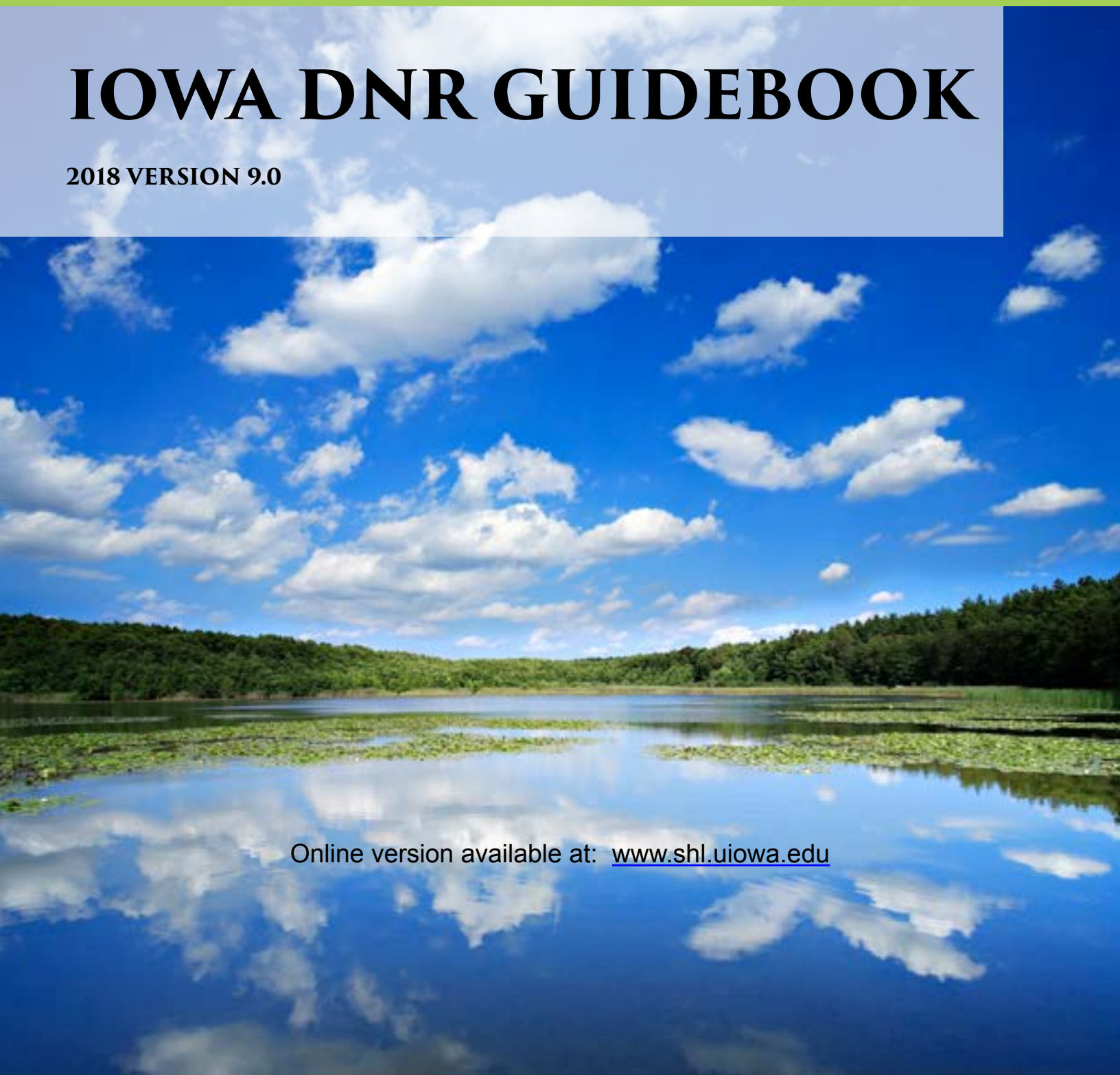
STATE HYGIENIC LABORATORY

AT THE UNIVERSITY OF IOWA

THE UNIVERSITY OF IOWA

IOWA DNR GUIDEBOOK

2018 VERSION 9.0



Online version available at: www.shl.uiowa.edu

TABLE OF CONTENTS

SECTION 1

Laboratory Information

1.0 THE STATE HYGIENIC LABORATORY

The State Hygienic Laboratory at the University of Iowa protects and improves quality of life by providing reliable environmental and public health information through the collective knowledge and capabilities of our organization.

Michael Pentella, Ph.D., Director

Susie Dai, Ph.D., Environmental Health Division Associate Director

For more information about the State Hygienic Laboratory, please scan the code below.

Find the State Hygienic Lab on social media.

@HygienicLab

State Hygienic Laboratory

State Hygienic Laboratory at the University of Iowa

HygienicLaboratory

www.shl.uiowa.edu

Last updated: 05/14/2018
By: Lisa Rathjen
Version 9.0

1.1 GENERAL INFORMATION

QUESTIONS

For all general inquiries, or for assistance in contacting State Hygienic Lab staff, please call the main operator at:

1-800-421-IOWA

or email ask-shl@uiowa.edu

LOCATIONS

CORALVILLE LABORATORY

800-421-4692 (toll-free)
319-335-4500 (local)
319-335-4555 (fax)

UI Research Park
2490 Crosspark Road
Coralville, IA 52241-4721

Hours: Mon-Fri 8:00 a.m. - 5:00 p.m.
Saturday 9:00 a.m. - Noon

ANKENY LABORATORY

515-725-1600 (local)
515-725-1642 (fax)

Iowa Laboratories Facility
2220 South Ankeny Boulevard
Ankeny, IA 50023-9093

Hours: Mon-Fri 8:00 a.m. - 5:00 p.m.
Saturday Appointment Only

IOWA LAKESIDE LABORATORY

712-337-3669 Ext. 6 (local)
712-337-0220 (fax)

1838 Highway 86
Milford, IA 51351-7267

Hours: Mon-Fri 8:30 a.m. - 5:00 p.m.
Saturday Appointment Only

EMERGENCIES AFTER BUSINESS HOURS/HOLIDAYS 319-335-5022 (UI Police)

A State Hygienic Laboratory Duty Officer is on-call during after-business hours (365 days of the year) to assist you. Please contact University Police to initiate contact with the **SHL Duty Officer**. The Duty Officer will contact you directly at the phone number you provided.

HOLIDAY SCHEDULE

SHL observes official University of Iowa holidays. The SHL holiday schedule is posted on our website at www.shl.uiowa.edu/news/holidayhours.xml. Environmental microbiology tests **are performed** on holidays.

SAMPLE RECEIVING

Hand-Delivered Samples: Samples may be hand-delivered directly to each of our laboratory locations during normal business hours (as listed above).

1.2 STAFF CONTACT INFORMATION (1 OF 2)

ADMINISTRATION

Environmental Health Division

Susie Dai, PhD, EHD Lab Director	susie-dai@uiowa.edu	Coralville
Mike Schueller, EHD Assistant Director	michael-schueller@uiowa.edu	Coralville

Biological Monitoring and Environmental Analytical Services

Don Simmons PhD, Lab Manager	donald-simmons@uiowa.edu	Ankeny

Client Services (Price quotes, bottle orders, sample results, etc.)

Sherri Marine, Program Manager	sherri-marine@uiowa.edu	Coralville
Rhonda Drayfahl	rhonda-drayfahl@uiowa.edu	Coralville
Marcia Dawson	marcia-dawson@uiowa.edu	Coralville
Bev French	beverly-french@uiowa.edu	Coralville
Misty O'Leary	misty-oleary@uiowa.edu	Ankeny

Government Relations Officer

Pamela Mollenhauer	pam-mollenhauer@uiowa.edu	Ankeny

IT (online reports, technical issues)

Frank Delin, IT Director	frank-delin@uiowa.edu	Coralville
Mike Hayek, IT Helpdesk Support	ask-shl@uiowa.edu	Coralville

Laboratory Certification

Don Simmons PhD, Lab Manager	donald-simmons@uiowa.edu	Ankeny
Brindusa Velica	brindusa-velica@uiowa.edu	Ankeny
Jeff Wasson	jeff-wasson@uiowa.edu	Coralville

Business Development

Lisa Rathjen, BD Coordinator	lisa-rathjen@uiowa.edu	Coralville
Trisha Kreman, BD Manager, Grants/Contracts	trisha-kreman@uiowa.edu	Coralville

ANALYTICAL SERVICES

Bacterial Analysis

Jessica Elliott, Lab Supervisor	jessica-elliot@uiowa.edu	Ankeny
Dawn Jones, Chemist	dawn-jones@uiowa.edu	Ankeny
Dennis Heimdal, Lab Specialist	dennis-heimdal@uiowa.edu	Lakeside

Environmental Microbiology

Nancy Hall, Lab Manager	nancy-hall@uiowa.edu	Coralville

Inorganics (BODs, Ammonia, TSS)

Jessica Elliott, Lab Supervisor	jessica-elliot@uiowa.edu	Ankeny
Dustin May, Lab Supervisor	dustin-may@uiowa.edu	Coralville
Dennis Heimdal, Lab Specialist	dennis-heimdal@uiowa.edu	Lakeside

Limnology (sample collection, algae, WETT, etc.)

Jim Luzier, Supervisor	james-luzier@uiowa.edu	Ankeny
Mike Schueller, Manager	michael-schueller@uiowa.edu	Coralville
Dennis Heimdal, Lab Specialist	dennis-heimdal@uiowa.edu	Lakeside

1.2 STAFF CONTACT INFORMATION (2 OF 2)

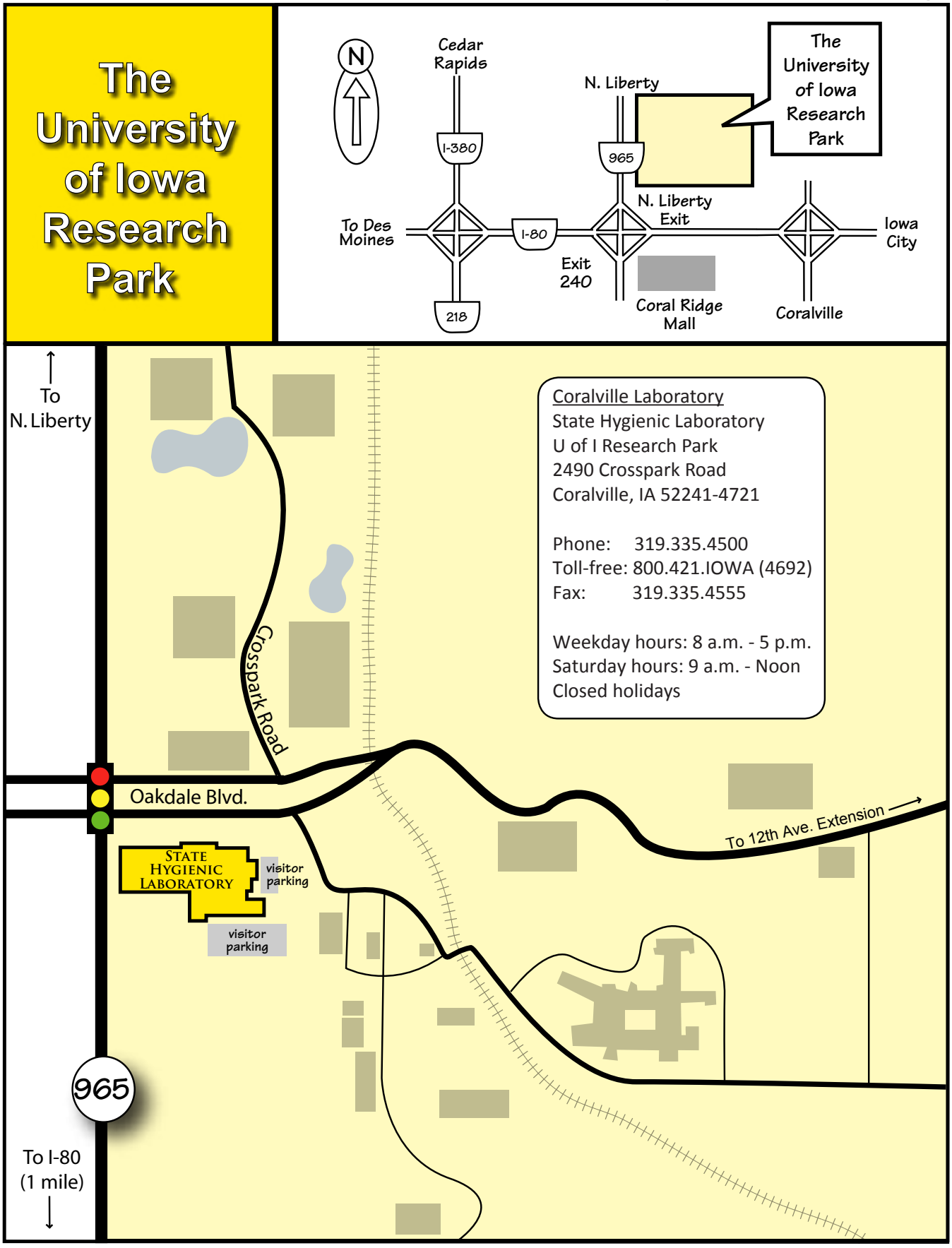
Minerals & Metals
Brian Wels, Lab Scientist ..... brian-wels@uiowa.edu Ankeny

Organics
Terry Cain, Lab Supervisor ..... terence-cain@uiowa.edu Coralville
Sarah May, Lab Supervisor ..... sarah-may@uiowa.edu Coralville

Radiation Chemistry
Dustin May, Lab Supervisor ..... dustin-may@uiowa.edu Coralville

ANALYTICAL SERVICES			
	Performed at Coralville Lab	**Performed at Ankeny Lab**	**Performed at Lakeside Lab**
MATRIX			
Drinking Water (DW)	●	●	●
Surface Water (SW)	●	●	●
Wastewater (WW)	●	●	●
Soil	●	●	---
Sludge	●	●	---
ANALYTICS			
Algal Toxins	●	---	---
Bacteria	●	●	●
BODs, Ammonia, TSS	---	●	●
Environmental Microbiology	●	---	---
Inorganics	---	●	●
Limnology	●	●	●
Minerals & Metals	---	●	---
Organics	●	---	---
Radiation Chemistry	●	---	---

STATE HYGIENIC LABORATORY (CORALVILLE)



1/14/2013

1.3 MAPS AND DIRECTIONS - Coralville

Directions from Eastern Iowa Airport - Cedar Rapids, IA

2121 Wright Brothers Blvd. W
Cedar Rapids, IA 52404-9084
information desk 319/362-8336
1. Go East on Wright Brothers Blvd. SW for 1.4 mi
2. Turn RIGHT on ramp to I-380 S (US-218, IA-27) and continue on I-380 for 9.2 mi Take Exit 4 to 250th St. NW (Penn St.) for 0.4 mi
3. Turn LEFT onto 250th St. NW (Penn St.) for 0.2 mi
4. Continue onto Penn St. for 1.7 mi
5. Turn RIGHT onto Highway 965 NE for 3 mi
6. Turn LEFT onto Oakdale Blvd. for 0.1 mi
7. You will enter the UI Research Park Campus
8. The State Hygienic Laboratory is the first building on the right.
9. To enter, take the first right off of Oakdale Blvd and the next immediate right into the Laboratory parking area.
Total Distance: 17 miles
Total Estimated Time: 22 minutes

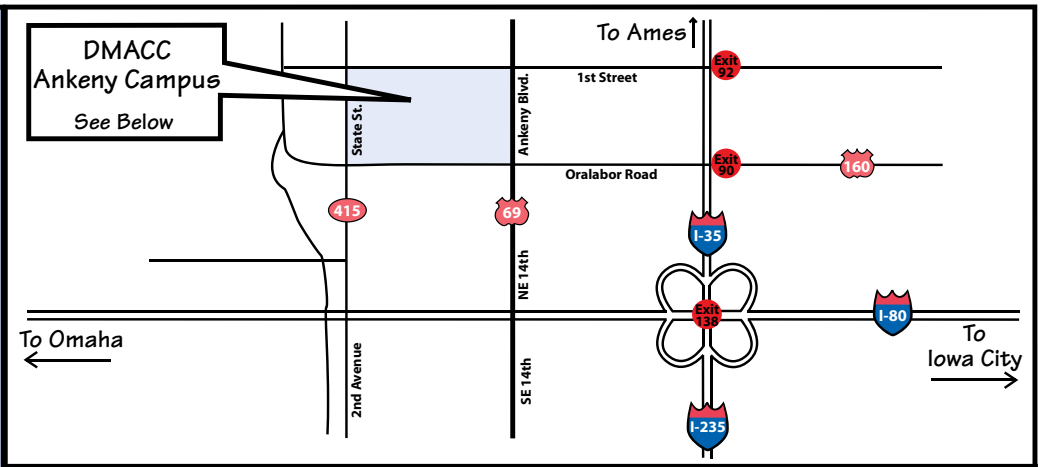
Directions from the State Capitol - Des Moines, IA

1. Depart Des Moines on E Grand Ave. (East) for 0.4 mi
2. Go SouthWest on Pennsylvania Ave. fro 0.2 mi
3. Bear RIGHT for 0.3 mi
4. Turn LEFT (North) onto the I-235 E entry ramp for 5.0 mi
5. Bear RIGHT onto the I-80 E ramp to Davenport for 102 mi
6. Take Exit 240 to Coralville / US-6 / North Liberty for 0.4 mi
7. Turn LEFT (North) onto Coral Ridge Ave. [27th Ave.] for 1.1 mi
8. Turn RIGHT (East) onto Oakdale Blvd. for 0.2 mi
9. You will enter the UI Research Park Campus
10. The State Hygienic Laboratory is the first building on the right.
11. To enter, take the first right off of Oakdale Blvd and the next immediate right into the Laboratory parking area.
Total Distance: 110 mi
Total Estimated Time: 1 hour, 33 minutes

Directions from the Moline Airport - Moline, IL

2200 69th Ave.
Moline, IL 61265
information desk 309/764-9621
1. Go West on Airport Rd. for 1.8 mi
2. Continue on E 1st Ave. for 0.7 mi
3. Turn LEFT onto the I-280 entry ramp for 14 mi
4. At exit 123 B, take the I-80 W ramp to Des Moines for 49 mi
5. At exit 240, take ramp to Coralville / US-6 / North Liberty for 0.4 mi
6. Turn RIGHT onto Coral Ridge Ave. [27th Ave.] for 0.9 mi
7. Turn RIGHT (East) onto Oakdale Blvd. for 0.2 mi
8. You will enter the UI Research Park Campus
9. The State Hygienic Laboratory is the first building on the right.
10. To enter, take the first right off of Oakdale Blvd and the next immediate right into the Laboratory parking area.
Total Distance: 68 miles
Total Estimated Time: 60 minutes

Iowa Laboratories Facility DMACC Ankeny Campus



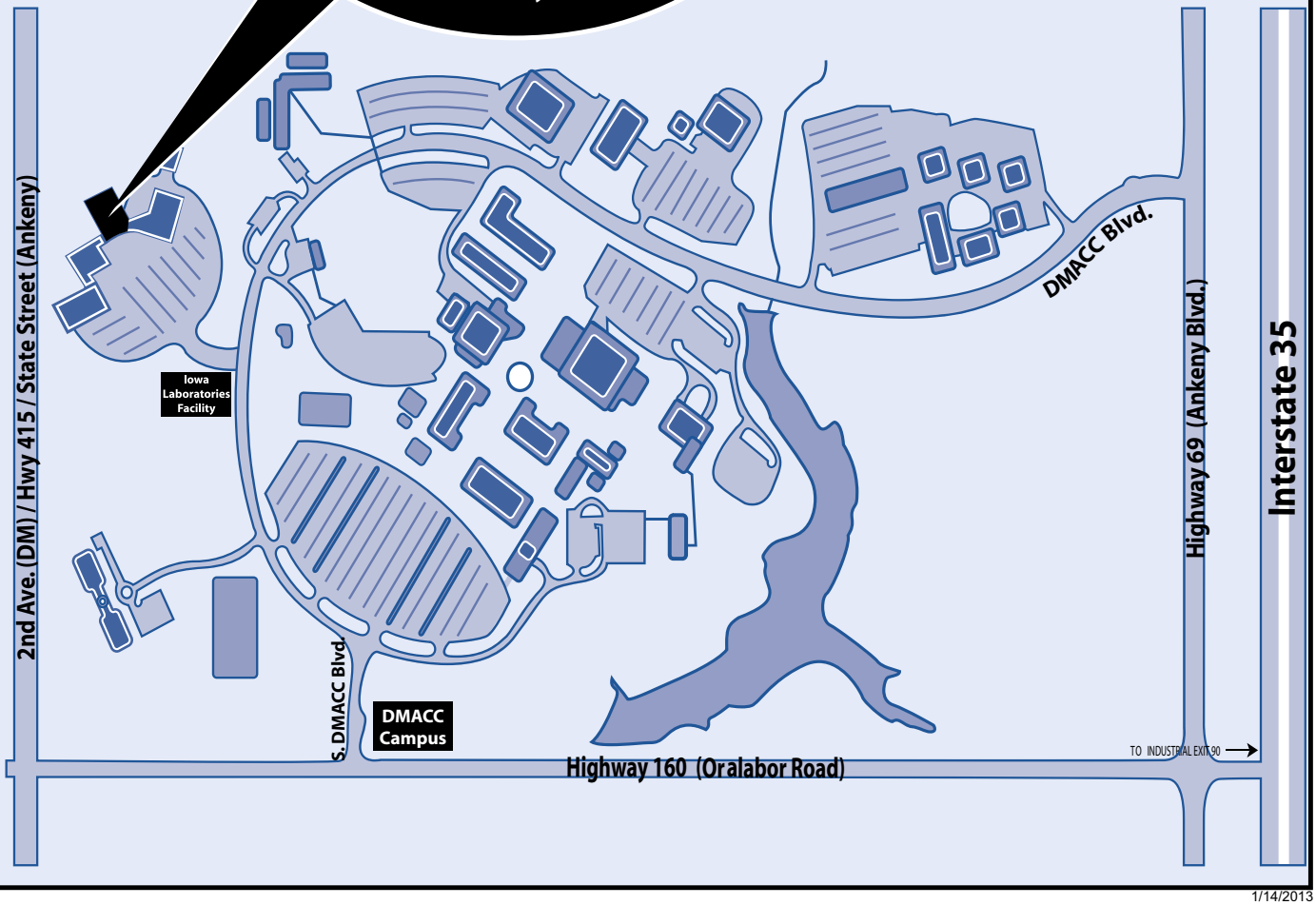
Ankeny Laboratory
State Hygienic Laboratory
2220 S. Ankeny Blvd.
Ankeny, IA 50023-9093

Phone: 515.725.1600
Fax: 515.725.1642

Weekday hours: 8a.m.- 5p.m.
Weekends: by appointment
Closed holidays

N
W E
S

DMACC
DES MOINES AREA COMMUNITY COLLEGE
Ankeny Campus



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1.3 MAPS AND DIRECTIONS - Ankeny

Directions from Des Moines International Airport

1. Go north on Fleur Dr.
2. Turn RIGHT onto the I-235
3. Continue north on I-35 N
4. Take Exit 90 at Ankeny
5. Turn LEFT at Oralabor Rd.
6. Turn RIGHT onto the DMACC Campus at S. DMACC Blvd.
7. Turn LEFT into the Iowa Laboratory Facility

Directions from Iowa City, IA

1. Take I-80 West and continue for 105 mi
2. Turn north onto I-35 (Exit 137B)
3. Take Exit 90 at Ankeny
4. Turn LEFT at SE Oralabor Rd.
5. Turn RIGHT onto the DMACC Campus at S. DMACC Blvd.
6. Turn LEFT into the Iowa Laboratory Facility

Total Distance: 113 mi
Total Estimated Time: 1 hour, 35 minutes

Directions from Omaha, Nebraska

1. Take I-80 East to I-35 North.
2. Take Exit 90 at Ankeny
3. Turn LEFT at SE Oralabor Rd.
4. Turn RIGHT onto the DMACC Campus at S. DMACC Blvd.
5. Turn LEFT into the Iowa Laboratory Facility

Total Distance: 143 mi
Total Estimated Time: 2 hours

1.3 MAPS AND DIRECTIONS - SHL (Milford)

Lakeside Lab
1838 Highway 86
Milford, IA 51351-7267

Phone: 712.337.3669 /ext. 6
Fax: 712.337.0227

Weekday hours: 8:30 a.m - 5 p.m.
Weekends: by appointment
Closed holidays

Directions from Omaha

1. Take Interstate 29 North to Sioux City.
2. Take Highway 75 North to Le Mars.
3. Take Highway 60 North to Sheldon.
4. Take Highway 18 East to Spencer.
5. Take Highway 71 North to Milford.
6. Take Highway 86 West.

Directions from Des Moines

1. Take Interstate 35 North to Highway 20.
2. Take Highway 20 West to Fort Dodge.
3. Take Highway 169 North to Algona.
4. Take Highway 18 West to Spencer.
5. Take Highway 71 North to Milford.
6. Take Highway 86 West.

Directions from Sioux Falls

1. Take Interstate 90 East to Lakefield, MN.
2. Take Highway 86 South into Iowa.

Directions from Minneapolis

1. Take Interstate 35 South to Interstate 90.
2. Take Interstate 90 West to Lakefield, MN.
3. Take Highway 86 South into Iowa.

SECTION 2

IDNR Sample Collection Forms and Project Codes

Multi Site Sample Collection Form

A **Multi Site** sample collection form is designed to be used by sample collectors that will be traveling to multiple sites for a specific IDNR sampling project or contract.

Please complete all **REQUIRED** form fields below:
(See Section 2.2 Multi Form Crosswalk for details on where to locate this information on the SHL Order Request Form.)

Collector Information – Required on each form submitted

- Report To:
- Bill To:
- SHL Project CODE/(name):
- Contract #:
- IDNR Project Contact/Phone:
- SHL Order No.:
- Collector Name:
- Collector Phone:

Analysis Information – Required for each sample submitted

- SHL Bottle Order No.:
- Location:
- Collected Date:
- Collected Time:
- Client Reference:
- Description:
- Analysis Requested:

Chain of Custody/Tracking Signatures

- Relinquished by:
- Date:
- Time:

If you have any questions about this form, please call Client Services for assistance.

Client Services: 1-800-421-4692 (IOWA)

REPORT TO: (Client ID:)						Analysis Requested									FOR 2018 USE ONLY
BILL TO: (Client ID:)															Collector Comments
SHL Proj.CODE(Name):			Cont #:												
IDNR Project Contact/Phone:															
SHL Order No.:				Sample Description Codes											
Collector Name:				SW = Surface Water; DW = Drinking Water; WW = Wastewater; S = Soil/Sed; F= Foliage; O=Other											
Collector Phone:															
SHL Bottle Order No.	Location	Collected Date	Collected Time	Client Reference	Description										Sample Labels SHL USE ONLY
Relinquished by					Date	Time									Comments
Sample receiving custodian					Date	Time									Sample Intact
															Yes No
Relinquished by					Date	Time									Comments
Sample receiving custodian					Date	Time									Sample Intact
															Yes No

State Hygienic Laboratory
2490 Crosspark Rd
Coralville, IA 52241
319-335-4500

State Hygienic Laboratory
2220 S. Ankeny Blvd.
Ankeny, IA 50021
515-725-1600

Lakeside Lab
1838 Hwy 86
Milford, IA 51351
712-337-3669 ext. 6

Revised 2/17/2016

For use in Calendar Year 2018 ONLY

Single Site Sample Collection Form

A **Single Site** sample collection form is designed to be used by sample collectors that will be travelling to a **single site**. Please use the single site form to record the sample information.

Please complete all **REQUIRED** form fields below.

Collector Information – Required on each form submitted

- Sample Type/Matrices:
- DNR Project Code:
- Report To:
- Bill To:

If sampling a public water supply (PWS): (skip this section if not sampling a PWS)

- PWS Name:
- PWS ID:
- Water Facility ID:
- Sampling Point ID:
- Sample Category:
- Sample Type:
- Chlorine Residual

Analysis Information – Required for the sample submitted

- Analysis and Method Requested:
- Collection Site:
- Number of bottle submitted per collection site:
- Collection Location:
- Collection Date/Time: (Year/Month/Day) (Military Time)
- Client Reference:
- Collector's Name:
- Collector's Phone:
- Collector's Signature:

Chain of Custody/Tracking Signatures

- Relinquished by:
- Date/Time:

If you have any questions about this form, please call Client Services for assistance.

Client Services: 1-800-421-4692 (IOWA)

2.0 IDNR SAMPLE COLLECTION FORM - SINGLE SITE

Print Form

Sample Type/Matrices: *(Must check one)*

▼Water
- ☐ Waste Water
- ☐ Drinking Water
- ☐ Surface Water
- ☐ Ground Water
- ☐ **Other**_____

▼Solids
- ☐ Soil
- ☐ Foliage
- ☐ Sludge
- ☐ Sediment

DNR Project Codes: *(Must check one)*

- ☐ 17WSTECH
- ☐ 04WQFS
- ☐ 05WQFK
- ☐ 07WQER
- ☐ WMSF
- ☐ WQSWR
- ☐ 16WSCOMP

REPORT TO:
Name of Person: _____
IDNR & Office: _____
Street Address: _____
City, State, Zip: _____
Phone Number: _____
Fax Number: _____
E-MAIL:

BILL TO: ☐ same as Report to:
_____
_____
_____
_____
_____
_____

Complete the following information only for public water supply

PWS Name: _____

PWS ID: _____ **Water Facility ID #**: _____ **Sampling Point ID**: _____

Sample Category: ☐CH ☐TC ☐RA ☐PB **choose one*
CH–Chemical, TC–Coliform, RA–Radionuclides, PB–Lead

Sample Type: ☐RT ☐SP ☐RP **choose one*
RT – Routine, SP – Special, RP– Repeat

Chlorine Residual: Free _____mg/L Total _____mg/L

Environmental Sample Collection Form

Requested Analyses

Analysis and Method Requested: _____
_____
_____

Complete the following information. Please use one form per site.

Collection Site: _____ Number of bottles submitted per collection site: _____
Specific sample location/SHL bottle #(s)

Collection Location: _____
(Town, County, GPS, Township, Section, Road Intersection, etc)

Collection Date/Time: ____/____/____/_____ Client Reference: _____
Year mm dd Military time Additional client information if needed

Collector's Name: _____ Collector's Phone #: _____
Please print

Collector's Signature: _____

Chain of Custody/Tracking Signatures

Relinquished by: _____ Date/Time ____/____/____/_____
Received by: _____ Date/Time ____/____/____/_____
Relinquished by: _____ Date/Time ____/____/____/_____
Received by: _____ Date/Time ____/____/____/_____
SHL Custodian

For SHL use only. Please do not write below here.

SAMPLE INTACT: ☐ Yes ☐ No pH: _____ TEMPERATURE: _____

Comments: _____

Place Label Here | Place Label Here | Place Label Here

State Hygienic Laboratory

Lakeside Laboratories
1838 Highway 86
Milford, IA 51351
Phone #: 712-337-3669 ext: 6
Fax #: 712-337-0227

2220 S. Ankeny Blvd
Ankeny, IA 50021
Phone #: 515-725-1600
Fax #: 515-725-1642

U of I Research Park
Iowa City, IA 52242-5002
Phone #: 319-335-4500
Fax #: 319-335-4555

http://www.uhl.uiowa.edu

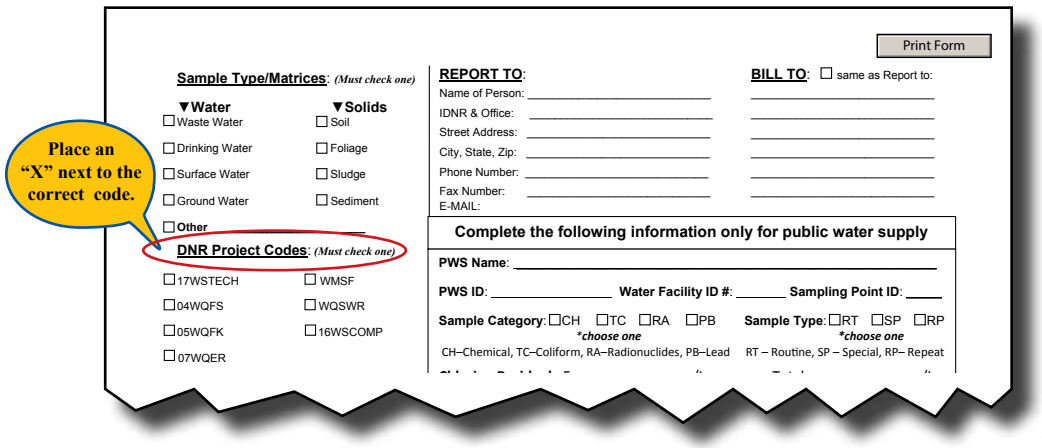
Revised 03-09-18

IDNR PROJECT CODES

Important: Know your code!

An IDNR Project Code is **REQUIRED** on **EVERY** Sample Collection Form. The **sample collector** is responsible for selecting the correct project code. IDNR project codes are located in the upper left-hand corner of the Sample Collection Form (example below). Project code definitions are provided below to assist you.

Why do I need to choose an IDNR Project Code?
The project code assigns the charges for a sample analysis to a specific contract or funding agreement.



PROJECT CODE	WASTEWATER SAMPLING
04WQFS	**Wastewater Quality Field Sample -** samples collected during compliance evaluation inspections of wastewater treatment plants, sanitary landfills, investigation of feedlot complaints and other sources of surface water contamination not covered by other codes.
05WQFK	**Wastewater Quality Fish Kill -** Samples collected during the investigation of fish kills not related to emergency response spills.
07WQER	**Wastewater Quality Emergency Response -** samples collected during emergency response investigations.
WQSWR	**Wastewater Quality Storm Water Runoff -** samples collected during evaluations of storm water runoff from industrial activities or municipal storm sewer systems.

PROJECT CODE	WATER SUPPLY SAMPLING
17WSTECH	**Water Supply Technical -** public water supply samples collected for the purpose of technical assistance. Including samples collected during the investigation of complaints by the public regarding aesthetic problems.

2.1 IDNR PROJECT CODES (2 OF 2)

PROJECT CODE
16WSCOMP

WATER SUPPLY SAMPLING
Water Supply Compliance - public water supply samples collected for the purpose of determining compliance. Samples collected during sanitary survey visits and during the investigation of complaints by the public not involving spills or non aesthetic problems.

PROJECT CODE
WMSF

UNCONTROLLED SITE MONITORING
Water Monitoring Super Fund - samples of water, soils, soil-gas, solvents and solid wastes collected during uncontrolled sites investigations.

If you have questions regarding which project code to use for your sample, please call:
SHL Client Services @ 1-800-335-IOWA (4692)

Know your code!
IDNR Project Codes Quick Guide

Wastewater Quality	04WQFS	Wastewater Quality - Field Sample
	05WQFK	Wastewater Quality - Fish Kill
	07WQER	Wastewater Quality - Emergency Response
	WQSWR	Wastewater Quality - Storm Water Runoff
Water Supply Sampling	17WSTECH	Water Supply - Technical
	16WSCOMP	Water Supply - Compliance
Uncontrolled Site Monitoring	WMSF	Water Monitoring - Super Fund

NOTE: QA SAMPLES DO NOT REQUIRE PROJECT CODES

1

Order Request for SHL

Date: 2/15/2016 **Contract Name:** Wetland Monitoring **Contract #:** 17S ESD WQB HB8A BHARL 0003

Project Contact: Brandon Harland

Client Reference: NA

Project Name: AMBWETLAND

Project Year: FY2017/2016

Billed to
Client ID# 3057
Client Name: IDNR Wetland Monitoring

Results to be Sent to:
Client Name: Brandon Harland
Client ID#: 3057
Client Name: IDNR Wetland Monitoring

Sample Collector Name: Brandon Harland

Sample Collector Phone Number : (515)725-8378

Sample Collector Person Email: brandon.harland@dnr.iowa.gov

Ship bottles to:
Client Name: IDNR Wetland Monitoring/Brandon Harland
Client Address 1: Wallace State Office Building
Client Address 2: 502 East 9th Street Des Moines, IA 50319
Client e-mail/phone#: brandon.harland@dnr.ia.gov/(515)725-8378

Number of Sites to be Sampled: 16

Parameters to be Analyzed.

Bottle Order Number: 000000	
Test	**Method**
Acid Herbicides	EPA 515.3
Neonicotinoids	UHL-H-018 LC/MS/MS
Fungicides	UHL-H-029 LC/MS/MS

Sampling Frequency: Once per site

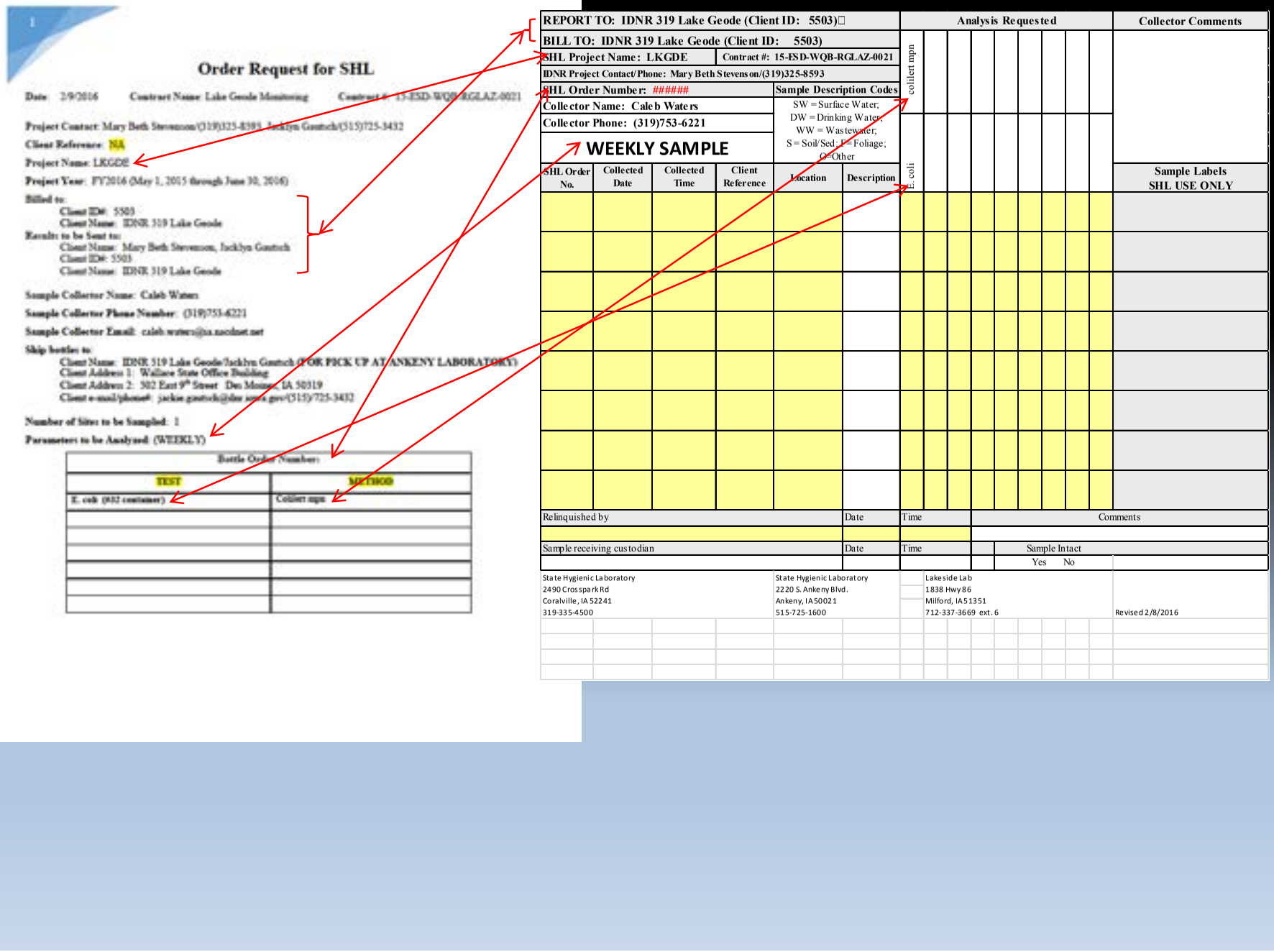
Sampling Start Date: April 15, 2016

Sampling End Date: April 15, 2017

Shipping Instructions: IDNR staff will pick up samples at SHL Ankeny lab location

Quality Assurance Containers Needed: NA (None specified in contract)

Other Instructions: ??????



Order Request for SHL

Date: 2/9/2016 Contract Name: Lake Geode Monitoring Contract #: 15-ESD-WQB-RGLAZ-0021

Project Contact: Mary Beth Stevenson/(319)325-8595, Jacklyn Gautsch/(515)725-3432

Client Reference: NA

Project Name: LKGDE

Project Year: FY2016 (May 1, 2015 through June 30, 2016)

Billed to:
Client ID#: 5503
Client Name: IDNR 319 Lake Geode

Results to be Sent to:
Client Name: Mary Beth Stevenson, Jacklyn Gautsch
Client ID#: 5503
Client Name: IDNR 319 Lake Geode

Sample Collector Name: Caleb Waters

Sample Collector Phone Number: (319)753-6221

Sample Collector Email: caleb.waters@ia.nacdnet.net

Ship bottles to:
Client Name: IDNR 319 Lake Geode/Jacklyn Gautsch (OR PICK UP AT ANKENY LABORATORY)
Client Address 1: Wallace State Office Building
Client Address 2: 502 East 9th Street Des Moines, IA 50319
Client e-mail/phone#: jackie.gautsch@dnr.iowa.gov/(515)725-3432

Number of Sites to be Sampled: 1

Parameters to be Analyzed: (WEEKLY)

Bottle Order Number:	
TEST	METHOD
E. coli (0.02 container)	Colilert mpn

REPORT TO: IDNR 319 Lake Geode (Client ID: 5503)

BILL TO: IDNR 319 Lake Geode (Client ID: 5503)

SHL Project Name: LKGDE | Contract #: 15-ESD-WQB-RGLAZ-0021

IDNR Project Contact/Phone: Mary Beth Stevenson/(319)325-8593

SHL Order Number: ###### | Sample Description Codes

Collector Name: Caleb Waters | SW = Surface Water; DW = Drinking Water; WW = Wastewater; S = Soil/Sed; F = Foliage; O=Other

Collector Phone: (319)753-6221

WEEKLY SAMPLE

SHL Order No.	Collected Date	Collected Time	Client Reference	Location	Description	E. coli	Colilert mpn	Collector Comments / Sample Labels SHL USE ONLY

Relinquished by	Date	Time	Comments
Sample receiving custodian	Date	Time	Sample Intact: Yes No

State Hygienic Laboratory
2490 Crosspark Rd
Coralville, IA 52241
319-335-4500

State Hygienic Laboratory
2220 S. Ankeny Blvd.
Ankeny, IA 50021
515-725-1600

Lakeside Lab
1838 Hwy 86
Milford, IA 51351
712-337-3669 ext. 6

Revised 2/8/2016

1

Order Request for SHL Page 2

Sampling Frequency: WEEKLY

Sampling Start Date: March 2016

Sampling End Date: September 2016 **(Does not match contract date)**

Shipping Instructions: Container order will be picked up by IDNR staff at the SHL Ankeny facility

Quality Assurance Bottles Needed: **None specified for weekly sampling**

Other Instructions/Comments: A total of 33 #32 containers for E. coli analysis are included in this order.

Number of Sites to be Sampled: 11 + 1 QA

Parameters to be Analyzed: (MONTHLY)

Bottle Order Number:	
TEST	**METHOD**
E. coli (#32 container)	Colilert-mpn
Total P (#2 container)	LAC 10-115-01-1D
TSS (#9 container)	USGS I-3765-85
E. coli in sand (# 62container)	Sludge mpn Ecoli

Sampling Frequency: MONTHLY

Sampling Start Date: March 2016

Sampling End Date: September 2016 **(Does not match contract date)**

Shipping Instructions: Container order will be picked up by IDNR staff at the SHL Ankeny facility

Quality Assurance Bottles Needed: 7 #32 conatiners for E. coli analysis, 7 #2 containers for Total P analysis, 7 #9 containers for TSS analysis. **(One field replicate will be collected at a randomly selected water site during each monthly sampling event.)**

REPORT TO: IDNR 319 Lake Geode (Client ID: 5503)

BILL TO: IDNR 319 Lake Geode (Client ID: 5503)

SHL Project Name: LKGDE | **Contract #: 15-ESD-WQB-RGLAZ-0021**

IDNR Project Contact/Phone: Mary Beth Stevenson/(319)325-8593

SHL Order Number: ######

Collector Name: Caleb Waters

Collector Phone: (319)753-6221

MONTHLY SAMPLE

Sample Description Codes

SW = Surface Water; DW = Drinking Water; WW = Wastewater; S = Soil/Sed; F= Foliage; O=Other

Analysis Requested

SHL Order No.	Collected Date	Collected Time	Client Reference	Location	Description	E. coli	Total P	TSS	E. coli in sand	colilert mpn	lac 10-115-01-1d	usgs i-3765-85	sludge mpn ecoli					**Collector Comments** / **Sample Labels SHL USE ONLY**

Relinquished by	Date	Time	Comments
Sample receiving custodian	**Date**	**Time**	**Sample Intact** Yes No

State Hygienic Laboratory
2490 Crosspark Rd
Coralville, IA 52241
319-335-4500

State Hygienic Laboratory
2220 S. Ankeny Blvd.
Ankeny, IA 50021
515-725-1600

Lakeside Lab
1838 Hwy 86
Milford, IA 51351
712-337-3669 ext. 6

Revised 2/8/2016

SECTION 3

Sample Collection Instructions

3.0 SAMPLE COLLECTION METHODS (1 OF 2)

Two collection types/techniques, **Grab and Composite**, are normally used when collecting samples.

The most precise and accurate analytical measurements are worthless, and even detrimental, if performed on a sample that was improperly collected and stored or was contaminated in the process (OEPA, 1978).

Grab Sample

A **Grab sample** is an individual sample collected over a period of time **not to exceed 15 minutes**. A grab sample is normally associated with water or wastewater sampling. However, liquid hazardous waste samples and non-aqueous samples (soil, solid, oil, and sediment) may also be considered grab samples.

Typical grab sampling is required for parameters such as chromium hexavalent, cyanide, oil and grease, pH, total phenols, residual chlorine, bacterial analyses, and volatile organics.

The collection of a grab sample is appropriate when it is desired to:

- Characterize water or wastewater stream at a particular instant in time.
- Provide information about minimum & maximum concentrations.
- Allow collection of variable sample volumes.
- Comply with the NPDES permit monitoring specs.
- Coordinate with composite sample.

Composite Sample

A **composite sample** is prepared by combining a series of grab samples over known time or flow intervals for the purpose of analysis. The composite sample should contain a number of discrete samples taken at equal time intervals over the compositing period. Can be collected manually and mixed together. Can be collected by automatic sampling equipment. Typical composite sampling is required for parameters such as biochemical oxygen demand (BOD), suspended solids, ammonia, and total phosphorus.

Use composite sampling to:

- Determine average concentration over a given time span.
- Calculate mass/unit time loading.

SAMPLE TYPES

Sample - A sample is defined as a discrete portion of material to be analyzed that is contained in a single or multiple containers, and identified by a unique sample number. A sample includes duplicates and QC samples.

Duplicate Sample - It is a second aliquot of the same sample to determine the precision of the method, to check the accuracy and precision of analyses.

QC Sample - An additional volume of an existing sample used to detect contamination or error.

Matrix Spike (MS) Sample - It is an aliquot of a sample (water or soil) that is fortified (spiked) with known quantities of a specific compound and subjected entire analytical procedure.

Matrix Spike Duplicate (MSD) Sample - It is a second aliquot of the same matrix as the Matrix Spike (MS) that is spiked to determine the precision of the method.

3.0 SAMPLE COLLECTION METHODS (2 OF 2)

Blank Sample - is used to identify potential sources of contamination during sampling, shipping, storage and analysis. It is highly recommended that field blanks accompany all sample sets. Each blank is assigned its own unique sample number. Types of blank samples:

Sample Matrix ("Field") Blank - The **field blank** is used to determine whether contamination has been introduced during sample collection, storage and shipment, as well as, sample handling in the analytical laboratory.

Field blanks are prepared by transferring demonstrated analyte-free water to the appropriate sample containers during the time when site-specific samples are collected. These blanks are transported to the field and exposed to the same conditions as site-specific samples including removal of the container caps and addition of any appropriate preservatives.

This sample should be analyzed for the same parameters as those associated with site-specific samples collected from potentially contaminated media.

Trip Blank - The **trip blank** is only used for Volatile Organic Compounds (VOCs) to determine whether contamination has been introduced to aqueous samples through cross-contamination during shipment and storage of sample containers.

Trip blanks should be prepared, and include preservatives prior to the sampling event, and are not exposed to field conditions. They will be furnished by SHL and will consist of certified analyte-free water provided in the appropriate container.

Trip blanks should be collected at a frequency of:

i) One per each cooler used to store/transport site-specific samples designated for VOC analyses, or

ii) One for each day that VOCs are collected.

Note: Trip blanks are **not** required for VOCs in air.

HOLDING TIME

Holding time is the elapsed time from the **date/time of collection of the sample** until the **date/time of its analysis**. This is **not** the date/time of receipt at the lab. Samplers must be aware of the holding times for all analyses requested and ship samples to the State Hygienic Laboratory as quickly as possible. To ensure that SHL can meet the required holding time, it may be necessary to ship samples at the end of each collection day.

NOTE: Planning should be done so that samples are collected, shipped and analyzed within holding times.
Grab Sample: Holding time begins at the time of collection.
Composite Samples: Holding time begins at the time of the end of collection of the composite sample.

KEYS TO PROPER SAMPLING IS FIELD OPERATIONS

- Collection of Representative Samples
- Proper Handling
- Proper Preservation of Samples
- Appropriate Chain of Custody Records

3.1 GENERAL SAMPLING PRECAUTIONS (1 OF 2)

Sample Collection

Collection location for organic samples is determined by the purpose of the analysis:

- **Routine Monitoring** - Routine monitoring samples should be representative of the material being sampled.
- **Unknown Contaminants** - Collection location for organic samples is determined by the purpose of the analysis:
- **Compliance** - If organic samples are being collected for compliance purposes, the appropriate regulatory agency must be consulted to determine:
  - the required analytes
  - the number of samples
  - the sampling location
  - whether the samples need to be composited, etc.

This information must be forwarded to SHL.

Sample Contamination

SHL's analytical instruments have the capability to detect trace amounts of compounds within samples. Therefore, use **extreme care** while collecting the sample **to avoid contamination.**

- **Do not smoke** immediately before or during the sampling process.
- **Do not touch** the inside of the sample container or cap.
- **Do not collect** samples near a motor vehicle.
- **Please note** any noticeable odors on the sampling information sheet.
- **Do not store** sample containers in areas where contamination could occur.

If sample containers are accidentally contaminated, please call SHL for assistance.

Forms

Completely fill out the data forms provided by SHL. (see Section 2.0 for details)

Sample Storage

If possible, **REFRIGERATE** samples before packing them for shipping.

Sample Packaging

Recommended packaging:

a. Carefully package all samples for shipping using bubble wrap, paper or Styrofoam holders to avoid container breakage during transport and handling.
b. Unless otherwise instructed, samples should be packed on **ice** or with **frozen freeze-packs to keep samples cold during shipping**.
c. During cold weather, water samples must be protected from freezing while in transit to prevent breakage.

3.1 GENERAL SAMPLING PRECAUTIONS (2 OF 2)

Sample Shipping

Ship samples promptly after collection to arrive during normal business hours **Monday - Friday**. Certain analytical methods require that samples be received and analyzed at SHL within 24-48 hours of collection due to very short holding times. Please always read and follow the corresponding sample bottle instructions. (see Section 5: Sampling Instructions).

Note: **Weekends** - Do **NOT** ship samples to arrive on Saturday or Sunday unless **PRIOR** arrangements have been approved by SHL. Call Client Services to make special sample delivery arrangements.

Courier Service: Courier service is available to you for sample pick up. Charges will apply. All courier service charges are the sole responsibility of IDNR.

To set up your account or to schedule a courier pick up, contact:
Ron Hardy, General Manager, Central Delivery Service
Phone: (515) 289-9990
Cell: (515) 771-8541
Email: ronh@cdsofiowa.com
Website: www.cdsofiowa.com

For Additional Assistance

Please contact Client Services if you have any questions regarding sample collection, shipping/delivery, analysis, or fees.

CLIENT SERVICES: 1-800-421-IOWA (4692)

3.2 SAMPLE SUBMISSION INFORMATION (1 OF 2)

STEP 1: Obtain/print a Sample Collection Form (see Section 2.0 Sample Collections Forms)

STEP 2: Complete all REQUIRED fields on the Sample Collection Form

The following **12 fields** of the Sample Collection Form **MUST** be completed for each sample form submitted (missing information can delay testing):

1) **Report To**
2) **Bill To**
3) **Sample Type/Matrices**
4) **DNR Project Code** *(see Section 2.1 IDNR Project Codes)*
5) **Public Water Sample (PWS)** information **-** If the sample if from a PWS, you must fill out PWS information completely.
6) **Requested Analysis** (list each test individually)
7) **Collection Site** (specific sample location)
8) **Collection Location** (town, county, gps, township, section, road intersection, etc.)
9) **Collection Date/Time**
10) **Collector's Name and Phone Number**
11) **Chain of Custody/Tracking Signatures** if needed
12) **Contact Person's Name and Phone Number** if different than collector

STEP 3: Label Each Sample Container - REQUIRED

The following **3 items MUST** be written on the label affixed to the sample container(s):

1) **Sample Location/Nearest City or Town**
2) **Date and Time Collected**
3) **Collector's Initials**

STEP 4: Sample Storage

Follow the appropriate sample bottle instruction sheet for detailed sample storage and shipping (see Section 5 Sample Bottle Instructions). If possible, **REFRIGERATE** samples before packing them for shipping.

STEP 5: Packaging

Recommended packaging:

a. Carefully package all samples for shipping using bubble wrap, paper, or styrofoam holders to avoid container breakage during transport and handling.
b. Unless otherwise instructed, samples should be packed on **ice** or with **frozen freeze-packs to keep samples cold during shipping**.
c. During cold weather, water samples must be protected from freezing while in transit to prevent breakage.

3.2 SAMPLE SUBMISSION INFORMATION (2 OF 2)

STEP 6: Shipping

Weekdays (Mon-Fri): Ship samples promptly after collection to arrive during normal business hours **Monday - Friday**. Certain analytical methods require that samples be received and analyzed at SHL within 24-48 hours of collection due to very short holding times. Please always read and follow the corresponding sample bottle instructions. (see Section 5: Sampling Instructions).

Weekends (Sat-Sun): Do **NOT** ship samples to arrive on Saturday or Sunday unless PRIOR arrangements have been approved by SHL. Call Client Services to make special sample delivery arrangements.

Transport Options:

1) Hand-Delivery: Deliver directly to the sample receiving area at one of our three labortory locations during normal business hours.

2) UPS/FedEx: ***Note:*** **Weekends** - Do **NOT** ship samples to arrive on Saturday or Sunday unless PRIOR arrangements have been approved by SHL. Call Client Services to make special sample delivery arrangements.

3) Courier Service: Courier service is available for sample pick up. Charges will apply. All courier service charges are the sole responsibility of IDNR.

To set up your account or to schedule a courier pick up, contact:

Ron Hardy, General Manager, Central Delivery Service
Phone: (515) 289-9990
Cell: (515) 771-8541
Email: ronh@cdsofiowa.com
Website: www.cdsofiowa.com

For Additional Assistance

Please contact Client Services if you have any questions regarding sample collection, shipping/delivery, analysis, or fees.

CLIENT SERVICES: 1-800-421-IOWA (4692)

3.3 FISH TISSUE COLLECTION

Fish Tissue Collection Instructions:

1. Obtain a clean stainless steel knife.

2. ***Before filleting: record lengths and weights of fish.***

3. Wash and rinse all equipment that comes in contact with the fish fillets (e.g., fish scalers, knives, etc.) with soap and water, and rinse with clean water. Wash and rinse the equipment between each sample being submitted for analysis.

4. Fillet on a clean piece of aluminum foil for each fish.

5. Wear disposable gloves when preparing fillets and change gloves between each fish to prevent cross-contamination.

6. Wrap all fillets of each species of fish together in one foil package. Make sure there is a label inside the foil wrap with the fish that includes species and date collected.

7. Place foil-wrapped fish in heavyweight plastic bag. Place label inside plastic bag with same info as that inside the foil wrap. Seal the plastic bag well to avoid any potential leaking.

8. Freeze solid.

9. Deliver the frozen fish either to the lab in person or ship using overnight service.

For Additional Assistance

Please contact Client Services if you have any questions regarding sample collection, shipping/delivery, analysis, or fees.

CLIENT SERVICES: 1-800-421-IOWA (4692)

3.4 INORGANIC SAMPLES

Sample Preservation

Sample preservation should be performed immediately upon sample collection. For composite samples each aliquot should be preserved at the time of collection.

When use of an automated sampler makes it impossible to preserve each aliquot, samples may be preserved by maintaining at 4°C until compositing and sample splitting is complete.

Sample Shipping

When any sample is to be shipped by common carrier or sent through the United States Postal Service, it must comply with the Department of Transportation Hazardous Materials Regulations (49 CRF Part 172). The person offering such material for transportation is responsible for ensuring compliance.**

Holding Times

Samples should be analyzed **as soon as possible after collection**. The holding times listed are the maximum times that samples may be held before analysis and still considered valid.

Samples exceeding holding times may be analyzed but the results must be qualified. Samples may be held for longer periods only if the permittee, or monitoring laboratory, has data on file to show that the specific types of samples under study are stable for the longer time, and has received a variance from the Regional Administration.

Some samples may not be stable for the maximum time period given in the table.

** For the preservation requirements of Table 1, the Office of Hazardous Materials, Materials Transportation Bureau, Department of Transportation has determined that the Hazardous Materials Regulations do not apply to the following materials: Hydrochloric acid (HCl) in water solutions at concentrations of 0.04% by weight or less (pH about 1.96 or greater); Nitric acid (HNO_3) in water solutions at concentrations of 0.15% by weight or less (pH about 1.62 or greater); Sulfuric Acid H_2SO_4) in water solutions at concentrations of 0.35% by weight or less (pH about 1.15 or greater); Sodium hydroxide (NaOH) in water solutions at concentrations of 0.080% by weight or less (pH about 12.30 or less).

3.5 ORGANIC SAMPLES

A sampling kit for volatile organics contains the following:

- Three (3) 40 ml vials
- One (1) 40 ml Trip Blank filled with organic-free water.

SPECIAL NOTE:
DO NOT aerate water. If vials are labeled "preserved," be careful not to overflow the vials and flush out the preservative.

VOC Sampling Instructions

1. Run water for at least 2 minutes.

2. Carefully fill each vial by allowing water to trickle down the inside of the vial. (If HCl acid preservative is needed, put three drops in each vial when the vial is nearly full). Overfill vial so that a bead of water forms above the lip of the vial, so there are no air bubbles in the sample. Carefully screw cap on vial.

    - If sample is waste water, analysis is BTEX and/or volatiles, the HCL acid must be added or a #45 pre-preserved bottle needs to be used. Iowa Administrative Code requires laboratories to report sample pH. If samples are not acidified, results may be questionable.

    - If sample is drinking water, analysis is BTEX and/or volatiles, vial #15 contains ascorbic acid. Fill the vial to almost full and add the HCl acid. The HCL acid must be added to meet the method requirements. Iowa Administrative Code requires laboratories to report sample pH. If samples are not acidified, results may be questionable.

3. Tip vials upside down to check that no air bubble remain in the vial. If an air bubble does appear unscrew cap and add a little more water.

4. For municipal drinking water samples, carefully unscrew cap of the Trip Blank and add three drops of HCl acid and then replace the cap.

5. Fill out information on the labels of the vials.

6. Fill out information on the sample information forms.

7. Cool samples with ice packs and/or ice.

8. Ship promptly to SHL.

SECTION 4

Analytical Test Menu

A	Ankeny Laboratory
C	Coralville Laboratory
L	Lakeside Laboratory

WATER SUPPLY - SDWA - Environmental Microbiology, Other

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
ENVIRONMENTAL MICROBIOLOGY - SDWA									
Total Coliform and E.coli PA (SDWA)	#81 5 oz Plastic IDEXX	Sodium thiosulfate <10°C	30 hrs	Presence /Absence	N/A	SM 9223 B	•	•	•
Total Coliform and E.coli MPN (SDWA)	#81 5 oz Plastic IDEXX	Sodium thiosulfate <10°C	30 hrs	Most Probable Number	<1	SM 9223 B	•	•	•
Heterotrophic Plate Count	#32 4 oz Plastic IDEXX	Sodium thiosulfate <10°C	Compliance sample <= 6 hrs. IDNR will accept up to 24 hrs		<1	SM 9215 B	•	•	
HALOACETIC ACIDS - SDWA									
Haloacetic Acids (HAAs): Chloroacetic acid, Bromoacetic acid, Dichloroacetic acid, Trichloroacetic acid, Dibromoacetic acid, Total Haloacetic Acids (HAA5)	#87 1 - 125 mL Amber Glass vial with trip blank	Ammonium chloride Cool 4°C	Extraction: 14 days		0.001 - 0.006 mg/L	EPA 552.2		•	
TOTAL THMS (Trihalomethanes) - SDWA									
GCMS Trihalomethanes: Chloroform, Bromodichloromethane, Dibromochloromethane, Bromoform, Total Trihalomethanes	#6 3 - 40 mL Amber Glass vials with trip blank	Ascorbic acid + 3 drops HCL Cool 4°C	14 days		0.0005 - 0.0020 mg/L	EPA 524.2		•	
RADIONUCLIDES - SDWA									
Gross Alpha including Uranium	#22 Gallon Plastic	Unpreserved	180 days	Must reach lab within **5 days** of collection	3.0 pCi/L	EPA 00-02		•	
Gross Alpha including Uranium	#22 Gallon Plastic	Unpreserved	180 days	Must reach lab within **5 days** of collection	3.0 pCi/L	EPA 900.0		•	
Radium 226	#22 Gallon Plastic	Unpreserved	180 days	Must reach lab within **5 days** of collection	1.0 pCi/L	EPA 903.0		•	
Radium 228	#22 Gallon Plastic	Unpreserved	180 days	Must reach lab within **5 days** of collection	1.0 pCi/L	EPA 904.0		•	
Uranium (isotopic in water)	#22 Gallon Plastic	Unpreserved	180 days	Must reach lab within **5 days** of collection	0.02pCi/L	SM 7500 U C		•	
Uranium	#7 Pint Plastic/ #29 4 oz Plastic	1:1 Nitric Acid	180 days		1.0 ug/L	EPA 200.8	•		

WATER SUPPLY - SDWA - INORGANICS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Quant Limit	Method	A	C	L
REGULATED IOCs								
Metals (SDWA): **Antimony (Sb)**	#7 Pint Plastic	4mL 1:1 nitric acid	6 months	0.005 mg/L	EPA 200.8	•		
Arsenic (As)	#7 Pint Plastic	4mL 1:1 nitric acid	6 months	0.001 mg/L	EPA 200.8	•		
Cadmium (Cd)	#7 Pint Plastic	4mL 1:1 nitric acid	6 months	0.001 mg/L	EPA 200.8	•		
Selenium (Se)	#7 Pint Plastic	4mL 1:1 nitric acid	6 months	0.01 mg/L	EPA 200.8	•		
Thallium (Tl)	#7 Pint Plastic	4mL 1:1 nitric acid	6 months	0.001 mg/L	EPA 200.8	•		
Barium (Ba)	#7 Pint Plastic	4mL 1:1 nitric acid	6 months	0.05 mg/L	EPA 200.8	•		
Chromium (Cr)	#7 Pint Plastic	4mL 1:1 nitric acid	6 months	0.01 mg/L	EPA 200.8	•		
Mercury (Hg)	#7 Pint Plastic	4mL 1:1 nitric acid	28 days	0.00005 mg/L	EPA 200.8 EPA 245.2	•		
Sodium (Na)	#7 Pint Plastic	4mL 1:1 nitric acid	6 months	0.5 mg/L	EPA 200.7	•		
Fluoride (Fl)	#24 or #9 2 oz or 8 oz Plastic	Unpreserved Cool 6°C	28 days	0.1 mg/L	SM 4500 F C	•		•
Beryllium (Be) (currently waived by DNR)	#7 Pint Plastic	4mL 1:1 nitric acid	6 months	0.002 mg/L	EPA 200.8	•		
Nickel (Ni) (currently waived by DNR)	#7 Pint Plastic	4mL 1:1 nitric acid	6 months	0.05 mg/L	EPA 200.8	•		
NITRATE & NITRITE								
Nitrate (NO_3-N)	#1, #9 or #37 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	48 hours	1.0 mg/L	EPA 300.0	•		•
Nitrite (NO_2-N)	#1, #9 or #37 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	48 hours	0.1 mg/L	EPA 300.0	•		•
LEAD & COPPER								
Copper (Cu)	#26 Quart Plastic	nitric acid rinse	6 months	0.01 mg/L	EPA 200.8	•		
Lead (Pb)	#26 Quart Plastic	nitric acid rinse	6 months	0.001 mg/L	EPA 200.8	•		
CYANIDE (CURRENTLY WAIVED BY DNR)								
Cyanide (CN)	#4 500 ml Plastic	4-6 pellets sodium hydroxide Cool 6°C	14 days	0.01 mg/L	SM 4500 CN E	•		
WATER QUALITY PARAMETERS								
Alkalinity	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	14 days	1.0 mg/L	SM 2320 B	•		
Ammonia	#2 8 oz Plastic	H_2SO_4 to pH <2 Cool 4°C	28 days	0.05	Lachat 10-107-06-1-J	•		
Calcium (Ca)	#7 Pint Plastic	4 ml 1:1 nitric acid	6 months	1.0 mg/L	EPA 200.7	•		
Magnesium	#7 Pint Plastic	4 ml 1:1 nitric acid	6 months	0.05 mg/L	EPA 200.7	•		
Potassium	#7 Pint Plastic	4 ml 1:1 nitric acid	6 months	1.0 mg/L	EPA 200.7	•		

WATER SUPPLY - SDWA - INORGANICS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Quant Limit	Method	A	C	L
Chloride (Cl)	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	28 days	1.0 mg/L	EPA 300.0	•		
Conductivity	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	28 days	1 umho/cm	SM 2510 B	•		
Total Hardness (titration)	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	28 days	1.0 mg/L	SM 2340 C	•		
Iron (Fe)	#7 Pint Plastic	4 ml 1:1 nitric acid	6 months	0.02 mg/L	EPA 200.7 EPA 2008	•		
Soluble Iron	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C (prior to filtration & preservation)	6 months following filtraton & preservation in lab	0.02 mg/L	EPA 200.7 EPA 2008	•		
Manganese Mn)	#7 Pint Plastic	4 ml 1:1 nitric acid	6 months	0.02 mg/L	EPA 200.7 EPA 2008	•		
Silica (SiO_2)	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	28 days	1.0 mg/L	SM 4500 SI D	•		
Sulfate	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	28 days	1.0 mg/L	EPA 300.0	•		
Total Dissolved Solids (TDS)	#1 Quart Plastic	Unpreserved Cool 6°C	7 days	5 mg/L	SM 2540 C	•		
Total Suspended Solids (TSS)	#1 Quart Plastic	Unpreserved Cool 6°C	7 days	1 mg/L	USGS I-3765-85	•		
Zinc	#7 Pint Plastic	4 ml 1:1 nitric acid	6 months	0.02 mg/L	EPA 200.7 EPA 200.8	•		
ADDITIONAL POSSIBLE WATER QUALITY PARAMETERS								
Phenolphthalein Alkalinity	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	14 days	1.0 mg/L	SM 2320 B	•		
Bicarbonate Alkalinity	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	14 days	1.0 mg/L	SM 2320 B	•		
Carbonate Alkalinity	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	14 days	1.0 mg/L	SM 2320 B	•		
Hydroxide Alkalinity	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	14 days	1.0 mg/L	SM 2320 B	•		
Bromate	#58 125 cc Plastic	Ethylendiamine Cool 6°C	28 days	0.005 mg/L	EPA 300.1	•		
Bromide	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	28 days	0.10 mg/L	EPA 300.0 EPA 300.1	•		
Chlorate	#58 125 cc Plastic	Ethylendiamine Cool 6°C	28 days	0.02 mg/L	EPA 300.0 EPA 300.1	•		
Chlorite	#58 125 cc Plastic	Ethylendiamine Cool 6°C	14 days	0.04 mg/L	EPA 300.0 EPA 300.1	•		
Sulfide	#8 Quart Clear Glass	2ml Zinc Acetate + Sodium Hydroxide pellets Cool 6°C	7 days	1.0 mg/L	SM 4500 S E USGS I-3840-85	•		

WATER SUPPLY - SDWA - INORGANICS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Quant Limit	Method	A	C	L
Turbidity	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	48 hours	0.2 NTU	SM 2130 B	●		
****Laboratory pH**	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved	Analyze Immediately	n/a	Analyze Immediately	●	●	
*****Temperature**	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved	Analyze Immediately	n/a	Analyze Immediately	●		

** Laboratory pH does not reflect the pH of the sample at time of collection. EPA requires pH to be measured within 15 minutes of collection to be valid.
***Temperature is strictly a field test. The actual temperature of a water sample cannot be determined after it gets to the lab. It will start to change as soon as it is collected.

WATER SUPPLY - SDWA - ORGANICS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Quant Limit	Method	A	C	L
VOCs A/S #1 - REGULATED, UNREGULATED & DISCRETIONARY (UNREGULATED & DISCRETIONARY WAIVED BY DNR)								
VOCs Regulated: Benzene, Carbon tetrachloride, 1,2-Dichloroethane, Trichloroethylene, 1,1-Dichloroethylene, 1,1,1-Trichloroethane, para-Dichlorobenzene, Vinyl chloride, cis-1,2-Dichloroethylene, 1,2-Dichloropropane, Ethylbenzene, Chlorobenzene, o-Dichlorobenzene, Styrene, Tetrachloroethylene, Toluene, m, o & p-xylenes, Dichloromethane, trans-1,2-Dichloroethylene, 1,1,2-Trichloroethane, 1,2,4-Trichlorobenzene	#15 3 - 40 mL vials with trip blank	Ascorbic acid + 3 drops HCl Cool 4°C	14 days	0.0005 - 0.0010 mg/L	EPA 524.2		•	
VOCs Unregulated: Chloroform, Bromodichloromethane, Chlorodibromomethane, Bromoform, m-Dichlorobenzene, Dibromomethane, 1,1-Dichloropropene, 1,1-Dichloroethane, 1,1,2,2-Tetrachloroethane, 1,3-Dichloropropane, Chloromethane, Bromomethane, 1,2,3-Trichloropropane, Chloroethane, 2,2-Dichloropropane, o-Chlorotoluene, p-Chlorotoluene, Bromobenzene, 1,3-Dichloropropene, 1,1,1,2-Tetrachloroethane	#15 3 - 40 mL vials with trip blank	Ascorbic acid + 3 drops HCl Cool 4°C	14 days	0.0005 mg/L	EPA 524.2		•	
VOCs Discretionary: Bromochloromethane, n-Butylbenzene, tert-Butylbenzene, sec-Butylbenzene, Dichlorodifluoromethane, Hexachlorobutadiene, Isopropylbenzene, p-Isopropyltoluene, Naphthalene, n-Propylbenzene, 1,2,3-Trichlorobenzene, Trichlorofluoromethane, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene	#15 3 - 40 mL vials with trip blank	Ascorbic acid + 3 drops HCl Cool 4°C	14 days	0.0005 mg/L	EPA 524.2		•	

WATER SUPPLY - SDWA - ORGANICS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Quant Limit	Method	A	C	L
SOCs A/S #1 - REGULATED & UNREGULATED (CURRENTLY WAIVED BY DNR)								
SOCs #1 Regulated: Chlordane, Endrin, Heptachlor, Heptachlor epoxide, Hexachlorobenzene Hexachlorocyclopentadiene, Lindane, Methoxychlor, **Polychlorinated biphenyls Total** Toxaphene	#35 1 - 120 mL Amber Glass	Sodium thiosulfate + 3 mL buffer Cool 4°C	Extraction: 7 days	0.00005 - 0.0005 mg/L	EPA 508 **EPA 508A**		•	
SOCs #1 Unregulated: Aldrin, Dieldrin	#35 1 -120 mL Amber Glass	Sodium thiosulfate + 3 mL buffer Cool 4°C	Extraction: 7 days	0.0005 mg/L	EPA 508		•	
SOCs A/S #2 - REGULATED & UNREGULATED (CURRENTLY WAIVED BY DNR)								
SOCs A/S #2 Regulated: (Carbamates): Aldicarb, Aldicarb sulfone, Aldicarb sulfoxide, Carbofuran, Oxamyl	#30 1-120 mL Amber Glass	Sodium thiosulfate + 3 mL buffer Cool 4°C	28 days	0.0010 mg/L	EPA 531.1		•	
SOCs A/S #2 Regulated: Carbaryl, 3-hydroxycarbofuran, Methomyl	#30 1-120 mL Amber Glass	Sodium thiosulfate + 3 mL buffer Cool 4°C	28 days	0.0010 mg/L	EPA 531.1		•	
SOCs A/S #3 - REGULATED & UNREGULATED (UNREGULATED CURRENTLY WAIVED BY DNR)								
Regulated Acid Herbicides: 2,4-D, Dalapon, Dinoseb, Pentachlorophenol, Picloram, 2,4,5-TP (Silvex)	#35 1 Liter Amber Glass	Sodium thiosulfate Cool 4°C	Extraction: 14 days	0.0002 - 0.0005 mg/L	EPA 515.3		•	
Unregulated Acid Herbicide: Dicamba	#35 1 Liter Amber Glass	Sodium thiosulfate Cool 4°C	Extraction: 14 days	0.0002 mg/L	EPA 515.3		•	
SOCs A/S #4 - REGULATED & UNREGULATED (UNREGULATED CURRENTLY WAIVED BY DNR)								
Regulated Nitrogen Herbicides: Alachlor, Atrazine, Simazine	#18 1 Liter Amber Glass	Unpreserved Cool 4°C	Extraction: 14 days	0.0001 mg/L	EPA 525.2		•	
Unregulated Nitrogen Herbicides: Butachlor, Metolachlor, Metribuzin, Propachlor	#18 1 Liter Amber Glass	Unpreserved Cool 4°C	Extraction: 14 days	0.0001 mg/L	EPA 525.2		•	
SOCs A/S #5 - REGULATED (CURRENTLY WAIVED BY DNR)								
EDB and DBCP by GCEC: Ethylene dibromide, 1,2-Dibromo-3-chloropropane	#57 3 - 40 mL vials plus trip blank	Ammonium chloride + buffer Cool 4°C	Extraction: 14 days	0.00002 mg/L	EPA 551.1		•	
SOCs A/S #6 - REGULATED								
GCMS Semivolatiles: Di(2-ethylhexyl)adipate, Di(2-ethylhexyl)phthalate	#18 1 Liter Amber Glass	Unpreserved Cool 4°C	Extraction: 14 days	0.0006 mg/L	EPA 525.2		•	
SOCs A/S #7 - REGULATED								
Benzo(a)pyrene	#18 1 Liter Amber Glass	Unpreserved Cool 4°C	Extraction: 14 days	0.0001 mg/L	EPA 525.2		•	
SOCs A/S #8 - REGULATED (CURRENTLY WAIVED BY DNR)								
Glyphosate	#31 1 - 120 mL Amber Glass	Sodium thiosulfate Cool 4°C	14 days	0.010 mg/L	EPA 547		•	

WATER SUPPLY - SDWA - ORGANICS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Quant Limit	Method	A	C	L
SOCs A/S #9 - REGULATED (CURRENTLY WAIVED BY DNR)								
Diquat	#39 1 Liter Amber Plastic	Sodium thiosulfate + Sulfuric acid Cool 4°C	Extraction: 7 days	0.0010 mg/L	EPA 549.2		•	
SOCs A/S #10 - REGULATED (CURRENTLY WAIVED BY DNR)								
Endothall	#35 1 Qt Amber Glass	Sodium thiosulfate Cool 4°C	Extraction 14 days	0.020 mg/L	EPA 548.1		•	

DRINKING WATER (Non-SDWA)

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
TOTAL COLIFORM BACTERIA									
Total Coliform and E.coli PA (Presence/Absence)	#32 or #81 4 or 5 oz Plastic IDEXX	Sodium thiosulfate	48 hrs		N/A	SM 9223B	•	•	•
Total Coliform and E.coli MPN (Most Probable Number)	#32 or #81 4 or 5 oz Plastic IDEXX	Sodium thiosulfate	48 hrs		<1	SM 9223B	•	•	•
ADDITIONAL BACTERIA									
***Aeromonas* MF**	#51 500 mL Nalgene Plastic	Sodium Thiosulfate & EDTA Cool <10°C	30 hrs	***Must schedule analysis**	<0.2/100 mL	EPA 1605		•	
Iron Bacteria	#20 4 oz Plastic IDEXX	Unpreserved	None		Presence/Absence	SM 9240 B		•	
***Legionella* MF**	#81 5 oz Plastic IDEXX, or #49 Liter Nalgene, or #51 500 ml Nalgene	Sodium Thiosulfate Cool < 10°C	48 hrs		variable	SM 9260 J		•	
Yeast and Mold	#32 or #81 4 or 5 oz Plastic IDEXX	Cool	2 days		N/A	SM 9610C		•	
PARASITES									
Giardia and Cryptosporidium	#72 2.5 gallon Carbuoy for bulk water submission *or* #73* Envirochek HV filter for in the field filtration	≤20°C	96 hours	***Must call to schedule analysis**	variable	EPA 1623.1		•	
***Giardia* and *Cryptosporidium* Matrix Spike**	#72* 2.5 gallon Carbuoy	≤20°C	96 hours	***Must call to schedule analysis**	variable	EPA 1623.1		•	
Microscopic Particulate Analysis (MPA)	MPA Filter Sampling device Filter 100 gallons	≤10°C	48 hours	***Must call to schedule analysis**	variable	EPA consensus method		•	
VIRUS									
Somatic Coliphage PA	#49* Liter Nalgene #81 IDEXX	Cool <10°C	48 hours	***Must call to schedule analysis**	Presence/Absence <1 PFU/100 ml	EPA 1601 EPA 1602		•	
Male-specific Coliphage	#49* Liter Nalgene #81 IDEXX	Cool <10°C	48 hours	***Must call to schedule analysis**	Presence/Absence <1 PFU/100 ml	EPA 1601 EPA 1602		•	

DRINKING WATER (Non-SDWA)

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
EXTRACTABLES/SEMIVOLATILES - DRINKING WATER (NON-SDWA)									
Routine 8270 target list: Phenol, bis(2-Chloroethyl)ether, 2-Chlorophenol, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 2-Methylphenol, 2,2-oxybix(1-Chloropropane), 4-Methylphenol, N-Nitroso-di-propylamine, Hexachloroethane, Nitrobenzene, Isophorone, 2-Nitrophenol, 2,4-Dimethylphenol, bis(2-Chloroethoxy) methane, 2,4-Dichlorophenol, 1,2,4-Trichlorobenzene, Hexachlorobutadiene, 4-Chloro-3-methylphenol, 2-Methylnaphthalene, Hexachlorocyclopentadiene, 2,4,6-Trichlorophenol, 2,4,5-Trichlorophenol, 2-Chloronaphthalene, 2-Nitroaniline, Dimethyl phthalate, Acenaphthylene, 3-Nitroaniline, Acenaphthene, 2,4-Dinitrophenol, 4-Nitrophenol, Dibenzofuran, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Diethylphthalate, 4-Chlorophenyl phenyl ether, Fluorene, 4-Nitroaniline, 4,6-Dinitro-2-methylphenol, N-Nitrosodiphenylamine, 4-Bromophenyl phenyl ether, Hexachlorobenzene, Pentachlorophenol, Phenanthrene, Anthracene, Carbazole, Di-n-butyl phthalate, Fluoranthene, Pyrene, Butylbenzyl phthalate, 3,3'-Dichlorobenzidine, Benzo(a)anthracene, bis(2-Ethylhexyl) phthalate, Chrysene, Di-n-octyl phthalate, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene **Non-target compounds as requested.**	#18 1 Quart Amber Glass/TFE lid	Unpreserved Cool 4°C	Extraction: 7 days		5 - 20 ug/L	EPA 8270 EPA 625		•	
VOLATILES - DRINKING WATER (NON-SDWA)									
Routine 8260 target list: Chloromethane, Bromomethane, Vinyl chloride, Chloroethane, Methylene chloride, Methyl-t-butyl ether, Acetone, Carbon disulfide, 1,1-Dichlorethene, Total 1,2-Dichloroethenes, Chloroform, 1,2-Dichloroethane, 2-Butanone, 1,1,1-Trichloroethane, Carbon tetrachloride, Bromodichloromethane, 1,1,2,2-Tetrachloroethane, 1,2-Dichloropropane, cis-1,3-Dichloropropene, Trichloroethene, Dibromochloromethane, 1,1,2-Trichloroethane, Benzene, trans-1,3-Dichloropropene, Bromoform, 2-Hexanone, 4-Methy-2-pentanone, Tetrachloroethene, Toluene, Chlorobenzene, Ethylbenzene, Styrene, Total Xylenes **Non-target compounds as requested.**	If Chlorinated: #15 (3) 40 mL Glass Vials plus trip blank If Not Chlorinated: #45 (3) 40 mL Glass Vials plus trip blank	If Chlorinated: Ascorbic acid plus 3 drops HCl, No Headspace Cool 4°C If Not Chlorinated: 3 drops HCl, No Headspace Cool 4°C	14 Days		0.5 - 20 ug/L	EPA 524.2 EPA 624 EPA 8260		•	

DRINKING WATER (Non-SDWA)

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
METALS & NUTRIENTS - DRINKING WATER (NON-SDWA)									
Bicarbonate Alkalinity	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	14 days		1.0 mg/L	SM 2320 B	●		
Carbonate Alkalinity	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	14 days		1.0 mg/L	SM 2320 B	●		
Total Alkalinity	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	14 days		1.0 mg/L	SM 2320 B	●		
Ammonia	#2 8 oz Plastic	H2SO4 to pH <2 Cool 6°C	28 days		0.05 mg/L	Lachat 10-107-06-1-J	●		
Bromate	#58 125 cc Plastic	Ethylendiamine Cool 6°C	28 days		0.005 mg/L	EPA 300.1	●		
Bromide	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	28 days		0.10 mg/L	EPA 300.0 EPA 300.1	●		
Calcium (Ca)	#7 Pint Plastic	4 mL 1:1 Nitric acid	6 months		1.0 mg/L	EPA 200.7	●		
Magnesium (Mg)	#7 Pint Plastic	4 mL 1:1 Nitric acid	6 months		0.5 mg/L	EPA 200.7	●		
Potassium (K)	#7 Pint Plastic	4 mL 1:1 Nitric acid	6 months		1.0 mg/L	EPA 200.7	●		
Chlorate	#58 125 cc Plastic	Ethylendiamine Cool 6°C	28 days		0.10 mg/L	EPA 300.0 EPA 300.1	●		
Chloride (Cl)	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	28 days		1.0 mg/L	EPA 300.0	●		
Chlorite	#58 125 cc Plastic	Ethylendiamine Cool 6°C	14 days		0.10 mg/L	EPA 300.0 EPA 300.1	●		
Conductivity	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	28 days		1 umho/cm	SM2510B	●		
Total Hardness (titration)	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	28 days		1.0 mg/L	SM2340C	●		
Iron (Fe)	#7 Pint Plastic	4 mL 1:1 Nitric acid	6 months		0.02 mg/L	EPA 200.7 EPA 200.8	●		
Soluble Iron	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C (prior to filtration & preservation)	6 months following filtration & preservation in the laboratory		0.02 mg/L	EPA 200.7 EPA 200.8	●		
Manganese (Mn)	#7 Pint Plastic	4 mL 1:1 Nitric acid	6 months		0.05 mg/L	EPA 353.2	●		●
Nitrite as N	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	48 hrs		0.02	SM 4500 no2 b	●		●
Orthophosphate - filtered sample	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	48 hrs		0.02	SM 4500 p e	●	●	

DRINKING WATER (Non-SDWA)

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
pH	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	24 hrs		4.0	SM 4500 h+ b	●	●	
Silica (SiO2)	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	28 days		1.0 mg/L	SM 4500 SI-D	●		
Sulfate	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	28 days		1.0 mg/L	EPA 300.0	●		
Sulfide	#8 1 Quart Clear Glass	2mL Zinc Acetate + Sodium Hydroxide pellets Cool 6°C	7 days		1.0 mg/L	SM 4500S-E USGS I-3840-85	●		
Total Dissolved Solids (TDS)	#1 1 Quart Plastic	Unpreserved Cool 6°C	7 days		5.0 mg/L	SM 2540 C	●		
Total Phosphorus	#2 8 oz Plastic	H_2SO_4 to pH <2 Cool 4°C	28 days		0.02	EPA 119b			
Total Suspended Solids (TSS)	#1 1 Quart Plastic	Unpreserved Cool 6°C	7 days		1 mg/L	USGS I-3765-85	●		
Turbidity	#1 or #9 1 Quart or 8 oz Plastic	Unpreserved Cool 6°C	48 hours		0.2 NTU	EPA 180.1	●		
Volatile Solids	#1 1 Quart Plastic	Unpreserved Cool 6°C	72 hours		1	EPA 160.4	●		
Zinc (Zn)	#7 Pint Plastic	4 mL 1:1 Nitric acid	6 months		0.02 mg/L	EPA 200.7 EPA 200.8	●		
CYANIDE									
Cyanide (CN) (Total & Amenable)	#4 500 ml Plastic	4-6 pellets sodium hydroxide Cool 6°C	14 days		0.01 mg/L	SM 4500 CN E	●		

PRIVATE WELL

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
COLIFORM BACTERIA									
Total Coliform and *E.coli* MPN (Private Well)	#32 or #81 4 or 5 oz Plastic IDEXX	Sodium thiosulfate	2 days	Private Well Only	<1	Most Probable Number	●	●	●
Total Coliform and *E.coli* PA (Private Well)	#32 or #81 4 or 5 oz Plastic IDEXX	Sodium thiosulfate	2 days	Private Well Only	N/A	Presence/ Absence	●	●	●
Nitrate as N (Private Well)	#37 or #20 4 oz Plastic	Unpreserved Cool 6°C	2 days/48 hrs	Private Well Only	0.05	EPA 300.0	●		
Nitrite as N (Private Well)	#37 or #20 4 oz Plastic	Unpreserved Cool 6°C	2 days/48 hrs	Private Well Only	0.1	EPA 300.0	●		
Nitrate + Nitrite as N (Private Well)	#20 4 oz Plastic IDEXX	Unpreserved Cool 6°C	2 days/48 hrs	Private Well Only	0.102	EPA 3532		●	●
ARSENIC									
Arsenic (Private Well)	#29 1 mL 1:1 Nitric Acid	4 mL 1:1 Nitric acid	6 months		0.001 mg/L	EPA 200.8	●		
Arsenic Speciation (Private Well)	#70 125 cc Plastic	EDTA	1 month		0.001 mg/L	SHL	●		
IRON BACTERIA									
Iron Bacteria (Private Well)	#20 4 oz Plastic or clean container	Unpreserved	None		N/A	SM 9240A		●	

SLUDGE, SOIL, SOLIDS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
COLIFORM BACTERIA - SLUDGE, SOIL									
Total Coliform MPN (soil)	#62	Cool	30 hrs		variable	SM9223	●	●	
***E.coli* MPN (soil)**	#62	Cool	30 hrs		variable	SM9223	●	●	
Fecal Coliform MF (sludge)	#62	<10°C	8 hrs qualified up to 30 hrs	Compliance samples <= 8 hrs, IDNR will accept up to 30 hrs, Noncompliance samples ≤ 30 hrs	variable	SM9222D		●	
Fecal Coliform MF (soil)	#62	<10°C	30 hrs		variable	SM9222D		●	
Fecal Coliform MPN (NPDES compliance)	#62	<10°C	24 hrs; qualified up to 30 hrs	NPDES. Compliance samples ≤ 24 hrs, IDNR will accept up to 30 hrs	variable	SM9221E		●	
Fecal Coliform plus *E. coli* MPN (Most Probable Number)	#62	<10°C	30 hrs		variable	SM9221E SM9221F		●	
Microscopic Identification	Depends	NA	None	***Must call to schedule analysis**	variable	microscopy		●	
Yeast and Mold	#32 4 oz Plastic IDEXX	Sodium thiosulfate Cool	2 days		N/A	yeast mold		●	
COLIFORM BACTERIA - PATHOGEN REDUCTION RULE - SLUDGE COMPLIANCE									
Fecal Coliform MF (includes geometric mean and % solids)	#62 x 7	<10°C	See notes	Compliance samples <= 8 hrs, IDNR will accept up to 30 hrs, Noncompliance samples = 30 hrs	matrix dependent/dry weight gram	SM9222D EPA 100.2		●	
Fecal Coliform MPN (sludge)	#62 x 7 4 oz Plastic Container w/ Labeled Wire Enclosure Bags	<10°C	24 hrs; qualified up to 30 hrs	Compliance samples ≤24 hrs, IDNR will accept up to 30 hrs	variable	SM9221E		●	
***Salmonella* MPN**	#62 4 oz Plastic Container w/ Labeled Wire Enclosure Bags	<10°C	See notes	Compliance samples ≤ 24 hrs, IDNR will accept up to 30 hrs	3/dry wt g	EPA 1682		●	

SLUDGE, SOIL, SOLIDS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
ENTEROCOCCI - SLUDGE, SOIL									
~~**Enterococci MPN**~~	NO LONGER AVAILABLE								
~~**Enterococci MF**~~	NO LONGER AVAILABLE								
EXTRACTABLES/SEMI-VOLATILES - SOIL									
Routine 8270 target list: Phenol, bis(2-Chloroethyl)ether, 2-Chlorophenol, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 2-Methylphenol, 2,2-oxybix(1-Chloropropane), 4-Methylphenol, N-Nitroso-di-propylamine, Hexachloroethane, Nitrobenzene, Isophorone, 2-Nitrophenol, 2,4-Dimethylphenol, bis(2-Chloroethoxy) methane, 2,4-Dichlorophenol, 1,2,4-Trichlorobenzene, Hexachlorobutadiene, 4-Chloro-3-methylphenol, 2-Methylnaphthalene, Hexachlorocyclopentadiene, 2,4,6-Trichlorophenol, 2,4,5-Trichlorophenol, 2-Chloronaphthalene, 2-Nitroaniline, Dimethyl phthalate, Acenaphthylene, 3-Nitroaniline, Acenaphthene, 2,4-Dinitrophenol, 4-Nitrophenol, Dibenzofuran, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Diethyl phthalate, 4-Chlorophenyl phenyl ether, Fluorene, 4-Nitroaniline, 4,6-Dinitro-2-methylphenol, N-Nitrosodiphenylamine, 4-Bromophenyl phenyl ether, Hexachlorobenzene, Pentachlorophenol, Phenanthrene, Anthracene, Carbazole, Di-n-butyl phthalate, Fluoranthene, Pyrene, Butylbenzyl phthalate, 3,3'-Dichlorobenzidine, Benzo(a)anthracene, bis(2-Ethylhexyl) phthalate, Benzidine, Chrysene, Di-n-octyl phthalate, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene. **Non-target compounds as requested.**	#46 4 oz Clear Glass Jar with septa lid	Unpreserved Cool 4°C	Extraction: 14 days		170 - 670 ug/kg	EPA 8270		•	

SLUDGE, SOIL, SOLIDS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
VOLATILES - SOIL									
Routine 8260 target list: Chloromethane, Bromomethane, Vinyl chloride, Chloroethane, Methylene chloride, Methyl-t-butyl ether, Acetone, Carbon disulfide, 1,1-Dichloroethene, 1,1-Dichloroethane, Total 1,2-Dichloroethenes, Chloroform, 1,2-Dichloroethane, 2-Butanone, 1,1,1-Trichloroethane, Carbon tetrachloride, Bromodichloromethane, 1,1,2,2-Tetrachloroethane, 1,2-Dichloropropane, cis-1,3-Dichloropropene, Trichloroethene, Dibromochloromethane, 1,1,2-Trichloroethane, Benzene, trans-1,3-Dichloropropene, Bromoform, 2-Hexanone, 4-Methyl-2-pentanone, Tetrachloroethene, Toluene, Chlorobenzene, Ethylbenzene, Styrene, Total Xylenes **Non-target compounds as requested.**	#46 4 oz Clear Glass Jar with septa lid	Unpreserved Cool 4°C	Extraction: 14 days		5 - 10 ug/kg	EPA 8260		•	
INORGANICS - SLUDGE, SOLID WASTE									
Arsenic (As)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		1 mg/kg	EPA 6020	•		
Antimony (Sb)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		5 mg/kg	EPA 6020	•		
Cadmium (Cd)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		2 mg/kg	EPA 6010 EPA 6020	•		
Chromium (Cr)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		2 mg/kg	EPA 6010 EPA 6020	•		

SLUDGE, SOIL, SOLIDS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
Copper (Cu)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		5 mg/kg	EPA 6010 EPA 6020	•		
Cyanide (CN)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		1 mg/kg	EPA 9010A	•		
Lead (Pb)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		10 mg/kg	EPA 6010 EPA 6020	•		
Mercury (Hg)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	28 days		1 mg/kg	EPA 7471A EPA 6020	•		
Molybdenum (Mo)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		5 mg/kg	EPA 6010 EPA 6020	•		
Nickel (Ni)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		5 mg/kg	EPA 6010 EPA 6020	•		
Potassium (K)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		100 mg/kg	EPA 6010A	•		
Selenium (Se)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		1 mg/kg	EPA 6020	•		

SLUDGE, SOIL, SOLIDS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
Silver (Ag)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		1 mg/kg	EPA 7760 EPA 6020	•		
Thallium (Tl)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		1 mg/kg	EPA 6020	•		
Zinc (Zn)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		2 mg/kg	EPA 6010 EPA 6020	•		
Solids: **Total Dissolved Solids** **Total Solids** **Total Suspended Solids** **Volatile Solids** **Total Solids - Sludge**	#1 1 Quart Plastic	Cool 6°C	7 days		Dependent on volume for analysis. 1mg/L for 1000 mL	SM 2540 C SM 2540 B USGS I-3765-85 EPA 160.4 SM 2540 G	•		
METALS - SLUDGE, SOLID WASTE									
Lead (Pb)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		10 mg/kg	EPA 6010 EPA 6020	•		
Mercury (Hg)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	28 days		1 mg/kg	EPA 7471A EPA 6020	•		
Molybdenum (Mo)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		5 mg/kg	EPA 6010 EPA 6020	•		
Nickel (Ni)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		5 mg/kg	EPA 6010 EPA 6020	•		

SLUDGE, SOIL, SOLIDS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
Potassium (K)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		100 mg/kg	EPA 6010A	•		
Selenium (Se)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		1 mg/kg	EPA 6020	•		
Silver (Ag)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		1 mg/kg	EPA 7760 EPA 6020	•		
Thallium (Tl)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		1 mg/kg	EPA 6020	•		
Zinc (Zn)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		2 mg/kg	EPA 6010 EPA 6020	•		

SLUDGE, SOIL, SOLIDS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
NUTRIENTS - SOLIDS									
Alkalinity as CaCO3	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	14 days		1.0 mg/kg	SM 2320 B	•		
Ammonia	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	28 days		0.05 mg/kg OR Determined on a per sample basis	Lachet 10-107-06-1-J EPA accepted version of EPA 350.1	•		
Chloride (Cl)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	28 days		0.5 mg/kg	EPA 300.0	•		
Cyanide	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	14 days		0.01 mg/kg	EPA 9014	•		
Nitrate + Nitrite as Nitrate	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	28 days		0.05 mg/kg OR Determined on a per sample basis	EPA 353.2			
Phenols, Total	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	28 days		2 ug/kg	EPA 420.1 EPA 420.4			
Phosphorus: Total	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	28 days		0.05 mg/kg OR Determined on a per sample basis	Lachat 10-115-01-1-C EPA accepted version of EPA 365.4	•		
Solids: Total Solids Total Volatile Solids	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	7 days		Dependent on volume for analysis. 1mg/kg for 1000 g	SM 2540 C SM 2540 B EPA 160.4 SM 2540 G	•		•

SLUDGE, SOIL, SOLIDS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
Total Kjeldahl Nitrogen (TKN)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	28 days		0.1 mg/kg	Lachat 10-107-06-2E EPA accepted version of EPA 351.1	•		
Total Phosphorus	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	28 days		0.02 mg/kg	Lachat 10-115-01-1c	•		
INORGANICS - TCLP - HAZARDOUS WASTE									
Arsenic (As)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		0.5 mg/L	EPA 6020	•		
Selenium (Se)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		0.1 mg/L	EPA 6020	•		
Barium (Ba)+337:55	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		10 mg/L	EPA 6010 EPA 6020	•		
Cadmium (Cd)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		0.1 mg/L	EPA 6010 EPA 6020	•		
Chromium (Cr)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		0.5 mg/L	EPA 6010 EPA 6020	•		
Lead (Pb)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		0.5 mg/L	EPA 6010 EPA 6020	•		

SLUDGE, SOIL, SOLIDS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
Silver (Ag)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	6 months		0.5 mg/L	EPA 6020	•		
Mercury (Hg)	#17 1 Pint Clear Glass or #46 4 oz Clear Glass Jar with septa lid	Cool 4°C	28 days		0.02 mg/L	EPA 7470	•		
PESTICIDES - SLUDGE, SOIL - Nitrogen Containing Herbicides									
Nitrogen Containing Herbicides: EPTC, Butylate, Propachlor, Desisopropyl atrazine, Trifluralin, Desethyl atrazine, Prometon, Simazine, Atrazine, Propazine, Dimethenamid, Metribuzin, Acetochlor, Alachlor, Ametryn, Metolachlor, Cyanazine, Butachlor	#17 1 Pint Clear Glass/TFE Lid	Unpreserved Cool 4°C	Extraction: 14 days		0.010 - 0.030 mg/kg	EPA 8270		•	
PESTICIDES - SLUDGE, SOIL, OIL - Chlorinated Hydrocarbons & PCBs									
Chlorinated Hydrocarbon Insecticides: Aldrin, alpha-BHC, beta-BHC, delta-BHC, Lindane, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, Dieldrin, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin aldehyde, Endrin ketone, Heptachlor, Heptachlor epoxide, Methoxychlor, Chlordane, Toxaphene	*Oil:* #14 40 mL vial *Solid:* #17 1 Pint Clear Glass/TFR Lid	Unpreserved Cool 4°C	*Solid-* Extraction: 14 days		0.01 - 0.1 mg/kg *OR* Determined on a per sample basis	EPA 8081		•	
Polychorinated biphenyls (PCB): PCB Total as DCBP, Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, Arochlor 1260	*Oil:* #14 40 mL vial *Solid:* #17 1 Pint Clear Glass/TFR Lid	Unpreserved Cool 4°C	*Solid-* Extraction: 14 days		0.05 mg/kg *OR* Determined on a per sample basis	EPA 8082		•	
PESTICIDES – SLUDGE, SOIL - Acid Herbicides									
Acid Herbicides: 2,4-D, 2,4-DB, 2,4,5-T, 2,4,5,-TP, Acifluorfen, Bentazon, Chloramben, Clopyralid, Dicamba, Dichlorprop, Dinoseb, Mecoprop, MCPA, Picloram, Triclopyr	#17 1 Pint Clear Glass Minimum 200 grams	Cool 6 °C	60 days		1 - 5 ug/kg	LC/MS SOP UHL-H-025 EPA 8321	•		

SLUDGE, SOIL, SOLIDS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
PESTICIDES – SLUDGE, SOIL - Organophosphate Insecticides, Carbamate Insecticides, and Other Pesticides									
Ethoprop, Terbufos, Fonofos, Methyl parathion, Malathion, Chlorpyrifos, Parathion, Isofenphos, Phorate, Dimethoate, Carbofuran, Disulfoton, Triallate, Carbaryl, Clomazone, Bromacil, Pendimethalin	#17 1 Pint Clear Glass/TFE Lid	Unpreserved Cool 4°C	Extraction: 14 days		0.010 - 0.030 mg/kg	EPA 8270		•	
RADIONUCLIDES - SLUDGE, SOIL									
Gross Alpha	#1 1 Quart Plastic or Gallon Zip Lock Bag	None	6 months		5.0 pCi/g	ORISE AP 1		•	
Gross Beta	#1 1 Quart Plastic or Gallon Zip Lock Bag	None	6 months		5.0 pCi/g	ORISE AP 1		•	
Radium 226 and 228	#1 1 Quart Plastic or Gallon Zip Lock Bag	None	6 months		varies (Call Lab)	EPA LV pg. 92		•	
Gamma Spectroscopy	#1 1 Quart Plastic or Gallon Zip Lock Bag	None	6 months		varies (Call Lab)	EPA LV pg. 92		•	

WASTEWATER

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
COLIFORM BACTERIA - WASTEWATER, SURFACE WATER									
Fecal Coliform MF	#32 or #81 4 or 5 oz Plastic IDEXX	Sodium thiosulfate; <10°C	See notes	Compliance samples <= 8 hrs, IDNR will accept up to 30 hrs, Noncompliance samples = 30 hrs	<10	SM9222D	●	●	
Fecal Coliform MPN (NPDES compliance)	#32 or #81 4 or 5 oz Plastic IDEXX	Sodium thiosulfate; <10°C	8 hrs; qualified up to 30 hrs	NPDES Compliance samples ≤ 8 hrs, IDNR will accept up to 30 hrs	<1.8 or <18	SM9221E		●	
***E. coli* MF**	#32 or #81 4 or 5 oz Plastic IDEXX	Sodium thiosulfate; <10°C	See notes	Compliance samples <= 8 hrs IDNR will accept up to 30 hrs, Noncompliance samples = 30 hrs	<10	EPA1603	●	●	●
***E. coli* MPN (Note: For spills please specify which samples may be high)**	#32 or #81 4 or 5 oz Plastic IDEXX	Sodium thiosulfate; <10°C	See notes	NPDES, Surface & Beaches. Compliance samples ≤ 24 hrs, IDNR will accept up to 30 hrs, Noncompliance samples = 30 hrs	<10	SM9223B	●	●	●
***E. coli* MPN (LT2)**	#32 or #81 4 or 5 oz Plastic IDEXX	Sodium thiosulfate ≤10°C	30 hrs	LT2 compliance	<1	SM9223B	●	●	●
Aeromonas MF	#51 500 mL Nalgene	Sodium thiosulfate <10°C	30 hrs	***Must schedule analysis; media not routinely available**	<0.2	EPA1605		●	
~~**Enterococci MF**~~	NO LONGER AVAILABLE								
~~**Enterococci MPN**~~	NO LONGER AVAILABLE								
Male-specific and somatic coliphage PA	(2) #81 5 oz Plastic IDEXX	<10°C	48 hrs	***Must call to schedule analysis**	NA	EPA 1602		●	
Male-specific and somatic coliphage	(2) #49 Liter Nalgene	<10°C	48 hrs	***Must call to schedule analysis**	<1	EPA 1601		●	
Microscopic Identification	Varies - Call Lab	per lab	None	***Must call to schedule analysis**	variable	microscopy		●	

WASTEWATER

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
COLIFORM BACTERIA - WASTEWATER, SURFACE WATER *Cont'd*									
Microscopic Identification	Varies - Call Lab	per lab	None	***Must call to schedule analysis**	variable	microscopy		•	
PATHOGENIC BACTERIA - WASTEWATER, SURFACE WATER									
***Salmonella* MPN**	#51 500 mL Nalgene or #49 1 Liter Nalgene	Sodium Thiosulfate Cool <10°C	30 hrs		3/100 mL	SM9260B		•	
ENTEROCOCCI - SURFACE WATER									
~~**Enterococci MPN**~~	NO LONGER AVAILABLE								
~~**Enterococci MF**~~	NO LONGER AVAILABLE								
SEMI-VOLATILES - WASTEWATER, GROUNDWATER									
Semi-Volatiles - Routine 625 target list: Phenol, bis(2-Chloroethyl)ether, 2-Chlorophenol, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 2-Methylphenol, 2,2-oxybix(1-Chloropropane), 4-Methylphenol, N-Nitroso-di-propylamine, Hexachloroethane, Nitrobenzene, Isophorone, 2-Nitrophenol, 2,4-Dimethylphenol, bis(2-Chloroethoxy) methane, 2,4-Dichlorophenol, 1,2,4-Trichlorobenzene, Hexachlorobutadiene, 4-Chloro-3-methylphenol, 2-Methylnaphthalene, Hexachlorcyclopentadiene, 2,4,6-Trichlorophenol, 2,4,5-Trichlorophenol, 2-Chloronaphthalene, 2-Nitroaniline, Dimethyl phthalate, Acenaphthylene, 3-Nitroaniline, Acenaphthene, 2,4-Dinitrophenol, 4-Nitrophenol, Dibenzofuran, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Diethylphthalate, 4-Chlorophenyl phenyl ether, Fluorene, 4-Nitroaniline, 4,6-Dinitro-2-methylphenol, N-Nitrosodiphenylamine, 4-Bromophenyl phenyl ether, Hexachlorobenzene, Pentachlorophenol, Phenanthrene, Anthracene, Carbazole, Di-n-butyl phthalate, Fluoranthene, Pyrene, Butylbenzyl phthalate, 3,3'-Dichlorobenzidine, Benzo(a)anthracene, bis(2-Ethylhexyl) phthalate, Chrysene, Di-n-octyl phthalate, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene, N-Nitrosodimethylamine, Benzidine, N-Nitrosodimethylamine, Benzidine **Non-**	#18 1 Liter Amber Glass/TFE lid	Unpreserved Cool 4°C	Extraction: 7 days		5 - 20 ug/L	EPA 625 (WW) EPA 8270 (GW)		•	

WASTEWATER

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
VOLATILES - WASTEWATER, GROUNDWATER									
Volatiles - Routine 624 target list: Chloromethane, Bromomethane, Vinyl chloride, Chloroethane, Methylene chloride, 1,1-Dichloroethene, 1,1-Dichloroethane, Total 1,2-Dichloroethenes, Chloroform, 1,2-Dichloroethane, 1,1,1-Trichloroethane, Carbon tetrachloride, Bromodichloromethane, 1,2-Dichloropropane, cis-1,3-Dichloropropene, Trichloroethene, Dibromochloromethane, 1,1,2-Trichloroethane, Benzene, trans-1,3-Dichloropropene, Bromoform, Tetrachloroethene, 1,1,2,2-Tetrachloroethane, Toluene, Chlorobenzene, Ethylbenzene. **Non-target compounds as requested.**	If Chlorinated: #15 3 - 40 mL Glass Vials with trip blank If Not Chlorinated: #45 3 - 40 mL Glass Vials with trip blank	If Chlorinated: Ascorbic acid + 3 drops HCL, No Headspace Cool 4°C If Not Chlorinated: 3 drops HCL, No Headspace Cool 4°C	14 days		0.5 - 20 ug/L	EPA 624 (WW) EPA 8260 (GW)		•	
METALS - WASTEWATER									
Aluminum (Al)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.1 mg/L	EPA 200.7 EPA 200.8	•		

WASTEWATER

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
Antimony (Sb)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.005 mg/L	EPA 200.8	●		
Arsenic (As)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.01 mg/L	EPA 200.8	●		
Barium (Ba)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.05 mg/L	EPA 200.7 EPA 200.8	●		
Beryllium (Be)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.02mg/L	EPA 200.7 EPA 200.8	●		
Boron (B)	#7 500 mL Plastic	4 mL 1:1 nitric acid	6 months		0.05 mg/L	EPA 200.7	●		
Cadmium (Cd)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.02 mg/L	EPA 200.7 EPA 200.8	●		
Calcium (Ca)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		1.0 mg/L	EPA 200.7	●		
Chromium (Cr VI) dissolved	#86 Plastic	Ammonia buffer Cool 6°C	28 days		0.01 mg/L	SM 3500-Cr D	●		
Chromium (Cr)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.02 mg/L	EPA 200.7 EPA 200.8	●		
Cobalt (Co)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.05 mg/L	EPA 200.7 EPA 200.8	●		
Copper (Cu)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.01 mg	EPA 200.7 EPA 200.8	●		
Iron (Fe)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.02 mg/L	EPA 200.7 EPA 200.8	●		
Lead (Pb)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.001 mg/L	EPA 200.7 EPA 200.8	●		
Magnesium (Mg)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.5 mg/L	EPA 200.7	●		
Manganese (Mn)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.02 mg/L	EPA 200.7 EPA 200.8	●		
Mercury (Hg)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	28 days		0.00005 mg/L	EPA 245.2	●		
Molybdenum (Mo)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.05 mg/L	EPA 200.7 EPA 200.8	●		
Nickel (Ni)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.05 mg/L	EPA 200.7 EPA 200.8	●		

WASTEWATER

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
Potassium (K)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		1.0 mg/L	EPA 200.7	●		
Selenium (Se)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.01 mg/L	EPA 200.8	●		
Silver (Ag)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.01 mg	EPA 200.8	●		
Sodium (Na)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.5 mg/L	EPA 200.7	●		
Thallium (Tl)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.001 mg/L	EPA 200.8	●		
Tin (Sn)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.1 mg/L	EPA 200.7 EPA 200.8	●		
Titanium (Ti)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.05 mg/L	EPA 200.7 EPA 200.8	●		
Vanadium (Va)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.05 mg/L	EPA 200.7 EPA 200.8	●		
Zinc (Zn)	#7 1 Pint Plastic	4 mL 1:1 nitric acid	6 months		0.02 mg/L	EPA 200.7 EPA 200.8	●		
NUTRIENTS - WASTEWATER									
Alkalinity as CaCO3	#1 or #9 1 Liter or 8 oz Plastic	Cool 6°C	14 days		1.0 mg/L	SM2320B	●		
Ammonia	#2 8 oz Plastic	H2SO4 to pH <2 Cool 6°C	28 days		0.05	Lachet 10-107-06-1-J EPA accepted version of EPA 350.1	●		●
Biochemical Oxygen Demand (BOD)	#1 1 Quart Plastic	Cool 6°C	48 hours		2 mg/L	SM 5210 B	●	●	●
Biochemical Oxygen Demand, Carbonaceous (BOD)	#1 1 Quart Plastic	Cool 6°C	48 hours		2mg/L	SM 5210 B	●	●	●
Chemical Oxygen Demand (COD)	#2 8 oz Plastic	H2SO4 to pH <2 Cool 6°C	28 days		2 mg/L	SM 5220 D	●		
Chloride (Cl)	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	28 days		0.5 mg/L	EPA 300.0 EPA 105b	●		●
Conductivity	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	28 days		1 umbo/ cm	SM 2510 B	●		●
Cyanide	#4 500 mL Plastic	4-6 pellets sodium Hydroxide Cool 6°C	14 days		0.01 mg/L	SM 4500 CN E	●		
Fixed Solids	#1 1 Quart Plastic	Cool 6°C	72 hours		1	EPA 160.4			

WASTEWATER

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
Fixed Solids	#1 1 Quart Plastic	Cool 6°C	72 hours		1	EPA 160.4			•
Fluoride, Total	#24 2 oz Plastic	None required	28 days		0.1 mg/L	SM 18 4500-F C	•		
Hydrogen Ion (pH)	#37 125 mL Plastic	None required	Analyze Immediately		2 pH units	SM4500-H+B	•		
Nitrate + Nitrite as Nitrogen	#2 8 oz Plastic	H2SO4 to pH <2 Cool 6°C	28 days		0.05 mg/L	EPA 353.2	•	•	•
Nitrite as N	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	48 hrs		0.05 mg/L	EPA 353.2			•
Oil & Grease (Hexane Extractable Material (HEM))	#3 (2) 1 Quart Glass	10 mL 1:1 sulfuric acid Cool 6°C	14 days		5.0 mg/L	EPA 1664	•		•
Optical Brighteners	40ml Vial	Cool 6°C	14 days			cao etal. 2009			•
Orthophosphate - filtered sample	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	48 hrs		0.02	EPA 365.1			•
pH	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	24 hrs			SM 4500 H+B	•	•	•
Phenols, Total	#5 1 Quart Amber Glass	H2SO4 to pH <2 Cool 6°C	28 days		2 ug/L	EPA 420.1 EPA 420.4	•		
Phosphorus: Orthophosphate	#9 8 oz Plastic If not filtered on site use #2	Filter on site Cool 6°C	48 hours		0.02 mg/L	Lachat 10-115-01-1-A EPA accepted version of EPA 365.1	•		•
Phosphorus: Total	#2 8 oz Plastic	H2SO4 to pH <2 Cool 6°C	28 days		0.05 mg/L 0.02 mg/L	Lachat 10-115-01-1-C EPA accepted version of EPA 365.4 EPA 365.1	•		•
Silica (SiO2), Dissolved	#1 or #9 1 Quart or 8 oz Plastic	Filter on site Cool 6°C	28 days		1.0 mg/L	SM 4500SI-D	•		
Solids: Total Dissolved Solids (TDS) Total Suspended Solids (TSS) Volatile Solids	#1 1 Quart Plastic	Cool 6°C	7 days		Dependent on volume for analysis. 1mg/L for 1000 mL	SM2540D SM2540C SM2540B USGS I-3765-85 EPA 160.4 SM s540 G	•		•
Sulfate	#9 8 oz Plastic	Cool 6°C	28 days		5 mg/L	ASTM D516-07			•
Sulfide - S	#8 1 Quart Clear Glass	2 mL zinc acetate + 6-8 sodium hydroxide pellets	7 days		1.0 mg/L	SM 4500S-E USGS I-3840-85	•		

WASTEWATER

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Special Notes	Quant Limit	Method	A	C	L
Total Kjeldahl Nitrogen (TKN)	#2 8 oz Plastic	H2SO4 to pH <2 Cool 6°C	28 days		0.1 mg/L 0.40 mg/L	Lachat 10-107-06-2E EPA accepted version of EPA 351.1 EPA 111b	●		●
Total Organic Carbon (TOC)	#2 8 oz Plastic	H2SO4 to pH <2 Cool 6°C	28 days		0.5 mg/L	SM 5310 B	●		
Total Phosphorus	#2 8 oz Plastic	H_2SO_4 to pH <2 Cool 4°C	28 days		0.02	EPA 119b			●
Turbidity	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	48 hrs		1 NTU	SM 2130 B			●
Settleable Matter	#22 Gallon Plastic	Cool 6°C	48 hours		1.0 mg/L with 1 Liter sample	SM 2540 F	●		
Total Kjeldahl Nitrogen (TKN)	#2 8 oz Plastic	H2SO4 to pH <2 Cool 6°C	28 days		0.1 mg/L 0.40 mg/L	Lachat 10-107-06-2E EPA accepted version of EPA 351.1 EPA 351.2	●		●
Total Organic Carbon (TOC)	#2 8 oz Plastic	H2SO4 to pH <2 Cool 6°C	28 days		0.5 mg/L	SM 5310 B	●		
Total Phosphorus	#2 8 oz Plastic	H_2SO_4 to pH <2 Cool 4°C	28 days		0.02	EPA 119b			●
Turbidity	#1 or #9 1 Quart or 8 oz Plastic	Cool 6°C	48 hrs		1 NTU	SM 2130 B			●

PESTICIDES - GC & GC/MS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Quant Limit	Method	A	C	L
PESTICIDES – WASTEWATER, GROUNDWATER - NON-COMPLIANCE DRINKING WATER								
Acid Herbicides: 2,4-D, Dinoseb, Pentachlorophenol, Silvex, Dalapon, Picloram, Dicamba, 2,4,5-T, Bentazon, Chlorthal-dimethyl, Dichlorprop, Chloramben, 2,4-DB, Acifluorfen	#35 Liter Amber Glass/TFE lid	Sodium thiosulfate Cool 4°C	Extraction: 14 days	0.0002 - 0.0005 mg/L	EPA 515.3		●	
Chlorinated Hydrocarbon Insecticides: Aldrin, alpha-BHC, beta-BHC, delta-BHC, Lindane, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, Dieldrin, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin aldehyde, Endrin ketone, Heptachlor, Heptachlor epoxide, Methoxychlor, Chlordane, Toxaphene	#18 Liter Amber Glass/TFE lid	Unpreserved Cool 4°C	Extraction: 7 days	0.05 - 0.5 ug/L	EPA 508 EPA 608 EPA 8081		●	
Nitrogen Containing Herbicides: EPTC, Butylate, Propachlor, Desisopropyl atrazine, Trifluralin, Desethyl atrazine, Prometon, Simazine, Atrazine, Propazine, Dimethenamid, Metribuzin, Acetochlor, Alachlor, Ametryn, Metolachlor, Cyanazine, Butachlor	#18 Liter Amber Glass/TFE lid	Unpreserved Cool 4°C	Extraction: 7 days	0.1 ug/L	EPA 8270		●	
Organophosphate Insecticides, Carbamate Insecticides, and Other Pesticides: Ethoprop, Terbufos, Fonofos, Methyl parathion, Malathion, Chlorpyrifos, Parathion, Isofenphos, Phorate, Dimethoate, Carbofuran, Disulfoton, Triallate, Carbaryl, Clomazone, Bromacil, Pendimethalin	#18 Liter Amber Glass/TFE lid	Unpreserved Cool 4°C	Extraction: 7 days	0.1 ug/L	EPA 8270		●	
PCBs: PCB Total as DCBP, Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, Arochlor 1260	#18 Liter Amber Glass/TFE lid	Unpreserved Cool 4°C	Extraction: 7 days	0.5 ug/L	EPA 508A EPA 608 EPA 8082		●	

PESTICIDES - GC & GC/MS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Quant Limit	Method	A	C	L
PESTICIDES – SLUDGE, SOIL, FOLIAGE								
Nitrogen Containing Herbicides *SEE LIST ABOVE*	#17 500 mL Glass/TFE Lid	Unpreserved Cool 4°C	Extraction: 14 days	0.01 mg/kg	EPA 8270		•	
Organophosphate Insecticides, Carbamate Insecticides, and Other Pesticides *SEE LIST ABOVE*	#17 500 mL Glass/TFE Lid	Unpreserved Cool 4°C	Extraction: 14 days	0.01 - 0.03 mg/kg	EPA 8270		•	
PESTICIDES – SLUDGE, SOIL, FOLIAGE, and OIL								
Chlorinated Hydrocarbons Insecticides and PCBs *SEE LIST ABOVE*	*Solid:* #17 500 mL Glass/TFE Lid *Oil:* #14 40 mL vial	Unpreserved Cool 4°C	*Solid:* Extraction 14 days *Liquid:* Extraction 14 days	0.05 - 5.0 mg/kg *OR* Determined on a per sample basis	EPA 8081 EPA 8082		•	
PESTICIDES – AIR								
Chlorinated Hydrocarbons Insecticides and PCBs *SEE LIST ABOVE* **Contact SHL prior to sample submission.**	Polyurethane foam plug (PUF)	No light	Extraction: 7 days	Determined on a per sample basis	EPA TO-10 EPA 8081 EPA 8082		•	
Nitrogen Containing Herbicides *SEE LIST ABOVE* **Contact SHL prior to sample submission.**	Polyurethane foam plug (PUF)	No light	Extraction: 7 days	Determined on a per sample basis	EPA TO-10 EPA 8270		•	
Organophosphate Insecticides, Carbamate Insecticides, and Other Pesticides *SEE LIST ABOVE* **Contact SHL prior to sample submission.**	Polyurethane foam plug (PUF)	No light	Extraction: 7 days	Determined on a per sample basis	EPA TO-10 EPA 8270		•	
PESTICIDES – FISH								
Chlorinated Hydrocarbons Insecticides and PCBS *SEE LIST ABOVE*	10 gram sample	Frozen	Extraction: 14 days	Determined on a per sample basis	EPA 8081 EPA 8082		•	
PESTICIDES – WIPES								
Nitrogen Containing Herbicides *SEE LIST ABOVE*			Extraction: 14 days	0.001 mg	EPA 8270		•	
Chlorinated Hydrocarbons Insecticides and PCBs SEE LIST ABOVE			Extraction: 14 days	0.001 mg	EPA 8081 EPA 8082		•	
Organophosphate Insecticides, Carbamate Insecticides, and Other Pesticides *SEE LIST ABOVE*			Extraction: 14 days	0.001 mg	EPA 8270		•	

PESTICIDES - HPLC

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Quant Limit	Method	A	C	L
PESTICIDES - HPLC - DRINKING WATER, SURFACE WATER, GROUNDWATER								
Atrazine and Dealkylated Metabolites: Atrazine, Desethyl-Atrazine, Desisopropyl-Atrazine	#14 40-mL Amber Glass vial	Ammonium acetate and Sodium omadine Cool 4 °C	28 days	0.02 µg/L	EPA 536		●	
Carbamates: 3-Hydroxycarbofuron, Aldicarb, Aldicarb Sulfone, Aldicarb, Sulfoxide, Carbofuran, Carbaryl, Methiocarb, Methomyl, Oxamyl, Propoxur	#30 120 mL Amber Glass	Sodium thiosulfate + 3 mL Buffer Cool 4°C	Extraction: 14 days	0.0010 mg/L	EPA 531.1		●	
Chloroacetanilide and Chloroacetamide Herbicides and Metabolites: Acetochlor, Acetochlor ESA, Acetochlor OXA, Alachlor, Alachlor ESA, Alachlor OXA, Dimethenamid, Dimethenamid ESA, Dimethenamid OXA, Metolachlor, Metolachlor ESA, Metolachlor OXA	#18 1 Quart Amber Glass	Cool 4°C	Extraction: 14 days	0.02 ug/L	LC/MS SOP UHL-H-016		●	
Diquat, Paraquat	#39 1 Quart Amber Plastic	Sodium thiosulfate + Sulfuric acid Cool 4°C	Extraction: 7 days	0.0010 mg/L	EPA 549.2		●	
ESA OXA Metabolites: Acetochlor, Alachlor, Metolachlor	#68 1 liter Amber Glass, with 100 mg Ammonium chloride	Cool 4°C	14 days	0.05 ug/L	EPA 535		●	
Fungicides: Azoxystrobin, Cyproconazole, Propiconazole, Pyraclostrobin, Metconazole, Tebuconazole, Tetraconazole, Trifloxystrobin	#19 120 mL Amber Glass	Unpreserved Cool 4°C	28 days	0.02 µg/L	SOP UHL-H-029		●	
Glyphosate and AMPA Metabolite	*Drinking Water:* #31 120 mL Amber Glass *Groundwater/ Surface Water:* #40 120 mL Amber Glass	Sodium thiosulfate Cool 4°C Unpreserved Cool 4°C	14 days	0.010 mg/L	EPA 547		●	
Imidazolinones: Imazapyr, Imazameth, Imazamox, Imazethapyr, Imazaquin	#67 1 Liter Nalgene	Cool 4°C	14 days	0.01 ug/L	SOP UHL-H-017		●	
Isoxaflutole and Metabolites: RPA 202248 RPA 203328	#1 1 Quart Plastic	Cool 4°C	14 days	0.01 ug/L	LC/MS SOP UHL-H-021		●	
Miscellaneous Pesticides: Abamectin, Bispyribac, Carfentrazone, Chloransulam-methyl, Chlorophacinone, Clethodim, Diflufenzopyr, Ethephon, Fenoxaprop-ethyl, Flufenacet, Fomesafen, Foramsulfuron, Imidacloprid, Mesotrine, Prochloraz, Pyraclostrobin, Quizalofop-p-ethyl, Sulfentrazone	#18 1 Quart Amber Glass	Cool 4°C	30 days	0.025 ug/L	LC/MS SOP UHL-H-018		●	
Neonicotinoid Insecticides: Acetamiprid, Clothianidin, Dinotefuran, Imidacloprid, Sulfoxaflor, Thiacloprid, Thiamethoxam	#14 40-mL Amber Glass vial	Unpreserved Cool 4°C	28 days	0.025 µg/L	LC/MS SOP UHL-H-018		●	

PESTICIDES - HPLC

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Quant Limit	Method	A	C	L
Perfluorinated Surfactants: Perfluorinated octanoic acid (PFOA), Perfluorinated octane sulfonate (PFOS), Perfluorobutanesulfonic acid (PFBS), Perfluoro-n-[1,2-13C2]hexanoic acid (13C-PFHxA), Perfluoroheptanoic acid (PFHpA), Perfluorononanoic acid (PFNA)	250-mL Polypropylene	Trizma buffer Cool 4°C	14 days	0.1 µg/L	EPA 537		●	
Rotenone	#19 120 mL Amber Glass	Cool 4°C	14 days	0.0025 - 0.25 ug/L	LC/MS SOP UHL-H-018		●	
Sulfonyl Urea and Sulfonamide Herbicides: Chlorimuron-ethyl, Chlorsulfuron, Flumetsulam, Halosulfuron-methyl, Metsulfuron-methyl, Nicosulfuron, Primisulfuron-methyl, Prosulfuron, Rimsulfuron, Sulfometuron-methyl, Thifensulfuron-methyl, Triasulfuron, Foramsulfuron	#18 1 Quart Amber Glass	Cool 4°C	14 days	0.01 ug/L	SOP UHL-H-017		●	
PESTICIDES - HPLC - SOIL, FOILAGE								
Acid Herbicides: 2,4-D, 2,4-DB, 2,4,5-T, 2,4,5,-TP, Acifluorfen, Bentazon, Chloramben, Clopyralid, Dicamba, Dichlorprop, Dinoseb, Mecoprop, MCPA, Picloram, Triclopyr	*Soil:* #17 1 Pint Clear Glass Minimum 200 grams *Foliage:* 1 Quart Freezer Bags Minimum 100 grams	*Soil:* Cool 6 °C *Foliage :* Frozen Storage at <-10°C. Protect from light.	Extraction: 14 days	1 - 5 ug/kg	LC/MS SOP UHL-H-025 EPA 8321		●	
Carbamates: Aldicarb, Aldicarb Sulfone, Aldicarb Sulfoxide, Carbofuran, Oxamyl, Carbaryl, Methomyl, 3-Hydroxycarbofurn, Propoxur, Methiocarb. **Contact SHL prior to sample submission.**	*Soil:* #17 1 Pint Clear Glass Minimum 200 grams *Foliage:* 1 Quart Freezer Bags Minimum 100 grams	*Soil:* Cool 6 °C *Foliage :* Frozen Storage at <-10°C. Protect from light.	60 days	0.5 ug/kg	LC/MS SOP UHL-H-018		●	
Glyphosate and AMPA Metabolite	*Soil:* #17 1 Pint Clear Glass Minimum 200 grams *Foliage:* 1 Quart Freezer Bags Minimum 100 grams	*Soil:* Cool 6 °C *Foliage :* Frozen Storage at <-10°C. Protect from light.	Extraction: 14 days	10 ug/kg	SOP UHL-H-006		●	
Imidazolinones: Imazapyr, Imazampic, Imazamox, Imazethapyr, Imazaquin	*Soil:* #17 1 Pint Clear Glass Minimum 200 grams *Foliage:* 1 Quart Freezer Bags Minimum 100 grams	*Soil:* Cool 6 °C *Foliage :* Frozen Storage at <-10°C. Protect from light.	Extraction: 14 days	0.5 ug/kg	LC/MS SOP UHL-H-017		●	
Isoxaflutole and Metabolites: Isoxaflutole RPA 202248 RPA 203328	*Soil:* #17 1 Pint Clear Glass Minimum 200 grams *Foliage:* 1 Quart Freezer Bags Minimum 100 grams	*Soil:* Cool 6°C *Foliage :* Frozen Storage at <-10°C. Protect from light.	Extraction: 14 days	1 ug/kg	LC/MS SOP UHL-H-021		●	

PESTICIDES - HPLC

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Quant Limit	Method	A	C	L
Miscellaneous Pesticides: Aldicarb, Aminocyclopyrachlor, Carfentrazone, Clothianidin, Diflufenzopyr, Ethephon, Fenoxaprop-ethyl, Flufenacet, Flumiclorac-pentyl, Flumioxazin, Fomesafen, Fosamine ammonium, Mesotrine, Prochloraz, Quizalofop-p-ethyl, Tembotrione, Thiamethoxam, Topramezone. **Contact SHL prior to sample submission.**	*Soil:* #17 1 Pint Clear Glass Minimum 200 grams *Foliage:* 1 Quart Freezer Bags Minimum 100 grams	*Soil:* Cool 4°C *Foliage:* Frozen Storage at <-10°C. Protect from light.	Extraction: 14 days	Sensitivity varies with analyte	LC/MS SOP UHL-H-018		●	
Sulfonyl Urea and Sulfonamide Herbicides: Azimsulfuron, Bensulfuron-methyl, Carfentrazone-ethyl, Chlorimuron-ethyl, Chlorsulfuron, Cloransulam-methyl, Diuron, Flumetsulam, Foramsulfuron, Halosulfuron-methyl, Imidacloprid, Metsulfuron-methyl, Nicosulfuron, Primisulfuron-methyl, Prosulfuron, Rimsulfuron, Sulfometuron-methyl, Tebuthiuron, Thifensulfuron-methyl, Triasulfuron, Tribenuron-methyl, Triflusulfuron-methyl	*Soil:* #17 1 Pint Clear Glass Minimum 200 grams *Foliage:* 1 Quart Freezer Bags Minimum 100 grams	*Soil:* Cool 6°C *Foliage:* Frozen Storage at <-10°C. Protect from light.	Extraction: 14 days	0.5 ug/kg	LC/MS SOP UHL-H-023		●	
Clethodim	*Soil:* #17 1 Pint Clear Glass Minimum 200 grams *Foliage:* 1 Quart Freezer Bags Minimum 100 grams	*Soil:* Cool 6 °C *Foliage:* Frozen Storage at <-10°C. Protect from light.	Extraction: 14 days	0.5 ug/kg	LC/MS SOP UHL-H-024		●	

UNDERGROUND STORAGE TANK (UST)

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Quant Limit	Method	A	C	L
VOLATILES - UST WATER - OA-1								
Benzene Ethylbenzene Methyl-t-butyl ether Toluene Total Xylenes	#45 3 - 40 mL glass vials with trip blank	3 drops HCL, NO HEADSPACE Cool 4°C	14 days	2 - 5 ug/L	Iowa OA-1		•	
SEMI-VOLATILES - UST WATER - OA-2								
Diesel Fuel Gasoline Kerosene Mineral spirits Motor Oil Total Extractable Hydrocarbons	#18 1 Liter Amber Glass/TFE lid	Unpreserved Cool 4°C	Extraction: 7 days	100 ug/L	Iowa OA-2		•	
VOLATILES - UST SOIL - OA-1								
Benzene Ethylbenzene Methyl-t-butyl ether Toluene Total Xylenes	#46 4 oz glass jar with septa lid	Unpreserved Cool 4°C	14 days	0.002 - 0.005 mg/kg	Iowa OA-1		•	
SEMIVOLATILES - UST SOIL - OA-2								
Diesel Fuel Gasoline Mineral spirits Motor Oil Kerosene Total Extractable Hydrocarbons	#46 4 oz glass jar with septa lid	Unpreserved Cool 4°C	Extraction: 14 days	3 mg/kg	Iowa OA-2		•	
VOLATILES - UST AIR - Miscellaneous								
Miscellaneous compounds as requested	Charcoal Tube	Cool tubes to 4°C	14 days	Determined on a per sample basis	NIOSH		•	

MISCELLANEOUS ANALYSIS

Analysis Name and Analyte(s)	Sample Bottle #	Preservation & Storage Temp	Maximum Holding Time	Quant Limit	Method	A	C	L
Algal Toxins (Cylindrospermopsin) in Water by Immunoassay	#32 4 oz Plastic IDEXX	Sodium thiosulfate <10°C	14 days		Immunoassay		•	
Algal Toxins (Microcystins) in Water Immunoassay	#32 4 oz Plastic IDEXX	Sodium thiosulfate <10°C	14 days		Immunoassay		•	
Chlorophyll	#9	none	24 hours	1 ug/L	EPA		•	•
Ethylene glycol, Propylene glycol	#19 120 mL Amber Glass	Unpreserved Cool 6°C	7 days	500 ug/L	LC/MS SOP UHL-H-019		•	
Heterotrophic Plate Count (NON-DRINKING WATER)	#32 4 oz Plastic IDEXX	<10°C		<1	SM 9215	•	•	
Hormones and Steroids: Estriol, 17b-Estradiol, 17a-Ethynylestradiol, Estrone, Equilin, Androstenedione, Testosterone	#18 1 Quart Amber Glass	Sodium thiosulfate + 2-Mercaptopyridine-1-oxide, sodium salt Cool 6°C	28 days	0.0004 ug/L hormones 0.0001 ug/L steroids	EPA 539		•	
Pharmaceuticals, Antibiotics, Personal Care Products: Acetaminophen, Caffeine, Carbamazepine, Cotinine, Diclofenac, DEET, Gemfibrozil, Ibuprofen, Lincomycin, Metoprolol, Sulfadimethoxine, Sulfamethazine, Sulfamethoxazole, Sulfathiazole, Trimethoprim	#14 40 mL Amber Glass Vial	Unpreserved Cool 6°C	14 days	0.001 - 0.005 ug/L	LC/MS SOP UHL-H-020		•	

ANALYSIS NOT FOUND

For any analysis not listed, please call State Hygienic Laboratory Client Services for further information:
1-800-421-IOWA or **319-335-4500**
or refer to our contact list @ **www.shl.uiowa.edu**

SECTION 5

Sampling Instructions for Bottles

5.0 SAMPLE BOTTLE INSTRUCTIONS — INDEX I (1 OF 2)

By Bottle Number

By Bottle Number

5.0 SAMPLE BOTTLE INSTRUCTIONS — INDEX II (1 OF 2)

By Test Name

5.0 SAMPLE BOTTLE INSTRUCTIONS — INDEX II (2 OF 2)

By Test Name

State Hygienic Laboratory

at The University of Iowa

BOD, Settable Solids, Color

Container # 1

Collection and Shipping Instructions

Collection and Handling

- Collect sample on Tuesday, Wednesday, or Thursday.
- **Be sure ice packs are frozen prior to sample collection**.
- Run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Place container in the plastic bag provided and secure with twist-tie.
- Begin cooling sample to < 6°C (43°F).
- Fill out the sample collection form provided.
- Do not place form in plastic bag with bottle.
- Ship sample promptly.
- **NOTE:** Sample must be received and analyzed at the Lab within 48 hours of collection.
- Any sample arriving after 3:00 pm on Friday and Saturday will be rejected, unless special permission has been arranged by a previous phone call.

Shipping Instructions

- Package sample with frozen ice packs for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 7/7/2017

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State Hygienic Laboratory

at The University of Iowa

Inorganic and/or Organic Parameters

Container #1

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Run water for at least 2 – 3 minutes to flush the line. For surface water, partially immerse the bottle in the water source.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to ≤ 6ºC (43ºF).
- Fill out the sample collection form provided.
- Do not place form in plastic bag with bottle.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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/2017 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

Perfluorinated Surfactants in Water

Container #1

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Run water for at least 2 – 3 minutes to flush the line. For surface water, partially immerse the bottle in the water source.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to < 6°C (43°F).
- Fill out the sample collection form provided.
- Ship sample promptly after collection.
- **Avoid sample contact with any fluorinated plastic materials!**

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

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State Hygienic Laboratory

at The University of Iowa

Solids (TSS, TDS, TVSS, etc.)

Container # 1

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample promptly.
- **NOTE:** Sample must be received at the Lab within 5 days of collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

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State Hygienic Laboratory

at The University of Iowa

Miscellaneous Nutrient Analysis

Ammonia, Nitrate+Nitrite as N, Total Kjeldahl Nitrogen, Oganic Nitrogen, Total Phosphorous, Chemical Oxygen Demand

Container #2

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- Run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Place container in the plastic bag provided and secure with twist-tie.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Do not place form in plastic bag with bottle.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 7/14/2017

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State Hygienic Laboratory

at The University of Iowa

Oil and Grease in Water (EPA 1664)

Container #3

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- Run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 7/14/2017

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State Hygienic Laboratory

at The University of Iowa

Cyanide

Container # 4

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- Run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Place container in the plastic bag provided and secure with twist-tie.
- Begin cooling sample to < 6°C (43°F).
- Fill out the sample collection form provided.
- Do not place form in plastic bag with bottle.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 7/14/2017 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

Total Phenol

Container # 5

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- Run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Place container in the plastic bag provided and secure with twist-tie.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Do not place form in plastic bag with container.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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State Hygienic Laboratory

at The University of Iowa

Total Trihalomethanes (THMs)

Container #6

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Do not rinse the vials as they contain ascorbic acid preservative.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- When collecting drinking water samples, remove any aerator and run water for at least 2 minutes.
- Fill each sample vial with water almost to overflowing so there is no air space.
- Add three drops of 1:1 hydrochloric acid to each vial including the trip blank using the dropper bottle.
- Seal each vial tightly.
- Complete information on each sample vial label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Do not return acid dropper bottle with samples; return outer bottle.
- Ship sample vials with the trip blank promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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State Hygienic Laboratory

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Metals

Container # 7

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- Run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Place container in the plastic bag provided and secure with twist-tie.
- Fill out the sample collection form provided.
- Do not place form in plastic bag with bottle.
- Ship sample promptly after collection.

Shipping Instructions

- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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State Hygienic Laboratory

at The University of Iowa

Sulfide

Container #8

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- Run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Place container in the plastic bag provided and secure with twist-tie.
- Begin cooling sample to < 6°C (43°F).
- Fill out the sample collection form provided.
- Do not place form in plastic bag with bottle.
- Ship sample promptly after collection.
- **NOTE:** Sample must be received by Laboratory within 5 days of collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

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State Hygienic Laboratory

at The University of Iowa

Ortho Phosphate

Container # 9

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Rinse sample collection equipment and non-preserved sample containers with sample water before taking the actual sample. EPA approved methods require the non-potable water sample to be field filtered (0.45 µm membrane filter) before filling the sample container. Fill the sample bottle with filtered sample. When field filtration is impractical samples may be filtered in the laboratory. When filtered in the laboratory results will be qualified to state "Sample was filtered for analysis after receipt by the laboratory."
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample promptly after collection.
- **NOTE**: Sample must be received by Laboratory within 5 days of collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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Volatile Organic Parameters

Container #13

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- When collecting drinking water samples, remove any aerator and run water for at least 2 minutes.
- Fill each sample vial with water almost to overflowing so there is no airspace
- Seal each vial.
- Complete information on each sample vial label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample vials with the trip blank promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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Neonicotinoids in Water

Container #14

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection or use bagged ice.**
- Fill the container completely to the top and seal.
- Complete information on the container label.
- Fill out the sampling information form provided.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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Optical Brighteners

Container #14

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Fill each sample vial with water to the shoulder and seal with cap.
- Complete information on each sample vial label.
- Begin cooling sample to < 6ºC (43ºF).
- **Avoid sample exposure to sunlight or UV light sources.**
- Fill out the sample collection form provided.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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PCBs in Oil

Container # 14

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Do not rinse vials prior to sample collection.
- Fill container slowly to within ½ inch from the top.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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Rev: 7/14/2017 **Page 1 of 1**

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State Hygienic Laboratory

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Pharmaceuticals

Container # 14

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Run water for at least 2-3 minutes to flush the line.
- **Wear gloves while collecting water in the #14 vials**. It is extremely important to wear gloves to minimize contamination from the sample collector since the test for pharmaceuticals detects chemicals present in commonly used products such as pain relievers (Acetaminophen, Ibuprofen), Caffeine (often found in coffee and some soda pops), Triclosan (antibacterial soaps), Cotinine (metabolite of cigarette smoke), and a number of prescription drugs.
- Fill container slowly with water to near the top.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with protective materials to help minimize breakage and with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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State Hygienic Laboratory

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Volatile Organic Parameters

Container #15

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- **When collecting Safe Drinking Water Act (SDWA) samples (container #15):**
  - remove any aerator and run water for at least 2 minutes to flush the line
  - fill each vial with water almost to overflowing so there is no airspace
  - add three drops of 1:1 hydrochloric acid to each vial including the trip blank using the dropper bottle provided.
  - Do not return acid dropper bottle with samples; return outer bottle
- Seal each vial tightly.
- Complete information on each sample vial label.
- Begin cooling sample to < 6°C (43°F).
- Fill out the sample collection form provided.
- Ship sample vials with the trip blank promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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Rev: 7/14/2017 **Page 1 of 1**

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Call laboratory prior to sampling at 800-421-4692 in order to schedule testing for your samples.

State Hygienic Laboratory

at The University of Iowa

Legionella Testing

Container #16

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Handling

- Unpack cooler upon receipt and place ice packs in freezer at least overnight. Ice packs need to be frozen solid before use.
- **Please call the Lab prior to collecting sample to schedule analysis time.**
- If you wish to take the water temperature, you will need to provide a thermometer for this purpose.
- **Swabs (Surfaces: Container #16):** At the sampling faucet, remove strainers, screens, diffusers, or shower heads before collection. At each site, take the swab out of the package, being careful not to touch the sterile cotton-tipped end and reem out the inside surface of the faucet at the sink as far as the swab will reach (four times around the inner circumference). Place swab back into tube and label appropriately.
- **Faucets (Drinking Water: Container #49):**
- Turn on the hot or cold water tap (depending on which water you wish to investigate), and immediately collect the first liter of water into the container provided. Be careful not to touch the inside of the lid or sterile bottle. Record hot water temperature on the form or in your records.
- **Hot Water Tanks (Drinking Water: Container #49):**
- Open the drain valve at the base of the tank slowly until sediment from the boiler appears, then close the valve and take the swab sample. Then, open the valve again, and collect the first 120 mL of water/sediment.
- **Cooling Towers (Container #32):**
- Collect approximately 120 mL of cooling water into the container provided.
- Record SAMPLE LOCATION, COLLECTION DATE, AND WATER TEMPERATURE on the collection form and respective bottles.
- Place the bottles and swabs in the bottom of the cooler. Remove ice packs from the freezer, and place them in the cooler. Secure cooler lid, and place shipping label on the cooler.

Shipping Instructions

- Ship sample promptly, **sample must be received in the Lab within 48 hours of collections and received cooled but not frozen (<10°C).**
- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of acceptable shipment options to ensure rapid delivery.
- **Contact Information**
- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500
- Environmental Microbiology section for technical questions and scheduling: 319-335-4366

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 5/14/18

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State Hygienic Laboratory

at The University of Iowa

Soil or Sludge or Foliage

Container # 17

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- For soil, be sure sample is representative of area of interest. If the area is large, take multiple portions of soil across the entire area and mix thoroughly. Fill sample container with mixed soil and seal the container.
- For sludge, collect a sample that is representative of the entire contents of the digester. Fill container up to the shoulder (within ½ inch of top) and seal the container.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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Rev: 7/14/2017 **Page 1 of 1**

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State Hygienic Laboratory

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General Organic Parameters

Container # 18

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Run water for at least 2-3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from the top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

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Rev: 7/14/2017 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

TCLP or SPLP Parameters

Container # 18

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- To sample the waste, collect a sample that is representative of the entire waste area. If the area is large, take multiple portions of the waste and mix thoroughly before filling container.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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Rev: 7/14/2017 **Page 1 of 1**

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Tritium

Container # 19

Collection and Shipping Instructions

Collection and Handling

- Municipalities should fill from the source entry point.
- Homeowners should not collect sample from a home water softener system.
- Run water for at least 2-3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top.
- Seal the container tightly.
- Complete information on the container label.
- Fill out the sample collection form provided.
- Ship sample promptly after collection.

Shipping Instructions

- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Coralville or Lakeside (Milford) laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 4/25/2018 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

Iron Bacteria

Container # 20

Collection and Shipping Instructions

Collection and Handling

- If collecting from faucet, remove any aeration devices or hoses from the spigot.
- Collect the water or material you wish tested.
  - Since iron bacteria are commonly present in orange/brown colored precipitate (iron), do not flush the line but collect the first draw sample.
- Open and handle container carefully – do not touch inside sterile lid or container.
- Fill container slowly with water to within 1 inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label, including NAME and COLLECTION LOCATION.
- Fill out the sample collection form provided.
- Ship sample promptly after collection.

Shipping Instructions

- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny or Iowa City laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500
- Environmental Microbiology section for technical questions: 319-335-4366

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 12/8/2011 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

Radionuclides

Gross Alpha, Gross Beta, Gamma Emitters, Radium-226/228 (Combined), Strontium-89/90, Uranium

Container # 22

Collection and Shipping Instructions

Collection and Handling

- Municipalities should fill from the source entry point.
- Homeowners should not collect sample from a home water softener system.
- Run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top.
- Seal the container tightly.
- Complete information on the container label.
- Fill out the sample collection form provided.
- Ship sample promptly.
- **NOTE**: Sample must be received by Laboratory within 3 days of collection.

Shipping Instructions

- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milford) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 5/14/2018

Page 1 of 1

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State Hygienic Laboratory

at The University of Iowa

SDWA Lead and SDWA Copper

Container # 26

Collection and Shipping Instructions

Collection and Handling

- Sampling site may not include faucets that have point-of-use (attached to the faucet) or point-of-entry (water softeners, RO system, etc.) treatment devices designed to remove inorganic contaminants. Contact your utility if you have any questions.
- Sample is to be collected from the COLD water tap in the kitchen or bathroom.
- Sample must be collected from water that has been standing undisturbed in the pipes for at least 6 hours.
- Sample should be "first draw". Do not run the water or rinse the container before collection.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Fill out the sample collection form provided and in the enclosed plastic bag.
- Samples must be received by the laboratory within 14 days of their collection.

Shipping Instructions

- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 7/14/2017

Page 1 of 1

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State Hygienic Laboratory

at The University of Iowa

Radon

Container #27

Do not aerate or agitate collection water

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Collect 2 vials per sampling site.
- Homeowners should not collect sample from a home water softener system.
- Collect the sample on Monday, Tuesday or Wednesday only, to ensure delivery in time for analysis.
- Remove any aerator connected to the faucet or water outlet.
- Run water for at least 30 seconds to flush the line.
- Fill container slowly with water. Allow the water to trickle or flow without disturbance into the vial.
- Overfill so excess water forms a bead over the lip of the vial.
- Check the cap to make sure the thin layer of Teflon on the rubber seal is in contact with the water side.
- Seal the container tightly.
- Invert the vial to ensure no air bubbles are in the vial.
- If bubbles are present empty the vial and repeat the collection process.
- Complete information on the container label.
- Begin cooling sample to < 6°C (43°F).
- Fill out the sample collection form provided.
- Ship sample promptly.
- **NOTE**: Sample must be received by Laboratory within 48 hours of collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milford) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 4/25/2018 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

Metals

Container #29

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- Run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Place container in the plastic bag provided and secure with twist-tie.
- Fill out the sample collection form provided.
- Do not place form in plastic bag with bottle.
- Ship sample promptly after collection.

Shipping Instructions

- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 7/14/2017

Page 1 of 1

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State Hygienic Laboratory

at The University of Iowa

Private Lead

Container # 29

Collection and Shipping Instructions

Collection and Handling

- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- Sampling site may not include faucets that have point-of-use (attached to the faucet) or point-of-entry (water softeners, RO system, etc.) treatment devices designed to remove inorganic contaminants.
- Sample is to be collected from the COLD water tap in the kitchen or bathroom.
- Sample must be collected from water that has been standing undisturbed in the pipes for at least 6 hours.
- Sample should be "first draw". Do not run the water or rinse the container before collection.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Fill out the sample collection form provided and in the enclosed plastic bag.
- Ship sample promptly after collection.

Shipping Instructions

- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

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State Hygienic Laboratory

at The University of Iowa

Inorganic Parameters

Container #34

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Run water for at least 2 – 3 minutes to flush the line. For surface water, partially immerse the bottle in the water source.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to $\leq$ 6ºC (43ºF).
- Fill out the sample collection form provided.
- Do not place form in plastic bag with bottle.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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Rev: 7/14/2017 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

SDWA SOCs A/S 1 & 3

Container #35

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection or use bagged ice.**
- Do not rinse the bottle as it contains sodium thiosulfate preservative.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water
- When collecting drinking water samples, remove any aerator and run water for at least 2 minutes.
- Fill the container with water up to the shoulder (within ½ inch of top) and seal.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 7/14/2017 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

Nitrate or Nitrite

(SDWA & Non SDWA Drinking Water)

Container #37

Collection and Shipping Instructions

See Water Supply Operation Permit.
Collect sample as early as possible during IDNR scheduled monitoring time period.

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- If public water supply, sample must be collected from the designated source entry point as indicated on your Water Supply Operation Permit. Contact your DNR regional field office if you have permit questions.
- **Collect sample as early as possible during IDNR scheduled monitoring time period. See your Water Supply Operation Permit.**
- Run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to < 6°C (43°F).
- Fill out the sample collection form provided.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- **Sample must arrive at the laboratory within 36 hours of collection and received at < 6°C.**
- Collect sample on Monday thru Thursday. Ship samples with frozen ice packs, immediately after collection to the Ankeny Laboratory. Do not ship on Friday, also avoid weekends and holidays. UPS and FED Ex (ground) are examples of acceptable shipment options to ensure rapid delivery within Iowa borders.
- Samples may be brought directly to the Ankeny, Lakeside, or Coralville laboratories Monday – Thursday 8 am–5 pm. Ankeny Laboratory Only: will accept drop offs until noon Friday.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 5/4/2018 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

Diquat/Paraquat in Water

(Regulated SOCs A/S #9)

Container #39

Sodium thiosulfate preservative pre-added
DO NOT RINSE OUT PRESERVATIVE
After filling sample bottle, add entire contents of SULFURIC ACID preservative vial to water sample

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
  CAUTION: Use extra care when handling any container with preservative. Strongly recommend wearing neoprene or nitrile gloves when handling sulfuric acid. If any acid spills on skin or clothing, immediately rinse with copious amounts of water. Do not breathe sulfuric acid preservative fumes.
- Run water for at least 2 – 3 minutes to flush the line. For surface water, partially immerse the bottle in the water source.
- Fill container slowly with water to shoulder – Do not overflow.
- After filling sample bottle; make sure you have your gloves on and CAREFULLY pour the entire contents of the small vial of sulfuric acid into the water sample. Take great care to avoid spilling the sulfuric acid. Dispose of the sulfuric acid vial after use. Return the outer container to SHL.
- Seal the sample container tightly.
- Complete information on the container label.
- Begin cooling sample to < 6°C (43°F).
- Fill out the sample collection form provided.
- Ship sample promptly after collection.
- **NOTE**: Sample must be received by Laboratory within 3 days of collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 7/7/2017

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State Hygienic Laboratory

at The University of Iowa

Sealed Source Leak Wipe Test

Container #44

Collection and Shipping Instructions

Collection and Handling

- To take a wipe of the surface or exposure area, determine if the cotton applicator swab or the circular cotton smear (each included) will work best.
- Use a separate swab or wipe for each instrument or wipe item.
- Remove the swab from the container or open the flap covering the round cotton smear. Gently wipe the instrument exposure area, or item with either the swab or smear. Pay particular attention to joints or seams.
- If using a swab, place cotton swab back in tube. If using a smear, fold envelope closed over the smear.
- Fill out the sample collection form provided.
- Wrap the information form with the swab or smear, together, and enclose in the plastic mailer.
- On the return label fill in the "From" information and peel the paper backing from the return label. Stick label on the outside of the mailer.
- Ship sample promptly.

Shipping Instructions

- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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Rev: 7/14/2017~~6/16/2017~~

Page 1 of 1

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State Hygienic Laboratory

at The University of Iowa

Volatile Organic Parameters

Container #45

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- **When collecting drinking water/non drinking water samples (container #45):**
  - remove any aerator and run water for at lease 2 minutes to flush the line
  - fill container slowly with water completely to the top so there is no airspace
  - do not open the vial labeled "Trip Blank"; return it to the lab with samples
- Seal each vial tightly.
- Complete information on each sample vial label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample vials with the trip blank promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 7/14/2017 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

Soil or Sludge or Foliage

Container # 46

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- For soil, be sure sample is representative of area of interest. If the area is large, take multiple portions of soil across the entire area and mix thoroughly. Fill sample container to the top with mixed soil and seal the container.
- For sludge, collect a sample that is representative of the entire contents of the digester. Fill container up to the top and seal the container.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 7/14/2017 **Page 1 of 1**

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Call laboratory prior to sampling at 800-421-4692 in order to schedule testing for your samples.

State Hygienic Laboratory

at The University of Iowa

Sample Collection and Shipping Instructions

Legionella Testing

Container #51

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Handling

- Unpack cooler upon receipt and place ice packs in freezer at least overnight. Ice packs need to be frozen solid before use.
- **Please call the Lab prior to collecting sample to schedule analysis time.**
- If you wish to take the water temperature, you will need to provide a thermometer for this purpose.
- **Faucets/shower heads -Drinking Water Sample:** Turn on the hot or cold water tap (depending on which water you wish to investigate), and immediately collect the first 500mL of water into the container provided (fill to neck of bottle). Be careful not to touch the inside of the lid or sterile bottle. Record hot water temperature on the form or in your records..
- **Hot Water Tank Water Sample:** Open the drain valve at the base of the tank slowly until sediment from the boiler appears. Continue flushing until the sediment disappears and then collect the water sample. Fill to neck of bottle and secure lid.
- Place the bottles in the bottom of the cooler. Remove ice packs from the freezer, and place them in the cooler but NOT in direct contact with the sample bottles. Use bubble-wrap or crumpled newspaper between bottle and ice packs. Secure cooler lid, and place shipping label on the cooler.

Shipping Instructions

- Ship sample promptly, **sample must be received in the Lab within 48 hours of collections and received cooled but not frozen.**
- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of acceptable shipment options to ensure rapid delivery.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500
- Environmental Microbiology section for technical questions and scheduling: 319-335-4366

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 5/14/18

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State Hygienic Laboratory

at The University of Iowa

UV Absorbance at Wavelength 254

Container # 52

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection.**
- When collecting drinking water samples, remove any aerator and run water for at least 2 – 3 minutes to flush the line.
- Fill both containers slowly with water to the top (NO AIRSPACE) – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Please call the Lab prior to collecting sample to schedule analysis time.
- Ship sample promptly, **sample must be received in the Lab within 24 hours of collection**.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

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State Hygienic Laboratory

at The University of Iowa

Volatile Organic Parameters

Container #57

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- **When collecting Safe Drinking Water Act (SDWA) samples (container #57):**
  - remove any aerator and run water for at least 2 minutes to flush the line
  - fill each vial with water almost to overflowing so there is no airspace
- Seal each vial tightly.
- Complete information on each sample vial label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample vials with the trip blank promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 7/17/2017

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State Hygienic Laboratory

at The University of Iowa

Chlorite, Chlorate, Bromate

Container #58

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- Run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Place container in the plastic bag provided and secure with twist-tie.
- Begin cooling sample to < 6°C (43°F).
- Fill out the sample collection form provided.
- Do not place form in plastic bag with bottle.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny or Iowa City laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 5/9/2012

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State Hygienic Laboratory

at The University of Iowa

Lead in Dust

Container #59

Collection and Shipping Instructions

Collection and Handling

- Latex or nitrile gloves should be worn.
- Mark and measure area to be sampled e.g.12'X12" square on a floor.
- Open wipe and unfold completely. Completely wipe the area marked from side to side.
- Fold wipe in half dirty side in. Wipe same area completely up and down.
- Fold again dirty side in and put the wipe in the tube.
- Complete information on the container label.
- Fill out the sample collection form provided. Be sure to include the area of measurement.
- When submitting multiple samples be sure tube labels correlate to information on sheet.
- Ship sample promptly after collection.

Shipping Instructions

- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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Rev: 7/14/2017

Page 1 of 1

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State Hygienic Laboratory

at The University of Iowa

Lead in Paint

Container #59

Collection and Shipping Instructions

Collection and Handling

- Be sure sample is representative of area of interest.
- Different paints should be submitted in separate containers.
- Lift paint using sharp knife taking a minimum of the underlying surface.
  If paint chips are mixed in soil, minimize amount of soil included in the sample.
- Collect one half teaspoon of paint, if possible.
- Complete information on the container label.
- Fill out the sample collection form provided.
- When submitting multiple samples, be sure tube labels correlate to information on sheet.
- Ship sample promptly after collection.

Shipping Instructions

- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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Rev: 7/14/2017 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

Lead in Soil

Container #59

Specimen Collection and Shipping Instructions

Collection and Handling

- Be sure sample is representative of area of interest. If the area is large, take multiple portions of soil across the entire area, and mix thoroughly in a large bucket.
- Fill sample tube with thoroughly mixed soil.
- Complete information on the container label.
- Fill out the sample collection form provided.
- When submitting multiple samples, be sure tube labels correlate to information on sheet.
- Ship sample promptly after collection.

Shipping Instructions

- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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State Hygienic Laboratory

at The University of Iowa

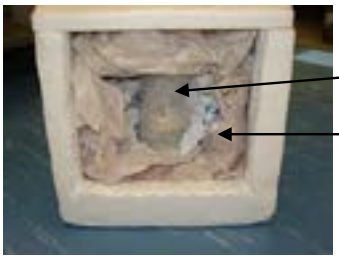
Container #62

E.coli and/or Fecal Coliform in Sediment

Collection and Shipping Instructions

Collection and Handling

- **Please call the lab prior to collecting multiple samples to schedule analysis time.**
- Unpack cooler upon receipt and place ice packs in freezer at least overnight. Ice packs need to be frozen solid before use.
- Complete the sample collection form and label sample bottle with NAME and SITE LOCATION BEFORE collection. Please use pencil or waterproof ink.
- While holding the sample collection bottle in one hand, remove and hold the cap with the other hand, taking care not to touch the inside of the cap. Container is sterile so do not touch inside lid or bottle. Gloves may be worn if necessary.
- In a single motion, scoop the collection bottle through the sediment/soil, submerging the sample bottle to the depth in question (e.g. surface scrapings or deeper). Mouth of bottle should be in front of hand at all times during collection. Replace the cap
- Place the bottle in cooler and wrap the bottle with bubble wrap or newspaper on all sides. Remove the ice packs from the freezer and place in cooler surrounding the bubble-wrapped bottles (place on opposite sides). Make sure ice packs are not in direct contact with the bottle. Fill the remaining cooler space with either bubble wrap, newspaper or other paper so the bottles and ice packs are packed tightly (minimal air space). One bottle requires two ice packs, two bottles require three and three bottles require four, etc. Secure cooler lid and place shipping label on the cooler.



Shipping Instructions

- Samples must arrive at the laboratory **within 24 hours of collection and received ≤ 10 ° C and not frozen**.
- Ship samples immediately after collection. Avoid Friday, weekend, and holiday mailings unless prior arrangements have been made. UPS and Fed Ex (ground) are examples of acceptable shipment options to ensure rapid delivery within Iowa borders.
- Do not send payment with sample; you will be billed.

Contact Information

- Client Services section for general questions, orders, etc., 800-421-4692 or 319-335-4500
- Environmental Microbiology section for technical questions or scheduling: 319-335-4366

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 12/22/2017 **Page 1 of 1**

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Phytoplankton

Container # 64

Collection and Shipping Instructions

Collection and Handling

- Exercise care in opening the container so that preservative (Lugol's Solution and formalin) is not spilled.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- Fill container to the bottle neck with water and reseal the container.
- Be careful not to stir up the sediment when collecting sample. Excessive sediment can make sample processing impossible.
- Complete information on the container label.
- Store at room temperature. Extreme heat can be damaging to the sample.
- Fill out the sample collection form provided.
- Ship sample after collection at your earliest convenience.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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Rev: 7/14/2017

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State Hygienic Laboratory

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Arsenic Speciation Analysis

Arsenic (III), Arsenic (V)

Container #70

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- Run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Place container in the plastic bag provided and secure with twist-tie.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Do not place form in plastic bag with bottle.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 7/14/2017 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

Total Organic Carbon (TOC), Dissolved Organic Carbon (DOC)

Container #74
Preserved with liquid hydrochloric acid
DO NOT RINSE OUT PRESERVATIVE

Specimen Collection and Shipping Instructions

Sample Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- **CAUTION**: Use extra care when handling any container with preservative. If any acid spills on skin or clothing, immediately rinse with copious amounts of water.
- **DO NOT** rinse out the bottle.
- Recommend samples be collected Monday, Tuesday, or Wednesday, immediately cooled, and shipped using an overnight courier service to insure ice packs *do not* completely thaw.
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the sample container tightly.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF). Samples **MUST** maintain temperature of 6°C or lower during shipping.
- Fill out the sample collection form provided.
- Ship sample promptly after collection.
- If you are on a monthly monitoring schedule, we recommend collection of samples early in the month to allow for recollection if there are any problems.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Coralville or Lakeside (Milton) laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500.

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 7/14/2017

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Hygienic Laboratory

The University of Iowa

Container #81
Preservative added
DO NOT RINSE

Collection and Shipping Instructions

SDWA Bacterial *(Repeat Sample Type)*

Requirements: A public water supply must collect a set of 3 repeat samples for each total coliform-positive routine sample. One repeat sample must be from the same tap as the original sample; at least one from a tap within five service connections upstream, and one from a tap within five service connections downstream of the original sampling site. All repeat samples must be collected the same day and within 24 hours of receipt of sampling bottles. If you have questions concerning repeat sampling locations, contact your regional DNR office for guidance.

----Always double-check all preprinted information; if incorrect, draw a single line through the incorrect information and write correct information:

- Fill out paperwork completely.
- Additional information:
  - **Client Reference**: optional client information field. If you have assigned a specific sample point ID number to this location (e.g. 1, 2, 3, etc.), write this number in this field.
  - **Repeat Code**: Write the code that corresponds to the location of this sample from the original positive sample site which are as follows: original, upstream, downstream.
  - **Relinquished By**: Sign and date if chain of custody requested for legal purposes.

Sampling Instructions:

- Use sample bottle supplied by the lab. Label bottle with facility name, location, and collection date/time.
- Select a clean, indoor faucet where aerator is or can be removed. Avoid leaking taps, outside hydrants, treatment units, swing-type faucets and water fountains.
- Remove aeration device, screen, or hose attachments (if unable to remove, select another tap).
- Open cold water tap to obtain smooth-flowing stream at moderate pressure without splashing (if water flow is not steady, select another tap).
- Allow water to run to waste for at least 2-3 minutes (time sufficient to clear service line).
- Reduce water flow slightly (pencil-width) to fill bottle without splashing. Do not adjust flow while filling bottle.
- Fill bottle to **"120 ml" mark.** Caution: Inside sample bottle is sterile – avoid placing fingers inside bottle or cap. Do not place cap down. White powder is a chlorine neutralizer that should not be rinsed out of bottle.
- Remove bottle from stream and immediately place cap on bottle. Tighten cap to avoid leakage in transit. Do not over-tighten or cap may split.

Shipping Instructions:

- Mail or ship sample with completed form the **same day** collected.
- Sample must be received within **30 hours of collection** and not frozen. Avoid Friday, weekend, and holiday mailings. First class postage, UPS or FED EX -ground, or other carrier services may be necessary to insure rapid delivery from your area.
- Do not send payment with sample; you will be billed.

Contact Information:

- Client Services: 800-421-4692 or 319-335-4500

Revisio Revision 12/22/2017 CV DCD 1255 **Page 1 of 1**

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Hygienic Laboratory

The University of Iowa

Container #81
Preservative Added
DO NOT RINSE

SDWA Bacterial *(Routine and Special Sample Types)*

Collection and Shipping Instructions

-----Always double-check all preprinted information; if incorrect, draw a single line through the incorrect information and write correct information:

- Fill out paperwork completely.
- Additional information:
  - **Client Reference**: optional client information field. If you have assigned a specific sample point ID number to this location (e.g. 1, 2, 3, etc.), write this number in this field.
  - **Relinquished By**: Sign and date if chain of custody requested for legal purposes.

Sampling Instructions:

- Use sample bottle supplied by the lab. Label bottle with your facility name, location and collection date/time.
- Select a clean, indoor faucet where aerator is or can be removed. Avoid leaking taps, outside hydrants, treatment units, swing-type faucets and water fountains.
- Remove aeration device, screen, or hose attachments (if unable to remove, select another tap).
- Open cold water tap to obtain smooth-flowing stream at moderate pressure without splashing (if water flow is not steady, select another tap).
- Allow water to run to waste for at least 2-3 minutes (time sufficient to clear service line).
- Reduce water flow slightly (pencil-width) to fill bottle without splashing. Do not adjust flow while filling bottle.
- Fill bottle to **"120 ml" mark.** Caution: Inside sample bottle is sterile – avoid placing fingers inside bottle or cap. Do not place cap down. White powder is a chlorine neutralizer that should not be rinsed out of bottle.
- Remove bottle from stream and immediately place cap on bottle. Tighten cap to avoid leakage in transit. Do not over-tighten or cap may split.

Shipping Instructions:

- Mail or ship sample with completed form the **same day** collected.
- Sample must be received within **30 hours of collection** and not frozen. Avoid Friday, weekend, and holiday mailings. First class postage, UPS or FED EX -ground, or other carrier services may be necessary to insure rapid delivery from your area.
- Do not send payment with sample; you will be billed.

Contact Information:

- Client Services: 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

Rev: 5/14/2018 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

Hexavalent Chromium

Container # 86

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Run water for at least 2 – 3 minutes to flush the line.
- **Use caution when opening container. Ammonia vapor from the preservative may be irritating.**
- Fill container slowly with water to within ½ inch from top – Do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

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Rev: 7/14/2017 **Page 1 of 1**

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State Hygienic Laboratory

at The University of Iowa

Halo Acetic Acids (HAAs)

Container #87

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Collection and Handling

- **Be sure ice packs are frozen prior to sample collection**.
- Care should be exercised when handling any container with preservative. In case of contact with skin or clothing, immediately rinse with water.
- Remove any aerator and run water for at least 2 – 3 minutes to flush the line.
- Fill container slowly with water completely to the top so there is no airspace.
- Seal the container tightly.
- Gently shake the container by hand for about 1 minute.
- Complete information on the container label.
- Begin cooling sample to < 6ºC (43ºF).
- Fill out the sample collection form provided.
- Ship sample promptly after collection.

Shipping Instructions

- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of shipment options to ensure rapid delivery.
- Sample may be brought directly to either the Ankeny, Lakeside (Milton) or Coralville laboratories.

Contact Information

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Hygienic Laboratory

The University of Iowa

Container #88

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Collection and Shipping Instructions

Algal Toxins (Microcystins) in Water by Immunoassay

Collection and Handling

- Immediately freeze the reusable ice packs provided in the cooler.
- For drinking water sample run water for at least 30 seconds to flush the line.
- For surface water, partially immerse the bottle in the water source.
- At each sample site fill 2 vials to within ½ inch of shoulder with water. DO NOT fill to the top (See *Image A*).
- Replace lid and carefully tighten.
- Complete information on the container label.
- Once sample is collected, place the 2 vials in the bubble wrap bag provided and secure with rubber band.
- Fill out the sampling information form provided.
- Ship sample and completed information form promptly after collection.
- If sample cannot be shipped the same day of collection, immediately cool to less than 6°C or 42°F. And ship sample as soon as possible.

Image A

Packing Instructions

- Put the frozen ice packs in the bottom of the cooler.
- Take the bubble wrapped vials and put on top of the frozen ice packs. (See *Image B*)
- Return the **filled out sample submittal form** to the plastic bag it came in. Place the form in plastic over the vials, inside the cooler, to help keep the vials from shifting around and breaking.
- Put the cooler lid on and tape box shut.


Image B

*If you feel additional packing material is needed or if the material sent with the kit is misplaced, use newspaper or brown paper. Scrunch a little of the paper and place between the ice packs and the vials. Add the vials and then place the paperwork in plastic on top of the vials. Put the lid on and tape shut.

Shipping Instructions

Samples are to be at the laboratory within 3 days of collection. You may ship them to our Coralville Laboratory or you may drop them off at any of our laboratory locations: Ankeny (by 4:30pm), Coralville (by 5:00pm) or Lakeside in Milford (by 12:00 noon).

Contact Information: Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500

Note: Samples not meeting preservation or holding time requirements may be analyzed with results qualified unless the submitter or regulations have instructed otherwise.

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Page 1 of 1

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State Hygienic Laboratory

at The University of Iowa

Bulk Asbestos Sample

Collection and Shipping Instructions

Dampen the sample collection area with water to minimize fibers becoming airborne.

Carefully cut approximately a 2 inch by 2 inch piece of the material. Be sure to include the entire thickness of the material.

Examples

Floor tile usually has a glue or mastic that was used to secure it. Oftentimes this glue adheres to the floor tile sample. It is best to submit a floor tile sample with the glue so both the tile and glue will be tested.

Built up roofing material. It is important to sample the full thickness of this material as sometimes only one layer may contain asbestos.

Material not amenable to cutting, a minimum of approximately 2 tablespoons of scraped or crumbled material should be sufficient for most materials.

Vermiculite, be careful not to disturb the material any more than necessary. Attempt to collect vermiculite sample near the bottom of the material. For vermiculite, at least one cup of the material should be collected.

Place each sample in a separate clean Ziploc plastic bag and seal tightly. It is recommended to double bag (place the sealed Ziploc bag inside a second Ziploc bag and seal it also) the sample in case the first bag leaks. Label the bag with sample identification (for instance, kitchen ceiling). Use a paper towel dampened with water to wipe up material on the outside of the Ziploc bag(s) and at the sample collection area. Dispose of the paper towel.

Contact SHL Client Services @ (319) 335-4500 or toll free 800-421-4692, so they may prepare a sampling information form for you. They can fax or email the form to you.

Place the Ziploc bags inside another envelope or box along with the sample information form.

Mail sample(s) and form(s) to:

State Hygienic Laboratory
Attention Sample Receiving
U of I Research Park
2490 Crosspark Road
Coralville, IA 52241-4721

Note: Samples not meeting preservation or holding time requirements may be analyzed with results

Container #16, 32, 49

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Call laboratory prior to sampling to schedule testing. 800-421-4692

Collection and Handling

- Unpack cooler upon receipt and place ice packs in freezer at least overnight. Ice packs need to be frozen solid before use.
- **Please call the Lab prior to collecting sample to schedule analysis time.**
- If you wish to take the water temperature, you will need to provide a thermometer for this purpose.
- **Swabs (Surfaces: Container #16):** At the sampling faucet, remove strainers, screens, diffusers, or shower heads before collection. At each site, take the swab out of the package, being careful not to touch the sterile cotton-tipped end and reem out the inside surface of the faucet at the sink as far as the swab will reach (four times around the inner circumference). Place swab back into tube and label appropriately.
- **Faucets (Drinking Water: Container #49):** Turn on the hot or cold water tap (depending on which water you wish to investigate), and immediately collect the first liter of water into the container provided. Be careful not to touch the inside of the lid or sterile bottle. Record hot water temperature on the form or in your records.
- **Hot Water Tanks (Drinking Water: Container #49):** Open the drain valve at the base of the tank slowly until sediment from the boiler appears, then close the valve and take the swab sample. Then, open the valve again, and collect the first 120 mL of water/sediment.
- **Cooling Towers (Container #32):** Collect approximately 120 mL of cooling water into the container provided.
- Record SAMPLE LOCATION, COLLECTION DATE, AND WATER TEMPERATURE on the collection form and respective bottles.
- Place the bottles and swabs in the bottom of the cooler. Remove ice packs from the freezer, and place them in the cooler. Secure cooler lid, and place shipping label on the cooler.

Shipping Instructions

- Ship sample promptly, **sample must be received in the Lab within 48 hours of collections and received cooled but not frozen (<10°C).**
- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of acceptable shipment options to ensure rapid delivery.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500
- Environmental Microbiology section for technical questions and scheduling: 319-335-4366

Container #51

Preservative Added
DO NOT RINSE OUT PRESERVATIVE

Call laboratory prior to sampling to schedule testing. 800-421-4692

Collection and Handling

- Unpack cooler upon receipt and place ice packs in freezer at least overnight. Ice packs need to be frozen solid before use.
- **Please call the Lab prior to collecting sample to schedule analysis time.**
- If you wish to take the water temperature, you will need to provide a thermometer for this purpose.
- **Faucets/shower heads -Drinking Water Sample:** Turn on the hot or cold water tap (depending on which water you wish to investigate), and immediately collect the first 500mL of water into the container provided (fill to neck of bottle). Be careful not to touch the inside of the lid or sterile bottle. Record hot water temperature on the form or in your records.
- **Hot Water Tank Water Sample:** Open the drain valve at the base of the tank slowly until sediment from the boiler appears. Continue flushing until the sediment disappears and then collect the water sample. Fill to neck of bottle and secure lid.
- Place the bottles in the bottom of the cooler. Remove ice packs from the freezer, and place them in the cooler but NOT in direct contact with the sample bottles. Use bubble-wrap or crumpled newspaper between bottle and ice packs. Secure cooler lid, and place shipping label on the cooler.

Shipping Instructions

- Ship sample promptly, **sample must be received in the Lab within 48 hours of collections and received cooled but not frozen.**
- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- UPS and Fed Ex (ground) are examples of acceptable shipment options to ensure rapid delivery.

Contact Information

- Client Services: questions, orders, etc., 800-421-4692 or 319-335-4500
- Environmental Microbiology section for technical questions and scheduling: 319-335-4366

Hygienic Laboratory

The University of Iowa

Collection and Shipping Instructions

Sampling and Shipping of Sediment and Water

Sampling Instructions:

Place sediment in one of the gallon zippered plastic bags provided. If the sample does not contain much water, fill to at least half full.

If the sample has a lot of water, let the sample settle and pour off the excess water. Continue this process until there is about 1 pound of sediment/soil in the bag (approximately half full). Do NOT fill the bag completely.

Place the bag containing the sample in a second clean zippered baggie.

Fill out a separate Environmental Sample Collection Form for each sample.

Shipping Instructions:

Place the double bagged sediment sample and the 1 gallon water sample in a box. Include the Sample Collection Forms for each sample.

Seal the box with tape and place the shipping label provided on the outside.

There will be separate boxes, one for each site (water and sediment), to ship back.

Ship samples using FedEx or UPS for tracking. Sample must reach the State Hygienic Laboratory within 5 days of collection.

Contact Information:

- Client Services: 800-421-4692 or 319-335-4500

102 Oakdale Campus, #101 OH
Iowa City, IA 52242-5002
319/335-4500 Fax: 319/335-4555

http://www.uhl.uiowa.edu

Iowa Laboratories Complex
2220 S. Ankeny Blvd., Ankeny, IA 50023-9093
515/725-1600 Fax: 515/725-1642

SECTION 6

Results Reports

6.0 OpenELIS WEB PORTAL USER GUIDE (1 OF 8)

SHL's OpenELIS Web Portal has been redesigned to afford easier access to test results regardless of the type of sample (environmental, safe drinking water, private well, clinical, animal, maternal screen, or neonatal screening.) The new OpenELIS Web Portal features the following enhancements:

- All of your organization's test results can now be downloaded by using the Final Report screen.
- The functionality to download your results into a spreadsheet has also been expanded to all types of samples.
- Clinical test results for samples that were received at SHL beginning on March 1, 2015 are located in OpenELIS.
- Rabies test results for samples that were received at SHL beginning on November 1, 2016 are located in OpenELIS.
- Maternal screen test results for samples that were received at SHL beginning on June 20, 2017 are located in OpenELIS.
- A filter can now be added that allows the user to only receive email notifications for samples that she collects, where she is the provider, or that have a specific Client Reference.
- Sample attachments (test request forms, previous revisions of final reports, copies of email correspondence, laboratory instrument output, etc.) are now available through the Final Report screen.

Neonatal screening results will still be located in the Neonatal Screening web portal until this testing is transitioned into OpenELIS.

Logging in

- Go to the State Hygienic Laboratory at The University of Iowa's web site at www.shl.uiowa.edu .
- Click on the green **Test Results** button on the left-hand side.
- Click on the green **OpenELIS** button.
- Login using your username and password. (This is a secure site. Your username and password are encrypted as they are sent for authorization.)
- If you use a shared computer, please click the **Logout** button in the top right corner and then exit the browser after completing your session.
- Supported web browsers are recent versions of: Firefox, Chrome, Safari, Internet Explorer.

Message of the Day

- The Message of the Day is displayed upon login. It contains important announcements regarding the OpenELIS Web Portal.
- You can click on the orange SHL logo anytime that you wish to return to this page.

Searching for Your Final Reports

- Click on the **Final Report** icon.
- You only need to enter information in one field to conduct a search for your results. Example fields include: **Collected Date**, **Accession Number**, **Collector** or **Patient's Last Name**. (See Figures 1 and 2.)
- It is recommended that you use the calendar to the right of each date field when entering a date to eliminate any formatting errors. You must click out of the calendar to enter the selected date. All dates have the format of YYYY-MM-DD. **Released Date** also includes the time in the format of YYYY-MM-DD HH:MM.
- You may also narrow your search by entering information in multiple fields. For example, to find all of the samples that you collected and sent to the laboratory in June of 2014, enter your name (as it appeared on the collection form) in the **Collector** field and select (using the calendars provided) 2014-06-01 in the **Collected Date** field and 2014-06-30 in the **To** field.
- The system supports wild card searches in the following fields: **Client Reference**, **Collector**, **PWS ID**, **Patient's First Name** and **Patient's Last Name**. To use this search method add an * at the beginning and/or end of your search term. Below are three examples:
    - To see a list of reports for a patient whose last name starts with the letters schm, enter schm* in the **Patient's Last Name** field. Matches would include: schmidt, schmitt, schmitz, etc.
    - To see a list of reports for a patient whose first name ends with the letters jo, enter *jo in the **Patient's First Name** field. Matches would include: betty jo, bettyjo, jo, etc.
    - To see a list of reports for samples with a collector name of buck, enter *buck* in the **Collector** field. Matches would include: joseph buck, joe buck, j buck, buck joseph, buck joe, buck j, etc.
- Enter the **Patient's Date of Birth** in this field to search by that information. You must enter an ending date in the **To** field to search for a range of birth dates.
- Click on the Tool Tip  to the right of each field to view information about the use and format of that field.
- Click the **Find Samples** button to display a list of samples that match your search criteria. The **Reset** button clears all of the search fields.

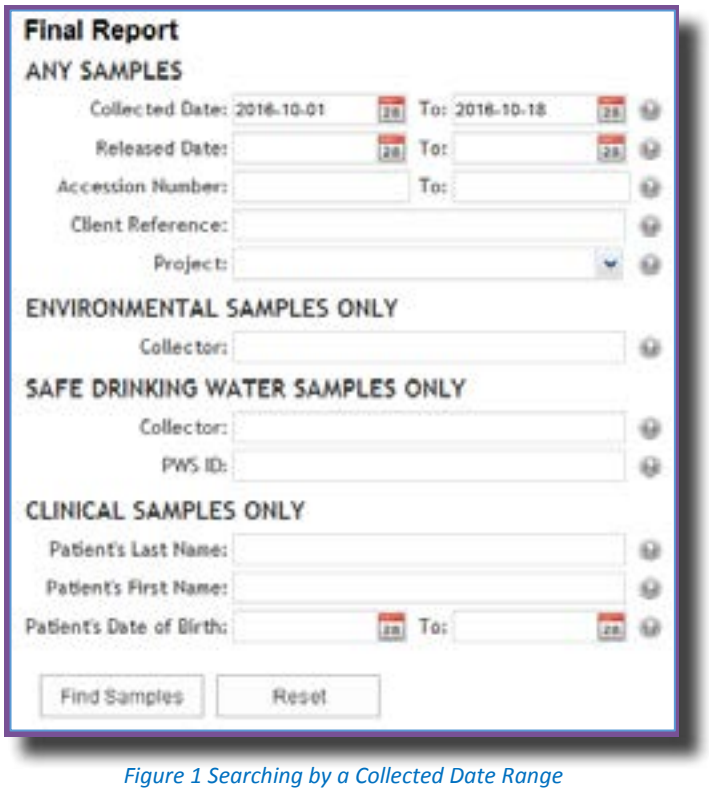


Figure 1 Searching by a Collected Date Range

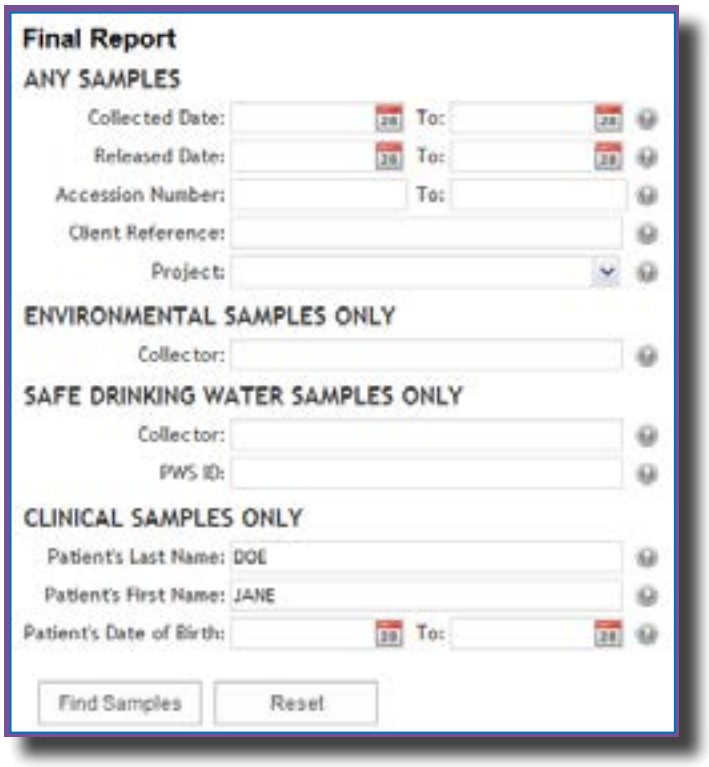


Figure 2 Searching by a Patient's Last and First Name

Viewing Your Final Reports

- A list of final reports that match your search criteria will be displayed on the next screen. (See Figure 3.)
- To view all reports of the listed samples, click on the **Select All** button, and then the **Run Report** button.
- To view specific reports, check the boxes in front of their **Accession Numbers**, and then click the **Run Report** button.
- The PDF reports of the selected samples will pop up. You may view, save, or print your PDF reports.
- The following are descriptions of each column on this screen.

Accession Number: The lab number assigned to the sample by the laboratory.

Collected Date: The date and time that the sample was collected. All dates and times have the format of YYYY-MM-DD HH:MM.

Reference Information: This information can be helpful in identifying a sample. The patient's name is usually displayed for clinical samples. The collector's name is usually displayed for environmental, safe drinking water, and private well samples. The type of animal is displayed for animal samples (e.g., rabies testing).

Additional Information: This information can also be useful in identifying a sample. The collection location, address, and city (if submitted) are displayed for environmental and private well samples. The collection location (if submitted) and PWS ID-PWS Name are displayed for safe drinking water samples. The health care provider's/veterinarian's/public health professional's name (if submitted) and the submitting organization are displayed for clinical and animal samples.

Status: The sample's status is shown here. "In Progress" samples have one or more tests that are not yet complete and at least one test that is finished. The finished test's results are currently available on the Final Report. "Completed" samples have finished testing and all of their results are available on the Final Report.

Project: The name of the project that has been assigned to the sample. A project can be used to group samples with a similar purpose.

Attachments: The number of documents attached to each sample (if any) are shown in this column. First, click on the number to display the list of attachments. (See Figure 4.) Next, click on the attachment that you want to display. Attachments may include the test request form (begins with the prefix "TRF"), previous revisions of final reports (begin with the prefix "FinalReport"), copies of email correspondence, and laboratory instrument output.

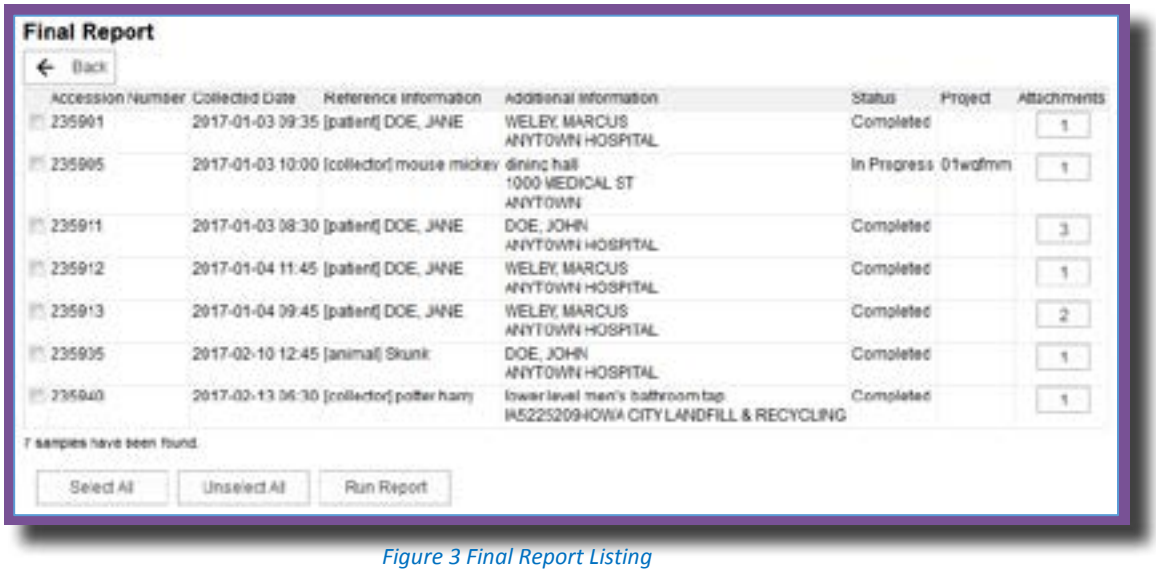


Figure 3 Final Report Listing

Figure 4 Sample Attachment List

Spreadsheet View

- The Spreadsheet View option will display your results in a spreadsheet that you can sort and filter. It can be used to compare results from the same sampling location or the same patient over time, among other things. Click on the **Spreadsheet View** icon.
- The first step is to search for the results that you would like to be displayed in the spreadsheet. The Spreadsheet View search screen works the same way as the one for final reports. See **Searching for Your Final Reports** for suggestions on how to conduct a search.
- After entering your search information, click the **Continue to Report Fields** button. The **Reset** button clears all of the search fields.
- The next page will display groups of fields containing sample, organization, analysis, patient, and other information which you can select to be displayed as columns in your spreadsheet. (See Figure 5.) This screen also shows all of the test analytes and auxiliary data that matches your search criteria. You need to select at least one **Test Analyte** or **Auxiliary Data** field to run the report. You can use the **Select All** buttons if you want to view all of the available information in a group.

- Click the **Run Report** button to pop up the spreadsheet containing all of the data that you selected. You may view, save, or print your spreadsheet reports. (See Figure 6.)

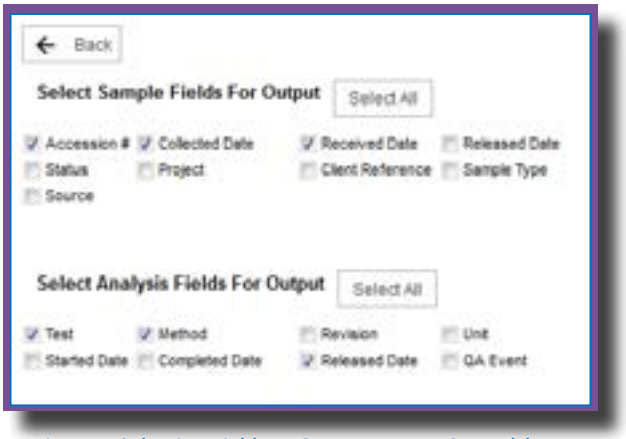
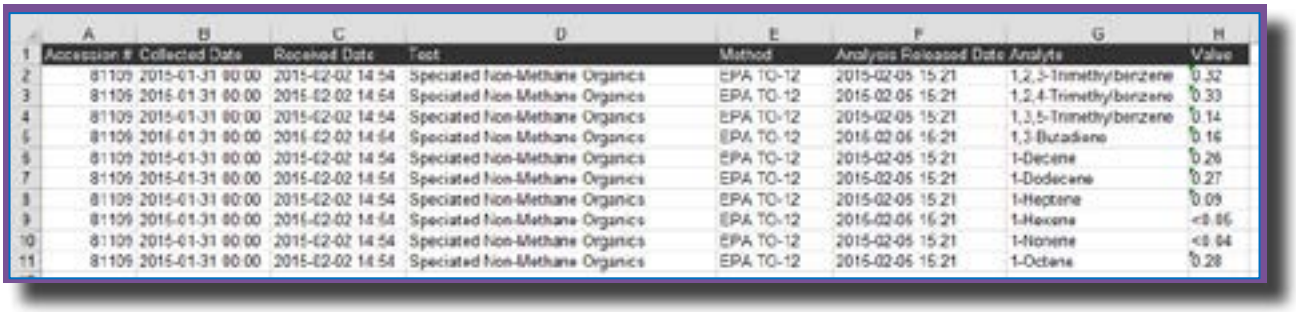


Figure 5 Selecting Fields to Output to Your Spreadsheet



	A	B	C	D	E	F	G	H
1	Accession #	Collected Date	Received Date	Test	Method	Analysis Released Date	Analyte	Value
2	81109	2015-01-31 00:00	2015-02-02 14:54	Speciated Non-Methane Organics	EPA TO-12	2015-02-05 15:21	1,2,3-Trimethylbenzene	0.32
3	81109	2015-01-31 00:00	2015-02-02 14:54	Speciated Non-Methane Organics	EPA TO-12	2015-02-05 15:21	1,2,4-Trimethylbenzene	0.33
4	81109	2015-01-31 00:00	2015-02-02 14:54	Speciated Non-Methane Organics	EPA TO-12	2015-02-05 15:21	1,3,5-Trimethylbenzene	0.14
5	81109	2015-01-31 00:00	2015-02-02 14:54	Speciated Non-Methane Organics	EPA TO-12	2015-02-06 16:21	1,3-Butadiene	0.16
6	81109	2015-01-31 00:00	2015-02-02 14:54	Speciated Non-Methane Organics	EPA TO-12	2015-02-05 15:21	1-Decene	0.26
7	81109	2015-01-31 00:00	2015-02-02 14:54	Speciated Non-Methane Organics	EPA TO-12	2015-02-05 15:21	1-Dodecene	0.27
8	81109	2015-01-31 00:00	2015-02-02 14:54	Speciated Non-Methane Organics	EPA TO-12	2015-02-05 15:21	1-Heptene	0.09
9	81109	2015-01-31 00:00	2015-02-02 14:54	Speciated Non-Methane Organics	EPA TO-12	2015-02-06 16:21	1-Hexene	<0.05
10	81109	2015-01-31 00:00	2015-02-02 14:54	Speciated Non-Methane Organics	EPA TO-12	2015-02-05 15:21	1-Nonene	<0.04
11	81109	2015-01-31 00:00	2015-02-02 14:54	Speciated Non-Methane Organics	EPA TO-12	2015-02-05 15:21	1-Octene	0.28

Figure 6 Spreadsheet View

Disclaimer

Results from the **Spreadsheet View** represent analytical values as of the date they are generated. Future revisions may affect these results and official final results should be reviewed from the **Final Report** option to assure their accuracy.

Test Status

- The Test Status option will display the status of each test that is being performed on your samples. The Collected Date, Received Date, Client Reference, and any QA Events will also be shown. Click on the **Test Status** icon.
- The first step is to search for your desired samples. The Test Status search screen works the same way as the one for final reports. See **Searching for Your Final Reports** for suggestions on how to conduct a search.
- After entering your search information, click the **Find Samples** button. The **Reset** button clears all of the search fields.
- A list of samples matching your search criteria will be displayed. (See Figure 7.)
- The following are descriptions of each column on this screen.

Accession #: The lab number assigned to the sample by the laboratory.

Sample/Test Description: The Sample Description is displayed in the first row for each Accession #. The patient's name is usually displayed for clinical samples. The collector's name is usually displayed for environmental, safe drinking water, and private well samples. The type of animal is displayed for animal samples (e.g., rabies testing). The Test Descriptions are displayed in the remaining rows for each Accession #. There may be a footnote at the end of a Sample or Test Description which is explained in the QA Event column. If a footnote is after the Sample Description, it applies to the entire sample. If a footnote is after a Test Description, it applies to only that test.

Test Status: The test's status is shown here. "In Progress" tests have not been finished. "Completed" tests have finished testing and their results are available on the Final Report or through the Spreadsheet View.

Collected Date: The date and time that the sample was collected. All dates and times have the format of YYYY-MM-DD HH:MM.

Date Received: The date and time that the sample was received at the laboratory. All dates and times have the format of YYYY-MM-DD HH:MM.

Client Reference: This value is a piece of information that your organization provided on the sample paperwork. It could be your organization's lab number, a patient ID/Chart ID/Medical Record Number or another unique identifier for a sample.

QA Event: Any quality assurance issue that applies to your entire sample or an individual test is displayed in this column.

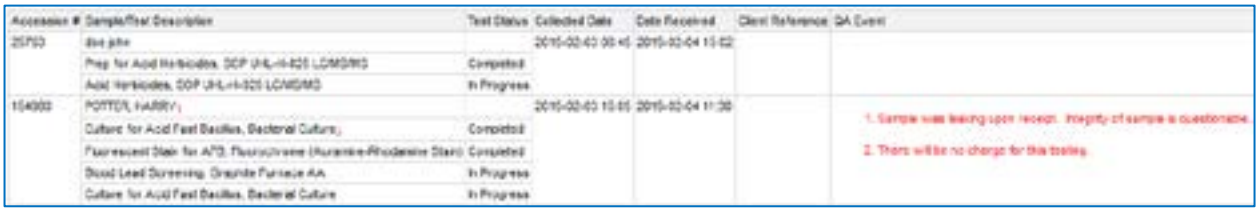


Figure 7 Test Status Listing

Email Notification

- The laboratory can send an email to specified email addresses whenever a new sample is received or when a result is available. You can choose whether the notification emails are sent for either or both types of events. Click on the **Email Notification** icon.
- You can also add a filter so that you will only receive email notifications from the laboratory that match that filter. This allows the user to only receive email notifications for samples that she collects, where she is the provider, or that have a specific Client Reference.

To Add Your Email Address (See Figure 8.)

- Click on the **Add** button to enter a new email address.
- Select your organization from the dropdown list in the **Organization** field.
- Enter your email address in the **Email** field.
- Check **Received** or **Released** or both to receive notifications for each type of event.

- Click the **Save Changes** button to complete the process.

To Add an Email Notification Filter (Optional) (See Figure 8.)

- If you wish to add an email notification filter, select the **Filter By** field (Client Reference, Collector, or Provider) by which you want to filter your email notifications.
- Enter the text that you want to match your filter in the **Filter Match** field. Examples include the last name of the collector or provider or a common word or number that is used in the Client Reference field of your samples.
- Click the **Save Changes** button to complete the process.

To Edit an Existing Email Address or Filter

- Click on any cell in the entry that you want to edit.
- Type in the new email address or filter information.
- Click the **Save Changes** button to complete the process.

To Remove an Email Notification

- Select the entry that you want to remove. Click the **Remove** button.

Figure 8 Signing Up for Email Notification

Changing Your Password

- You can click the **Change Password** button in the top right corner or go to https://www.shl.uiowa.edu/pwm/private/Login to change your password.
- Keep your new password secure. If you must write it down, be sure to keep it in a safe place.
- Your new password must meet the following requirements:
    - Password is case sensitive.
    - Must be at least 9 characters long.
    - Must be no more than 25 characters long.
    - Must not include any of the following values: test password
    - Must not include part of your name or username.
    - Must not include a common word or commonly used sequence of characters.
    - Must have at least three types of the following characters:
        - Uppercase (A-Z)
        - Lowercase (a-z)
        - Number (0-9)
        - Symbol (!, #, $, etc.)

Questions/Help

- Questions regarding the OpenELIS Web Portal may be directed to ask-shl@uiowa.edu or to 319/335-4358.

6.1 BOD (CBOD) REPORTS

Explanation of Report Trailers (in italics) Used to Qualify Results

A. Report Comment:

"BOD results for the individual dilutions used to analyze this sample indicate the presence of bacterial inhibitory material in the sample. Reported results may be lower than the true oxygen demand of the sample."

Explanation:
There was an analytical problem with this sample. The problem is related to the sample itself - not to collection or analytical procedures. We report the average of all results meeting SM 5210B criteria for DO depletion/remaining DO. Reported concentration is more an indicator of the order of magnitude of the BOD rather than an accurate measurement.

B. Report Comment:

"BOD dilution water showed depletion in excess of 0.2 mg/l DO. Reported results may be higher than the true oxygen demand. Estimated error is less than 20%."

Or

"Quality assurance duplicate analysis and/or glucose-glutamic acid reference check analyzed with this sample exceeded our control limits for precision and/or accuracy."

Explanation:

The above two data qualifiers are to alert you that there were problems encountered in the analysis of a group of samples. The problem may have been with a specific sample or may have affected the entire group. The dilution water qualifier is normally used if all blanks set up in one day are between 0.3 and 0.5 mg/l depletion.

Note: There are several other data qualifiers which may be used but they are self-explanatory. Two qualifiers relate to the actions taken to eliminate known interferences such as Chlorine and pH in the sample. The other relates to sample age.

SECTION 7

Appendices

APPENDIX I
Common Environmental Laboratory Acronyms

Acronym	Definition
µg/L	micrograms per liter *(= parts per billion (ppb))*
AA	Atomic Absorption *(for metals analyses)*
AIHA-LAP, LLC	American Industrial Hygiene Association - Laboratory Accreditation Programs
BNAs	Base Neutral Acids *(semivolatile compounds)*
BOD	Biochemical Oxygen Demand *(includes ammonia nitrification)*
BTEX	Benzene, Toluene, Ethyl Benzene, Xylene
CBOD	Carbonaceous Biological Oxygen Demand *(inhibits ammonia nitrification)*
COD	Chemical Oxygen Demand
CWA	Clean Water Act
ELIS	Environmental Laboratory Information System *(SHL's computer system)*
EPA	Environmental Protection Agency
FB	Field Blank
GC	Gas Chromatograph *(for organic analyses)*
GC/MS	Gas Chromatograph/Mass Spectrometer *(for organic analyses)*
GFAA	Graphite Furnace Atomic Absorption
GPC	Gel Permeation Cleanup
HAA	Haloacetic Acids
HAL	Health Advisory Level
HGA	Heated Graphite Atomizer *(for low level metals analyses)*
HPC	Heterotrophic Plate Count
HPLC	High Performance Liquid Chromatography
IC	Ion Chromatography
ICP	Inductively Coupled Plasma *(for metals analyses)*
ICP/AES	Inductively Coupled Plasma/Atomic Emission
ICP/MS	Inductively Coupled Plasma/Mass Spectrometer *(for metals analyses)*
ICR	Information Collection Rule
IOC	Inorganic Compound
LC	Liquid Chromatography
LC/MS/MS	Liquid Chromatography with Tandem Mass Spectrometer detection
LUST	Leaking Underground Storage Tank
MBAS	Detergents
MCL	Maximum Contaminant Level *(SDWA)*
MCLG	Maximum Contaminant Level Goal
MDL	Method Detection Limit
MF	Membrane Filter
mg/L	milligrams per liter *(= parts per million (ppm))*
MPN	Most Probable Number
MS	Matrix Spike
MSD	Matrix Spike Duplicate

Acronym	Definition
NELAC	National Environmental Laboratory Accreditation Conference
NPDES	National Pollutant Discharge Elimination System
NVLAP	National Voluntary Laboratory Accreditation Program
OVM	Organic Vapor Monitor
PAHs	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PLM	Polarized Light Microscopy
ppb	parts per billion *(= µg/L micrograms per liter)*
PPL	Priority Pollutant List
ppm	parts per million *(= mg/L milligrams per liter)*
QA/QC	Quality Assurance/Quality Control
Ra 226 & 228	Radium 226 & 228/Radium 228
RBCA	Risk Based Corrective Action
RCRA	Resource Conservation and Recovery Act
SDS	Safety Data Sheet
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SHL	State Hygienic Laboratory at the University of Iowa
SM	Standard Methods *(for examination of water and wastewater)*
SOC	Synthetic Organic Compound
SOP	Standard Operating Procedure
TB	Trip Blank
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
TDS	Total Dissolved Solids
TEM	Transmission Electron Microscopy
TEH	Total Extractable Hydrocarbons
THMs	Total Trihalomethanes
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TLV	Threshold Limit Value
TNI	The NELAC Institute
TOC	Total Organic Carbon
TRC	Total Residual Chlorine
TSS	Total Suspended Solids
TTO	Total Toxic Organic
UCMR	Unregulated Contaminant Monitoring Rule
UST	Underground Storage Tank
VOA	Volatile Organic Analysis
VOC	Volatile Organic Compound
WETT	Whole Effluent Toxicity Test
ZHE	Zero Headspace Extraction *(for TCLP volatiles analyses)*

APPENDIX II

From	Multiply by	To / From	Multiply by	To
Ca	2.497	Ca (as $CaCO_3$)	0.40	Ca
Ca	1.40	CaO	0.714	Ca
Mg	1.66	MgO	0.602	Mg
Mg	4.117	Mg (as $CaCO_3$)	0.243	Mg
Fe	1.43	Fe_2O_3	0.699	Fe
Fe	1.38	Fe_3O_4	0.725	Fe
Mn	1.58	MnO_2	0.633	Mn
Pb	1.15	PbO_2	0.870	Pb

Phosphate Conversions*				
	P	PO_4	P_2O_5	$Na_5P_3O_{10}$**
P	1	3.006	2.291	3.959
PO_4	0.326	1	0.747	1.291
P_2O_5	0.436	1.338	1	1.728
$Na_5P_3O_{10}$**	0.253	0.775	0.579	1

* To obtain Phosphate form in top horizontal row, multiply form in vertical column at left by the number in the square found at the intersection of the Phosphate forms, e.g., to determine phosphate as PO_4 if results are expressed as P, multiply P value by 3.006 to determine phosphate as PO_4.

** Common polyphosphate (triphosphate)

APPENDIX III

From	Multiply by	To / From	Multiply by	To
NO_3-N	4.426	NO_3	0.2259	NO_3-N
NO_3-N	1.00	NO_2-N	1.00	NO_3-N
NO_3-N	3.284	NO_2	0.3045	NO_3-N
NO_2-N	3.284	NO_2	0.3045	NO_2-N
NO_3	0.2259	NO_2-N	4.426	NO_3
NO_3	0.7420	NO_2	1.348	NO_3
NH_3-N	1.216	NH_3	0.8224	NH_3-N
NH_3-N	1.288	NH_4^+	0.7764	NH_3-N

NOMENCLATURE	MCL[1]
NO_3-N = nitrate as N or nitrate nitrogen	45 mg/L nitrate as NO_3
NO_2-N = nitrite as N or nitrite nitrogen	10 mg/L nitrate as N
NO_3 = nitrate as NO_3	
NO_2 = nitrite as NO_2	3.3 mg/L nitrite as NO_2
NH_3 = ammonia	1.0 mg/L nitrite as N
NH_4^+ = ammonium	
NH_3-N = ammonia nitrogen	

[1] Maximum Contaminant Limit set by EPA for drinking water.

APPENDIX IV

PREFIX	SYMBOL	POWER OF 10	MULTIPLICATION FACTOR
Yotta-	Y	10^{24}	1 000 000 000 000 000 000 000 000
Zetta-	Z	10^{21}	1 000 000 000 000 000 000 000
Exa-	E	10^{18}	1 000 000 000 000 000 000
Peta-	P	10^{15}	1 000 000 000 000 000
Tera-	T	10^{12}	1 000 000 000 000
Giga-	G	10^{9}	1 000 000 000
Mega-	M	10^{6}	1 000 000
myria-	my	10^{4}	10 000
kilo-	k	10^{3}	1000
hecto-	h	10^{2}	100
deka-	da	10^{1}	10
-	-	-	-
deci-	d	10^{-1}	0.1
centi-	c	10^{-2}	0.01
milli-	m	10^{-3}	0.001
micro-	μ	10^{-6}	0.000 001
nano-	n	10^{-9}	0.000 000 001
pico-	p	10^{-12}	0.000 000 000 001
femto-	f	10^{-15}	0.000 000 000 000 001
atto-	a	10^{-18}	0.000 000 000 000 000 001
zepto-	z	10^{-21}	0.000 000 000 000 000 000 001
yocto-	y	10^{-24}	0.000 000 000 000 000 000 000 001

APPENDIX V

Parts per million =	**ppm**		
	mg/L	µg/mL	ng/µL
	mg/kg	µg/g	ng/mg

Parts per billion =	**ppb**		
	µg/L	ng/mL	pg/µL
	µg/kg	ng/g	pg/mg

To convert:	**From**	**To**	**Multiply by**
	ppm	ppb	1000
	mg/L	µg/L	1000
	mg/kg	µg/kg	1000

To convert:	**From**	**To**	**Divide by**
	ppb	ppm	1000
	µg/L	mg/L	1000
	µg/kg	mg/kg	1000

Measurements:

Liter	L	1000 mL
Milliliter	mL	1 mL
Microliter	µL	0.001 mL
Kilogram	kg	1000 g
Gram	g	1 g
Milligram	mg	0.001 g
Microgram	µg	0.000001 g
Nanogram	ng	0.000000001 g
Picogram	pg	0.000000000001 g

Parts per Million 1 second in approximately 11½ days
Parts per Billion 1 second in approximately 31.7 years

SECTION 8

Quick Guides

FISH KILL

Sampling Scenario	Analytes	Sample Bottle (Water)	Sample Bottle (Soil)	Special Notes
FISH KILL-MANURE	**Ammonia**	**#2** - 8 oz. plastic with Sulfuric acid	**#9** - 8 oz. plastic unpreserved	
	BOD	**#1** - 1 L plastic ***(BOD needs its own bottle)***		
	E. coli	**#32 or #81** - 4 or 5 oz. IDEXX plastic	**#62** - 4 oz. plastic specimen cup	
FISH KILL-PESTICIDES	**Acid Herbicides**	**#35** - 1 L amber glass with Sodium thiosulfate	**#17** - 500 mL glass	The number of containers for herbicides and/or insecticides analysis will depend on chemicals needed.
	Nitrogen Containing Herbicides	**#18** - 1 L amber glass	**#17** - 500 mL glass	
	Chlorinated Hydrocarbon Insecticides	**#18** - 1 L amber glass	**#17** - 500 mL glass	
	Miscellaneous Pesticides and Other Tests	**Contact SHL**	**Contact SHL**	
FISH KILL-PETROLEUM	**BTEX by OA-1 or 8260**	**#45** - 3 (40 mL) vials with HCl	**#46** - 4 oz. glass jar	Must have separate container for each test (one for BTEX and one for TEH)
	Total Extractable Hydrocarbons (TEH)	**#18** - 1 L amber glass	**#46** - 4 oz. glass jar **#17** - 500 mL glass (alternate)	

SPILL

Sampling Scenario	Analytes	Sample Bottle (Water)	Sample Bottle (Soil)	Special Notes
SPILL-ETHANOL	**Ethanol**	**#13** - 3 (40 mL) vials non-preserved	**#13** - 3 (40 mL) vials non-preserved OR **#46** - 4 oz. glass jar	
SPILL-MANURE	**Ammonia**	**#2** - 8 oz. plastic with Sulfuric Acid	**#9** - 8 oz. plastic unpreserved	
	BOD	**#1** - 1 L plastic ***(BOD needs its own bottle)***		
	E. coli	**#32 or #81** - 4 or 5 oz. IDEXX plastic	**#62** - 4 oz. plastic specimen cup	
SPILL-PETROLEUM	**BTEX plus MTBE by OA-1**	**#45** - 3 (40 mL) vials with HCl	**#46** - 4 oz. glass jar	Must have separate container for each test (one for BTEX and one for TEH)
	Total Extractable Hydrocarbons (TEH) by OA-2	**#18** - 1 L amber glass	**#46** - 4 oz. glass jar **#17** - 500 mL glass (alternate)	
SPILL-UNKNOWN *DEPENDS ON SITUATION. RECOMMEND CALLING LAB FOR BOTTLE INFORMATION.* **CLIENT SERVICES 1-800-421-4692**	**BOD**	**#1** - 1 L plastic ***(BOD needs its own bottle)***		
	E. coli	**#32 or #81** - 4 or 5 oz. IDEXX plastic	**#62** - 4 oz. plastic specimen cup	
	GC/MS Volatiles	**#45** - 3 (40 mL) vials with HCl	**#46** - 4 oz. glass jar	
	GC/MS Semivolatiles (Extractables)	**#18** - 1 L amber glass	**#17** - 500 mL glass	
	Acid Herbicides	**#35** - 1 L amber glass with Sodium thiosulfate	**#17** - 500 mL glass	
	Nitrogen Containing Herbicides	**#18** - 1 L amber glass	**#17** - 500 mL glass	
	Chlorinated Hydrocarbon Insecticides	**#18** - 1 L amber glass	**#17** - 500 mL glass	
	Miscellaneous Pesticides and Other Tests	**Contact SHL**	**Contact SHL**	
	Metals	**#7** - 16 oz. plastic with Nitric acid	**#17** - 500 mL glass	
	TSS	**#1** - 1 L plastic		
	Ammonia	**#2** - 8 oz. plastic with Sulfuric acid	**#9** - 8 oz. plastic unpreserved	

WATER

Sampling Scenario	Analytes	Sample Bottle (Water)	Sample Bottle (Soil)	Special Notes
Water-Private Well	**Private Well Bacteria Only**	**#32 or #81** - 4 or 5 oz. IDEXX plastic		
	Bacteria/Nitrate-Private Well Chlorinated/Non-Chlorinated	**Private Well Kit** with 2 IDEXX plastic bottles*		*One preserved, one non-preserved
Water-SDWA	**SDWA Bacteria Only**	**#81** - 150 mL clear IDEXX with Sodium thiosulfate		
	SDWA Regulated VOCs	**#15** - 3 (40 mL) vials with HCI		
	SDWA Regulated IOCs	**#7** - 16 oz. plastic with Nitric acid **#24** - 2 oz. plastic unpreserved		
	SDWA Regulated SOCs A/S #3	**#35** - 1 L amber glass with Sodium thiosulfate		
	SDWA Regulated SOCs A/S #4, #6	**#18** - 1 L amber glass		
	SDWA Regulated SOCs A/S #8	**#31** - 120 mL Amber glass		
	SDWA Regulated SOCs A/S #9	**#39** - 1 L Amber glass		
	SDWA Gross Alpha (including Uranium) and/or Radium 226 & 228	**#22** - gallon plastic jug		
	SDWA Gross Alpha (excluding Uranium and Radium)	**#22** - gallon plastic jug		
	Water Quality Parameters*	**#1** - 2 (1 L) plastic bottles **#2** - 8 oz. plastic with Sulfuric acid **#9** - 8 oz. plastic unpreserved		*Use primarily for new wells.
Wastewater/ Bypass	***E. coli***	**#32 or #81** - 4 or 5 oz. IDEXX plastic		
	Ammonia and/or TKN	**#2** - 8 oz. plastic with Sulfuric acid		
	BOD	**#1** - 1 L plastic ***(BOD needs its own bottle)***		
	TSS	**#1** - 1 L plastic		
	Pharmaceuticals-Caffeine*	**#18** - 1 L glass		*GLOVES REQUIRED! If chlorinated use #35 - 1 L amber glass with Sodium thiosulfate

STATE HYGIENIC LABORATORY
AT THE UNIVERSITY OF IOWA

Environmental Sampling Bottle Guide

BOTTLE # 1 Qt. Plastic (unpreserved)	**BOTTLE # 15** 3-40 ml Clear Glass Vial (ascorbic acid) Trip blank + HCl dropper bottle	**BOTTLE # 31** 120 ml Amber Glass w/ Black Cap (0.5 ml sodium thiosulfate)	**BOTTLE # 61** 7-4 oz. Plastic Specimen Containers w/Screw Cap + Labeled Wire Enclosure Bags
BOTTLE # 2 8 oz. Plastic (1ml 1:1 sulfuric acid)	**BOTTLE # 17** Pint Clear Glass (unpreserved)	**BOTTLE # 32** 4 oz. Plastic IDEXX (sodium thiosulfate powder)	**BOTTLE # 62** 4 oz. Plastic Specimen Container w/Screw Cap + Wire Enclosure Bag
BOTTLE # 3 Qt. Clear Glass (10 ml 1:1 sulfuric acid)	**BOTTLE # 18** Qt. Amber Glass (unpreserved)	**BOTTLE # 34** 500 ml Plastic (unpreserved)	**BOTTLE # 64** 500 ml Nalgene (phytoplankton) Lugols/Formaldehyde)
BOTTLE # 4 500 ml Plastic (4-6 pellets sodium hydroxide)	**BOTTLE # 19** 120 cc Amber Glass w/Green Cap (baked, unpreserved)	**BOTTLE # 35** Qt. Amber Glass (1 ml sodium thiosulfate)	**BOTTLE # 70** 250 cc Plastic w/ preservative (EDTA)
BOTTLE # 5 Qt. Amber Glass (4 ml 1:1 sulfuric acid)	**BOTTLE # 20** 4 oz. Plastic IDEXX (unpreserved, labeled)	**BOTTLE # 37** 125 cc (4 oz.) Plastic (unpreserved)	**BOTTLE # 74** 8 oz. Plastic (1 ml Hydrochloric acid for TOC)
BOTTLE # 6 3-40 ml Amber Glass Vials (ascorbic acid) Trip blank + HCl dropper bottle	**BOTTLE # 21** 1-4 oz. Plastic IDEXX (unpreserved) 1-4 oz. Plastic IDEXX (preserved)	**BOTTLE # 39** Qt. Amber Plastic (1 ml sodium thiosulfate)	**BOTTLE # 81** 5 oz IDEXX Plastic Bacterial Water Collection Kit (sodium thiosulfate)
BOTTLE # 7 Pint Plastic (4 ml 1:1 nitric acid)	**BOTTLE # 22** Gallon Plastic (unpreserved)	**BOTTLE # 45** 3-40 ml Clear Glass Vials (hydrochloric acid + Trip blank)	**BOTTLE # 86** 1 Qt Plastic (sodium hydroxide/ammonium sulfate)
BOTTLE # 8 Qt. Clear Glass (2 ml zinc acetate) (6-8 pellets sodium hydroxide)	**BOTTLE # 24** 2 oz. Plastic (unpreserved)	**BOTTLE # 46** 4 oz. Clear Glass w/Septa Cap (unpreserved)	**BOTTLE # 87** 4 oz Amber Glass w/ Septa Cap (ammonium chloride)
BOTTLE # 9 8 oz. Plastic (unpreserved)	**BOTTLE # 26** Qt. Plastic (nitric acid rinsed)	**BOTTLE # 49** Liter Nalgene (4 ml sodium thiosulfate)	
BOTTLE # 11 Clear Pint Glass (2 ml 1:1 sulfuric acid)	**BOTTLE # 27** 2-40 ml Clear Glass Vials (unpreserved)	**BOTTLE # 51** 500 ml Nalgene (2 ml sodium thiosulfate)	
BOTTLE # 13 3-40 ml Clear Glass Vials (unpreserved) Trip blank	**BOTTLE # 29** 4 oz. Plastic (1 ml 1:1 nitric acid)	**BOTTLE # 52** 2-125 ml Amber Glass w/Septa Cap (unpreserved)	
BOTTLE # 14 1-40 ml amber glass vial (unpreserved)	**BOTTLE # 30** 120 ml Amber Glass w/ Green Cap (0.5 ml sodium thiosulfate + 3.6 ml buffer-lab)	**BOTTLE # 58** 125 cc Plastic Preserved (140 microliters of 5% EDTA)	

STATE HYGIENIC LABORATORY
Iowa's Environmental and Public Health Laboratory

CORALVILLE
UI Research Park, 2490 Crosspark Rd., Coralville, IA 52241
319-335-4500 or 800-421-IOWA

ANKENY
Iowa Laboratories Facility, 2220 S. Ankeny Blvd., Ankeny, IA 50023
515-725-1600

MILFORD
Iowa Lakeside Labs, 1838 Highway 86, Milford, IA 51351
712-337-3669

www.shl.uiowa.edu

ANKENY

Bottle #	Lab	Matrix	Type & Quantity	Chemical Parameter	Holding Time	Quant Limit	Preservation	Directions
#1	Ankeny	Water	Quart Plastic	BOD	48 hrs.	2 mg/L	Cool to 4° C	Fill to shoulder
				CBOD	48 hrs.	2 mg/L	Cool to 4° C	
				Fluoride, Total	28 days	0.1 mg/L	None	
				TSS only	7 days	1 mg/L for 10000 mL	Cool to 4° C	
				Solids: Dissolved, Suspended, Total, Volatile	7 days	1 mg/L for 10000 mL	Cool to 4° C	
				Surfactants	48 hrs.	0.1 mg/L	Cool to 4° C	
#2	Ankeny	Water	8 oz. plastic w/ Sulfuric acid	Ammonia	28 days	0.05 mg/L	Cool to 4° C H_2SO_4 to pH<2	Fill to shoulder
				COD	28 days	2 mg/L	Cool to 4° C H_2SO_4 to pH<2	
				Total Kjeldahl Nitrogen	28 days	0.05 mg/L	Cool to 4° C H_2SO_4 to pH<2	
				Nitrate + Nitrite as Nitrate	28 days	0.1 mg/L	Cool to 4° C H_2SO_4 to pH<2	
				Total Phosphorus	TP (28 days)	0.05 mg/L	Cool to 4° C H_2SO_4 to pH<2	
#4	Ankeny	Water	500 ml 4-6 pellets NaOH	Cyanide, Cyanide amendable to chlorination	14 days	0.01 mg/L	Cool to 4° C 4-6 pellets NaOH	Fill to shoulder
#5	Ankeny	Water	Glass quart	Phenols, Total	28 days	50 µg/L	Cool to 4° C H_2SO_4 to pH<2	Fill to shoulder
#7	Ankeny	Water	Plastic pint with nitric acid	Metals See Test Menu Section	28 days to 6 months	See Test Menu Section	4 ml 1:1 Nitric Acid	Fill to shoulder
#9	Ankeny	Water/ soil	8 oz. plastic	Nitrate (NO_3-N) Nitrite (NO_2-N)	48 hrs.	0.1 mg/L 0.02 mg/L	Cool to 4° C	Fill to shoulder
	Ankeny	Water		P-PO4, Ortho P	48 hrs.	0.05 mg/L	Cool to 4° C	

Bottle #	Lab	Matrix	Type & Quantity	Chemical Parameter	Holding Time	Quant Limit	Preservation	Directions
#10	Ankeny	Water	Half-gallon plastic	Settleable matter	48 hrs.	0.1 mg/L with 1 L sample	Cool to 4° C	Fill to shoulder
				pH	***FIELD ANALYSIS ONLY***			
#32 or #81	Ankeny/ Coralville	Water	IDEXX 4 or 5 oz. plastic	Total Coliform Fecal Coliform *E. coli*	30 hrs.	Presence/ Absence & Quantity (1/100 mL)	sodium thiosulfate Cool to 4° C	Fill to shoulder or 120 ml line

CORALVILLE

#3	Coralville	Water	Amber Quart glass	Oil & Grease	14 days	5 mg/L	Cool to 4° C 10 ml 1:1 H_2SO_4	Fill to shoulder
#6	Coralville	Water	3 vials w/ ascorbic powder ----- SDWA Total THM	Chloroform Bromodichloromethane Dibromochloromethane Bromoform Total Trihalomethanes	14 days	1.0 µg/L 4.0 µg/L for Total Trihalomethanes	Cool to 4° C Ascorbic Acid + 3 drops HCL	Fill 3 empty vials to top-No Airspace-Add 3 drops 1:1 HCL to all vials including trip
#15	Coralville	Water	3 vials w/ ascorbic powder	VOC's (SDWA)	14 days	<0.5 µg/L to <1 µg/L	Cool to 4° C Ascorbic Acid + 3 drops HCL	Fill 3 empty vials to top-No Airspace-Add 3 drops 1:1 HCL to all vials including trip

8.2 SAMPLE BOTTLE SUMMARY (3 OF 3)

Bottle #	Lab	Matrix	Type & Quantity	Chemical Parameter	Holding Time	Quant Limit	Preservation	Directions
#17	Coralville	Soil/ Sludge	Pint glass	Metals	6 mos.	See Test Menu Section	Cool to 4° C	Fill to shoulder
			Pint glass	Total Extractable Hydrocarbons (TEH)	14 days	3 mg/kg	None	Fill to shoulder
#18	Coralville	Water	Quart glass	Total Extractable Hydrocarbons (TEH)	7 days	100 µg/L	Cool to 4° C	Fill to shoulder
				Pest Residues	7-14 days	0.05-0.5 µg/L	Cool to 4° C No Light	Fill to shoulder
#19	Coralville	Water	1 120 cc glass	Ethylene Glycol Propylene Glycol	14 days	500 µg/L	Cool to 4° C unpreserved	Fill to top
#35	Coralville	Water	SDWA SOC (A/S #1, 3)	Pest Residue	14 days	<0.00005-0.0005 mg/L	Cool to 4° C	Source chlorinated use Sodium thiosulfate
#45	Coralville	Water	3 vials w/ HCL	**BTEX** Benzene Ethylbenzene Toluene Total Xylenes MtBE Gasoline	7 days not preserved <2 pH ----- 14 days preserved <2 pH	2 µg/L 2 µg/L 2 µg/L 5 µg/L 2 µg/L 100 µg/L	Cool to 4° C prepreserved HCL	Fill to top (preserved) No Airspace
#46	Coralville	Soil/ Sludge	Glass Jar 4 oz.	**BTEX** Benzene Ethylbenzene Toluene Total Xylenes MtBE Gasoline	7 days	0.002 mg/kg 0.002 mg/kg 0.002 mg/kg 0.005 mg/kg 0.002 mg/kg 0.0010 mg/kg	Cool to 4° C	Fill to shoulder
#87	Coralville	Water	25 mL glass vial w/ ammonium chloride granules ----- SDWA Total HAA	**HAA** Chloroacetic acid Bromoacetic acid Dichloroacetic acid Dibromoacetic acid Total Haloacetic Acids (HAA5)	14 days	0.002 mg/L 0.001 mg/L 0.001 mg/L 0.001 mg/L 0.001 mg/L 0.006 mg/L	Cool to 4° C prepreserved ammonium chloride	Fill 3 empty vials to top No Airspace

8.3 RUSH OPTIONS & TYPICAL TURNAROUND TIMES

Rush Analyses Requests

Rush analysis MUST be approved by the laboratory PRIOR to sample submission. A Rush surcharge is added to the fee if a Rush turnaround time is requested. Rush surcharges range from 50% - 200% of the fee depending on the analysis requested and the rush turnaround time requested. Samples are registered into our laboratory information system with a Rush sample status upon receipt at the laboratory.

Turnaround Time (TAT)

The Turnaround Time (TAT) refers to the typical time period from sample receipt (with sample request form) at the laboratory to analyses completion and available report. Standard turnaround times are based on analyses performed during normal business hours/weeks (Monday - Friday).

Sample Turnaround Time (TAT) & Surcharges

Sample TAT Option	**Priority 3 (Standard) TAT**			**Priority 1 (Rush)*,** TAT**		**Emergency (Rush)*,** TAT**	
Sample Type	Drinking Water	Non-potable Water & Solid Materials	Program Code PB	Drinking Water	Non-potable Water & Solid Materials	Drinking Water	Non-potable Water & Solid Materials
General Chemistry & Water Microbiology							
Bacteriology Only	3 days	7 days	14 days	n/a	7 days	18 or 24 hours	72 hours
General Chemistry	30 days	21 days	14 days	7 days	7 days	72 hours	72 hours
Nitrates	14 days	n/a	n/a	1 day	n/a	n/a	n/a
Metals	30 days	14 days	14 days	5 days	7 days	48 hours	72 hours
Organics							
Volatiles	14 days	14 days	14 days	14 days	14 days	24 hours	24 hours
Non-Volatiles	14 days	14 days	14 days	14 days	14 days	48-72 hours	72 hours
Radiation* **							
Enviro Monitoring	60 days	25 days	n/a	7 days	7 days	72 hours	72 hours
Drinking Water	60 days	n/a	n/a	7 days	n/a	72 hours	n/a
Radon	30 days	n/a	n/a	7 days	n/a	48 hours	n/a
Additional Surcharge (%) Business Hours Sample accepted and analyzed **during** normal business hours Mon-Fri	n/a	n/a	n/a	+50%	+50%	**+150%**	**+150%**
Additional Surcharge (%) Non-business Hours Sample accepted and analyzed **after** normal business hours Sun-Sat	n/a	n/a	n/a	+50%	+50%	**+200%**	**+200%**
Sample Results/Reports	**Standard sample results** are either mailed hard copy, faxed or accessed online via our web reporting portal (WebAccess).			**Per the client's request, Priority 1 and Emergency sample results** can be phoned, faxed, or emailed as soon as the analyses are complete.			

*** Radiation analytical times may be longer, depending on the tests requested.

NOTE:

Report times will be 5 days plus the above listed analytical times. Report times for samples for a special project will be determined when negotiating the terms of the special project.

Samples with unusual or difficult matrices or special samples may need extra time for analysis; report times will be discussed with the client.

Contracts may contain different analytical schedules and priority options. The schedules defined in the contracts take precedence over the above information.

8.4 TRIP BLANK POLICY

What are trip blanks?

A trip blank consists of a sample container or set of containers filled at the laboratory with water demonstrated to be target analyte free. The trip blank travels to the sampling site with the empty sample containers and returns from the site with the full sample containers.

Why are trip blanks used?

By duplicating the handling, environment and storage that the sample containers undergo, trip blanks are used to measure possible contamination of samples. Trip blanks are typically analyzed for volatile organic compounds but may be used for other analyses such as PFCs.

How are trip blanks used?

Trip blanks should not be opened in the field. They must return to the laboratory with the set of containers they accompanied into the field.

Trip blanks should be submitted to the laboratory in the same manner as routine samples. They are to be listed on the same Laboratory Request Form as the samples they are associated with. All trip blank containers should be uniquely identified. Uniquely identified trip blanks are samples that can only be linked to a single sample point on a single Laboratory Request Form. **Note: Collection date and time are not unique identifiers per MDH Sample Acceptance Policy.** The date and time for the trip blanks should be filled in using the collection date and time of the first sample the trip blanks are associated with.

When do the trip blanks expire?

All trip blank containers should have an expiration date on the label provided by MDH. All associated samples must be collected prior to the trip blank expiration date.

What are some examples of properly labeled trip blank containers?