away from you may affect the quality of ground water.
A. Well
B. Surface water
C. Community
D. Reservoirs
E. Aquifers

9. Your annual drinking _____will tell you where your water supplier gets your water.
A. Contaminants
B. Contaminated
C. Dissolved minerals
D. Discharge
E. None of the Above

10. Your water will normally contain chlorine and varying amounts of _____ including calcium, magnesium, sodium, chlorides, sulfates and bicarbonates, depending on its source.
A. Contaminants
B. Contaminated
C. Dissolved minerals
D. Discharge
E. Insecticides

11. It is also not uncommon to find traces of iron, manganese, copper, aluminum, nitrates, _____ and herbicides.
A. Contaminants
B. Contaminated
C. Dissolved minerals
D. Discharge
E. Insecticides

12. Although the maximum amounts of all these substances as mentioned above, are strictly limited by the regulations. These are usually referred to as_____.
A. Contaminants
B. Contaminated
C. Dissolved minerals
D. Discharge
E. Insecticides

13. Surface water is usually_____ and unsafe to drink.
A. Contaminants
B. Contaminated
C. Dissolved minerals
D. Discharge
E. Insecticides

14. Depending on the region, some lakes and rivers receive _____ from sewer facilities or defective septic tanks.
A. Contaminants
B. Contaminated
C. Dissolved minerals
D. Discharge
E. Insecticides

15. _____ could produce mud, leaves, decayed vegetation, and human and animal refuse.
A. Contaminants
B. Contaminated
C. Dissolved minerals
D. Discharge
E. Runoff

16. The discharge from industry could increase _____.
A. Contaminants
B. Contaminated
C. Volatile organic compounds
D. Discharge
E. Insecticides

17. Some lakes and _____ may experience seasonal turnover.
A. Biological characteristics
B. Chemical characteristics
C. Physical characteristics
D. Reservoirs
E. None of the Above

18. Changes in the dissolved oxygen, algae, temperature, suspended solids, turbidity, and carbon dioxide will change because of _____.
A. Biological characteristics
B. Chemical characteristics
C. Physical characteristics
D. Biological activities
E. Reservoirs

19. _____such as taste, odor, temperature, and turbidity; this is how the consumer judges how well the provider is treating the water.
A. Biological characteristics
B. Chemical characteristics
C. Physical characteristics
D. Biological activities
E. Reservoirs

20. _____are the elements found that are considered alkali, metals, and non metals such as fluoride, sulfides or acids. The consumer relates it to scaling of faucets or staining.
A. Biological characteristics
B. Chemical characteristics
C. Physical characteristics
D. Biological activities
E. Reservoirs

21. _____ are the presence of living or dead organisms.
A. Biological characteristics
B. Chemical characteristics
C. Physical characteristics
D. Biological activities
E. Reservoirs

22. _____will also interact with the chemical composition of the water. The consumer will become sick or complain about hydrogen sulfide odors, the rotten egg smell.
A. Biological characteristics
B. Chemical characteristics
C. Physical characteristics
D. Biological activities
E. Reservoirs

23. _____are the result of water coming in contact with radioactive materials. This could be associated with atomic energy.
A. Biological characteristics
B. Chemical characteristics
C. Radiological characteristics
D. Biological activities
E. Reservoirs

24. Most of these substances are of _____and are picked up as water passes around the water cycle.
A. Natural origin
B. Treatment processes
C. Relatively low level
D. May enter the water cycle
E. To remove color

25. Some are present due to the _____which are used make the water suitable for drinking and cooking.
A. Natural origin
B. Treatment processes
C. Relatively low level
D. May enter the water cycle
E. To remove color

26. The water will also contain a _____of bacteria, which are not generally a risk to health
A. Natural origin
B. Treatment processes
C. Relatively low level
D. May enter the water cycle
E. To remove color

27. Insecticides and herbicides (sometimes referred to as pesticides) are widely used in agriculture, industry, leisure facilities and gardens to control weeds and insect pests and _____ in many ways.
A. Natural origin
B. Treatment processes
C. Relatively low level
D. May enter the water cycle
E. To remove color

28. Aluminum salts are added during water treatment _____and suspended solids.
A. Natural origin
B. Treatment processes
C. Relatively low level
D. May enter the water cycle
E. To remove color

29. Lead does not usually occur naturally in water supplies but is derived from lead distribution and domestic _____ and fittings.
A. Particles and rust
B. Permanent
C. Pipework
D. Temporary
E. Cysts

30. Water suppliers have removed most of the original _____from the mains distribution system, many older properties still have lead service pipes and internal lead pipework.
A. Particles and rust
B. Permanent
C. Pipework
D. Lead Piping
E. Cysts

31. The _____ (including the service pipe) within the boundary of the property is the responsibility of the owner of the property, not the water supplier.
A. Particles and rust
B. Permanent
C. Pipework
D. Temporary
E. Cysts

32. There are two types of _____: temporary and permanent.
A. Particles and rust
B. Permanent
C. Pipework
D. Temporary
E. None of the Above

33. _____ hardness comes out of the water when it's heated and is deposited as scale and fur on kettles, coffee makers and taps and appears as a scum or film on tea and coffee.
A. Particles and rust
B. Permanent
C. Pipework
D. Temporary
E. Cysts

34. _____ hardness is unaffected by heating.
A. Particles and rust
B. Permanent
C. Pipework
D. Temporary
E. Cysts

35. _____ are associated with the reproductive stages of parasitic micro-organisms (protozoans) which can cause acute diarrhea type illnesses; they come from farm animals, wild animals and people.
A. Particles and rust
B. Permanent
C. Pipework
D. Temporary
E. Cysts

36. _____ are very resistant to normal disinfection processes but can be removed by advanced filtration processes installed in water treatment works.
A. Particles and rust
B. Permanent
C. Pipework
D. Temporary
E. Cysts

37. _____ are rarely present in the public water supply.
A. Particles and rust
B. Permanent
C. Pipework
D. Temporary
E. Cysts

38. _____come from the gradual breakdown of the lining of concrete or iron mains water pipes or from sediment which has accumulated over the years and is disturbed in some way.
A. Particles and rust
B. Permanent
C. Pipework
D. Temporary
E. Cysts

39. _____ contributes most of all of the water that is derived from wells or springs.
A. Percolates
B. Precipitation
C. Wells or springs
D. Groundwater
E. Drinkable water

40. _____ occurs in the natural open spaces (e.g., fractures or pore spaces between grains) in sediments and rocks below the surface.
A. Percolates
B. Precipitation
C. Wells or springs
D. Groundwater
E. Drinkable water

41. _____ is distributed fairly evenly throughout the crust of the earth, but it is not readily accessible or extractable everywhere.
A. Percolates
B. Precipitation
C. Wells or springs
D. Groundwater
E. Drinkable water

42. More than 90 percent of the world's total supply of _____is groundwater.
A. Percolates
B. Precipitation
C. Wells or springs
D. Groundwater
E. Drinkable water

43. Groundwater originates as _____ that sinks into the ground.
A. Percolates
B. Precipitation
C. Wells or springs
D. Groundwater
E. Drinkable water

44. Some of this water _____ down to the water table (shallowest surface of the groundwater) and recharges the aquifer.
A. Percolates
B. Precipitation
C. Wells or springs
D. Groundwater
E. Drinkable water

45. For shallow wells (for example less than 50-75 feet), the recharge area is often the immediate vicinity around the well or "wellhead." Some wells are _____ in areas that may be a great distance from the well itself.
A. Percolates
B. Precipitation
C. Wells or springs
D. Groundwater
E. None of the Above

46. If the downward percolating _____ encounters any source of contamination, at the surface or below it, the water may dissolve some of that contaminant and carry it to the aquifer.
A. Percolates
B. Precipitation
C. Wells or springs
D. Groundwater
E. Drinkable water

47. _____moves from areas where the water table is high to where the water table is low.
A. Percolates
B. Precipitation
C. Well
D. Groundwater
E. Drinkable water

48. Consequently, a contaminant may enter the aquifer some distance upgradient from you and still move towards your _____.
A. Percolates
B. Precipitation
C. Well
D. Groundwater
E. Drinkable water

49. When a well is pumping, it lowers the water table in the immediate vicinity of the well, increasing the tendency for water to move towards the _____.
A. Percolates
B. Precipitation
C. Well
D. Groundwater
E. Drinkable water

50. _____ can be conveniently lumped into three categories: microorganisms (bacteria, viruses, Giardia, etc.), inorganic chemicals (nitrate, arsenic, metals, etc.) and organic chemicals (solvents, fuels, pesticides, etc.).
A. Trichloroethylene
B. Microbes
C. Contaminants
D. Coliform bacteria
E. Human or animal wastes

51. One gallon of pure _____, a common solvent, will contaminate approximately 292 million gallons of water.
A. Trichloroethylene
B. Microbes
C. Contaminants
D. Coliform bacteria
E. Human or animal wastes

52. _____are common in the environment and are generally not harmful.
A. Trichloroethylene
B. Microbes
C. Contaminants
D. Coliform bacteria
E. Human or animal wastes

53. The presence of these bacteria in drinking water are usually a result of a problem with the treatment system or the pipes which distribute water, and indicates that the water may be contaminated with germs that can cause disease.
A. Trichloroethylene
B. Microbes
C. Contaminants
D. Coliform bacteria
E. Human or animal wastes

54. Fecal Coliform and E coli are bacteria whose presence indicates that the water may be contaminated with _____.
A. Trichloroethylene
B. Microbes
C. Contaminants
D. Coliform bacteria
E. Human or animal wastes

55. _____ in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms.
A. Trichloroethylene
B. Microbes
C. Contaminants
D. Coliform bacteria
E. Human or animal wastes

56. _____ is a parasite that enters lakes and rivers through sewage and animal waste.
A. Cryptosporidium
B. Cryptosporidiosis
C. Giardia lamblia
D. Gastrointestinal illness
E. None of the Above

57. Cryptosporidium causes _____, a mild gastrointestinal disease.
A. Cryptosporidium
B. Cryptosporidiosis
C. Giardia lamblia
D. Gastrointestinal illness
E. None of the Above

58. _____ disease can be severe or fatal for people with severely weakened immune systems.
A. Cryptosporidium
B. Cryptosporidiosis
C. Giardia lamblia
D. Gastrointestinal illness
E. None of the Above

59. The EPA and CDC have prepared advice for those with severely compromised immune systems who are concerned about _____.
A. Cryptosporidium
B. Cryptosporidiosis
C. Giardia lamblia
D. Gastrointestinal illness
E. None of the Above

60. _____is a parasite that enters lakes and rivers through sewage and animal waste.
A. Cryptosporidium
B. Cryptosporidiosis
C. Giardia lamblia
D. Gastrointestinal illness
E. None of the Above

61. _____causes gastrointestinal illness (e.g. diarrhea, vomiting, and cramps).
A. Cryptosporidium
B. Cryptosporidiosis
C. Giardia lamblia
D. Gastrointestinal illness
E. None of the Above

62. _____ are a broad group of bacteria including nonpathogens, pathogens, and opportunistic pathogens; they may be an indicator of poor general biological quality of drinking water. Often referred to as HPC.
A. Alpha emitters
B. Beta/photon emitters
C. Opportunistic pathogens
D. Combined Radium 226/228
E. HPC

63. Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing _____in excess of the EPA standards over many years may have an increased risk of getting cancer.
A. Alpha emitters
B. Beta/photon emitters
C. Opportunistic pathogens
D. Combined Radium 226/228
E. Radon gas

64. Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing _____in excess of the EPA standards over many years may have an increased risk of getting cancer.
A. Alpha emitters
B. Beta/photon emitters
C. Opportunistic pathogens
D. Combined Radium 226/228
E. Radon gas

65. Some people who drink water containing _____in excess of the EPA standards over many years may have an increased risk of getting cancer.
A. Alpha emitters
B. Beta/photon emitters
C. Opportunistic pathogens
D. Combined Radium 226/228
E. Radon gas

66. _____can dissolve and accumulate in underground water sources, such as wells, and in the air in your home. Breathing radon can cause lung cancer. Drinking water containing radon presents a risk of developing cancer. Radon in air is more dangerous than radon in water.
A. Alpha emitters
B. Beta/photon emitters
C. Opportunistic pathogens
D. Combined Radium 226/228
E. Radon gas

67. Some people who drink water containing _____ in excess of the EPA's standard over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
A. Alpha emitters
B. Beta/photon emitters
C. Opportunistic pathogens
D. Combined Radium 226/228
E. Arsenic

68. Many communities add _____ to their drinking water to promote dental health. Each community makes its own decision about whether or not to add fluoride.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Fluoride
E. Lead

69. The EPA has set an enforceable drinking water standard for _____ of 4 mg/L (some people who drink water containing fluoride in excess of this level over many years could get bone disease, including pain and tenderness of the bones).
A. MCLGs
B. MCL
C. Dental fluorosis
D. Fluoride
E. Lead

70. The EPA has also set a secondary fluoride standard of 2 mg/L to protect against _____.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Fluoride
E. Lead

71. _____, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Fluoride
E. Lead

72. Children under nine should not drink water that has more than 2 mg/L of _____.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Fluoride
E. Lead

73. _____ typically leaches into water from plumbing in older buildings.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Fluoride
E. Lead

74. _____ pipes and plumbing fittings have been banned since August 1998. Children and pregnant women are most susceptible to lead health risks.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Fluoride
E. Lead

75. For advice on avoiding _____, see the EPA's lead in your drinking water fact sheet.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Fluoride
E. Lead

76. The maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health effect of persons would occur, and which allows for a proper margin of safety.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Fluoride
E. Lead

77. _____ are non-enforceable public health goals.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Fluoride
E. Lead

78. The maximum permissible level of a contaminant in water which is delivered to any user of a public water system.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Fluoride
E. None of the Above

79. MCLs are enforceable standards. The margins of safety in _____ ensure that exceeding the MCL slightly does not pose significant risk to public health.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Fluoride
E. Lead

80. _____ were not established before the 1986 Amendments to the Safe Drinking Water Act.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Fluoride
E. Lead

81. Lead and copper are regulated in a _____ which requires systems to take tap water samples at sites with lead pipes or copper pipes that have lead solder and/or are served by lead service lines.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Treatment Technique
E. Lead

82. The _____, which triggers water systems into taking treatment steps if exceeded in more than 10% of tap water samples, for copper is 1.3 mg/L, and for lead is 0.015mg/L.
A. MCLGs
B. MCL
C. Dental fluorosis
D. Action level
E. Lead

83. Each water system must certify, in writing, to the state (using third-party or manufacturer's certification) that when _____ are used in drinking water systems, the combination (or product) of dose and monomer level does not exceed the levels specified, as follows: Acrylamide = 0.05% dosed at 1 mg/L (or equivalent)
A. Acrylamide
B. Epichlorohydrin
C. All of the Above
D. None of the Above

84. Each water system must certify, in writing, to the state (using third-party or manufacturer's certification) that when acrylamide and epichlorohydrin are used in drinking water systems, the combination (or product) of dose and monomer level does not exceed the levels specified, as follows: _____ = 0.01% dosed at 20 mg/L (or equivalent)
A. Acrylamide
B. Epichlorohydrin
C. All of the Above
D. None of the Above

The Surface Water Treatment Rule requires systems using surface water or ground water under the direct influence of surface water to (1) disinfect their water, and (2) filter their water or meet criteria for avoiding filtration so that the following contaminants are controlled at the following levels:

85. _____: 99.9% killed/inactivated
A. Legionella
B. Viruses
C. Giardia lamblia
D. Both B and C
E. None of the Above

86. No limit, but EPA believes that if _____ and viruses are inactivated, Legionella will also be controlled.
A. Fecal coliform and E. coli
B. Viruses
C. Giardia lamblia
D. Turbidity
E. HPC

87. At no time can _____ (cloudiness of water) go above 5 nephelolometric turbidity units (NTU); systems that filter must ensure that the turbidity go no higher than 1 NTU (0.5 NTU for conventional or direct filtration) in at least 95% of the daily samples in any month.
A. Fecal coliform and E. coli
B. Viruses
C. Giardia lamblia
D. Turbidity
E. HPC

88. No more than 500 bacterial colonies per milliliter.
A. Fecal coliform and E. coli
B. Viruses
C. Giardia lamblia
D. Turbidity
E. HPC

89. _____ are bacteria whose presence indicates that the water may be contaminated with human animal wastes. Microbes in these wastes can cause diarrhea, cramps, nausea, headaches, or other symptoms.
A. Fecal coliform and E. coli
B. Viruses
C. Giardia lamblia
D. Turbidity
E. HPC

Let's review some SDWA terms.

90. A public water system that serves at least 15 service connections used by year-round residents of the area served by the system or regularly serves at least 25 year-round residents.
A. Sole Source Aquifer (SSA) Designation
B. Source Water Protection Area (SWPA)
C. Significant Potential Source of Contamination
D. Sub watershed
E. None of the Above

91. An analysis to determine, with a clear understanding of where the significant potential sources of contamination are located, the susceptibility of the public water systems in the source water protection area to contamination from these sources. This analysis will assist the state in determining which potential sources of contamination are "significant."
A. Susceptibility Analysis
B. State Management Plan (SMP) Program
C. Significant Potential Source of Contamination
D. Surface Water Treatment Rule (SWTR)
E. None of the Above

92. A facility or activity that stores, uses, or produces chemicals or elements, and that has the potential to release contaminants identified in a state program (contaminants with MCLs plus any others a state considers a health threat) within a source water protection area in an amount which could contribute significantly to the concentration of the contaminants in the source waters of the public water supply.
A. Sole Source Aquifer (SSA) Designation
B. Source Water Protection Area (SWPA)
C. Significant Potential Source of Contamination
D. Sub watershed
E. None of the Above

93. The surface area above a sole source aquifer and its recharge area.
A. Sole Source Aquifer (SSA) Designation
B. Source Water Protection Area (SWPA)
C. Significant Potential Source of Contamination
D. Sub watershed
E. None of the Above

94. The area delineated by the state for a PWS or including numerous PWSs, whether the source is ground water or surface water or both, as part of the state SWAP approved by the EPA under section 1453 of the SDWA.
A. Sole Source Aquifer (SSA) Designation
B. Source Water Protection Area (SWPA)
C. Significant Potential Source of Contamination
D. Sub watershed
E. None of the Above

95. A topographic boundary that is the perimeter of the catchment area of a tributary of a stream.
A. Sole Source Aquifer (SSA) Designation
B. Source Water Protection Area (SWPA)
C. Significant Potential Source of Contamination
D. Sub watershed
E. None of the Above

96. A state program implemented in accordance with the statutory language at section 1454 of the SDWA to establish local voluntary incentive-based partnerships for SWP and remediation.
A. Sole Source Aquifer (SSA) Designation
B. Source Water Protection Area (SWPA)
C. Significant Potential Source of Contamination
D. Sub watershed
E. None of the Above

97. A state management plan under FIFRA required by the EPA to allow states (e.g. states, tribes and U.S. territories) the flexibility to design and implement approaches to manage the use of certain pesticides to protect ground water.
A. Susceptibility Analysis
B. State Management Plan (SMP) Program
C. Significant Potential Source of Contamination
D. Surface Water Treatment Rule (SWTR)
E. None of the Above

98. Generally used in expressions of water use, gallons per capita per day (gpcd).
A. Exposure Contact
B. Point-of-Use Water Treatment
C. Point-of-Entry Water Treatment
D. Per capita Per person
E. None of the Above

99. Refers to devices used in the home or office on a specific tap to provide additional drinking water treatment.
A. Exposure Contact
B. Point-of-Use Water Treatment
C. Point-of-Entry Water Treatment
D. Per capita Per person
E. None of the Above

100. Refers to devices used in the home where water pipes enter to provide additional treatment of drinking water used throughout the home.
A. Exposure Contact
B. Point-of-Use Water Treatment
C. Point-of-Entry Water Treatment
D. Per capita Per person
E. None of the Above

101. Contact between a person and a chemical. Exposures are calculated as the amount of chemical available for absorption by a person.
A. Exposure
B. Point-of-Use Water Treatment
C. Point-of-Entry Water Treatment
D. Per capita Per person
E. None of the Above

102. A protozoan, which can survive in water for 1 to 3 months, associated with the disease giardiasis. Ingestion of this protozoan in contaminated drinking water, exposure from person-to-person contact, and other exposure routes may cause giardiasis.
A. Exposure Contact
B. Point-of-Use Water Treatment
C. Point-of-Entry Water Treatment
D. Per capita Per person
E. None of the Above

103. Chemical molecules that contain carbon and other elements such as hydrogen.
A. Nitrates
B. Phase I Contaminants
C. Organics
D. Nephelolometric Turbidity Units
E. Radionuclides

104. _____ contaminants of concern to drinking water include chlorohydrocarbons, pesticides, and others.
A. Nitrates
B. Phase I Contaminants
C. Organic(s)
D. Nephelolometric Turbidity Units
E. Radionuclides

105. The Phase I Rule became effective on January 9. 1989. This rule, also called the Volatile Organic Chemical Rule, or VOC Rule, set water quality standards for 8 VOCs and required all community and Non-Transient, Non-Community water systems to monitor for and, if necessary, treat their supplies for these chemicals.
A. Nitrates
B. Phase I Contaminants
C. Organics
D. Nephelolometric Turbidity Units
E. Radionuclides

106. The 8 VOCs regulated under this rule are: Benzene, Carbon Tetrachloride, para-dichlorobenzene, trichloroethylene, vinyl chloride, 1,1, 2-trichlorethane, 1,1-dichloroethylene, and 1,2-dichlorothane.
A. Nitrates
B. Phase I Contaminants
C. Organics
D. Nephelolometric Turbidity Units
E. Radionuclides

107. A unit of measure used to describe the turbidity of water.
A. Nitrates
B. Phase I Contaminants
C. Organics
D. Nephelolometric Turbidity Units
E. Radionuclides

108. Turbidity is the cloudiness in water and is commonly measured _____.
A. Nitrates
B. Phase I Contaminants
C. Organics
D. Nephelolometric Turbidity Units
E. Radionuclides

109. Inorganic compounds that can enter water supplies from fertilizer runoff and sanitary wastewater discharges.
A. Nitrates
B. Phase I Contaminants
C. Organics
D. Nephelolometric Turbidity Units
E. Radionuclides

110. _____ in drinking water are associated with methemoglobanemia, or blue baby syndrome, which results from interferences in the blood's ability to carry oxygen.
A. Nitrates
B. Phase I Contaminants
C. Organics
D. Nephelolometric Turbidity Units
E. Radionuclides

111. Elements that undergo a process of natural decay. As radionuclides decay, they emit radiation in the form of alpha or beta particles and gamma photons.
A. Nitrates
B. Phase I Contaminants
C. Organics
D. Nephelolometric Turbidity Units
E. Radionuclides

112. Radiation can cause adverse health effects, such as cancer, so limits are placed on _____ concentrations in drinking water.
A. Nitrates
B. Phase I Contaminants
C. Organics
D. Nephelolometric Turbidity Units
E. Radionuclides

113. _____ was first passed in 1974 and established the basic requirements under which the nation's public water supplies were regulated.
A. Risk
B. SDWA
C. Toxicity
D. To the Extent Practical
E. None of the Above

114. The _____ is responsible for setting the national drinking water regulations while individual states are responsible for ensuring that public water systems under their jurisdiction are complying with the regulations.
A. Risk
B. SDWA
C. Toxicity
D. To the Extent Practical
E. None of the Above

115. The _____ was amended in 1986 and again in 1996.
A. Risk
B. SDWA
C. Toxicity
D. To the Extent Practical
E. None of the Above

116. The potential for harm to people exposed to chemicals. In order for there to be risk, there must be hazard and there must be exposure.
A. Risk
B. SDWA
C. Toxicity
D. To the Extent Practical
E. None of the Above

117. Bacteria that are used as indicators of _____ in drinking water.
A. Risk
B. SDWA
C. Toxicity
D. To the Extent Practical
E. None of the Above

118. The property of a chemical to harm people who come into contact with it.
A. Risk
B. SDWA
C. Toxicity
D. To the Extent Practical
E. None of the Above

119. States must inventory sources of contamination to the extent they have the technology and resources to _____ delineated as described in the guidance.
A. Risk
B. SDWA
C. Toxicity
D. To the Extent Practical
E. None of the Above

120. All information sources may be used, _____ Federal and state inventories of sources.
A. Risk
B. SDWA
C. Toxicity
D. To the Extent Practical
E. None of the Above

121. The surface and subsurface area surrounding a well or well field, supplying a PWS, through which contaminants are reasonably likely to move toward and reach such water well or well field.
A. Transient non-community systems
B. Transient/Non-Transient, Non-Community Water Systems
C. Treatment Technique
D. Wellhead Protection Area
E. Underground Injection Control (UIC) Program

122. Water systems that are non-community systems: transient systems serve 25 non-resident persons per day for 6 months or less per year.
A. Transient non-community systems
B. Transient/Non-Transient, Non-Community Water Systems
C. Treatment Technique
D. Wellhead Protection Area
E. Underground Injection Control (UIC) Program

123. _____ typically are restaurants, hotels, large stores, etc. Non-transient systems regularly serve at least 25 of the same non-resident persons per day for more than 6 months per year. These systems typically are schools, offices, churches, factories, etc.
A. Transient non-community systems
B. Transient/Non-Transient, Non-Community Water Systems
C. Treatment Technique
D. Wellhead Protection Area
E. Underground Injection Control (UIC) Program

124. A specific treatment method required by the EPA to be used to control the level of a contaminant in drinking water. In specific cases where the EPA has determined it is not technically or economically feasible to establish an MCL, the EPA can instead specify a treatment technique.
A. Transient non-community systems
B. Transient/Non-Transient, Non-Community Water Systems
C. Treatment Technique
D. Wellhead Protection Area
E. Underground Injection Control (UIC) Program

125. A treatment technique is an enforceable procedure or level of _____ which public water systems must follow to ensure control of a contaminant.
A. Transient non-community systems
B. Transient/Non-Transient, Non-Community Water Systems
C. Treatment Technique
D. Wellhead Protection Area
E. None of the Above

126. A topographic boundary area that is the perimeter of the catchment area of a stream.
A. Watershed Approach
B. Watershed Area
C. Watershed
D. None of the Above

127. A _____is a coordinating framework for environmental management that focuses public and private sector efforts to address the highest priority problems within hydrologically-defined geographic areas, taking into consideration both ground and surface water flow.
A. Watershed Approach
B. Watershed Area
C. Watershed
D. None of the Above

128. A topographic area that is within a line drawn connecting the highest points uphill of a drinking water intake, from which overland flow drains to the intake is referred to as_____ .
A. Watershed Approach
B. Watershed Area
C. Watershed
D. None of the Above

129. The gradual flow or movement of water into and through the pores of the soil.
A. Evaporation
B. Condensation
C. Infiltration
D. Precipitation
E. None of the Above

130. The process by which the water or other liquids become a gas.
A. Evaporation
B. Condensation
C. Infiltration
D. Precipitation
E. None of the Above

131. The collection of the evaporated water in the atmosphere.
A. Evaporation
B. Condensation
C. Infiltration
D. Precipitation
E. None of the Above

132. The process by which atmospheric moisture falls onto the land or water surface as rain, snow, hail or other forms of moisture.
A. Evaporation
B. Condensation
C. Infiltration
D. Precipitation
E. None of the Above

133. Water that drains from a saturated or impermeable surface into stream channels or other surface water areas. Most lakes and rivers are formed this way.
A. Evaporation
B. Condensation
C. Infiltration
D. Runoff
E. None of the Above

134. Moisture that will come from plants as a byproduct of photosynthesis.
A. Evaporation
B. Condensation
C. Transpiration
D. Runoff
E. None of the Above

135. Water rights because property is adjacent to a river or surface water.
A. Ecological balance
B. Riparian
C. Prescriptive
D. Food chain
E. Appropriative

136. Acquired water rights for exclusive use.
A. Ecological balance
B. Riparian
C. Prescriptive
D. Food chain
E. Appropriative

137. Rights based upon legal prescription or long use or custom.
A. Ecological balance
B. Riparian
C. Prescriptive
D. Food chain
E. Appropriative

138. Depending on the region, source water may have several restrictions of use as part of a Water Shed Management Plan. In some areas it may be restricted from recreational use, discharge or _____ from agriculture, or industrial and wastewater discharge.
A. Ecological balance
B. Runoff
C. Prescriptive
D. Food chain
E. None of the Above

139. Another aspect of quality control is aquatic plants. The _____ in lakes and reservoirs plays a natural part in the purification and sustaining the life of the lake.
A. Ecological balance
B. Riparian
C. Prescriptive
D. Food chain
E. Appropriative

140. Algae and rooted aquatic plants are essential in the _____ of fish and birds.
A. Ecological balance
B. Riparian
C. Prescriptive
D. Food chain
E. Appropriative

141. Algae growth is the result of _____.
A. Photosynthesis
B. Algae
C. THM
D. PAC or GAC
E. None of the Above

142. _____ growth is supplied by the energy of the sun, as algae absorb this energy it converts carbon dioxide to oxygen. This creates aerobic conditions that supply fish with oxygen.
A. pH
B. Algae
C. THM
D. PAC or GAC
E. None of the Above

143. Without sun light, the _____ would consume oxygen and release carbon dioxide.
A. pH
B. Algae
C. THM
D. PAC or GAC
E. None of the Above

144. The lack of _____in water is known as anaerobic conditions.
A. pH
B. Algae
C. THM
D. PAC or GAC
E. None of the Above

145. Certain vegetation removes the excess nutrients that would promote the growth of _____.
A. pH
B. Algae
C. THM
D. PAC or GAC
E. None of the Above

146. Too much algae will imbalance the lake and this will result in _____.
A. pH
B. Algae
C. THM
D. PAC or GAC
E. None of the Above

147. Most treatment plant upsets such as taste and odor, color, and filter clogging is due to _____.
A. pH
B. Algae
C. THM
D. PAC or GAC
E. None of the Above

148. The type of _____ determines the problem it will cause for instance slime, corrosion, color, and toxicity.
A. pH
B. Algae
C. THM
D. PAC or GAC
E. None of the Above

149. Algae can be controlled by using chemicals such as _____.
A. pH
B. Algae
C. THM
D. PAC or GAC
E. None of the Above

150. Depending on federal regulations and the amount of copper found natural in water, operators have used Potassium Permanganate, _____and Chlorine.
A. pH
B. Algae
C. THM
D. PAC or GAC
E. None of the Above

151. The _____and alkalinity of the water will determine how these chemicals will react. Most systems no longer use Chlorine because it reacts with the organics in the water to form Trihalomethanes.
A. pH
B. Algae
C. THM
D. PAC or GAC
E. None of the Above

152. _____ form when disinfectants added to drinking water to kill germs react with naturally-occurring organic matter in water.
A. pH
B. Algae
C. THM
D. PAC or GAC
E. None of the Above

153. Some people who drink water containing _____in excess of EPA's standard over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
A. pH
B. Algae
C. THM
D. PAC or GAC
E. None of the Above

154. Most lakes and reservoirs are not free of logs, tree limbs, sticks, gravel, sand and rocks, weeds, leaves, and trash. If not removed, these will cause problems to the treatment plant's _____.
A. Mechanical bar screens
B. Screening
C. Horizontal bars
D. Clarifiers
E. None of the Above

155. The best way to protect the plant is _____.
A. Mechanical bar screens
B. Screening
C. Horizontal bars
D. Clarifiers
E. None of the Above

156. Bar screens are made of straight steel bars at the intake of the plant. The spacing of the _____will rank the size.
A. Mechanical bar screens
B. Screening
C. Horizontal bars
D. Clarifiers
E. None of the Above

157. _____are woven stainless steel material and the opening of the fabric is narrow. Both require manual cleaning.
A. Mechanical bar screens
B. Screening
C. Horizontal bars
D. Clarifiers
E. None of the Above

158. _____vary in size and use some type of raking mechanism that travels horizontally down the bars to scrap the debris off.
A. Mechanical bar screens
B. Screening
C. Horizontal bars
D. Clarifiers
E. None of the Above

159. The type of _____ used depends on the raw water and the size of the intake.
A. Mechanical bar screens
B. Screening
C. Horizontal bars
D. Clarifiers
E. None of the Above

160. Once the water passes the bar screens, sand and grit are still present. This will damage plant equipment and pipes, so it must be removed. This is generally done with either _____- shaped clarifiers.
A. Mechanical bar screens
B. Screening
C. Horizontal bars
D. Clarifiers
E. None of the Above

161. _____ are also used after the flocculation process.
A. Mechanical bar screens
B. Screening
C. Horizontal bars
D. Clarifiers
E. None of the Above

162. Most rectangular clarifiers are designed with scrapers on the bottom to move the settled sludge to one or more _____ at the influent end of the tank.
A. Flights and chains
B. Traveling bridge
C. Hoppers
D. Drive chain
E. Shear pin

163. A clarifier could have a screw conveyor or _____used to collect the sludge. The most common is a chain and flight collector.
A. Flights and chains
B. Traveling bridge
C. Hoppers
D. Drive chain
E. Shear pin

164. The _____turns the drive sprockets and the head shafts. The shafts can be located overhead or below.
A. Flights and chains
B. Traveling bridge
C. Hoppers
D. Drive chain
E. Shear pin

165. Some clarifiers may not have scum removal equipment so the configuration of the shaft may vary. As the _____ travel across the bottom of the clarifier, wearing shoes are used to protect the flights. The shoes are usually metal and travel across a metal track.
A. Flights
B. Traveling bridge
C. Hoppers
D. Drive chain
E. Shear pin

166. Most clarifier designs will have baffles to prevent short-circuiting and scum from entering the _____.
A. Flights and chains
B. Traveling bridge
C. Effluent
D. Drive chain
E. Shear pin

167. The most important thing to consider is the sludge and scum collection mechanism known as the_____ . They move the settled sludge to the hopper in the clarifier for return and they also remove the scum from the surface of the clarifier.
A. Flights and chains
B. Traveling bridge
C. Hoppers
D. Drive chain
E. Shear pin

168. The flights are usually wood or nonmetallic flights mounted on parallel chains. The motor shaft is connected through a gear reducer to a shaft which turns the _____.
A. Flights and chains
B. Traveling bridge
C. Hoppers
D. Drive chain
E. Shear pin

169. To prevent damage due to overloads, a _____is used.
A. Flights and chains
B. Traveling bridge
C. Hoppers
D. Drive chain
E. Shear pin

170. The _____holds the gear solidly on the shaft so that no slippage occurs.
A. Flights and chains
B. Traveling bridge
C. Hoppers
D. Drive chain
E. Shear pin

171. The gear moves the drive chain. If a heavy load is put on the sludge collector system then the shear pin should break. This means that the gear would simply slide around the shaft and movement of the _____ would stop. The most common type has a center pier or column.
A. Flights and chains
B. Traveling bridge
C. Hoppers
D. Drive chain
E. Shear pin

172. Conventional technology uses a 30 to 50 mg/L alum dosage to form a large floc that requires _____to permit settling.
A. Graded silica sand filter media
B. On expensive, construction-intensive processes
C. Extensive retention time
D. Conventional water treatment process
E. Form a white precipitate that

173. Traditional filter systems use _____.
A. Graded silica sand filter media
B. On expensive, construction-intensive processes
C. Which causes them to repel
D. Conventional water treatment process
E. Form a white precipitate that

174. The major mechanic parts of the clarifier are the _____; the sludge collector mechanism; and the scum removal system.
A. Flights and chains
B. Traveling bridge
C. Hoppers
D. Drive Unit
E. Shear pin

175. Improving the clarity of surface water has always presented a challenge because source quality varies. Traditional treatments rely on _____with lengthy times.
A. Graded silica sand filter media
B. On expensive, construction-intensive processes
C. Which causes them to repel
D. Conventional water treatment process
E. Form a white precipitate that

176. Suspended particles carry an electrical charge _____one another.
A. Graded silica sand filter media
B. On expensive, construction-intensive processes
C. Which causes them to repel
D. Conventional water treatment process
E. Form a white precipitate that

177. The _____uses alum (aluminum sulfate) and cationic polymer to neutralize the charge. That allows suspended particles to clump together to form more easily filtered particles.
A. Graded silica sand filter media
B. On expensive, construction-intensive processes
C. Which causes them to repel
D. Conventional water treatment process
E. Form a white precipitate that

178. Alum combines with alkalinity in the raw water to _____neutralizes suspended particles' electrical charge and forms a base for coagulating those particles.
A. Graded silica sand filter media
B. On expensive, construction-intensive processes
C. Which causes them to repel
D. Conventional water treatment process
E. Form a white precipitate that

179. Since the sand _____ all have about the same density, larger grains lay toward the bottom of the filter bed and finer grains lay at the top of the filter bed.
A. Material
B. Particles
C. Density
D. Grains
E. Media

180. Filtration occurs only within the first few inches of the finer _____ at the top of the bed.
A. Material
B. Particles
C. Density
D. Grains
E. Media

181. A depth filter has four layers of filtration _____, each of different size and density.
A. Material
B. Particles
C. Density
D. Grains
E. Media

182. Light, coarse _____ lies at the top of the filter bed.
A. Material
B. Particles
C. Density
D. Grains
E. None of the Above

183. The _____ become progressively finer and denser in the lower layers. Larger suspended particles are removed by the upper layers while smaller particles are removed in the lower layers.
A. Material
B. Particles
C. Density
D. Grains
E. Media

184. _____ are trapped throughout the bed, not in just the top few inches. That allows a depth filter to run substantially longer and use less backwash water than a traditional sand filter.
A. Material
B. Particles
C. Density
D. Grains
E. Media

185. Turbidity washes out of the filter bed as the filter media particles _____ one another. The down flow rinse settles the bed before the filter returns to service.
A. Scour
B. Cycle
C. Mud-balling
D. Backwash
E. Fast rinse

186. _____ lasts about 5 to 10 minutes.
A. Scour
B. Cycle
C. Mud-balling
D. Backwash
E. Fast rinse

187. As suspended _____ accumulate in a filter bed, the pressure drop through the filter increases.
A. Material
B. Particles
C. Density
D. Grains
E. Media

188. When the pressure difference between filter inlet and outlet increases by 5 - 10 psi from the beginning of the _____, the filter should be reconditioned.
A. Scour
B. Cycle
C. Mud-balling
D. Backwash
E. Fast rinse

189. Operating beyond this pressure drop increases the chance of fouling - called "_____ " - within the filter.
A. Scour
B. Cycle
C. Mud-balling
D. Backwash
E. Fast rinse

190. The reconditioning cycle consists of an up flow _____ followed by a down flow rinse.
A. Scour
B. Cycle
C. Mud-balling
D. Backwash
E. Fast rinse

191. _____ is an up flow operation, at about 14 gpm per square foot (34m/hr) of filter bed area that lasts about 10 minutes.
A. Scour
B. Cycle
C. Mud-balling
D. Backwash
E. Fast rinse

192. Chemical pretreatment is often used to enhance filter performance, particularly when turbidity includes fine _____.
A. Colloidal particles
B. NTU
C. Electrically charged
D. Full water treatment
E. None of the Above

193. Suspended particles are usually _____.
A. Colloidal particles
B. NTU
C. Electrically charged
D. Full water treatment
E. None of the Above

194. _____such as alum (aluminum sulfate), ferric chloride, or a cationic polymer neutralizes the charge, allowing the particles to cling to one another and to the filter media.
A. Colloidal particles
B. NTU
C. Electrically charged
D. Full water treatment
E. None of the Above

195. Representing a slight modification of _____, package plants are usually built in a factory, mounted on skids, and transported virtually assembled to the operation site.
A. Colloidal particles
B. NTU
C. Electrically charged
D. Full water treatment
E. None of the Above

196. These are appropriate for small community systems where _____ is desired, but without the construction costs and space requirements associated with separately constructed sedimentation basins, filter beds, clear wells, etc.
A. Colloidal particles
B. NTU
C. Electrically charged
D. Full water treatment
E. None of the Above

197. Chemical pretreatment may increase filtered water clarity, measured in _____, by 90% compared with filtration alone.
A. Colloidal particles
B. NTU
C. Electrically charged
D. Full water treatment
E. None of the Above

198. If an operator is present to make adjustments for variations in the raw water, filtered water _____in the range of 93 to 95% are achievable.
A. Colloidal particles
B. NTU
C. Electrically charged
D. Full water treatment
E. None of the Above

199. In addition to the _____ filtration processes, package plants are found as two types: tube-type clarifiers and adsorption clarifiers. This is the most prevalent form of water treatment technology in use today.
A. Particles
B. Alum
C. Conventional
D. Coagulation
E. Coagulant

200. This filtration process employs a combination of _____ and chemical processes in order to achieve maximum effectiveness.
A. Particles
B. Alum
C. Physical
D. Coagulation
E. Coagulant

Always call us after faxing the paperwork to ensure that we've received it.

Special Notice to Help the Less Fortunate

Kavi and the believers in his church prayed fervently and lifted up praise to God before digging the well.

We here in the U.S. have it very good. Here is a story of and drilling a well just to have drinking water in India.

Kavi Viresh was accustomed to rejection. A Gospel for Asia missionary, Kavi knew he was laboring in hard soil in his village in Andhra Pradesh, India and the spiritual drought experienced by its people was worse than the physical drought they suffered in the summers. The people of this village lived hard lives focused on daily survival, and most did not have faith in any god.

By God's grace, Kavi has seen a church planted there—and believers who are eager to help him with outreach. Still, the hearts of many in the village have remained hard. Kavi has suffered beatings several times for sharing the Good News of Jesus. One time, a group of 30 people came to his house to attack him. The Gospel tracts he handed out were torn into pieces on many occasions.
"People told me, 'Your God is a great God.'"

But Kavi knew the people weren't really rejecting *him*—they were rejecting *Jesus* who sent him. And he knew there just had to be some way to get through to these people whom Jesus loved so much. That way turned out to be a Jesus Well. Before the Jesus Well was dug in this village, the people's only source of water was one government-built water tank

that was not nearly enough to meet their basic needs. Kavi knew the Jesus Well would be a tangible way to show the villagers that Jesus loved them.

Sudhir Rao, a new Christian in the village, gladly provided his services as a mason to help with construction. The digging of the Jesus Well was in itself a miracle. Others had attempted to dig a well in the village but not seen water even at depths of 300 feet. So when Kavi saw water at around 100 feet, villagers were amazed.

"People told me, 'Your God is a great God,'" Kavi recalls. Even the village leader expressed heartfelt appreciation to Kavi for providing his people with water—and that he desired to see another well dug in a nearby area. Although the well was just dug in recent months, Kavi has already seen God wash away barriers in the villagers' hearts through its refreshing waters. Hearts have been brought that much closer to being able to receive the message of hope in Christ. And he has a vision of faith for how God will continue to work. "Through this Jesus Well, surely those who have beaten me and are against me will come to know the Lord Jesus," Kavi shared.

For more information, we welcome you to visit…

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