

# **North Carolina Pretreatment Consortium**

## **PRETREATMENT CERTIFICATION GRADE III NEEDS-TO-KNOW**

### **CHAPTER ONE – PRETREATMENT PROGRAM ADMINISTRATION**

What are the objectives of the general pretreatment regulations?  
What are the Federal pretreatment program requirements?  
Know the definition of Approval Authority and Control Authority.  
What legal document requires control authorities to implement the pretreatment program?  
What general statute was passed to implement the State of NC Pretreatment program?  
What is the definition of “modified” program in NC?  
Where does the CA get the legal authority to implement the pretreatment program?  
Know the basic pretreatment program procedural requirements.  
What items need to be submitted to NC with the pretreatment program application?  
What are some of the resources needed for the pretreatment program?  
Name other function areas that may be needed to implement the pretreatment program?  
List some of the budget items that need to be included in the pretreatment program?  
Name several ways that a control authority can recover costs to run the PT program.  
Be able to calculate surcharges based on the pounds formula.  
Name some of the equipment and materials needed to maintain inventory.  
What additional program responsibilities may be included in the pretreatment program that are not required by Federal regulations?

### **CHAPTER TWO – SEWER USE ORDINANCE DEVELOPMENT**

Where would you find the legal authority to enforce the pretreatment program?  
Who is affected by a Sewer Use Ordinance?  
What are the eight Federal specific prohibitions?  
What are local limits?  
What is dilution prohibition?  
What kind of fees may the pretreatment program assess?  
What are the reasons to modify a permit? What are the reasons to revoke a permit?  
What are reporting requirements?  
What authority must you have to conduct compliance monitoring?  
Describe how the control authority must handle confidential information?  
When is effluent data deemed to be confidential?  
Be able to discuss various enforcement actions.  
What must the control authority have in place in order to assess penalties?  
What is the maximum Federal civil penalty that the control authority can issue?  
What actions are deemed to be criminal violations?  
Define injunctive relief and remedies nonexclusive.  
Why must the control authority have an appeal process?  
Who chooses the level of the adjudicatory hearing?  
What court has the final decision in an appeal?  
What is the federal requirement for public notice for SNC?  
Understand the affirmative defense to certain violations.  
The affirmative defense does not apply to which of the 8 EPA specific prohibitions?  
Define bypass.  
Who must approve a Sewer Use Ordinance prior to the effective date?

## **CHAPTER THREE- MULTIJURISDICITONAL AGREEMENTS**

Not Applicable-Read Only Chapter

## **CHAPTER FOUR – ADVANCED CATEGORICAL PRETREATMENT STANDARDS**

What are Federal Categorical Pretreatment Standards?

Be able to recognize differences in the characteristics of Federal Categorical Pretreatment Standards and Local Limits.

Know the difference between concentration-based standards and production based standards.

Categorical pretreatment standards apply only to what type of flow?

When is a categorical pretreatment standard the same as the end-of-pipe standard?

Define CWF.

When should the CWF be used?

As it relates to the Combined Wastestream Formula:

- Define regulated wastestreams
- Define unregulated wastestreams
- Define dilute wastestreams
- Define non-regulated wastestreams

The dilution factor value be less than when using the Combined Wastestream Formula?

Given appropriate information be able to calculate adjusted categorical limits using the CWF.

Describe the difference in the way the CWF addresses the various wastestreams

Given appropriate information, be able to calculate production rate using 5 years of actual data

Given appropriate data, be able to calculate an equivalent mass limit and an equivalent concentration limit for a production based standard.

When can projected production rates be used?

Be familiar with the requirements of the 2017 EPA Dental Amalgam Rule (40 CFR Part 441) and the role Pretreatment Programs play in the implementation of the Rule. [Copy of Rule and Dental Compliance Report Provided at End of Chapter 4 in 2019]

What is an amalgam separator and why and where is it typically used?

## **CHAPTER FIVE – HAZARDOUS WASTE and the RESOURCE CONSERVATION AND RECOVERY ACT [RCRA]**

What is the purpose of RCRA?

How does RCRA define “solid waste”?

Who has the responsibility of determining if a particular solid waste is a hazardous waste?

EPA uses two regulations to define wastes as hazardous: *listing* and *hazardous characteristics*.

Describe each regulation.

Know the four *characteristics* that EPA uses to define hazardous waste.

What are the pH values associated with the corrosivity *characteristic*?

What is a TCLP test? How do the results of that test relate to determining a hazardous waste?

How does RCRA define an “empty” container?

What are the three waste generator categories?

Who must have a Hazardous Waste Identification Number?

Describe the hazardous waste manifest process.

Be able to define: LQG, SQG, VSQG, and TSDF.

When is used oil not regulated under RCRA?

What is universal waste?

What is the mixed sewage/domestic sewage exclusion? Why is it important to Pretreatment Programs and POTWs?

Describe the POTW's responsibility to notify SIUs of certain hazardous waste regulations.

Be familiar with forms that EPA developed for that purpose. *[Provided at end of Chapter 5]*

Describe the SIU's responsibility to notify the POTW prior to the discharge of hazardous waste.

Be familiar with forms that EPA developed for that purpose. *[Provided at end of Chapter 5]*

Why would a PT Coordinator be interested in reviewing a Form R required by Title III Superfund Act?

Explain why a PT coordinator should be particularly careful about accepting hazardous waste at the POTW by truck, rail, or pipeline.

## **CHAPTER SIX – PRETREATMENT SPECIAL TOPICS**

What are the forms of mercury and what form of mercury is the most toxic to aquatic organisms?

What does the bioassay (Whole Effluent Toxicity) test indicate?

What is the difference between an “acute” toxicity test and a “chronic” toxicity test? What does each measure? How are the results expressed? How does the POTW IWC relate to the test?

What does TMDL stand for? Be familiar with the reasons a TMDL is required and how it can impact a pretreatment program and NPDES Permit limits.

What is the 303(d) List and what agency requires it to be developed?

Know the implications of LTMP data on calculation of a Reasonable Potential Analysis by DWR.

What is a BMP and how are BMPs used in the pretreatment program?

What information/data/analyses are used by DWR to develop NPDES Permit limits for POTWs?

Be familiar with the North Carolina requirements for development and implementation of a

Explain the relationship of POTW effluent hardness and NPDES Permit limits for certain metals.

“Mercury Minimization Plan” (MMP). *[State Model Provided at End of Chapter 6]*

## **CHAPTER SEVEN – HEADWORKS ANALYSIS AND LOCAL LIMITS DEVELOPMENT**

Know what the following acronyms stand for and the accompanying definition/meaning:

- HWA, POC, LTMP, AHL, MAHL, MAIL, TBLL, ADRE, MRE, WET, DMR, IWC, 7Q10, WQS, BPJ, MGD, cfs, gpd, HASL

At a minimum, how often must a Headworks Analysis be conducted, according to NC-DWR?

Identify events that might require a HWA be updated prior to the five year deadline.

List the differences between Federal Categorical Pretreatment Standards and Technically Based Local Limits *[Developed by? Pollutants? Objective? Regulates? Basis?]*.

Once established by the POTW, local limits are considered to be what for enforcement purposes?

Know the State of North Carolina required elements, required sampling points and minimum sampling frequency for a Long-Term Monitoring Plan.

Describe how site-specific POTW factors affect HWA and local limits determinations *[e.g. sludge disposal method, NPDES permit limits, 7Q10 flow/IWC, receiving stream classification]*

Be familiar with LTMP sampling protocols and how the PT Coordinator can maximize the use of the LTMP data *[e.g. sampling coordination, detection limits, NPDES data, etc.]*.

What are the sources used to determine a potential “Pollutants of Concern” List?

List the “EPA 15” Pollutants of Concern (the minimum list of pollutants) that must be evaluated during a HWA.

Given appropriate information, be able to calculate/determine the following:

- POTW hydraulic retention (detention) time [Grade III Homework]
- Removal Rate [% Removal] [Grade III Homework]
- Removal Efficiency using Average Daily Removal Efficiency [ADRE]
- Removal Efficiency using Mean Removal Efficiency [MRE] [concentration and mass]
- Removal Efficiency using the Decile method
- *Based on a specific data set and sampling protocols, be able to recognize which removal efficiency calculation method(s) could be appropriately used for that data set (ADRE, MRE, Decile)*
- Pass through AHL using NPDES permit limits
- Pass through AHL using NC Water Quality Standards
- Biological Process Inhibition AHL
- Biosolids AHL for Land Application
- Anaerobic Digester Inhibition AHL
- Uncontrollable loading in pounds using POTW influent and SIU data
- Uncontrollable loading in pounds using sampling data from uncontrollable sites
- Uncontrollable loading in pounds using EPA Literature values
- Maximum Allowable Headworks Loading
- Maximum Allowable Industrial Loading
- When the use of the State's HASL (for land application of sludge) may be appropriate

Given a specific MAIL value and other pertinent information be able to calculate the following:

- Uniform Concentration local limits for a city with one POTW
- Uniform Concentration local limits for a city with more than one POTW
- "What You Need is What You Get" local limits
- Industrial User Contributory Flow local limits
- Selected Industrial Reduction allocation of MAIL

Identify the various options for *allocating and implementing* local limits and be able to describe the advantages and disadvantages of each option.

Be able to convert numerical values between all of the following units:

- ppm, ppb, ppt, mg/l, ug/l ng/l [Grade III Homework]
- mg/l or ppm to percent [Grade III Homework]
- gpd, MGD, cfs [Grade III Homework]

Be able to list the 5 current options allowed by DWR for calculating MAHLs for BOD, TSS and NH<sub>3</sub>-N.

Describe the disadvantages of concentration based limits.

Given the appropriate information be able to use the pounds formula and rearrange the pounds formula to solve for any unknown. [Grade III Homework]

Which potential POCs can be removed from the final POC list because they cannot be evaluated using standard HWA calculation techniques?

Describe the difference between land application of biosolids and surface disposal of biosolids.

What information/regulation is contained in 40 CFR Part 503?

Identify the additional requirements for HWA and Local Limits development that are specific to North Carolina.

What is the purpose of a HWA "growth factor"?

What is the purpose of a HWA safety factor? Is a safety factor required by North Carolina DWR?

Be able to determine the appropriate HWA decision/action given the following:

- More than one stream classification is assigned to a POTW's receiving stream
- More than half of the of LTMP data for the POTW influent and POTW effluent is below detection limit
- More than one method of sludge disposal is used by the POTW
- LTMP data Negative removal efficiencies
- Domestic/Uncontrollable calculated load is greater than MAHL
- Very stringent Land Application Cumulative Load AHL is the MAHL

Know the mathematical relationship between the following: MAHL, Uncontrollable Load, Safety Factor, Hauled Waste Load, MAIL

List the resources a PT Coordinator will need to complete a HWA and Local Limits determination:

- Copies of what EPA documents, permits, regulations, and reference material?
- Copies of what DWR documents, permits, regulations, and reference material?
- Copies of what POTW documents, information and data?
- Copies of what Industrial User/discharger information and data?

Describe the effects POTW effluent hardness and upstream hardness has in developing NPDES limits when using dissolved water quality standards.

## **CHAPTER EIGHT – ENFORCEMENT PROCEDURES AND ERP**

Where does the legal authority come from to implement the pretreatment program?

Where does the authority come from to enforce the Pretreatment Program?

What is an Enforcement Response Plan (ERP)?

Be able to identify the elements of an ERP.

What are the benefits/purpose of an ERP?

What are the four tasks in developing an ERP?

Why is it important to identify appropriate personnel in an enforcement action?

When should data be screened?

Why should one establish a range of responses?

What criteria should be evaluated when determining an enforcement action?

How does the implementation/definition of SNC differ for SIUs and IUs?

Define good faith effort.

Why is timely action necessary in an enforcement response?

What activity should occur when an IU refuses to accept hand-delivered mail?

How do you apply an ERP?

Name three formats that could be used for an ERP.

What format is used in the NC Model ERP?

Be able to list informal and formal enforcement actions.

What are informal enforcement actions?

Name some formal enforcement actions and when should they be applied?

Know the general types of actions required for each enforcement action.

Be able to discuss the different enforcement actions taken against an IU.

What is the most common form of enforcement action taken by a CA?

Why is follow-up action required in an enforcement action?

List the 4 types of enforcement orders be familiar with the pros and cons of each.

What is a compliance review meeting?

Why are compliance meeting follow-up letters important?

What are administrative orders?

What is a civil penalty?  
What are the two basic methods used to assess civil penalties?  
What is civil litigation?  
Be familiar with the use of civil penalties and the North Carolina required maximum penalty amount.  
What is the minimum civil penalty as defined by Federal and State Pretreatment regulations?  
What is the maximum civil penalty as defined by Federal law?  
What is the maximum civil penalty as defined by North Carolina law?  
When is it appropriate to pursue civil litigation?  
When determining a civil penalty, what circumstances should be considered before it is issued?  
What are the two elements that define a criminal violation?  
When is it appropriate to use criminal prosecution?  
What are the advantages and disadvantages of criminal prosecution?  
Define economic benefit.  
Be able to list and recognize the purposes of economic benefit.  
What are the ways to terminate service?  
What are reasons to terminate sewer service?  
Describe the Public Notice Requirement.  
Be familiar with the SNC definition and how it relates to the Public Notice.  
Be able to read an IU permit, review sampling data, recognize permit violations and use an ERP to determine appropriate enforcement actions.  
List 8 Factors DEQ says must be considered when issuing a civil penalty (From DEQ Model ERP page 2-3)

## **CHAPTER NINE – PRETREATMENT ANNUAL REPORT [PAR]**

What are the three regulatory references used to require the Pretreatment Annual Report?  
What information is required to be submitted with the PAR?  
What is the Narrative and Pretreatment Program Summary?  
What is the Pretreatment Program Info Database?  
What is the Pretreatment Program Summary?  
What is the SNCR?  
What is the SIUs in SNC Historical Report? Where does this report come from?  
What is the IDSF?  
What is the Allocation Table?  
Where do you get the Public Notice?  
What are Waste Reduction Activities?  
What other information may be included with the PAR?  
What is the reason for the narrative and summary in the PAR?  
What must be included about the SIUs in the Narrative Summary?  
Why is the Pretreatment Program Summary Form required?  
How do you count the Number of SIUs in SNC for the PPS Form?  
What is the IDSF?  
What information must be included on the IDSF?  
How do you report results that are “BDL” in the IDSF?  
How do you report SIU Waste Reduction Activities?  
What is required by a “Modified” Pretreatment Program for the Annual Report?