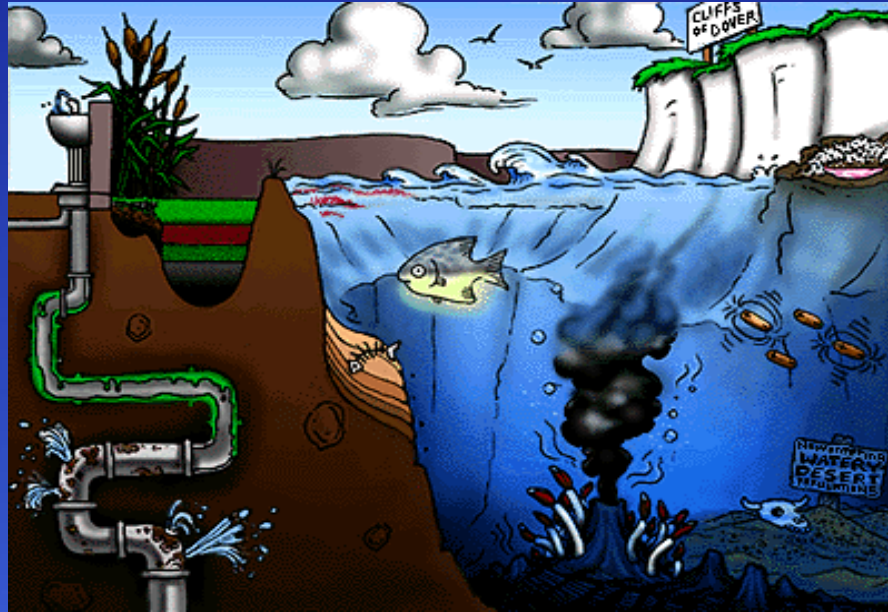


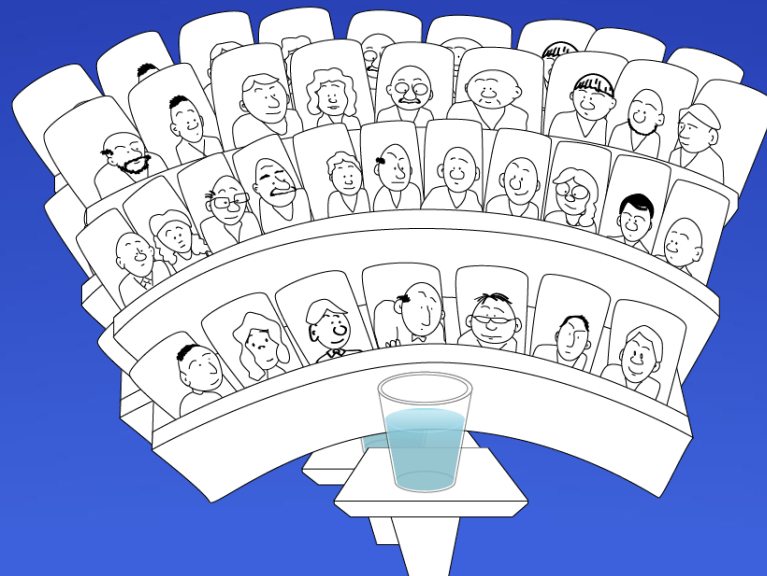
# Basic Sample Handling Guidelines



Dawn Jones and Karen Owens

State Hygienic Laboratory at the University of Iowa

Clean Water Act  
National Pollutant Discharge Elimination System (NPDES)  
Safe Drinking Water Act



Environmental Protection Agency sets standards for the quality of water and its sources.

# Representative samples

Sampling locations

Sampling techniques

Representative samples

Containers

Sample preservation, volume, holding time.

Documentation

Submitting samples

# Sampling Don'ts



**Bottle re-sterilized**



**POU device**



**Excess**



**Cracked bottle or cap**



**Rinsing sampling bottle**



**Car dash**

# Sample Rejection Criteria:




Date/time  
not given



Too  
old



$\leq 100\text{mL}$



Excess  
 $\text{Cl}_2$



Frozen

# Tests with Short Holding Times

CWA Bacterials – t. coliforms, fecal & *E. coli* – ideally < 8 hrs

SDWA Bacterials – up to 30 hours.

BOD – All types - <48 Hours

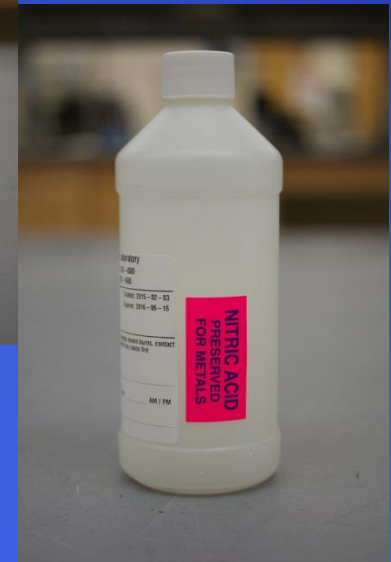
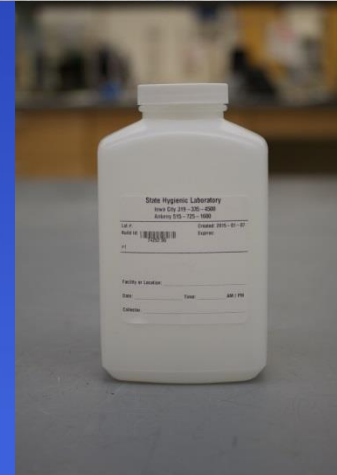
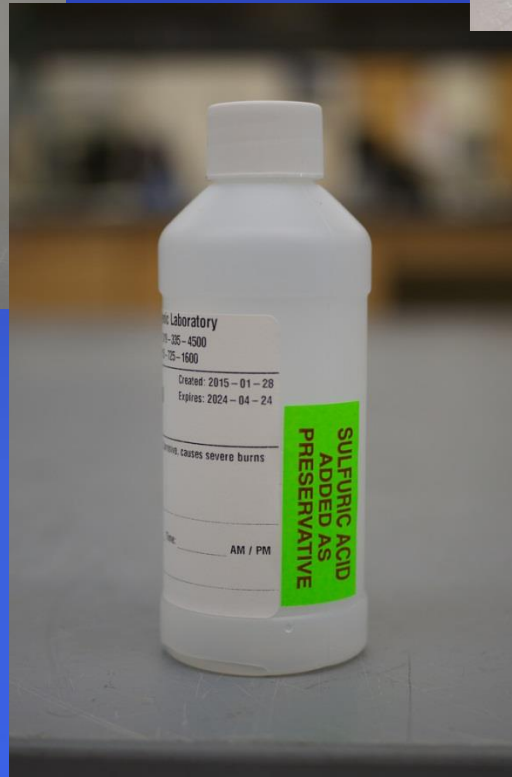
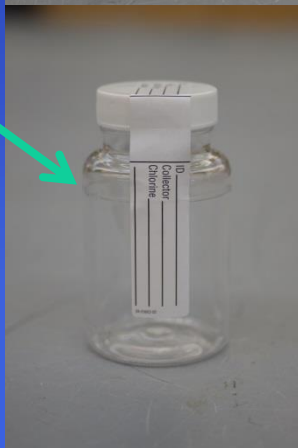
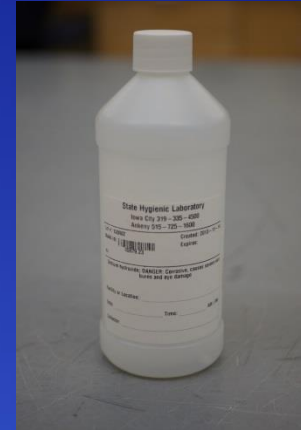
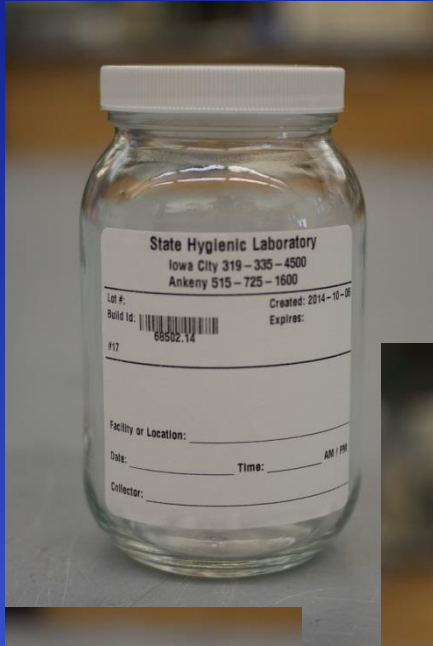
Hex Cr - <24 Hours

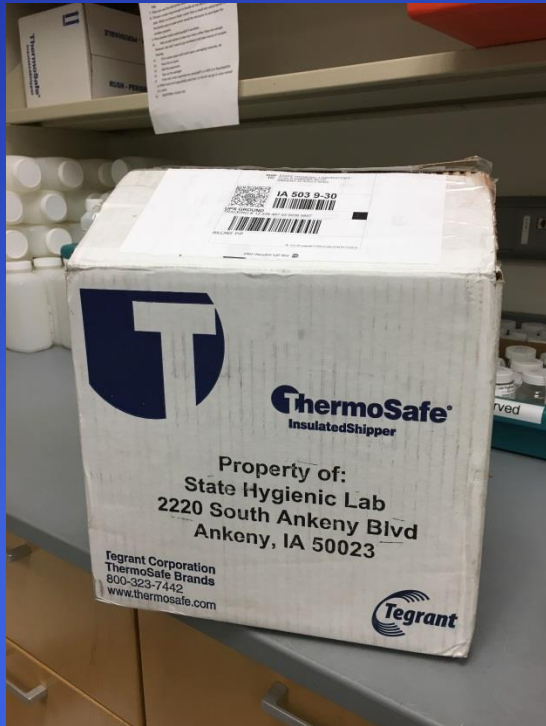
Filterable (Ortho) P - <24 Hours

Turbidity - <24 Hours

Nitrite N - <48 Hours




# Sample Bottles







# Sampling Information Needed

Order #: 106338  REPORT TO: 422  BILL TO: 422 

Pages in Order: 1 of 1 JOHN MILLER  
SHL LIMNOLOGY  
2220 S ANKENY BLVD  
ANKENY, IA 50021-

Containers in Order: 2 JOHN MILLER  
SHL LIMNOLOGY  
2220 S ANKENY BLVD  
ANKENY, IA 50021-

**Requested Analyses/Tests**

BOD, Ammonia-Nitrogen.

**Complete or correct the following information**

Collected Date: 2016-04-07  
yyyy-mm-dd

Collected Time: 13:00  
24 hour format hh:mm

Client Reference:

Is Hazardous:

Collector: luzier jim  
Print name

Location: outfall #0001 grab sample  
Machine sink, plant tap, etc.

Location City: ANKENY  
Collector Phone: 515-725-1638  
0001112222

Description: wastewater

**Chain of Custody/Tracking Signatures**

Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
SHL Sample Receiving Custodian: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
SHL Sample Receiving Custodian: \_\_\_\_\_ Date/Time: \_\_\_\_\_

**For SHL Use Only -- Please do not write below this line**

Received By: \_\_\_\_\_ pH: \_\_\_\_\_  
Evidence of Tampering:  Yes  No Evidence of Cooling:  Yes  No  
Date Printed: 2016-04-04 Temperature ( Celsius ): \_\_\_\_\_  
Bottles Received: \_\_\_\_\_ Thermometer ID: \_\_\_\_\_

FOR INTERNAL USE ONLY FOR INTERNAL USE ONLY FOR INTERNAL USE ONLY

**Environmental Sample Collection Form**

**State Hygienic Laboratory**  
Iowa State University  
1808 Highway 88  
Boone, IA 50031-5088  
Phone # 515-311-5088  
http://www.shl.iowa.edu

**Science Laboratory**  
2220 S. Ankeny Blvd.  
Ankeny, IA 50021-5000  
Phone # 515-725-1600  
http://www.shl.iowa.edu

**141 Research Park**  
2400 Crosspark Road  
Conville, IA 52004-0271  
Phone # 515-281-5000  
BIA-AP-1000A

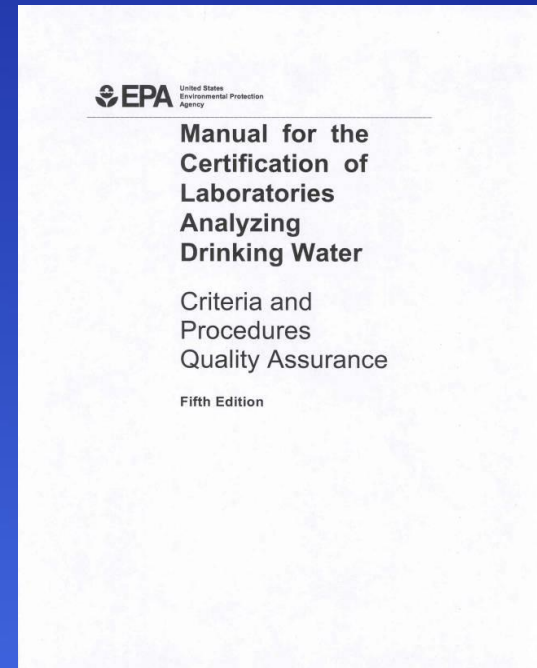
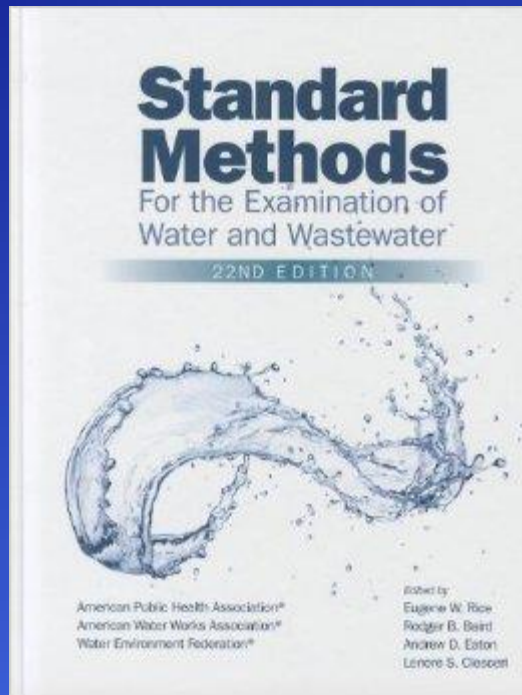
EN 062015

Facility name and location  
Site location  
Bottle number  
Collector's name  
Date and time  
Grab or composite (with time and volume information)  
Preservative

Any unusual circumstances should be identified.

Remember to include a chain of custody form.

# Standard Methods for the Examination of Water and Wastewater and EPA Manual



Standard Methods provided by American Public Health Association,  
American Water Works Association and Water Pollution Control Federation

# Quality Performance

Training ( Initial and Ongoing)

SOP (Standard Operating Protocol)

QASP (Quality Assurance Sampling Plan)

Biosafety

System Controls and Charting

Assessment

# Elements of Quality Assurance

Management activities that focuses on providing confidence in the data or product.

Training (IDC and DOC)

SOP & QASP

Biosafety

System Controls and Charting

Reporting results

QA reports

Assessment and Quality Improvement

# Basic QC Elements for Environmental Lab

Reagent water	Media-dispensing device	DO meters	Dilution water bottles	UV lamps
Air in workplace	Hot-air oven	Incubator	Sample bottles	Glassware/washing
Thermometers	Autoclave	Microscope	MF filters	Multi-well sealer
Balance	Refrig/freezer	Conductivity meter	Media	Analyst verification
Weights	MF equip	Micropipettes	pH meter	Centrifuge

## Analysis

'Clean collection' of sample is vital.  
And so is clean analytical space.

## Quality Control

Material needs vary test by test, but the need to maintain a clean work space and well documented analytical preparation is universal.

Analysis is void if these objectives are not met.



## Guidance contacts

<http://www.iowadnr.gov>

<http://www.ieha.net>

<http://www.shl.uiowa.edu>