

Registration Form

**Stormwater Monitoring 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*

List number of hours worked on assignment must match State Requirement. \_\_\_\_\_

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 \_\_\_\_\_

Class/Grade \_\_\_\_\_

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

Pretreatment \_\_\_ Collection \_\_\_ Wastewater Treatment \_\_\_

Other \_\_\_\_\_

Technical Learning College TLC PO Box 3060, Chino Valley, AZ 86323  
Toll Free (866) 557-1746 Fax (928) 272-0747 [info@tlch2o.com](mailto:info@tlch2o.com)

If you've paid on the Internet, please write your Customer# \_\_\_\_\_

Please invoice me, my PO# \_\_\_\_\_

Please pay with your credit card on our website under Bookstore or Buy Now. Or call us and provide your credit card information.

## **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 fully understand that this type of study program deals with dangerous, changing conditions and various laws and that I will not hold Technical Learning College, Technical Learning Consultants, Inc. (TLC) liable in any fashion for any errors, omissions, advice, suggestions or neglect contained in this CEU education training course or for any violation or injury, death, neglect, damage or loss of your license or certification caused in any fashion by this CEU education training or course material suggestion or error or my lack of submitting paperwork. It is my responsibility to 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. It is my responsibility to ensure all information is correct and to abide with all rules and regulations.

**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.

*You can obtain a printed version of the course manual from TLC for an additional \$89.95 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.

**Many States and employers require the final exam to be proctored.**

**Do not solely depend on TLC's Approval list for it may be outdated.**

**All downloads are electronically tracked and monitored for security purposes.**

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

## Texas Students Only

### Acknowledgement of Notice of Potential Ineligibility for License

*You are required to sign and return to TLC or your credit will not be reported.*

Name: \_\_\_\_\_

Date of Birth: \_\_\_\_\_

Email Address: \_\_\_\_\_

By signing this form, I acknowledge that Technical Learning College notified me of the following:

- the potential ineligibility of an individual who has been convicted of an offense to be issued an occupational license by the Texas Commission on Environmental Quality (TCEQ) upon completion of the educational program;
- the current TCEQ Criminal Conviction Guidelines for Occupational Licensing, which describes the process by which the TCEQ's Executive Director determines whether a criminal conviction:
  - renders a prospective applicant an unsuitable candidate for an occupational license;
  - warrants the denial of a renewal application for an existing license; or
  - warrants revocation or suspension of a license previously granted.
- the right to request a criminal history evaluation from the TCEQ under Texas Occupations Code Section 53.102; and
- that the TCEQ may consider an individual to have been convicted of an offense for the purpose of denying, suspending or revoking a license under circumstances described in Title 30 Texas Administrative Code Section 30.33.

Enrollee Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name of Training Provider/Organization: Technical Learning College

Contact Person: Melissa Durbin Role/Title: Dean



# For Texas TCEQ Wastewater Licensed Operators Important Information

## Wastewater/Collections Rule Changes (Texas Only)

### Rule Changes and Updates for Domestic Wastewater Systems

On Nov. 4, 2014, TCEQ commissioners adopted revisions to 30 Texas Administrative Code (TAC), Chapter 217, Design Criteria for Domestic Wastewater Systems, and “re-adopted” previously repealed rules in 30 TAC, Chapter 317, Design Criteria Prior to 2008.

#### *Some of the changes to Chapter 217 include:*

- Adding new definitions and clarifying existing definitions;
- Adding design criteria and approval requirements for rehabilitation of existing infrastructure;
- Adding design criteria for new technologies, including cloth filters and air lift pumps;
- Making changes to reflect modern practices, standards and trends;
- Modifying rule language to improve readability and enforceability; and
- Modifying the design organic loadings and flows for a new wastewater treatment facility.

### **SUBCHAPTER A: ADMINISTRATIVE REQUIREMENTS §§217.1 - 217.18**

Effective December 4, 2015 §217.1. Applicability. (a) Applicability. (1) This chapter applies to the design, operation, and maintenance of: (A) domestic wastewater treatment facilities that are constructed with plans and specifications received and approved by the executive director after the effective date of the amendments to this chapter; (B) treatment units that are altered, constructed, or re-rated with plans and specifications received and approved by the executive director after the effective date of the amendments to this chapter; (C) collection systems that are constructed with plans and specifications received and approved by the executive director after the effective date of the amendments to this chapter; (D) collection system units that are altered, constructed, or re-rated with plans and specifications received and approved by the executive director after the effective date of the amendments to this chapter; (E) existing domestic wastewater treatment facilities that do not have a current Texas Pollutant Discharge Elimination System permit or a Texas Land Application Permit and are required to have an active wastewater permit; (F) existing wastewater treatment facilities and collection systems that never received approval for plans and specifications from the executive director; and (G) collection system rehabilitation projects covered in §217.56(c) and §217.69 of this title (relating to Trenchless Pipe Installation; and Maintenance, Inspection, and Rehabilitation of the Collection System). (2) Domestic wastewater treatment facilities, treatment units, collection systems, and collection system units with plans and specifications approved by the executive director that were received on or after August 28, 2008 and before the effective date of this chapter must comply with the rules in this chapter, as they existed immediately before the effective date of the amendments to this chapter.

The rules in Texas Commission on Environmental Quality Page 2 Chapter 217 - Design Criteria for Domestic Wastewater Systems effect immediately before the effective date of the amendments to this chapter are continued in effect for that purpose. (3) This chapter does not apply to: (A) the design, installation, operation, or maintenance of domestic wastewater treatment facilities, treatment units, collection systems, or collection system units with plans and specifications that were approved by the executive director on or before August 27, 2008, which are governed by Chapter 317 of this title (relating to Design Criteria Prior to 2008) or design

criteria that preceded Chapter 317 of this title; and (B) systems regulated by Chapter 285 of this title (relating to On-Site Sewage Facilities); or collection systems or wastewater treatment facilities that collect, transport, treat, or dispose of wastewater that does not have the characteristics of domestic wastewater, although the wastewater may contain domestic wastewater.

(b) The executive director may grant variances from new requirements added by the amendments of this chapter to a person who proposes to construct, alter, or re-rate a collection system or wastewater treatment facility if the plans and specifications for the project are submitted within 180 days after the date the amendments to this chapter are effective, provided the plans and specifications comply with the rules in effect immediately prior to the amendment. Adopted November 4, 2015 Effective December 4, 2015

**The link to the rules is available on the TCEQ website at <https://www.tceq.texas.gov/rules/indxpathdf.html>**

***For Texas Students Only....***

Please sign and date this notice

Printed Name

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Signature

Date

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# Stormwater Monitoring Answer Key

Name \_\_\_\_\_

Phone \_\_\_\_\_

**You are solely responsible in ensuring that this course is accepted for credit by your State. No refunds. Did you check with your State agency to ensure this course is accepted for credit?**

**Method of Course acceptance confirmation. Please fill this section**

Website \_\_\_ Telephone Call \_\_\_ Email \_\_\_ Spoke to \_\_\_\_\_

What is the approval number if Applicable? \_\_\_\_\_

PA DEP Students are required to complete the original version of the text. \_\_\_\_\_  
Please initial

**You are responsible to ensure that TLC receives the Assignment and Registration Key. Please call us to ensure that we received it.**

**You can use Adobe Acrobat DC Program to complete the assignment.**

**Please circle, underline, bold or X only one correct answer**

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| 2. A B C D E F  | 17. A B C D E F | 32. A B C D E F |
| 3. A B C D E F  | 18. A B C D E F | 33. A B C D E F |
| 4. A B C D E F  | 19. A B C D E F | 34. A B C D E F |
| 5. A B C D E F  | 20. A B C D E F | 35. A B C D E F |
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*This course contains general EPA's CWA federal rule requirements. Please be aware that each state implements wastewater/safety/environmental /building regulations that may be more stringent than EPA's regulations. Check with your state environmental/health agency for more information. These rules change frequently and are often difficult to interpret and follow. Be careful to be in full-compliance and do not follow this course for proper compliance.*



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

**STORMWATER MONITORING 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? \_\_\_\_\_

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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.

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## Stormwater Monitoring CEU Training Assignment

**The Assignment (Exam) is also available in Word on the Internet for your Convenience, please visit [www.ABCTLC.com](http://www.ABCTLC.com) and download the assignment and e-mail it back to TLC.**

You will have 90 days from the start of this course to complete in order to receive your Professional Development Hours (**PDHs**) or Continuing Education Unit (**CEU**). A score of 70 % is necessary to pass this course. We prefer if this exam is proctored. No intentional trick questions. If you should need any assistance, please email all concerns and the completed manual to [info@tlch2o.com](mailto:info@tlch2o.com).

We would prefer that you utilize the enclosed answer sheet in the front, but if you are unable to do so, type out your own answer key. Please include your name and address on your Answer Key and make copy for yourself. You can e-mail or fax your Answer Key along with the Registration Form to TLC. **(S) Means answer may be plural or singular. Multiple Choice Section, One answer per question and please use the answer key.**

### Clean Water Act (Rule) Summary 33 U.S.C. s/s 1251 et seq. (1977)

- Which of the following terms has clarified and expanded permit requirements under the Clean Water Act for 19,000 municipal sanitary sewer collection systems in order to reduce sanitary sewer overflows?  
A. Clean Water Act or CWA      D. EPA still retains oversight responsibilities  
B. Water quality levels      E. Environmental Protection Agency (EPA)  
C. Clean water legislation      F. None of the Above
- The requirements will help communities improve some of water quality standards—by requiring facilities to develop and implement new capacity, management, operation, and maintenance programs and public notification programs.  
A. True    B. False
- The Clean Water Act is a 1977 amendment to the \_\_\_\_\_, which set the basic structure for regulating discharges of pollutants to waters of the United States.  
A. Clean Water Act or CWA      D. EPA  
B. Federal Water Pollution Control Act of 1972      E. Valuable wetlands  
C. Clean water legislation      F. None of the Above
- Which of the following terms gave the authority to set effluent standards on an industry basis and continued the requirements to set water quality standards for all contaminants in surface waters?  
A. Clean Water Act or CWA      D. Water quality standard(s)  
B. EPA      E. Public notification program(s)  
C. Congress      F. None of the Above
- The CWA makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit (NPDES) is obtained under the?  
A. Act      D. EPA  
B. Water quality levels      E. OSHA  
C. Clean water legislation      F. None of the Above
- Which of the following terms focused on toxic pollutants?  
A. Clean Water Act or CWA      D. Water quality standard(s)  
B. EPA      E. The 1977 amendments  
C. Congress      F. None of the Above

7. The CWA provisions for the delegation by this term of many permitting, administrative, and enforcement aspects of the law to state governments. In states with the authority to implement CWA programs, the EPA retains oversight responsibilities.
- A. Clean Water Act or CWA      D. EPA  
 B. Water quality levels      E. Valuable wetlands and other aquatic habitats  
 C. Clean water legislation      F. None of the Above
8. Which of the following terms is the primary federal law that protects our nation's waters, including lakes, rivers, aquifers, and coastal areas. Lake Erie was dying?
- A. Clean Water Act      D. Water quality standard(s)  
 B. EPA      E. Public notification program(s)  
 C. Congress      F. None of the Above
9. Which of the following terms primary objective is to restore and maintain the integrity of the nation's waters?
- A. Clean Water Act      D. EPA still retains oversight responsibilities  
 B. Water quality levels      E. Valuable wetlands and other aquatic habitats  
 C. Clean water legislation      F. None of the Above
10. Which of the following terms focuses on improving the quality of the nation's waters?
- A. Clean Water Act      D. Water quality standard(s)  
 B. EPA      E. Public notification program(s)  
 C. Congress      F. None of the Above
11. Which of the following terms requires major industries to meet performance standards to ensure pollution control; charges states and tribes with setting specific water quality criteria appropriate for their waters and developing pollution control programs?
- A. Clean Water Act      D. EPA oversight responsibilities  
 B. Water quality levels      E. Valuable wetlands and other aquatic habitats  
 C. Clean water legislation      F. None of the Above

**Stormwater Introduction**

12. Stormwater precipitation is caused by some type of runoff.
- A. True    B. False
13. Stormwater problems can contribute to raising of water quality of water sources; this is by decreasing the flow of human pollutants such as oil, fertilizers and pesticides, and the flow of natural elements such as phosphorus, into the water (stormwater quality impacts).
- A. True    B. False
14. Degradation of lakes, streams and wetlands has economic effects: it reduces property values, raises bills from public water utilities, raises local property tax rates, and reduces tourism and related business income.
- A. True    B. False
15. The U.S. Environmental Protection Agency (EPA) estimates that 6% of the water quality problems in the nation are caused by nonpoint sources.
- A. True    B. False
16. Stormwater runoff has no quantity and quality impacts.
- A. True    B. False

17. Nonpoint source (NPS) pollution is water pollution that consists of contaminated runoff associated with agricultural, urban, and other sources.  
A. True B. False
18. The term “nonpoint source pollution” was created under the federal Clean Water Act to distinguish it from “point source” discharges such as industrial wastewater from pipes.  
A. True B. False
19. Nonpoint sources include many varied small sources of pollutants from activities.  
A. True B. False
20. Every time it rains or the snow melts, pollutants such as dirt, nutrients, bacteria, oils and heavy metals, are swept off from land surfaces and are not carried by runoff water into surface and groundwater.  
A. True B. False
21. Stormwater runoff cannot cause flooding, undermine stream banks, and damage property and habitat, as well as carry contaminants that contribute to lower water quality.  
A. True B. False
22. When people speak about “stormwater quality control”, they are talking about reducing the pollutants from nonpoint sources that are carried by stormwater into our lakes, streams, groundwater, and coastal areas.  
A. True B. False
23. The Clean Water Act of 1776 passed by the United States Congress and amended by the Water Quality Act of 1812, set in motion requirements and policy measures for the Environmental Protection Agency (EPA).  
A. True B. False
24. The EPA has established regulatory components for Storm Water Discharges that were levied upon associated industries and municipalities with populations over 1,000,000.  
A. True B. False
25. The goal of NPDES, through permits and plans, is to reduce to the maximum extent practical, the amount of pollution discharges from the municipal storm drainage systems.  
A. True B. False
26. NPDES municipal permits have several components, one being management programs. A term frequently used in this subject matter is - Best Management Practices (BMP).  
A. True B. False
27. RMP's are schedules of activities, prohibition of practices, maintenance procedures, and other recommended management practices that may be employed for a particular purpose - Storm Water Pollution Prevention and Reduction.  
A. True B. False
28. Although the OSHA regulations seem complex, their goal is simple - “Improve water quality in waters of the United States”.  
A. True B. False

### Basic Program Requirements

29. Which of the following terms or objective is obtaining a baseline measurement of current water quality, discover and eliminate illicit connections to the system?
- A. In-Stream Monitoring Program
  - B. Illicit Connection Program
  - C. Industrial Monitoring Program
  - D. Stormwater Monitoring Program
  - E. Household Hazardous Waste Program
  - F. None of the above
30. Which of the following terms or objective eliminating household hazardous waste from contaminating the storm water?
- A. In-Stream Monitoring Program
  - B. Illicit Connection Program
  - C. Industrial Monitoring Program
  - D. Stormwater Monitoring Program
  - E. Household Hazardous Waste Program
  - F. None of the above
31. Which of the following terms or objective is creating a public awareness of the pollutional risk of misusing and improper disposal of chemicals?
- A. Public Education Program
  - B. Illicit Connection Program
  - C. Industrial Monitoring Program
  - D. Stormwater Monitoring Program
  - E. Household Hazardous Waste Program
  - F. None of the above
32. Which of the following terms or objective is evaluating industrial storm water runoff locations and to perform physical site inspections and develop future pollution prevention plans?
- A. Public Education Program
  - B. Illicit Connection Program
  - C. Industrial Monitoring Program
  - D. Stormwater Monitoring Program
  - E. Household Hazardous Waste Program
  - F. None of the above
33. Which of the following terms or objective is discovering and eliminating illicit connections to the storm sewer system?
- A. Public Education Program
  - B. Illicit Connection Program
  - C. Industrial Monitoring Program
  - D. Stormwater Monitoring Program
  - E. Household Hazardous Waste Program
  - F. None of the above
34. Which of the following terms or objective is the analysis of the monitoring sites with a full scan of pollutants as required by the NPDES permit?
- A. Public Education Program
  - B. Illicit Connection Program
  - C. Industrial Monitoring Program
  - D. Stormwater Monitoring Program
  - E. Household Hazardous Waste Program
  - F. None of the above
35. Which of the following terms or objective is reducing the amount of household hazardous waste disposed of improperly?
- A. Public Education Program
  - B. Illicit Connection Program
  - C. Industrial Monitoring Program
  - D. Stormwater Monitoring Program
  - E. Recycling Program
  - F. None of the above
36. NPDES stands for National Pollutant Discharge Elimination System.
- A. True
  - B. False
37. You will need an OSHA Permit if your discharge is composed entirely of storm water.
- A. True
  - B. False
38. Prior to October 1, 1994, discharges composed entirely of storm water shall not be required to obtain a NPDES permit except: A discharge with respect to which a permit has been issued prior to February 4, 1975.
- A. True
  - B. False

### Prohibited Discharge Standards

39. Specific prohibitions forbid eight categories of pollutant discharges as follows: Discharges containing pollutants which create a fire or explosion hazard in the CMOM.

- A. True      B. False

40. Discharges containing pollutants causing corrosive structural damage to the POTW, but in no case discharges with a pH lower than 5.0, unless the POTW is specifically designed to accommodate such?

- A. Categorical pretreatment standards      D. Violation of the general prohibitions  
B. Pass through      E. Flow rate and/or concentration  
C. Discharge(s)      F. None of the Above

41. Which of the following terms containing pollutants in amounts causing obstruction to the flow in the POTW resulting in interference?

- A. Interference or pass through      D. Eight categories of pollutant discharges  
B. Discharges      E. Categorical pretreatment standards  
C. POTW      F. None of the Above

42. Which of the following terms of any pollutants released at a flow rate and/or concentration which will cause interference with the POTW?

- A. Categorical pretreatment standards      D. Violation of the general prohibitions  
B. Pass through      E. Flow rate and/or concentration  
C. Discharge(s)      F. None of the Above

43. Discharges of petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause?

- A. Interference or pass through      D. Eight categories of pollutant discharges  
B. Discharge or discharges      E. Categorical pretreatment standards  
C. POTW      F. None of the Above

44. Which of the following terms which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems?

- A. Categorical pretreatment standards      D. Violation of the general prohibitions  
B. Pass through      E. Flow rate and/or concentration  
C. Discharge(s)      F. None of the Above

45. Which of the following terms, except at discharge points designated by the POTW?

- A. Interference or pass through      D. Eight categories of pollutant discharges  
B. Discharge or discharges      E. Discharges of trucked or hauled pollutants  
C. POTW      F. None of the Above

### Categorical Standards

46. Categorical pretreatment standards are national, uniform, technology-based standards that apply to discharges to POTWs from specific industrial categories and limit the?

- A. Categorical pretreatment standards      D. Violation of the general prohibitions  
B. Pass through      E. Flow rate and/or concentration  
C. Discharge of specific pollutants      F. None of the Above

47. Which of the following terms for both existing and new sources (are promulgated by the EPA pursuant to Section 307(b) and (c) of the CWA?

- A. Categorical pretreatment standards
- B. Pass through
- C. Discharge(s)
- D. Violation of the general prohibitions
- E. Flow rate and/or concentration
- F. None of the Above

48. Effluent limitations guidelines developed in conjunction with categorical standards.

- A. True
- B. False

**CMOM - "Capacity, Management, Operation and Maintenance"**

49. Which of the following terms is vital to protect public health, property, and waterways in the surrounding area?

- A. Sanitary sewage overflows (SSOs)
- B. Wastewater
- C. Clean decantable water
- D. Management, operation, and maintenance
- E. Proper function of sanitary sewer systems
- F. None of the Above

50. Which of the following terms occur every year, causing huge monetary losses, damage to fish/shellfish beds, polluting groundwater, and decreased tourism?

- A. Public health and water quality
- B. Disrepair
- C. 40,000 Sanitary sewage overflows SSOs
- D. Dissolved organics
- E. Undesirable solids
- F. None of the Above

51. Which of the following terms release raw sewage from the collection system before it can reach a treatment facility?

- A. Sanitary sewage overflows (SSOs)
- B. Wastewater
- C. Clean decantable water
- D. Management, operation, and maintenance
- E. Full compliance with the Clean Water Act
- F. None of the Above

52. Cities have used a wide variety of building materials, designs, and installation techniques, which aren't durable enough to withstand heavy, continuous use.

- A. True
- B. False

53. The Management, Operation and Maintenance (MOM) Programs Project is a pilot enforcement approach developed by?

- A. Clean Water Act
- B. EPA
- C. Congress
- D. Water quality standard(s)
- E. EPA Region 4
- F. None of the Above

54. A SSO is a release of untreated wastewater before the flow reaches a treatment plant. SSOs pose a significant threat to public health and?

- A. Public health and water quality
- B. Disrepair
- C. Water quality
- D. Dissolved organics
- E. Certain compounds and undesirable solids
- F. None of the Above

**Treatment Balance and the Effects of Undesirable Solids**

55. Which of the following terms are balanced mixture of microorganisms which contact and digest the organics in the wastewater, and bacteria then grows on this media to treat the wastewater?

- A. Sanitary sewage overflows (SSOs)
- B. Wastewater
- C. Wastewater treatment plant
- D. Management, operation, and maintenance
- E. Full compliance with the Clean Water Act
- F. None of the Above

56. When a plant is properly maintained these bacteria or bugs eat the dissolved organics in the water, thus removing?

- A. Public health and water quality
- B. BOD, Ammonia, Nitrates, and Phosphorus
- C. Sanitary sewage overflows SSOs
- D. Dissolved organics
- E. Certain compounds
- F. None of the Above

57. The wastewater treatment process leaves extremely clean and reusable water that can be injected back into the ground, sent to ponds or used for?

- A. Irrigation
- B. Wastewater
- C. Clean decantable water
- D. Management, operation, and maintenance
- E. Full compliance with the Clean Water Act
- F. None of the Above

58. Which of the following terms and undesirable solids, like grease and grass clippings, can disturb this delicate balance and necessary process at the wastewater treatment facility?

- A. Public health and water quality
- B. Disrepair
- C. Sanitary sewage overflows SSOs
- D. Dissolved organics
- E. Certain compounds
- F. None of the Above

59. There are compounds and this term that should never be introduced into a sanitary sewer system.

- A. Certain compounds
- B. Wastewater
- C. Clean decantable water
- D. Dissolved organics
- E. Mixtures
- F. None of the Above

60. Which of the following terms include but are not limited to: cleaning solvents, grease, oils, pesticides, herbicides, antifreeze and other automotive products?

- A. Deteriorating Sewer System
- B. Pipe Failure(s)
- C. Destructive compounds
- D. Badly connected sewer service lines
- E. Sanitary Sewer Overflows or (SSOs)
- F. None of the Above

61. The solids include but are not limited to: plastics, rubber goods, grass clippings, metal products such as aluminum foil, beer or soda cans, wood products, glass, paper products such as disposable diapers and sanitary napkins. Items such as these disturb or even kill the delicate balance of microorganisms and bacteria that are needed to treat the wastewater.

- A. True
- B. False

### **What are Sanitary Sewer Overflows?**

62. Sanitary Sewer Overflows (SSOs) are discharges of raw sewage from?

- A. Deteriorating Sewer System
- B. Pipe Failure(s)
- C. Destructive compounds
- D. Municipal sanitary sewer systems
- E. Sanitary Sewer Overflows or (SSOs)
- F. None of the Above

63. Which of the following terms can release untreated sewage into basements or out of manholes and onto city streets, playgrounds, and into streams before it can reach a treatment facility?

- A. Deteriorating Sewer System
- B. Pipe Failure(s)
- C. Destructive compounds
- D. Badly connected sewer service lines
- E. SSOs
- F. None of the Above

### Why do Sewers Overflow?

64. Which of the following terms occasionally occur in almost every sewer system, even though systems are intended to collect and contain all the sewage?
- A. SSOs
  - B. Undersized Systems
  - C. Sewer Service Connections
  - D. Poor sewer collection system management
  - E. Back-ups and sewer overflows
  - F. None of the Above

### Problems that Can Cause Chronic SSOs Include:

65. Which of the following terms is too much rainfall or snowmelt infiltrating through the ground into leaky sanitary sewers?

- A. Deteriorating Sewer System
- B. Infiltration and Inflow (I&I)
- C. Destructive compounds
- D. Badly connected sewer service lines
- E. Sanitary Sewer Overflows or (SSOs)
- F. None of the Above

66. Which of the following terms: Sewers and pumps are too small to carry sewage from newly-developed subdivisions or commercial areas?

- A. SSOs occasionally occur
- B. Undersized Systems
- C. Sewer Service Connections
- D. Poor sewer collection system management
- E. Back-ups and sewer overflows
- F. None of the Above

67. Which of the following terms: blocked, broken or cracked pipes, tree roots grow into the sewer, sections of pipe settle or shift?

- A. Deteriorating Sewer System
- B. Pipe Failure(s)
- C. Destructive compounds
- D. Badly connected sewer service lines
- E. Sanitary Sewer Overflows or (SSOs)
- F. None of the Above

68. Which of the following terms discharges occur at sewer service connections to houses and other buildings?

- A. SSOs occasionally occur
- B. Undersized Systems
- C. Sewer Service Connections
- D. Poor sewer collection system management
- E. Back-ups and sewer overflows
- F. None of the Above

69. Which of the following terms is improper installation, improper maintenance; widespread problems that can be expensive to fix develop over time?

- A. Deteriorating Sewer System
- B. Pipe Failure(s)
- C. Destructive compounds
- D. Badly connected sewer service lines
- E. Sanitary Sewer Overflows or (SSOs)
- F. None of the Above

### Why are SSOs a Problem?

70. Which of the following terms has found that SSOs caused by poor sewer collection system management pose a substantial health and environmental challenge?

- A. Clean Water Act or CWA
- B. EPA
- C. Congress
- D. Water quality standard(s)
- E. 1977 amendments
- F. None of the Above

71. Many municipalities have asked for national consistency in the way permits are considered for wastewater discharges, including this term, and in enforcement of the law prohibiting unpermitted discharges.

- A. Deteriorating Sewer System
- B. Pipe Failure(s)
- C. Destructive compounds
- D. Badly connected sewer service lines
- E. SSOs
- F. None of the Above

### Combined Sewer Overflows

72. Which of the following terms are sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe?

- A. Written MOM programs
- B. Program goal
- C. Water quality
- D. Publicly Owned Treatment Works (POTW)
- E. Combined sewer systems
- F. None of the Above

73. Which of the following terms transport all of their wastewater to a sewage treatment plant, where it is treated and then discharged to a water body?

- A. MOM program(s)
- B. Combined sewer system(s)
- C. Utility's plan/schedule
- D. NPDES Compliance Inspection Manual
- E. Utility's CMOM or MOM programs
- F. None of the Above

74. Which of the following terms are designed to overflow occasionally and discharge excess wastewater directly to nearby streams, rivers, or other water bodies?

- A. Written MOM programs
- B. Program goal
- C. Water quality
- D. Publicly Owned Treatment Works (POTW)
- E. Combined sewer systems
- F. None of the Above

### The Elements of a Proper CMOM Program

#### Utility Specific

75. The complexity and expense associated with a NPDES program is specific to the size and complexity of the Publicly Owned Treatment Works and related infrastructure.

- A. True
- B. False

#### Purposeful

76. Which of the following terms when present and properly maintained, they support customer service and protect system assets, public health, and water quality?

- A. MOM programs
- B. Program goal
- C. Water quality
- D. Publicly Owned Treatment Works (POTW)
- E. Combined sewer systems
- F. None of the Above

77. Which of the following terms have goals directed toward their individual purposes. Progress toward these goals is measurable, and the goals are attainable?

- A. MOM program(s)
- B. Combined sewer system(s)
- C. Utility's plan/schedule
- D. Proper MOM programs
- E. Utility's CMOM or MOM programs
- F. None of the Above

#### Uses Performance Measures

78. Performance measures should be established for each of this missing term in conjunction with the program goal.

- A. MOM program
- B. Program goal
- C. Water quality
- D. Publicly Owned Treatment Works (POTW)
- E. Combined sewer systems
- F. None of the Above

#### Periodically Evaluated

79. An evaluation of the progress toward reaching the goals, or missing term, should be made periodically and based upon the quantified performance measures.

- A. A reassessment of the goals
- B. Combined sewer system(s)
- C. Utility's plan/schedule
- D. NPDES Compliance Inspection Manual
- E. Utility's CMOM or MOM programs
- F. None of the Above



**Identify Deficiencies**

87. Identify any permitted discharges which have occurred in the past seven years.  
A. True      B. False

**Develop Improvement Plan**

88. Define the utility's plan/schedule to remediate the?  
A. Necessary improvements      D. Preventative operations  
B. Routine operation(s)      E. Recurrent SSOs  
C. NPDES permit authority      F. None of the Above

**Prepare the Self-Audit Report**

89. Which of the following terms including any deficiencies found and the corresponding improvement plan, which is useful for the utility?  
A. Audit results      D. Raw sewage  
B. Unpermitted discharges      E. Infiltration and inflow  
C. SSOs      F. None of the Above

**Are there federal grants or other compliance assistance resources available to conduct a Self-Audit?**

90. Which of the following terms offers a number of financial resources to assist qualified utilities in making improvements to their programs?  
A. Utility's plan/schedule      D. Both personnel and management  
B. MOM Programs Self-Audit      E. Office of Wastewater Management  
C. SSOs      F. None of the Above

**What Health Risks do SSOs present?**

91. Which of the following terms contain raw sewage they can carry bacteria, viruses, protozoa, helminths, and borroughs?  
A. Self-audit results      D. Raw sewage  
B. Unpermitted discharges      E. Infiltration and inflow  
C. SSOs      F. None of the Above

**People can be Exposed Through:**

92. Which of the following terms such as basements, lawns or streets, or waters used for recreation?  
A. Utility's plan/schedule      D. Both personnel and management  
B. MOM Programs Self-Audit      E. Capacity and/or reliability  
C. SSOs      F. None of the Above

93. One study indicates that an average of nearly 700 cases of illness per year were reported in the 1980s from eating shellfish contaminated by sewage and other sources. The number of unreported cases is estimated to be 20 times that.  
A. True      B. False

**What other Damage can SSOs do?**

94. Which of the following terms also damage property and the environment?  
A. Utility's plan/schedule      D. Both personnel and management  
B. MOM Programs Self-Audit      E. Capacity and/or reliability  
C. SSOs      F. None of the Above

95. Which of the following terms enter oceans, bays, estuaries, rivers, lakes, streams, or brackish waters is their effect on water quality?

- A. Self-audit results
- B. Unpermitted discharges
- C. SSOs
- D. Raw sewage
- E. Infiltration and inflow
- F. None of the Above

**How can SSOs be Reduced or Eliminated?**

96. Which of the following terms are caused by inadequate or negligent operation or maintenance, inadequate system capacity, and improper system design and construction?

- A. Utility's plan/schedule
- B. MOM Programs Self-Audit
- C. SSOs
- D. Both personnel and management
- E. Capacity and/or reliability
- F. None of the Above

97. Reducing which of the following terms through system rehabilitation and repairing broken or leaking service lines?

- A. Self-audit results
- B. Unpermitted discharges
- C. SSOs
- D. Raw sewage
- E. Infiltration and inflow
- F. None of the Above

98. Enlarging or upgrading sewer, pump station, or sewage treatment plant capacity and/or?

- A. Utility's plan/schedule
- B. MOM Programs Self-Audit
- C. SSOs
- D. Reliability
- E. Preventative operations
- F. None of the Above

99. Construction of wet weather storage and treatment facilities to treat?

- A. Utility's plan/schedule
- B. MOM Programs Self-Audit
- C. SSOs
- D. Excess flows
- E. Capacity and/or reliability
- F. None of the Above

100. Which of the following terms communities should address during sewer system master planning and facilities planning?

- A. Utility's plan/schedule
- B. MOM Programs Self-Audit
- C. SSOs
- D. Both personnel and management
- E. Capacity and/or reliability
- F. None of the Above

**Other Wastewater Treatment Components - Biochemical Oxygen Demand**

101. Biochemical Oxygen Demand (BOD or BOD5) is an indirect measure of Biodegradable organic compounds in water, and is determined by measuring the dissolved oxygen decrease in a controlled water sample over a five-day period.

- A. True
- B. False

102. During this five-day period, aerobic (oxygen-consuming) bacteria decompose organic matter in the sample and consume dissolved oxygen in proportion to the amount of organic material that is present.

- A. True
- B. False

103. Which of the following terms reflects high concentrations of substances that can be biologically degraded, thereby consuming oxygen?

- A. Organic carbon
- B. Human sources
- C. Domestic wastewater
- D. High BOD
- E. Growth of filamentous bacteria
- F. None of the Above

104. The BOD test has merit as a pollution parameter continues to be debated, \_\_\_\_\_ has the advantage of a long period of record.

- A. BOD
- B. Dissolved oxygen decrease
- C. Sludge bulking
- D. Bacteria and other microbes
- E. Oxygen-demanding pollutants
- F. None of the Above

### Organic Carbon

105. Most organic carbon in water occurs as partly degraded plant and animal materials, some of which are resistant to microbial degradation.

- A. True
- B. False

106. Dead tissue containing carbon is decomposed as \_\_\_\_\_ by bacteria and other microbes.

- A. An essential nutrient
- B. Dissolved oxygen decrease
- C. Sludge bulking
- D. Detritus
- E. Oxygen-demanding pollutants
- F. None of the Above

### Total Organic Carbon

107. (TOC) bears a direct relationship with biological and chemical oxygen demand; high levels of TOC can result from human sources, \_\_\_\_\_ being the main concern.

- A. Organic carbon
- B. High oxygen demand
- C. Domestic wastewater
- D. High BOD
- E. Growth of filamentous bacteria
- F. None of the Above

### pH Section

108. The Arrhenius theory states that an acid is a substance that produces \_\_\_\_\_ when it is dissolved in water, and a base is one that produces hydroxide ions when dissolved in water.

- A. Acid
- B. Alkalinity
- C. pH
- D. pH measurement(s)
- E. Hydronium ions
- F. None of the Above

109. When an atom loses \_\_\_\_\_ and thus has more protons than electrons, the atom is a positively-charged ion or cation.

- A. A proton
- B. Charge
- C. Anti-matter
- D. An electron
- E. A cation
- F. None of the Above

110. An oxidant removes electrons from another substance. Similarly, substances that have the ability to reduce other substances are said to be reductive and are known as reducing agents, reductants, or reducers. Because of this reaction, we call these?

- A. A proton
- B. An electron donor
- C. Anti-matter
- D. An electron
- E. A cation
- F. None of the Above

111. In chemistry, pH is a measure of the acidity or basicity of an aqueous solution. Solutions with a pH less than 7 are said to be acidic and solutions with a pH greater than 7 are basic or alkaline. Pure water has a pH very close to?

- A. 5
- B. 6
- C. 7
- D. 7.7
- E. 7.5
- F. None of the Above

112. Which of the following terms are determined using a concentration cell with transference, by measuring the potential difference between a hydrogen electrode and a standard electrode such as the silver chloride electrode?

- A. Primary pH standard values
- B. Alkalinity
- C. pH
- D. pH measurement(s)
- E. Measurement of pH
- F. None of the Above

113. Which of the following terms are important in medicine, biology, chemistry, agriculture, forestry, food science, environmental science, oceanography, civil engineering, chemical engineering, nutrition, water treatment & water purification, and many other applications?

- A. Primary pH standard values
- B. Alkalinity
- C. pH
- D. pH measurement(s)
- E. Measurement of pH
- F. None of the Above

114. Mathematically, pH is the negative logarithm of the activity of the hydronium ion, more often expressed as the measure of the?

- A. Electrons
- B. Alkalinity
- C. Hydronium ion concentration
- D. Cation measurement(s)
- E. Ions
- F. None of the Above

115. Which of the following terms for aqueous solutions can be done with a glass electrode and a pH meter, or using indicators?

- A. Primary sampling
- B. Alkalinity
- C. pH
- D. Determining values
- E. Measurement of pH
- F. None of the Above

116. The pH scale is logarithmic and therefore pH is?

- A. Universal indicator
- B. A dimensionless quantity
- C. Spectrophotometer
- D. Excess of alkaline earth metal concentrations
- E. A set of non-linear simultaneous equations
- F. None of the Above

117. Measuring alkalinity is important in determining a stream's ability to neutralize acidic pollution from rainfall or wastewater. It is one of the best measures of the sensitivity of the stream to acid inputs. There can be long-term changes in the \_\_\_\_\_ of rivers and streams in response to human disturbances.

- A. Acid
- B. Alkalinity
- C. pH
- D. pH measurement(s)
- E. Bond formation
- F. None of the Above

118. pH is defined as the decimal logarithm of the reciprocal of the \_\_\_\_\_,  $a_{H^+}$ , in a solution.

- A. Hydrogen ion activity
- B. Ion-selective electrode(s)
- C. (Solvated) hydronium ion
- D. Brønsted–Lowry acid–base theory
- E. Acid-base behavior
- F. None of the Above

119. Which of the following terms may be used to measure pH, by making use of the fact that their color changes with pH?

- A. Indicators
- B. pH
- C. Spectrophotometer
- D. Excess of alkaline earth metal concentrations
- E. A set of non-linear simultaneous equations
- F. None of the Above

120. Alkalinity is the name given to the quantitative capacity of an aqueous solution to neutralize an?

- A. Acid
- B. Base
- C. pH
- D. pH measurement(s)
- E. Bond formation
- F. None of the Above

121. Which of the following terms of the color of a test solution with a standard color chart provides a means to measure pH accurate to the nearest whole number?

- A. Universal indicator
- B. Colorwheel measurement
- C. Spectrophotometer
- D. Visual comparison
- E. A test
- F. None of the Above

122. Which of the following terms is made from absorbent paper that has been impregnated with universal indicator?

- A. Universal indicator
- B. Colorimeter of spectrophotometer
- C. Spectrophotometer
- D. Excess of alkaline earth metal concentrations
- E. A set of non-linear simultaneous equations
- F. None of the Above

123. The calculation of the pH of a solution containing acids and/or bases is an example of a chemical speciation calculation, that is, a mathematical procedure for calculating the concentrations of all chemical species that are present in the solution. The complexity of the procedure depends on the?

- A. Universal indicator
- B. pH
- C. Nature of the solution
- D. Excess of alkaline earth metal concentrations
- E. A set of non-linear simultaneous equations
- F. None of the Above

124. Under normal circumstances, this means that the concentration of hydrogen ions in acidic solution can be taken to be equal to the concentration of the acid. The pH is then equal to minus the logarithm of?

- A. The concentration value
- B. The pH
- C. The Spectrophotometer
- D. Excess of alkaline earth metal concentrations
- E. A set of non-linear simultaneous equations
- F. None of the Above

125. Alkalinity of water is its acid-neutralizing capacity. It is the sum of all the titratable bases. The measured value may vary significantly with the?

- A. Acid
- B. Alkalinity
- C. pH
- D. pH measurement(s)
- E. End-point pH
- F. None of the Above

126. For strong acids and bases, no calculations are necessary except in extreme situations. The pH of a solution containing a weak acid requires the solution of a quadratic equation. The pH of a solution containing a weak base may require the?

- A. Solution of a cubic equation
- B. pH
- C. Spectrophotometer
- D. Excess of alkaline earth metal concentrations
- E. A set of non-linear simultaneous equations
- F. None of the Above

127. Alkalinity is a measure of this missing term and can be interpreted in terms of specific substances only when the chemical composition of the sample is known.

- A. Universal indicator
- B. pH
- C. An aggregate property of water
- D. Excess of alkaline earth metal concentrations
- E. A set of non-linear simultaneous equations
- F. None of the Above

128. More precise measurements are possible if the color is measured spectrophotometrically, using a?

- A. Universal indicator
- B. Colorimeter or spectrophotometer
- C. Spectrophotometer
- D. Excess of alkaline earth metal concentrations
- E. A set of non-linear simultaneous equations
- F. None of the Above

129. Alkalinity is significant in many uses and treatments of natural waters and wastewaters. Because the alkalinity of \_\_\_\_\_ it is taken as an indication of the concentration of these constituents.

- A. Acid
- B. Alkalinity
- C. pH
- D. pH measurement(s)
- E. Bond formation
- F. None of the Above

130. For strong acids and bases no calculations are necessary except in extreme situations. The pH of a solution containing a weak acid requires?

- A. The concentration value
- B. The solution of a quadratic equation
- C. The Spectrophotometer
- D. Excess of alkaline earth metal concentrations
- E. A set of non-linear simultaneous equations
- F. None of the Above

131. Alkalinity in excess of this term is significant in determining the suitability of water for irrigation.

- A. 8
- B. pH of 7
- C. 3
- D. Alkaline earth metal concentrations
- E. Non-linear simultaneous equations
- F. None of the Above

132. The calculation of the pH of a solution containing acids and/or bases is an example of a \_\_\_\_\_ calculation, that is, a mathematical procedure for calculating the concentrations of all chemical species that are present in the solution

- A. Universal indicator
- B. Colorwheel measurement
- C. Spectrophotometer
- D. Visual comparison
- E. Chemical speciation
- F. None of the Above

133. Since pH is a logarithmic scale, a difference of one pH unit is equivalent to this term difference in hydrogen ion concentration

- A. 1
- B. 2
- C. 5
- D. 10
- E. 100
- F. None of the Above

134. Which of the following terms measurements are used in the interpretation and control of water and wastewater treatment processes?

- A. Acid
- B. Alkalinity
- C. pH
- D. Chemical ion
- E. Hydrogen bond formation
- F. None of the Above

135. Which of the following terms are compounds that, for practical purposes, are completely dissociated in water.

- A. Strong acids and bases
- B. Strong bases
- C. Chemical ions in chains
- D. Strong bases and weak acids
- E. Weak acids and weak bases
- F. None of the Above

136. The pH of a solution containing a \_\_\_\_\_ may require the solution of a cubic equation. The general case requires the solution of a set of non-linear simultaneous equations.

- A. Strong acids and bases
- B. Strong bases
- C. Weak bases
- D. Strong bases and weak acids
- E. Weak acids and weak bases
- F. None of the Above

137. Sodium hydroxide, NaOH, is an example of a?

- A. Strong acids and bases
- B. Strong base
- C. Weak base
- D. Strong bases and weak acids
- E. Weak acids and weak bases
- F. None of the Above

### **Types of Wastewater Samples**

#### **General**

138. Hand compositing is a series of time proportional grab samples that are collected and composited by hand.

- A. True
- B. False

139. Generally, there are four types of samples that are collected by the POTW's Sampling Section: grab, time proportional composites, flow proportional composites, and hand composites.

- A. True
- B. False

140. Which of the following terms used depends largely on the types of analyses to be run, and the nature of the wastestream being sampled?

- A. An analysis
- B. The sampling method
- C. Duplicate samples
- D. Taste test
- E. Blanks
- F. None of the Above

141. Which of the following sampling terms is an individual sample collected in less than 15 minutes without regard for flow or time of day?

- A. Entire batch discharge
- B. The volume of sample
- C. A grab sample
- D. An individual sample
- E. Proportional composite sampling
- F. None of the Above

142. pH, cyanide, oil and grease, sulfide, and volatile organics must be collected as composite samples.

- A. True
- B. False

143. Which of the following sampling terms would be taken by means of time proportional composite sampling methods or by hand composite will provide a representative sample of the effluent being discharged?

- A. An analysis
- B. Split samples
- C. Duplicate samples
- D. Samples
- E. Blanks
- F. None of the Above

144. Which of the following sampling terms is to be collected by any of these methods is dependent on the number and types of analyses that must be performed?

- A. Entire batch discharge
- B. The volume of sample
- C. Concentration of pollutants
- D. An individual sample
- E. Proportional composite sampling
- F. None of the Above

### Wastewater Grab Samples

145. Grab samples are individual samples collected in less than 3 minutes without regard to flow or time of day.

- A. True B. False

146. Which of the following sampling terms are normally taken manually, but can be pumped?

- A. Quantify the pollutants D. Time proportional composite sampling methods  
B. Grab samples E. Flow proportional composites  
C. Hand composites F. None of the Above

### A grab sample is usually taken when a sample is needed to:

147. Provide information about \_\_\_\_\_ of pollutants at a specific time.

- A. Entire batch discharge D. An individual sample  
B. The volume of sample E. An instantaneous concentration  
C. Concentration of pollutants F. None of the Above

148. According to the text, quantify the \_\_\_\_\_ in a non-continuous discharge?

- A. Pollutants D. Taste test  
B. Split samples E. Blanks  
C. Duplicate samples F. None of the Above

149. According to the text, corroborate \_\_\_\_\_ if the waste is not highly variable.

- A. Entire batch discharge D. An individual sample  
B. The volume of sample E. Proportional composite sampling  
C. Composite samples F. None of the Above

150. Which of the following sampling terms are not amenable to compositing such as pH, temperature, dissolved oxygen, chlorine, purgeable organics and sulfides, oil and grease, coliform bacteria, and sulfites?

- A. Quantify the pollutants D. Monitor parameters  
B. Grab samples E. Flow proportional composites  
C. Hand composites F. None of the Above

### Timed Composites

151. Which of the following sampling terms - are usually taken in instances where the intention is to characterize the wastes over a period of time without regard to flow?

- A. Timed samples D. Time proportional composite sampling methods  
B. Grab samples E. Flow proportional composites  
C. Hand composites F. None of the Above

152. Which of the following sampling terms - consist of a series of equal volume grab samples taken at regular intervals?

- A. Timed composite samples D. Time proportional composite sampling methods  
B. Grab samples E. Flow proportional composites  
C. Hand composites F. None of the Above

### Flow Proportional Composites

153. Which of the following sampling terms consist of: a series of grab samples whose volumes are equal in size and proportion to the flow at the time of sampling?

- A. The sampling point(s)
- B. Sample preservation
- C. Duplicate samples
- D. Routine QA/QC measures
- E. Flow proportional composite samples
- F. None of the Above

154. Which of the following sampling terms are taken at varying time intervals, or continuous samples taken over a period of time based on the flow?

- A. Entire batch discharge
- B. The volume of sample
- C. Concentration of pollutants
- D. An individual sample
- E. Samples
- F. None of the Above

155. Wherever possible, grab sampling is recommended because it most accurately reflects the nature of the wastestream.

- A. True
- B. False

156. Which of the following sampling terms - taken at varying time intervals are most often collected by the sampling inspectors?

- A. Entire batch discharge
- B. The volume of sample
- C. Equal volume samples
- D. An individual sample
- E. Proportional composite sampling
- F. None of the Above

### Wastewater Sample Preservation

157. One or more unstable pollutants that require immediate analysis or preservation until \_\_\_\_\_ can be made.

- A. An analysis
- B. Split samples
- C. Duplicate samples
- D. Taste test
- E. Blanks
- F. None of the Above

158. According the text, sample preservation is needed for \_\_\_\_\_, for example, which may be stored for as long as 24 hours prior to transferring them to the laboratory.

- A. Nitrified effluent
- B. Composite samples
- C. Total Nitrogen (TN)
- D. Nitrogen and phosphorus levels
- E. Activated sludge
- F. None of the Above

### Quality Assurance/Quality Control Policy Example

159. According the text, Quality Assurance/Quality Control (QA/QC) measures taken by the sampling crew include equipment blanks, trip blanks, split samples and duplicate samples.

- A. True
- B. False

160. Equipment blanks and \_\_\_\_\_ are routine QA/QC measures.

- A. The sampling point(s)
- B. Sample preservation
- C. Duplicate samples
- D. Routine QA/QC measures
- E. Trip blanks
- F. None of the Above

161. Which of the following sampling terms - are taken for Local Limits (pretreatment) sampling and when requested by an industry or laboratory?

- A. An analysis
- B. Split samples
- C. Duplicate samples
- D. Taste test
- E. Blanks
- F. None of the Above

162. Which of the following sampling terms should be run when requested by a Supervisor or Project Leader?

- A. An analysis
- B. Split samples
- C. Duplicate samples
- D. Taste test
- E. Blanks
- F. None of the Above

163. The laboratory needs to prepare \_\_\_\_\_ used by the sampling crews.

- A. The sampling point(s)
- B. Sample preservation
- C. Duplicate samples
- D. Routine QA/QC measures
- E. All trip blanks/travel blanks
- F. None of the Above

164. Any contamination detected in the \_\_\_\_\_ would result from field exposure which could in turn affect collected samples.

- A. An analysis
- B. Split samples
- C. Duplicate samples
- D. Taste test
- E. Blanks
- F. None of the Above

### Chain-of-Custody

165. If sampling is performed for the Pretreatment program, any sampling data may be used as evidence in court proceedings in this case \_\_\_\_\_ becomes critical.

- A. Sampling crew
- B. Duplicate samples
- C. Pre-preserved bottles
- D. Documentation
- E. Noncompliant industrial user
- F. None of the Above

166. Laboratory personnel sign and date the chain of custody form, and return it to the sampling crew who makes two copies of the form.

- A. True
- B. False

### Proper Sample Handling

167. The proper handling of \_\_\_\_\_ also includes wearing gloves.

- A. Other parameters
- B. Pre-preserved bottles
- C. Preservatives
- D. Some samples
- E. Water quality samples
- F. None of the Above

168. When the missing term are received from the laboratory, check to see that none have leaked.

- A. Other parameters
- B. Pre-preserved bottles
- C. Preservatives
- D. Some samples
- E. Containers and preservatives
- F. None of the Above

169. Which of the following wastewater sampling terms – should be labeled with type of preservative used, type of analysis to be done and be accompanied by a Safety Data Sheet (SDS).

- A. Sampling crew
- B. Duplicate samples
- C. Pre-preserved bottles
- D. Sampling bottles
- E. Noncompliant industrial user
- F. None of the Above

170. Make sure you can tell if containers are pre-preserved, because you do not to overfill them when collecting samples in the field.

- A. True
- B. False

171. Check with the laboratory about \_\_\_\_\_ when using pre-preserved bottles.

- A. Other parameters
- B. Quality control procedures
- C. Preservatives
- D. Some samples
- E. Organics
- F. None of the Above

172. If necessary, obtain extra coolers and never store coolers and containers near solvents, fuels or other sources of contamination or combustion. In warm weather, keep coolers and samples in the shade.

- A. True B. False

**Code of Federal Regulations**

173. Which of the following terms means all municipal separate storm sewers that are either: Located in an incorporated place with a population of 250,000 or more as determined by the 1990 Decennial Census by the Bureau of the Census?

- A. Medium municipal separate storm sewer system
- B. Major outfall
- C. Major municipal separate storm sewer outfall
- D. Large municipal separate storm sewer system
- E. Overburden
- F. None of the above

174. Which of the following terms means a municipal separate storm sewer outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent; or for municipal separate storm sewers that receive storm water from lands zoned for industrial activity?

- A. Medium municipal separate storm sewer system
- B. Major outfall
- C. Major municipal separate storm sewer outfall
- D. Large municipal separate storm sewer system
- E. None of the above

175. Which of the following terms means a major municipal separate storm sewer outfall?

- A. Medium municipal separate storm sewer system
- B. Major outfall
- C. Major municipal separate storm sewer outfall
- D. Large municipal separate storm sewer system
- E. None of the above

176. Which of the following terms means all municipal separate storm sewers that are either :(i) Located in an incorporated place with a population of 100,000 or more but less than 250,000, as determined by the 1990 Decennial Census by the Bureau of the Census?

- A. Medium municipal separate storm sewer system
- B. Major outfall
- C. Major municipal separate storm sewer outfall
- D. Large municipal separate storm sewer system
- E. None of the above

177. Which of the following terms means any material of any nature, consolidated or unconsolidated, that overlies a mineral deposit?

- A. Storm water or Stormwater discharge associated with industrial activity
- B. Storm water
- C. Significant materials
- D. Runoff coefficient
- E. Overburden
- F. None of the above

178. Which of the following terms means the fraction of total rainfall that will appear at a conveyance as runoff?
- A. Storm water or Stormwater discharge associated with industrial activity
  - B. Storm water
  - C. Significant materials
  - D. Runoff coefficient
  - E. Overburden
  - F. None of the above
179. Which of the following terms means raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances?
- A. Storm water or Stormwater discharge associated with industrial activity
  - B. Storm water
  - C. Significant materials
  - D. Runoff coefficient
  - E. Overburden
  - F. None of the above
180. Which of the following terms means storm water runoff, snowmelt runoff, and surface runoff and drainage?
- A. Storm water or Stormwater discharge associated with industrial activity
  - B. Storm water
  - C. Significant materials
  - D. Runoff coefficient
  - E. Overburden
  - F. None of the above
181. Which of the following terms means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant?
- A. Storm water or Stormwater discharge associated with industrial activity
  - B. Storm water
  - C. Significant materials
  - D. Runoff coefficient
  - E. Overburden
182. Prior to October 1, 1994, discharges composed entirely of storm water shall not be required to obtain a NPDES permit except : ) A discharge associated with industrial activity (see Sec. 122.26(a)(4))
- A. True
  - B. False
183. After October 1, 1994, discharges composed entirely of storm water shall not be required to obtain a NPDES permit except Discharge from a large municipal separate storm sewer system.
- A. True
  - B. False
184. Prior to October 1, 1991, discharges composed entirely of water shall not be required to obtain a NPDES permit except: A discharge from a medium municipal separate storm sewer system.
- A. True
  - B. False
185. When the Director designates discharges from municipal separate storm sewers on a system-wide or jurisdiction-wide basis. The Director may consider the following factor: The location of the discharge with respect to waters of the United States as defined at 40 CFR 122.2.
- A. True
  - B. False

186. When the Director designates discharges from municipal separate storm sewers on a system-wide or jurisdiction-wide basis. The Director may consider the following factor: The quantity and nature of the pollutants discharged to waters of the United States; and Other relevant factors.

- A. True
- B. False

187. The Director may not require a permit for discharges of storm water runoff from:

- A. Mining operations
- B. Oil and gas exploration
- C. Production, processing or treatment operations or transmission facilities.
- D. All of the above
- E. None of the above

188. The operator of a discharge from a municipal separate storm sewer which is part of a large or medium municipal separate storm sewer system must either: Participate in a permit application (to be a permittee or a co-permittee) with one or more other operators of discharges from the large or medium municipal storm sewer system which covers all, or a portion of all, discharges from the municipal separate storm sewer system;

- A. True
- B. False

### **Confined Space Entry Program**

#### **Purpose**

189. The Confined Space Entry Program is provided to protect authorized employees that will enter confined spaces and may be exposed to hazardous atmosphere, engulfment in materials, conditions which may trap or asphyxiate due to converging or sloping walls, or contains any other safety or health hazards.

- A. True
- B. False

190. According to the text, you are required to recognize this term associated with confined spaces.

- A. An internal configuration
- B. Hazardous atmosphere
- C. Permit-Required Confined Space
- D. Dangers and hazards
- E. Atmospheric factors and physical agents
- F. None of the Above

#### **Confined space:**

191. Is large enough or so configured that an employee can?

- A. Engulfing an entrant
- B. Bodily enter and perform work
- C. An internal configuration
- D. Recognized serious safety or health hazard
- E. Continuous employee occupancy
- F. None of the Above

192. Is not designed for?

- A. Engulfing an entrant
- B. Hazardous atmospheres
- C. An internal configuration
- D. Recognized serious safety or health hazard
- E. Continuous employee occupancy
- F. None of the Above

193. Permit required confined space (permit space), is a confined space that has one or more of the following characteristics: Contains or has a potential to contain a?

- A. An internal configuration
- B. Hazardous atmosphere
- C. Permit-Required Confined Space
- D. Entry or exit
- E. Atmospheric factors and physical agents
- F. None of the Above

194. Has limited or restricted means for entry or exit (i.e. tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have?)

- A. An internal configuration
- B. Hazardous atmosphere
- C. Limited means of entry
- D. Entry or exit
- E. Atmospheric factors and physical agents
- F. None of the Above

195. Contains a material that has the?

- A. Engulfing an entrant
- B. Hazardous atmospheres
- C. Potential for engulfing an entrant
- D. Recognized serious safety or health hazard
- E. Continuous employee occupancy
- F. None of the Above

196. Has an internal configuration such that \_\_\_\_\_ could be trapped or asphyxiated by inwardly covering walls or by a floor that slopes downward and tapers to a smaller cross-section.

- A. An internal configuration
- B. Hazardous atmosphere
- C. Permit-Required Confined Space
- D. An entrant
- E. Atmospheric factors and physical agents
- F. None of the Above

197. Contains any other recognized serious safety or?

- A. Engulfing an entrant
- B. Hazardous atmospheres
- C. An internal configuration
- D. Health hazard
- E. Continuous employee occupancy
- F. None of the Above

198. Which of the following terms will be marked "Confined Space - Entry Permit Required"?

- A. An internal configuration
- B. Hazardous atmosphere
- C. Permit-Required Confined Space
- D. Entry or exit
- E. Atmospheric factors and physical agents
- F. None of the Above

### **Confined Space Hazards**

199. Fatalities and injuries constantly occur among construction workers who, during the course of their jobs, are required to enter?

- A. An internal configuration
- B. Hazardous atmosphere
- C. Ventilation ducts
- D. Entry or exit
- E. Confined spaces
- F. None of the Above

200. Throughout the construction jobsite, contractors and workers encounter both inherent and \_\_\_\_\_ within confined workspaces.

- A. An internal configuration
- B. Hazardous atmosphere
- C. Permit-Required Confined Space
- D. Induced hazards
- E. Atmospheric factors and physical agents
- F. None of the Above