Sampling and Reporting for Sampler 1 and 2 Certification

Peter T Nathanson, Manager
SWIG Technical Services
New Mexico Environment Department
Drinking Water Bureau
505.222.9509
peter.nathanson@state.nm.us

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Chapter 1

Introduction to Drinking Water Sampling

Introduction to Drinking Water Sampling

- New Mexico Water Sampling Technician Certification
- New Mexico Water Conservation Fee
- Analyses That Are Covered By The Fee
- Sample Siting Plans and Components

New Mexico Water Sampling Technician Certification

Became Effective January 1, 2008:

In order to perform the various types of water sampling at public water supply systems the following levels of certification shall be required:

Type of Water Sampling	Population Served				
	25 to 500	501 to 5,000	5,001 to 10,000	10,001 to 20,000	20,000+
Microbiology (WST1)	SW or WST1	WST1	WST1	WST1	WST1
Chemical and Radiological (WST2)	WST2	WST2	WST2	WST2	WST2

New Mexico Water Sampling Technician Certification Requirements

Water Systems Operator certification can be substituted

OPERATOR CERTIFICATION LEVEL	INCLUDES THESE CERTIFICATIONS
SW	WST1
SWA	WST1
WS1	WST1
WS2	WST1, WST2
WS3	WST1, WST2
WS4	WST1, WST2

New Mexico Water Sampling Technician Certification Requirements

- DWB will now only collect source and entry point samples
- Water system now responsible for all distribution system samples: bacteriological, chlorine residual, lead, copper, DBPs – TTHMs & HAA5s, asbestos & turbidity (if GWUDI or surface water source)
- Labs have been instructed to reject any samples NOT collected by certified sampler or operator

New Mexico Water Sampling Technician Certification Requirements

Water Sample Technician 1 requires:

- High school diploma or GED
- 5 training credits
  - Renewal—5 training credits

Water Sample Technician 2 requires:

- High school diploma or GED
- 10 training credits
  - Renewal—10 training credits

New Mexico Water Conservation Fee

Water Conservation Fee Act (74-1-13 NMSA) requires that public water systems pay $0.03 per thousand gallons water pumped

This fee funds the following:

- Compliance sample collection and testing

New Mexico Water Conservation Fee

- The Water Conservation Fee *DOES NOT* include:
  - Repeat microbiological sample analyses
  - Special non-compliance microbiological samples
  - Lead and Copper sample collection
  - Secondary contaminant sampling and testing
  - Any non-compliance chemical testing
  - Sampling and testing for Tribal or Federal Water Systems

DISTRIBUTION SYSTEM SAMPLE PLANS (DSSP)

Compliance Sampling Sites

- Compliance sampling will either occur at:
  - Entry Point (EP) —Point where treated water enters the distribution system; regulatorily defined
  - Point-of-Use (POU)—Location where water is drawn directly from customers' plumbing fixtures

DSSPs

The DSSP shall, at a minimum, include the following:

- A written description of the system
- A map of the water supply system showing the general layout of the system
- A written description of the sampling sites to be used
- The name of the laboratory(s) to be used

Plan must be reviewed and approved by NMED-DWB; instructions & DSSP template available from: https://www.env.nm.gov/dwb/RTCR.htm

DSSPs

Systems need to have a DSSP for at least the following:

- Microbiological Sampling
- Disinfectants and Disinfection By-products
- Lead and Copper
- Asbestos

NMED-DWB should have a copy of the DSSP on file

The Microbiological portion of the DSSP will be reviewed based on the following criteria:

A. At least one sampling site shall be chosen for each major portion and each isolated portion of the distribution system

A. All sampling sites chosen should be sampled at least every four months

A. Site alternatives may be accepted within five connections up or down from the designated site

A. Public water systems, which collect six or more samples per month, shall collect them at regular time intervals throughout the month

Chapter 2

Safe Drinking Water Act

Safe Drinking Water Act

- Public Water Systems
- Primary Contaminants
- Maximum Contaminant Levels (MCL)
- Inorganic Contaminants
  - Lead and Copper Rule
  - Nitrate and Nitrite
  - Fluoride
  - Turbidity
- pH
- Dissolved Oxygen
- Temperature
- Organic Contaminants
- Radioactive Contaminants
- Bacteriological Contaminants
  - Bacteriological Violations
- Secondary Contaminants
- Monitoring and Reporting
- Sampling Schedules
- Public Notification
- Action Plans for Violations
- Variances and Exemptions
- Surface Water Rule
- Disinfectants and Disinfection By-Products Rule
- Ground Water Rule
- Consumer Confidence Reports

Safe Drinking Water Act (SDWA)

- SDWA passed by Congress in 1974

  Primary goal of the SDWA is to set health based standards for drinking water to protect against both man-made and naturally-occurring contaminants
- 1986 & 1996 Amendments
  - Requires additional protection of water sources- rivers, lakes, reservoirs, springs and groundwater wells

Public Water Systems

- "Public water system means a system for the provision to the public of water for human consumption through pipes or after August 5, 1998, other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year."

40 CFR 141.2 (4-16-07 edition)

A public water system is either a…

- **Community**—"a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents."
- **Non-Transient Non-Community**—"a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 months per year." (Examples: schools, senior centers, detention centers etc.)
- **Transient Non-Community**—"a non-community water system that does not regularly serve at least 25 of the same persons over six months per year." (Examples: rest stops, convenience centers, restaurants etc.)

Primary Contaminants

Certain substances and organisms in drinking water have been determined to cause adverse acute or chronic health effects. They are referred to as primary contaminants and are regulated by MCLs. These substances can be grouped into four major categories:

1) Inorganic Contaminants

2) Organic Contaminants

3) Radiological Contaminants

4) Microbiological Contaminants

1) Inorganic Contaminants

- These contaminants are mostly heavy metals (by RCRA definition), but also include other non carbon-based chemicals
  - 15 contaminants
    - Nitrate, Nitrite, Total Nitrate/Nitrite and Asbestos are exceptions to the Standard Monitoring Framework
  - They may enter the water supply naturally through groundwater formations or from mining runoff and industrial discharges

Inorganic Contaminant	**MCL (mg/L)**
Antimony	0.006
Arsenic	0.010
Barium	2
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Cyanide (as free Cyanide)	0.2
Mercury	0.002
Selenium	0.05
Thallium	0.002
Copper	*1.3* Action level*
Lead	*0.015* Action level*
Nitrate (as N) – Acute (chemical)	**10**
Nitrite (as N)	1
Total Nitrate/Nitrite (as N)	10
Fluoride	*2.0 Secondary MCLG* *4.0 Violation*
Turbidity – Acute (physical)	**0.3 NTU in 95% of samples** **1 NTU maximum**
Asbestos	7,000,000 Fibers/L

Lead and Copper

- Sampling must be conducted for lead and copper that may be present at the customer's tap. Most of the lead and copper found this way comes from the customer's plumbing

- The system will be responsible for treating the water to stabilize the corrosive qualities that cause the leaching of lead and copper from the customer's plumbing if the Action Levels are exceeded

Nitrate and Nitrite

- Nitrate and nitrite are the only chemical contaminants that represent an immediate health risk
  - Pregnant women and infants under 18 months can develop a condition known as “Blue Baby Syndrome” or methemoglobinemia

Fluoride

- Help prevent tooth decay
- The optimum dosage for fluoride is 0.8-1.2 mg/L. At higher concentrations fluoride can:
  - create stains on teeth in children and
  - leads to brittle bones in older individuals
- The optimum dosage for fluoride is determined by the average ambient air temperature of the system

Turbidity

- Turbidity is clay, silt or mud in the water.
  - Although turbidity does not represent a health risk by itself, it can shield harmful bacteria from disinfection processes.
- Turbidity is measured in Nephelometric Turbidity Units (NTU).
- The device used to measure NTU's is called a nephelometer or turbidimeter.

Inorganic Contaminants continued

- The following 3 physical parameters – pH, DO, temperature typically do not create adverse health effects though they can contribute to them

- They are used to evaluate water quality or are used for process control

pH – Power of Hydrogen

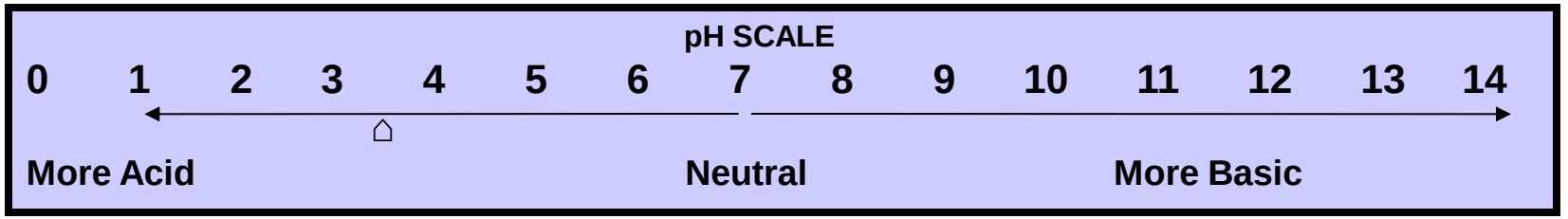
- pH is the measurement of the hydrogen ion, H+ or acid concentration of a fluid.
  - Water is considered to be acidic when it has more hydrogen ions (H+) than hydroxide ions (OH-)
  - Water is considered to be basic when there are more hydroxide ions (OH-) than hydrogen (H+)
    - Chemicals that add hydrogen ions (H+) are:

      hydrochloric acid, (HCl), sulfuric acid, (H_2SO_4), nitric acid, (HNO_3), and carbonic acid, ($H_2\ CO_3$)
    - Chemicals that add hydroxide ions (OH-) are:

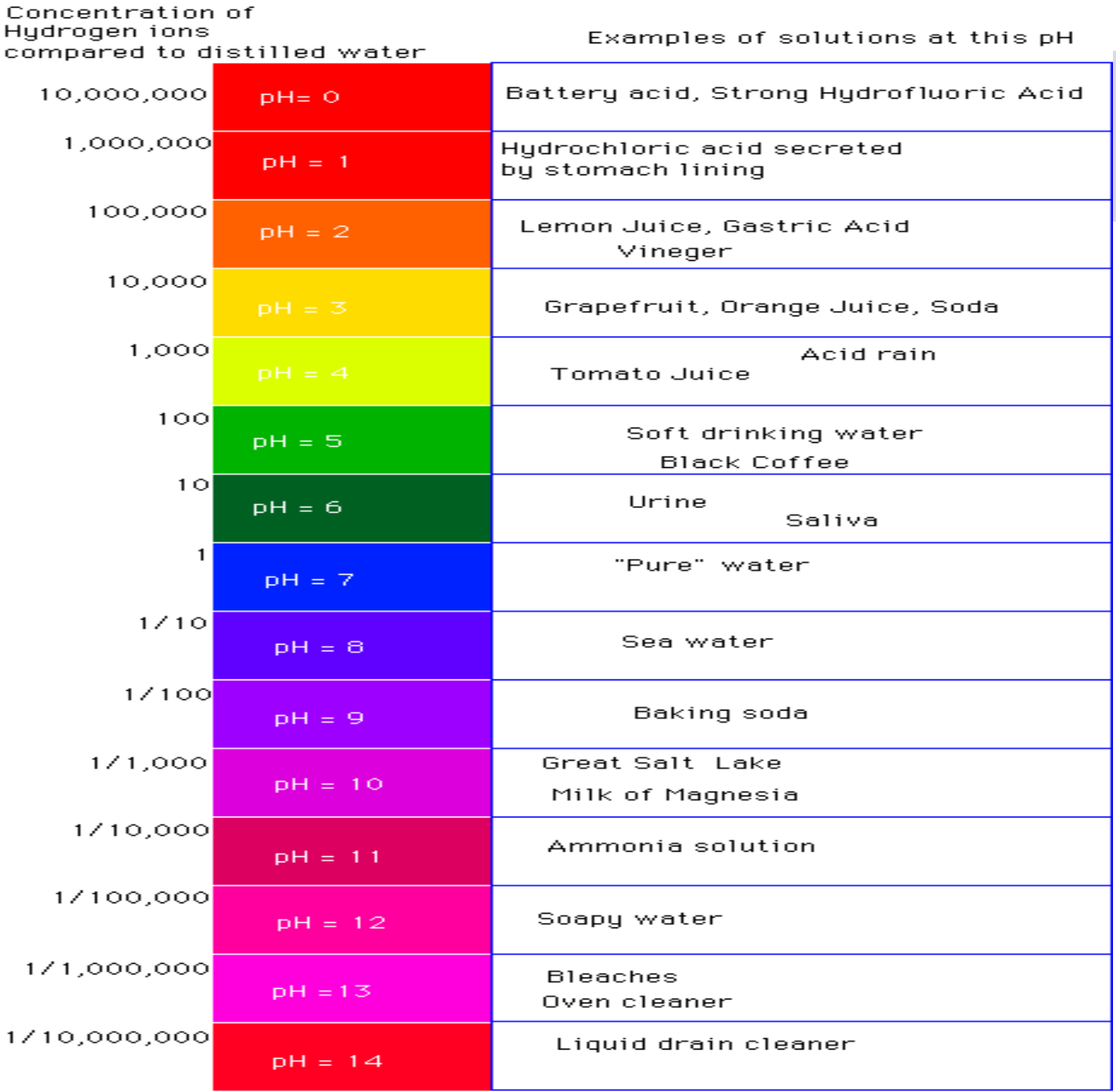
      sodium hydroxide, (NaOH), calcium hydroxide, ($Ca(OH)_2$), and magnesium hydroxide, ($Mg(OH)_2$)

pH – Power of Hydrogen

The pH of water is measured on a scale that reads from 0 to 14, where 7 is neutral



- For every whole number that the pH changes the strength of the acid or base properties of the fluid will change by a factor of ten
  - pH of 9 to a pH of 10 becomes 10 times more basic
  - pH of 5 is 10 times more acid than water at a pH of 6


Concentration of Hydrogen ions compared to distilled water
Examples of solutions at this pH
10,000,000
pH= 0
Battery acid, Strong Hydrofluoric Acid
1,000,000
pH = 1
Hydrochloric acid secreted by stomach lining
100,000
pH = 2
Lemon Juice, Gastric Acid
Vineger
10,000
pH = 3
Grapefruit, Orange Juice, Soda
1,000
pH = 4
Acid rain
Tomato Juice
100
pH = 5
Soft drinking water
Black Coffee
10
pH = 6
Urine
Saliva
1
pH = 7
"Pure" water
1/10
pH = 8
Sea water
1/100
pH = 9
Baking soda
1/1,000
pH = 10
Great Salt Lake
Milk of Magnesia
1/10,000
pH = 11
Ammonia solution
1/100,000
pH = 12
Soapy water
1/1,000,000
pH =13
Bleaches
Oven cleaner
1/10,000,000
pH = 14
Liquid drain cleaner

Dissolved Oxygen, DO

- DO determines the oxygen level in potable and non-potable waters

Sample Measurement

- The DO should be measured at a representative point
  - Remember…DO is a gas and is affected by turbulence and temperature
    - Measuring DO at a point of high turbulence will not be representative
    - Likewise, measuring DO in shallow or quiet areas of a river will be different than in deeper and faster moving areas
  - A sampling plan will help define what information is needed and where the most appropriate location will be

Temperature

- Accurate temperature measurements are critical to many of the tests that are performed in the laboratory and out in the field.
- Measurements should be made with a good mercury thermometer or digital thermometer.
- Use thermometers that have the sensitivity required for each test.
  - Typically use a thermometer with 0.1º C accuracy
  - Make sure you know temperature reqts for samples

2) Organic Contaminants

- There are 51 of these contaminants:
  - herbicides and insecticides that are primarily used in agriculture applications,
  - organic solvents used in industrial applications,
  - organic by-products of industrial processes, and
  - chemical by-products from chlorination of drinking water

SOURCES OF CONTAMINATION INCLUDE:

- Runoff from agricultural spraying
- Industrial discharges
- Accidental spills
- Improper disposal of hazardous wastes

Organic Contaminants

Contaminant	MCL (mg/L)
Acrylamide	TT[1]
Alachor	0.002
Atrazine	0.003
Benzene	0.005
Benzo(a)pyrene	0.0002
Carbofuran	0.04
Carbon Tetrachloride	0.005
Chlordane	0.002
Chlorobenzene	0.1
2,4-D	0.07
Dalapon	0.2
DBCP	0.0002
o-Dichlorobenzene	0.6
p-Dichlorobenzene	0.075
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
cis-1,2-Dichloroethylene	0.07
trans-1,2-Dichloroethylene	0.1
Dichlormethane	0.005
1,2-Dichloropropane	0.005
Di(2-ethylhexyl) adipate	0.4
Di(2-ethylhexyl) phthalate	0.006
Dinoseb	0.007
Dioxin	0.00000003
Diquat	0.02
Endothall	0.1
Endrin	0.002
Epichlorohydrin	TT[1]
Ethylbenzene	0.7
Ethylene dibromide	0.00005
Lindane	0.0002
Methoxychlor	0.04
Oxamyl (Vydate)	0.2
Polychlorinated byphenyls (PCBs)	0.0005
Pentechlorophenol	0.001
Picloram	0.5
Simazine	0.004
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1
Toxaphene	0.003
Trichloroethylene	0.005
2,4,5-TP (Silvex)	0.05
1,2,4-Trichlorobenzene	0.07
1,1,1-Trichloroethane	0.2
1,1,2-Trichloroethane	0.005
Vinyl chloride	0.002
Xylenes (total)	10

[1] – TT refers to approved Treatment Technology rather than MCL

3) Radiological Contaminants

- Most radioactive substances occur naturally in ground water and in some surface supplies

- Some man-made substances may also enter drinking water supplies from processing facilities, mining areas, and nuclear power plants

Radioactive Contaminants

The 4 contaminants include:

Contaminant	MCL
Radium 226 and 228	5 pCi/L
Gross Alpha Activity	15 pCi/L
Gross Beta Activity (man-made)	4 millirem/yr or 50 pCi/L
Uranium	30 μg/L (ppb)

4) Bacteriological Contaminants

- The total coliform group of bacteria represents the indicator organisms used in determining bacteriological contamination
  - coliforms in water include escherichia (E. coli – **Acute biological**), citrobacter, enterobacter & klebsiella

- Their presence indicates the possibility that some pathogenic (disease causing) organisms may also be present

Drinking Water Regulations

- Sets the number of samples a water system must submit per month (1-minimum)
- Larger systems require more samples each month (480-maximum)
  - Number of samples may be reduced by NMED-DWB
  - Compliance is based on routine and repeat samples

RTCR Monitoring Frequency

Population Served*	Minimum Number of Samples per Month
25 - 1,000	1
1,001 – 2,500	2
2,501 – 3,300	3
3,301 – 4,100	4
4,101 – 4,900	5
4,901 – 5,800	6
5,801 – 6,700	7
6,701 – 7,600	8
7,601 – 8,500	9
8,501 – 12,900	10

*** See rule (40 CFR 141.21.a.2) for additional population categories**

National Secondary Drinking Water Regulations 40 CFR 143

- Secondary Maximum Contaminant Level Goals (SMCLGs) - examples:

Secondary Contaminants	**SMCLG (mg/L)**
TDS	**500**
Chloride	**250**
Sulfate	**250**
Iron	**0.3**
Manganese	**0.05**
pH	**6.5-8.5**

- Monitoring
  - ✓*Not Enforceable*
  - ✓*Goals or Guidelines for the States*

Monitoring and Reporting

Water systems are responsible for:

- Monitoring water quality and
- Reporting violations to the public

  - NMED-DWB is currently collecting and submitting chemical and radiochemical samples to the laboratories

  - Systems are still responsible for the results of testing and any public notification that may be required

  - Systems are required to report to NMED-DWB within 48 hours if they fail to comply with any NM Drinking Water Regulation

Systems must retain records for:

- *Bacteriological samples:* ***5 years***
- *Chemical samples:* ***10 years***
- *Records of actions taken to correct violations:* ***3 years after last action***
- *Reports, correspondence, communications and sanitary surveys:* ***10 years***
- *Variance granted to the system:* ***5 years following the expiration of the variance***
- *Lead and copper samples:* ***12 years***
- *Consumer Confidence Reports:* ***3 years***

Sampling Schedules

Chemical & Radiological Baseline Monitoring of Drinking Water

Chemical Monitoring

For inorganic chemicals, monitoring frequency is dependent upon the water source and contaminant being sampled.

Radiological Monitoring

Initial sampling of 4 quarters composited.

ALL PWS MUST BE SAMPLED WITHIN 90 DAYS OF COMING ON LINE

Sample Collection Frequency

Ground Water

Nitrate—Annual (If 1 sample ≥ 5 mg/L, 1/4ly at least 1 year) All systems; No waiver

Nitrite—1 time only (if result is < 0.5 mg/L) All systems

Asbestos—Every 9 years (1st period of cycle if no waiver) CWS & NTNCWS

Others—Triennial - CWS & NTNCWS

Surface Water

Nitrate—Quarterly (reduced to annual if none >5 mg/L) All systems

Nitrite—1 time only (if result is < 0.5 mg/L) All systems

Asbestos—Every 9 years (same as groundwater system) CWS & NTNCWS

Others—Annual - CWS & NTNCWS

A CONFIRMATION SAMPLE IS REQUIRED WHEN THE MCL IS EXCEEDED

Public Notification

Divided into 3 tiers

- Takes into account the seriousness of the violation or situation and any potential adverse health effects

- Systems must notify the public and NMED-DWB
  - Certification to NMED-DWB within 10 days after public notification

Standards & Frequency

Tier 1—Significant potential health risks with short term exposure—**24 hours**

- Radio
- TV
- Hand Delivery
- Posting
- Other methods specified by State

Tier 2 Potential health risks—**30 days**

- Mail or direct delivery for CWSs
- Mail, direct delivery or posting for NCWs

Tier 3 No potential health risks—**1 year**

- Same as Tier 2
- CCR

Action Plans for Violations

- If a water supply exceeds the primary standards the water system must either:
  - cease using water from the contaminated source,
  - provide adequate treatment to remove the contaminants,
  - or locate a new source of supply that meets the standards
- Blending may be done under certain conditions
  - The blended water must enter the system from a single point of entry

Variances, Exemptions and Waivers

- A system may be granted a variance or exemption if the MCL is exceeded and is unable to correct the problem due to financial or technical reasons
- All requests for variances, waivers, and exemptions must be directed to and approved by the NMED-DWB
- Not allowed for acute hazards
- Waivers can be applied to sample frequencies

Surface Water Rules

- Any system that uses surface water must provide treatment of the supply
- Springs and infiltration galleries are considered surface supplies if they are found to have groundwater that is under the direct influence of surface water (GWUDI)
  - A speciation study of the organisms found in the suspected source of influence and the water that enters the system is used to determine whether a source is GWUDI

Surface Water Rules

- Interim Enhanced Surface Water Treatment Rule (IESWTR) – now expired
  - 10,000 or more population
- Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) – now expired
  - <10,000 population
- Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) – now in effect
  - Schedule 1—100,000 or more population
  - Schedule 2—50,000 to 99,999 population

Removal or Inactivation of *Giardia*

The concerns about contamination have created the need for higher free chlorine residuals and longer disinfection contact times

- The “CT” calculation is used to determine the necessary contact time at a given chlorine residual concentration
  - C x T = the CT factor

    C is the disinfectant concentration,

    T is the contact time in minutes,

    CT is a temperature & pH-based constant

Removal of *Cryptosporidium*

- 2-log reduction of the numbers found in raw water for IESWTR and LT1 systems
  - 2-log removal or deactivation would mean that 1% of the bacteria may survive or 99% are removed
  - 4-log removal or deactivation would mean that 0.01% of the organisms may survive or 99.99% are removed
- Some larger LT2 systems may be required to provide a 5.5-log removal
- Log removal credits are assigned to the various treatment processes

Disinfectants and Disinfection Byproducts Rule

- Applies to all CWSs and NTNCWSs that add disinfectant and TNCWSs that use chlorine dioxide
  - Subpart H systems serving ≥ 10,000 people (January 1, 2002)
  - Subpart H systems serving < 10,000 people and ground water systems that chemically disinfect (January 1, 2004)

- Trihalomethanes and haloacetic acids are formed when chlorine, bromine, or iodine combine with organic precursors that may be present in the source water
  - Recent changes have set new MCLs for several disinfection by-products
- Systems that use ozone as a disinfectant may also create bromates
- All of these chemicals are carcinogens

Stage 1 D-DBP

- New Maximum Residual Disinfectant Level Goals (MRDLGs) and MRDLs for 3 disinfectants (Chlorine, chloramines and chlorine dioxide)
- More stringent MCL for Total Trihalomethanes (TTHMs)
- New MCL for 5 Haloacetic Acids (HAA5s), Bromate and Chlorite (plants that use ozone and chlorine dioxide)

Stage 2 D-DBP

- Builds upon existing rules
- Identify more appropriate monitoring sites for DBPs
  - Initial distribution system evaluations (IDSEs) to investigate TTHM and HAA5 levels in the distribution system
- Improve protection of public health by reducing exposure to DBPs

Stage1 and Stage 2 D-DBP

- Stage1 D-DBP set MCLs based on a running annual average (RAA) of samples taken in the system, rather than individual sample results

- Stage 2 D-DBP has changed to use the location-based running annual average (LRAA) of each individual contaminant for the calculation

D-DBP Rule Contaminants

Contaminant	MCL (mg/L)
Total Trihalomethanes (TTHM)	0.080
Halo Acetic Acids (HAA5)	0.060
Bromate	0.010
Chlorite	1
Chlorine Dioxide	0.8
Chlorine (MRDL)	4
Chloramines	4

Stage1 and Stage 2 D-DBP

- A system that is in violation may be required to change to a different means of disinfection or incorporate an additional process
- Sample results from D-DBP testing must be reported within 10 days of the end of the monitoring period
- Chlorine residual reports must be submitted every quarter

Stage1 and Stage 2 D-DBP Chlorine Residual Report

MONTHLY DISINFECTANT RESIDUAL REPORT

FOR PUBLIC WATER SYSTEMS

SYSTEM NAME: _____

WATER SYSTEM ID # _____

Months _____ Year _____ Number of Active Service Connections this Month: _____

Chlorine Residual Readings (mg/L)

Date	Month #1	Month #2	Month #3
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
Avg			
Max			
Min			

I certify that I am familiar with the information contained in this report and that, to the best of my knowledge, the information is true, complete, and accurate.

Operator's Signature: _____

Stage1 and Stage 2 D-DBP Chlorine Residual Report

State of New Mexico
ENVIRONMENT DEPARTMENT
DRINKING WATER BUREAU
PO Box 5469
Santa Fe, NM 87502
Tel. 505-476-8635 • Fax 505-476-8656
Toll Free 1-877-654-8720
www.env.nm.gov/dwb/index.htm

DISINFECTANT LEVEL QUARTERLY OPERATING REPORT (DLQOR)

Quarter: _____ **Year:** _____

Water System Name: _____ **System ID #** _____

First Month of Quarter: Monthly Summary

Average of all disinfectant Residuals for this month		Number of residuals collected this month		Number of readings with NO Residual for this Month			
	mg/L		readings		Readings		%

Second Month of Quarter: Monthly Summary

Average of all disinfectant Residuals for this month		Number of residuals collected this month		Number of readings with NO Residual for this Month			
	mg/L		readings		Readings		%

Third Month of Quarter: Monthly Summary

Average of all disinfectant Residuals for this month		Number of residuals collected this month		Number of readings with NO Residual for this Month			
	mg/L		readings		Readings		%

Quarterly Summary

Average of all disinfectant Residuals for this Quarter		Lowest Residual for this Quarter		Highest Residual for this Quarter	
	mg/L		mg/L		mg/L

Running Annual Average Summary

Average of all disinfectant Residuals for the previous 12 Months	
	mg/L

NAME: _____ **TITLE:** _____

LICENSE # _____

ADDRESS: _____ **CITY:** _____

STATE: _____ **ZIP CODE** _____

PHONE # _____

SIGNATURE: **DATE:**

DLQORs are required to be submitted to NMED-DWB No Later than the Dates Noted Below

Quarter 1	*Quarter 2*	*Quarter 3*	*Quarter 4*
Disinfectant Residuals for January, February, & March	Disinfectant Residuals for April, May, & June	Disinfectant Residuals for July, August, & September	Disinfectant Residuals for October, November, & December
Report due by April 10th	Report due by July 10th	Report due by October 10th	Report Due by January 10th

Ground Water Rule

- The Ground Water Rule (GWR) was proposed to establish a strategy for identifying ground water systems that are at high risk for fecal contamination
- Community water systems with outstanding performance and non-community water systems had until December 31, 2014 to complete the initial sanitary survey
- All other community water systems had to complete their initial survey by December 31, 2012

The GWR is comprised of four major components:

1) Periodic sanitary surveys (CWS every 3 yrs, NTNC every 5 yrs) to identify and evaluate significant deficiencies such as defective casings or location too close to sources of surface pollution

2) Monitoring of source water for the presence of *E. coli* and other enteric organisms

3) Corrective action must be taken by any system with significant deficiencies or source water contamination

This could include:

A. Correcting structural deficiencies

B. Eliminating the source of contamination

C. Finding an alternative source of water

D. Providing treatment to achieve a 4-log inactivation or removal of viruses

4) Compliance monitoring to ensure that the treatment reliably achieves a 4-log reduction or inactivation of viruses

Consumer Confidence Reports

- Applies only to community water systems
- Summarizes information regarding sources used (i.e., rivers, lakes, reservoirs, or aquifers)
- Includes any Detected contaminants
- Includes Compliance information
- Includes Educational information

The report is due by:

- July 1st of each year to customers and NMED-DWB
- October 1st NMED-DWB must receive certification that the CCR has been distributed
- DWW data generator and EPA CCRiWriter (now available through EPA website)

Chapter 3

Microbiological Sampling

Microbiological Sampling

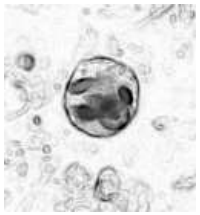
- Waterborne Pathogens
- Coliform Group of Bacteria
- Monthly Sampling
- The Sample Siting Plan
- The Sample Bottles
- Preparing To Collect The Sample
- Sample Collection
- Reporting & Shipping Considerations
- Repeat Samples
- Violations

Waterborne Pathogens

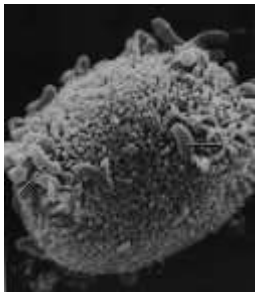
Diseases Caused By Waterborne Pathogens

All Water Sources:
Typhoid
Paratyphoid (Types A & B)
Cholera
Dysentery
Hepatitis (Virus)

Surface Water Only:
Cryptosporidiosis
Giardiosis

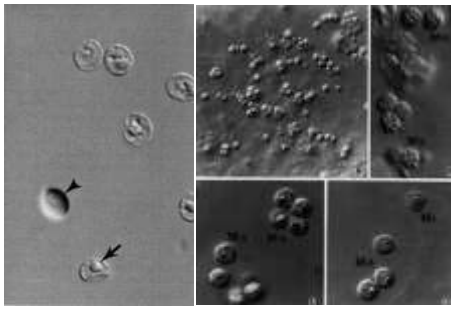


Dysentery



Cholera

Giardia



Cyptosporidium

The protozoa that are found in surface water supplies form cysts and spores that protect them from cold temperatures and make them more difficult to kill with disinfectant chemical

Coliform Group of Bacteria

- Coliform bacteria are enteric bacteria. This means that they are found in the intestinal tract of warm-blooded animals, including humans.
  - coliforms in water include escherichia (*E. coli*), citrobacter, enterobacter & klebsiella
- These bacteria do not cause disease but are necessary for the digestion of food.
- The waterborne pathogens are also enteric organisms. Some of the bacterial pathogens are part of the coliform family.

Coliform Group of Bacteria

- If coliform bacteria are present in the water supply, pathogens may also be present.
- The coliform bacteria live longer in water and are easier to detect by laboratory testing.
- This is the reason the coliform group has been chosen as the indicator organism for waterborne pathogens.
- If coliform bacteria are not present in GW it is assumed there are no viruses present either.

Coliform Group of Bacteria

- The coliform family has been divided into two groups.
- Results may come back as either total coliform positive (TC positive) or fecal coliform positive (*E. coli* positive.)
- Total coliform positive means that no human coliform are present.
- Fecal coliform positive indicates the presence of *E. coli*, which means there is a greater chance of pathogens being present.
- The laboratory tests for coliform include the MPN method, the Membrane Filter test, the Colilert test, and the presence-absence test.
- Most of the certified labs in New Mexico use either the colilert or membrane filter (MF) test. These tests require 100 $\pm$ 2.5 milliliters of sample.

Monthly Sampling

- Responsibility of the system to collect samples for microbiological ("Bac-T") testing
- Samples must be collected and tested and results reported properly
- If a sample becomes contaminated due to poor sampling procedures or is not sent to the testing laboratory at the proper time, the system may technically be in violation of the drinking water regulations
  - This may result in the system having to notify the public of violations when the water is actually safe

The Sample Bottles

- 3 types of bottles used by NM certified labs:
- **Nalgene -** Reusable bottles
  - Used by NM SLD and other large municipal labs
- **IDEXX –** Clear plastic disposable containers
- **Snap Lid –** Hinged cap that has a snap-on type seal and a hinged latch to secure it
  - A plastic “Key” is used to secure the latch once the sample is collected
- Provided by the lab
- Sterilized prior to distribution and/or after each use

Preparing To Collect The Sample

- Bottles should be stored in a cool, dry place until they are needed
- Sodium thiosulphate is added to the bottle
  - Neutralizes any chlorine residual that is present
  - It may be in the form of:
    - clear liquid
    - white powder
    - white tablet

Remember…

1. Chlorine residual test kit. If system disinfects, a free chlorine residual needs to be present prior to sample collection. The residual must be recorded on the sample request form.
2. Cooler and blue ice packs (or regular ice) for sample preservation. If ice is used, plastic bags will be needed to keep the sample bottles and forms dry.
3. Alcohol, soap, or latex gloves to prevent contamination due to dirty hands.
4. Pen should be used to fill out forms. Use tape and a permanent marker to label sample bottles.
5. Extra bottles and sample request forms. Repeat samples will also require red evidentiary seal tape.
6. Never wash out a bottle or even open it until you are ready to take the sample.
7. If a sample bottle has any dirt or junk in it or in the lid, don't use it. It's better to get a new bottle than to take a bad sample. See item 5.

Sample Collection

1. Select a sampling point

GOAL is to monitor the distribution system

- Should be a faucet that is commonly taken for public use
- The least–used faucet at the site is preferred because there is less chance of contamination of the faucet
- If an indoor faucet is selected, make sure the sink and faucet are clean
- Inspect each potential faucet to assure its suitability
  - Better to reject a poor sampling point because of the implications of a positive result.

Water taps to avoid

- Kitchen sink faucet that swivels or single handle
- Leaking faucet
- Hoses, vacuum breakers or other attachments
- Hot water faucet
- Drinking fountains
- Water conditioners

Remember…

- Remove the aerator screen (it might be contaminated)
- If the sample tap is located in an open area, clean brush and other vegetation for 3-5 feet away from the sample site

Sample Collection

2. **Disinfect the faucet with alcohol if necessary**
   - Avoid using bleach to clean the faucet. It doesn't evaporate as quickly and spills are a bigger problem to clean up
   - Wash your hands or put on latex gloves before collecting the sample
3. **Flush the line**
   - Open the tap and let the water run for 3-5 minutes or until the temperature changes. This will insure that the water being sampled is from the main and has not been standing in the customer's plumbing

Sample Collection

4. **Take a chlorine residual reading**
   - After flushing, throttle the flow down to an unaerated stream
   - Run a chlorine residual analysis and record the free chlorine residual
     - It must be included on the sample request form.

5. **Mark the bottles for identification**
   - Mark the disposable bottles directly
   - Use a piece of tape or other suitable label to mark and identify the reusable Nalgene bottles.
     - Label should include:
       - Address
       - Date
       - Time

     If records are being data based, the computer reference number should also be included

Sample Collection

6. Refrigerate the sample

- The sample must be refrigerated to lower the temperature to 39˚F or 4˚C until tested
- Always place the sample and the form in a plastic bag if ice is being used to refrigerate the sample
  - This is a good practice even if blue ice is being used because condensation can occur
  - If the samples are wet, the lab may reject them because they can't be sure the sample didn't leak

Reporting & Shipping Considerations

The final consideration for microbiological sampling is the proper completion of the sample form and delivery to the lab.

Microbiological Sample Request Form Data

I. System name, address, and PWSS number

2. Location of sampling site

3. Date and time sample was taken

4. Type of water sampled
- **a. Routine Sample – Compliance**
- **b. Repeat Sample**
- **c. Special sample – Line break/raw water**
- **d. NMED monitor sample – Requested by NMED**

5. Chlorine residual

6. Reference number (if it's a repeat sample)

7. Name of Collector and Operator ID Number or Water Sampler Technician ID Number

This information must be included on the sample form

Other considerations

- Special Sample—Microbiological samples not used for compliance
  - New water lines
  - Repaired lines
  - Wells that have been disinfected should be tested
- Sample must be tested within 30 hours after it is taken
  - Most labs require that the sample arrive at the lab within 24 hours of collection so the testing can be done before it is 30 hours old
- Some labs do not accept samples on Fridays
  - It is important to take compliance samples early in the week
  - Remember… repeat samples must be taken within 24 hours of notification—Otherwise may incur a violation

RTCR Sampling Requirements

ALL Public Water Systems:

- Monitor for Total Coliform and *E.coli* (no change for New Mexico)
- **No reduced monitoring will be allowed in New Mexico. Water systems that are currently sampling quarterly will now be required to sample monthly.**
- All PWSs must monitor according to a written sample siting plan; plan must identify routine **AND** repeat sampling locations.
- *E. coli* MCL violation replaces TCR's acute MCL with an *E. coli* MCL
- Total coliform Treatment Technique violation replaces TCR's total coliform MCL violations – no Public Notice (Tier 2) req'd
- Public Notice requirements remain for *E. coli* MCL violations

RTCR Sampling Requirements

- Seasonal Public Water Systems

  Must complete a State Approved Startup Procedure prior to opening for the season.

- Must sample on a Monthly basis rather than on a quarterly basis

RTCR Reduced Monitoring

- Why is Reduced Monitoring (Quarterly) not being allowed in New Mexico?

  The requirements for reduced monitoring within the RTCR made it very difficult to obtain, track, and maintain those reduced schedules.

  Some of those were:

  - Minimum of 12 months clean compliance history
  - Sanitary Survey with no deficiencies
  - Annual Site visits from NMED (Or annual Level 2 Assessment)
  - Cross-Connection control program approved by the State
  - Continuous disinfection
  - 4-Log Removal or inactivation of viruses

RTCR Sampling Plans

- All PWSs in New Mexico will be required to update their Sampling Plans

  The PWS must design its sample siting plan to identify routine **AND** repeat sampling with physical address or location info that best verify and determine the extent of potential contamination of the distribution system. The state has the discretion to modify the sample siting plan as necessary.

  Monthly sample site verifications between Chain-of-Custody location information will be compared to site plan location designations

RTCR Sampling Plans

- All PWSs in New Mexico will be required to update their Sampling Plans using DSSP Instructions and Template (available on DWB website)

  At a minimum sampling plans must contain the following:

  - Name of PWS
  - Name and Contact Information for all important contacts at PWS (Administrative Contact, Operator, Sampler, Emergency Contact)
  - Routine Sampling Locations that are representative of the entire distribution system
  - Pre-Identified repeat monitoring locations
  - Map of the entire distribution system

RTCR Sampling

- What happens when a routine sample is either Total Coliform or *E.Coli* Positive?

  All systems are required to collect repeat sampling

  Repeat sampling will be limited to **three** repeat samples for every routine positive result. (Plus triggered source sampling to comply with the Ground Water Rule)

  Repeat Samples do not have to be collected within 5 connections upstream or downstream.

  RTCR allows for alternative repeat sampling locations if a PWS believes that that those alternative locations are representative of pathways for contamination of the distribution system

  Sampling from alternative locations must be approved by DWB prior to repeat sampling event by system submitting SOP to designate alternate sites

RTCR Sampling

- What happens when a routine sample is either Total Coliform or *E.Coli* Positive?

  If one or more repeat samples are TC+, the PWS must collect an additional set of repeat samples within 24 hours of being notified of the repeat sample's TC+ result

  The PWS must continue to take additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples, or the PWS determines that a coliform TT trigger has been exceeded as a result of a TC+ repeat sample and the PWS has notified the state

  No additional sampling required the month after a TC+ or EC+ Result

RTCR Sampling

- What Violations are triggered by RTCR sampling events?

  A PWS is in violation of the *E.Coli* MCL if:

  - A PWS has an EC+ repeat sample following a TC+ routine sample
  - A PWS has a TC+ repeat sample following an EC+ routine sample
  - A PWS fails to take all required repeat samples following an EC+ routine sample

  ***E.Coli* MCLs require the PWS to issue a Tier 1 public notice which includes a Boil Water Advisory**

RTCR vs TCR Changes

- RTCR changes go into effect April 1, 2016
- All TCR-related questions have been removed from all sampler & operator exams
- New RTCR-related questions will be included in all sampler & operator exams starting with the April 2016 exam session
- New RTCR Need-To-Know (NTK) criteria were added to the on-line edition of the New Mexico Water Sampling Certification Study Guide in March 2016

Chapter 4

Organic Sampling

Organic Sampling

- Volatile and Semi-Volatile Organic Contaminants
  - Confirmation Samples
  - Increased sampling
- Preparing For Sample Collection
- Volatile and Semi-Volatile sample collection
- Disinfection By-Products Sample Kit
- Preparing Samples For Shipment

Volatile and Semi-Volatile Organic Compounds

- Volatile organic compounds (VOCs) are those chemicals that evaporate quickly
  - Example: benzene, toluene, and carbon tetrachloride
- Semi-volatile organic compounds (SOCs) are the heavier chemicals that do not evaporate
  - Example: lindane and 2,4-D
- Organic disinfection by-products includes total trihalomethanes (TTHM) and haloacetic acids (HAA5)
  - TTHMs are volatile organics
  - Haloacetic acids are semi-volatile

Confirmation Samples

- Any VOC or SOC ≥ MCL Confirmation sample is at State's discretion
  - If confirmation is required, the result must be averaged with the first sample for compliance determination
- Any VOC or SOC ≥ MCL

  Begin quarterly sampling

  - Compliance based on running annual average
  - The system will not be considered in violation until it has completed 1 year of quarterly sampling

Increased Sampling

- Any VOC (except Vinyl chloride) detection > 0.005 mg/L

  Begin Quarterly Sampling

  - GW systems must take a minimum of 2 consecutive quarterly samples
  - SW systems must take a minimum of 4 consecutive quarterly samples
- Quarterly samples are evaluated to determine if system is reliably & consistently below the MCL
- Compliance is based on running annual average at each sampling point
- If determined to be reliably & consistently below MCL, system must sample during the quarter(s) which previous yielded the highest analytical result
- System may apply for waiver after 3 consecutive annual samples with no detection

Increased Sampling

- 2-carbon VOC detection: *(trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, or 1,1-dichloroethylene)*

  Sample for Vinyl Chloride (degradation product)

  - GW systems may reduce frequency to 1 per compliance period if no vinyl chloride is detected
  - SW systems monitor as specified by State

Increased Sampling

- Any SOC detected ≥ 40 CFR 141.24(h)(18)

  Begin Quarterly Sampling

  - GW systems must take a minimum of 2 consecutive quarterly samples
  - SW systems must take a minimum of 4 consecutive quarterly samples
- Quarterly samples are evaluated to determine if system is reliably & consistently below the MCL
- Compliance is based on running annual average at each sampling point
- If determined to be reliably & consistently below MCL, system must sample during the quarter(s) which previous yielded the highest analytical result
- System may apply for waiver after 3 consecutive annual samples with no detection

Preparation for Sample Collection

Water is an excellent solvent for many organic compounds. When exposed to air, it has the ability to absorb volatile organic gases that may be present.

There are special precautions that must be taken to avoid contamination of organic water samples. VOC I/II and THM samples are the easiest to contaminate. They must be collected with no headspace (air) in the bottle.

- Check the sampling kit to make sure that all of the bottles and preservatives are present.

- Check the sample form(s) provided or download the sample form from the SLD website.

- Have a marker or pen to fill out labels and forms.

Remember…

- Personal hygiene issues can increase the risk of sample contamination.
    A. No smoking, hairspray/mousse, cologne/perfume, or breath spray/mouthwash – These have VOCs that can be absorbed by water.
    B. Latex gloves should be worn during sample collection - Change gloves at each new sampling site.

- Sample preservation will require refrigeration. A cooler with ice and a number of sealing plastic bags, to store sample bottles and forms, should be utilized.

- Make sure all vehicle or other combustion engines are off and the area is well ventilated. VOCs in engine exhaust can also contaminate the samples.

- Remove any aerator screens or other attachments from the faucet. Flush the faucet for 5-10 minutes to stabilize the water temperature

VOC Sample Collection (EPA Method 524.2)

✓SAMPLE KIT:

Two-40 ml clear glass vials with a Teflon septum in the screw cap

✓PRESERVATIVES:

Chlorinated systems: Ascorbic acid —added to each vial at the lab

All systems: Hydrochloric acid (HCl)—added on site

✓REMEMBER…

- VOC samples are collected in duplicate
- Never rinse the sample vials prior to collection
- Vials must be filled with no air bubbles or headspace

  —prevent potential contamination from airborne VOCs and the loss of very light VOCs from the sample
- Keep samples refrigerated during storage and transport (4˚C/39˚F)

SOC/Semi-Volatile Organic Compounds

Seven different sets of samples

Semi Volatile Organic Compounds Sample Kit

Set	Test Requested	# of Bottles	Description
1	VOC II (504.1) [1]	2	40 ml vial w/ preservative[a]
2	Acid Herbicides (515.2)[1]	2	250 ml amber bottle w/ preservative[b]
3	SOC (525.2)[1]	2	1 liter amber bottle w/ preservative[b]
4	Carbamates (531.2)[1]	1	40 ml vial w/ preservative[a & d]
5	Glyphosate (547)[1]	1	40 ml vial w/ preservative[a]
6	Endothall (548.1)[1]	1	250 ml amber bottle w/ preservative[a]
7	Diquat (549.2)[1]	1	1 liter PPE bottle w/ preservative[a & c]

[1] – EPA Method

[a] – Sodium thiosulfate ($Na_2S_2O_4$)	2	Mini-vials for sample preservation
[b] –1:1 Hydrochloric acid (HCl)	1	20 ml vial for sample preservations
[c] –1:1 Sulfuric acid (H_2SO_4)	1	20 ml vial for biologically active sample preservation
[d] – Citrate buffer	1	0.375 grams to stabilize the analytes

SOC/Semi-Volatile Organic Compounds Collection

✓PRESERVATIVES:

Most of the bottles and vials have preservative chemicals added to them by the lab

Some samples require preservation with hydrochloric acid after collection—The sample bottles that require acid preservation have yellow labels

✓REMEMBER…

- Some tests require duplicate samples—Others only require a single sample
- Check holding time requirements—You should contact the lab to schedule sample submission
- Never rinse the sample vials prior to collection
- Vials must be filled with no air bubbles or headspace
- Keep samples refrigerated during storage and transport (4˚C/39˚F)

Disinfection By-Products Sample Kit

There are two different sets of samples:
Total Trihalomethanes (TTHMs) and Haloacetic Acid (HAA5)

- **SAMPLE KIT:**
  Two 40 ml clear glass vials with a Teflon septum in the screw cap (TTHMs)

  Two 60 ml amber glass vials with screw cap (HAA5s)

- **PRESERVATIVES:**
  TTHMs: 3mg sodium thiosulfate —added to each vial at the lab

  HAA5s: 6 mg ammonium chloride—added to each vial at the lab

✓REMEMBER…

- Flush sample tap and reduce flow to a trickle
- TTHM and HAA5 samples are collected in duplicate
- Never rinse the sample vials prior to collection
- TTHM vials must be filled with no air bubbles or headspace
- After filling, agitate HAA5 vials to dissolve the ammonium chloride
- Keep samples refrigerated during storage and transport (4˚C/39˚F)

Preparing Samples For Shipment

- Make sure the samples are properly labeled.
- Include a request form for each sample or sample set.
- Place request forms in a zip lock baggie and tape it to the inside of the cooler cover.
- When taking samples at multiple sites, make sure that each set of samples for a site are shipped in the same cooler. This will help the lab organize the samples.
- Pack the samples carefully. If not properly protected, they can be broken in shipment.
- Chill samples to (4˚C/39˚F) at the time of collection and with sufficient ice to insure that they arrive at the lab properly chilled. Do not use too many ice packs or the samples may freeze causing the glass bottles to break.
- Send samples in as soon as possible after sampling for analysis. Some samples must be analyzed within 7 days of collection.

Chapter 5

Inorganic Sampling

Inorganic Sampling

- Inorganic Compounds
  - Confirmation Samples
  - Increased sampling
- SDWA Lead and Copper Sample Collection
- Sample Kits
- Preparing Samples For Shipment

Inorganic Compounds

- Heavy metals include: *lead, copper, iron, manganese, mercury, antimony, arsenic, barium, beryllium, cadmium, chromium, nickel, selenium, and thallium*

- Non-metals include: *fluoride, cyanide, chlorite, bromate, nitrate/nitrite, chloride, sulfate, hardness* (calcium and magnesium), *alkalinity* (carbonates, bicarbonates)

- Other metals include: *sodium and potassium*

Confirmation Samples

- Nitrate or Nitrite ≥ MCL
  - Within 24 hours of the system's receipt of notification
  - Must collect individual Nitrate and Nitrite samples, not a combined sample
- Compliance for Nitrate or Nitrite will be based on the average of the original sample and the confirmation sample
- All other Inorganic Compounds - confirmation sample is at State's discretion

Increased Sampling

- Nitrate or Nitrite ≥ 50 % of MCL

  Begin Quarterly Sampling

  - GW systems may reduce frequency to annually after 4 consecutive quarterly samples are reliably & consistently below the MCL

  - SW systems may reduce frequency to annually if all analytical results from 4 consecutive quarters are <50% of the MCL. SW system will return to quarterly if **ANY one** sample is ≥ 50% of the MCL

Increased Sampling

- Fluoride > 2.0 mg/L (SMCLG)

  Begin quarterly sampling

  - GW & SW systems may reduce frequency to annually after 4 consecutive quarterly samples are reliably & consistently below the MCL

- All other Inorganic Compounds > MCL monitor quarterly beginning the next quarter after the violation occurred

Lead and Copper Sample Collection

- The sampling protocol for inorganic samples for SDWA Lead and Copper sampling uses a slightly different protocol than the other heavy metals

- Samples must be “first draw” - Water must have been standing in the customers plumbing for at least 6 hours, but not more than 18 hours. It must be drawn before any other usage takes place at the sampling site.

- Because the sample must be the first draw, these samples are sometimes drawn by customers
  - Make sure the individual understands how to properly collect the sample
  - May be better to let the lab add the preservative later

✓SAMPLE KIT:

Heavy metal samples are a 1 liter (1 quart) sample plastic cubitainer

Most other inorganic samples are either 1 liter or 100 ml

1 liter containers are plastic cubitainers

100 ml bottles are either plastic or glass

Complete Secondary is a 4 liter plastic cubitainer

Major Anions/Cations Groups are a 1 liter sample

✓PRESERVATIVES:

Regulated Heavy Metals including lead & copper: Nitric Acid (HNO_3) - to pH <2.0

Nitrate/Nitrite: 2 ml Sulfuric acid (H_2SO_4) - to pH <2.0
(individual nitrite/nitrate samples not preserved – 48 hr holding times;
preserved combined nitrite/nitrate samples have 28-day holding time)

Total Cyanide: Sodium hydroxide (NaOH) - to pH >12

Fluoride: None

Secondary and Major Anions/Cations: None

✓REMEMBER…

- Flush sample tap and reduce flow to an unaerated stream
  - **Exception lead and copper samples**
- Remove lid and fill to the neck
- Add preservation if required
- Mark bottle
- Keep samples refrigerated during storage and transport (4˚C/39˚F)

Preparing Samples For Shipment

- Make sure the samples are properly labeled.
- Include a request form for each sample or sample set.
- Place request forms in a zip lock baggie and tape it to the inside of the cooler cover.
- When taking samples at multiple sites, make sure that each set of samples for a site are shipped in the same cooler. This will help the lab organize the samples.
- Pack the samples carefully.
- Chill samples to (4˚C/39˚F) at the time of collection and with sufficient ice to insure that they arrive at the lab properly chilled. Do not use too many ice packs or the samples may freeze causing the glass bottles to break.
- Send samples in as soon as possible after sampling for analysis. Some samples must be analyzed within 14 days of collection.

Chapter 6

Radiological Sampling

Radiological Sampling

- Changes to Requirements
  - Confirmation Samples
  - Increased sampling
- Sample Kits

Radiological Sampling

- Radiological (RAD) sampling and analysis requirements were changed in 2003. The revisions are summarized below.

A. There is no substitution option for Radium-228 analyses.

A. Uranium has been added. It has an MCL of 30 µg/L (ppb) with a substitution of Gross alpha option (141.26(a)(5)).

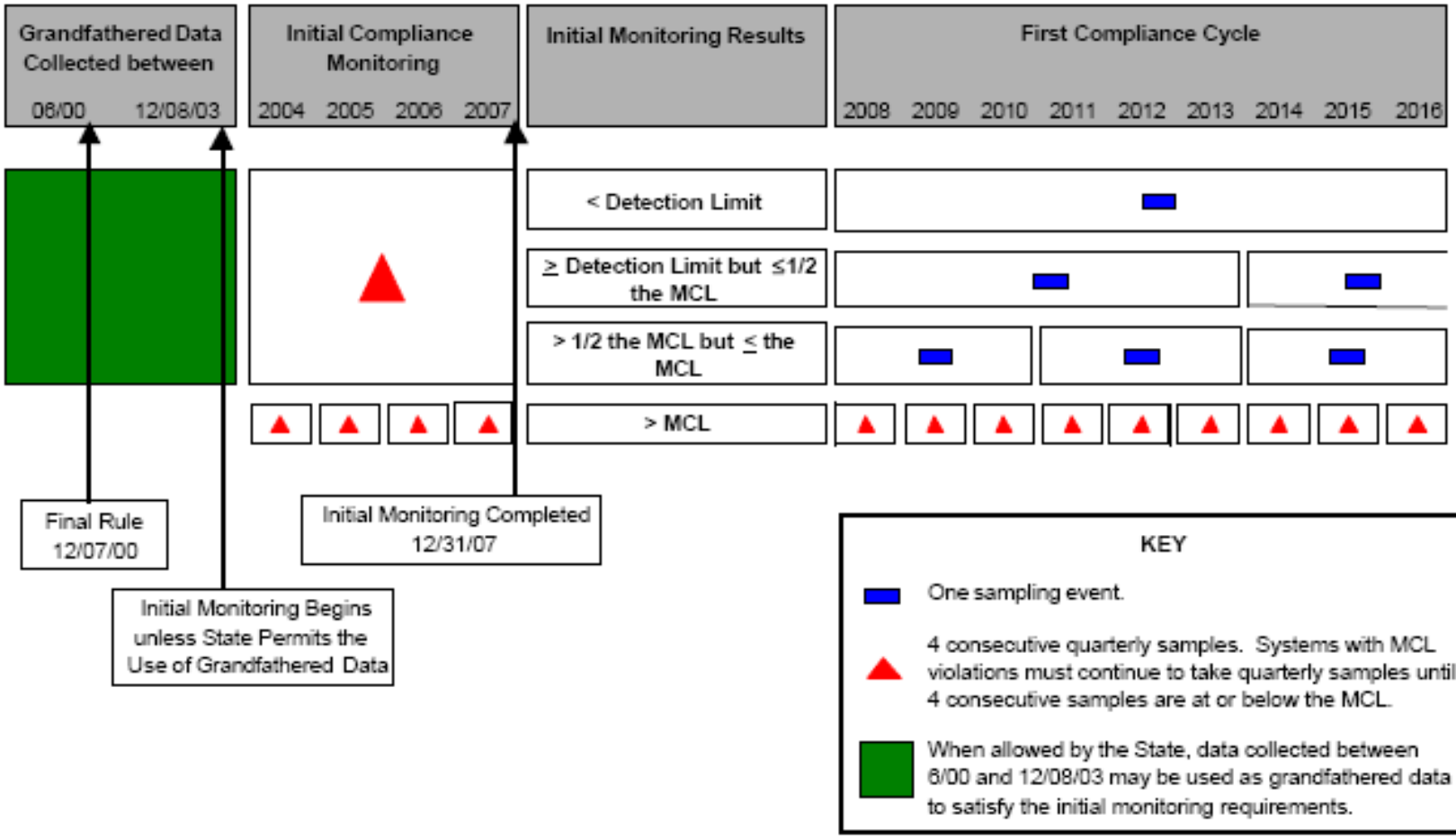
A. The gross alpha substitution for Ra-226 has been retained.

A. Compositing for gross alpha, U-mass, Radium-226, & Radium-228 has been retained

A. The monitoring frequency has been changed to follow the 3-6-9 year Standardized Monitoring Rule.

Applicability of the Standardized Monitoring Framework to Radionuclides

(Excluding the Beta Particle and Photon Emitters)



Initial Monitoring Increased Sampling

- Initial Monitoring for Gross Alpha particle activity, Uranium, Radium-226 & Radium-228 > MCL

  Begin quarterly sampling

  - Until 4 consecutive quarterly samples are ≤ MCL

  or

  - System enters into another schedule as part of a formal compliance agreement with the State

Monitoring & Compliance Requirements

Any RAD ≥ MCL Confirmation sample is at State's discretion

- If confirmation is required, the result must be averaged with the first sample for compliance determination

- Any RAD ≥ MCL

  Begin quarterly sampling

  - Compliance based on running annual average
  - The system will not be considered in violation until it has completed 1 year of quarterly sampling

✓SAMPLE KIT:

Radiological samples are collected in either 1-L or 4-L cubitainers

Sequential Flow (existing wells) – One 4-L cubitainers

Sequential Flow for Radium - Two 4-L cubitainers

Gross Alpha/Beta - One 1-L cubitainer

Baseline (new wells) – Two 4-L cubitainers composited with 1-L each quarter (duplicates)

EXCEPTION—Radon–222 samples.

Two- 40 ml clear glass vials

✓PRESERVATIVES:

Sequential Flow: 5 ml Nitric Acid (HNO_3) per gallon to a pH of <2.0

Gross Alpha/Beta: None

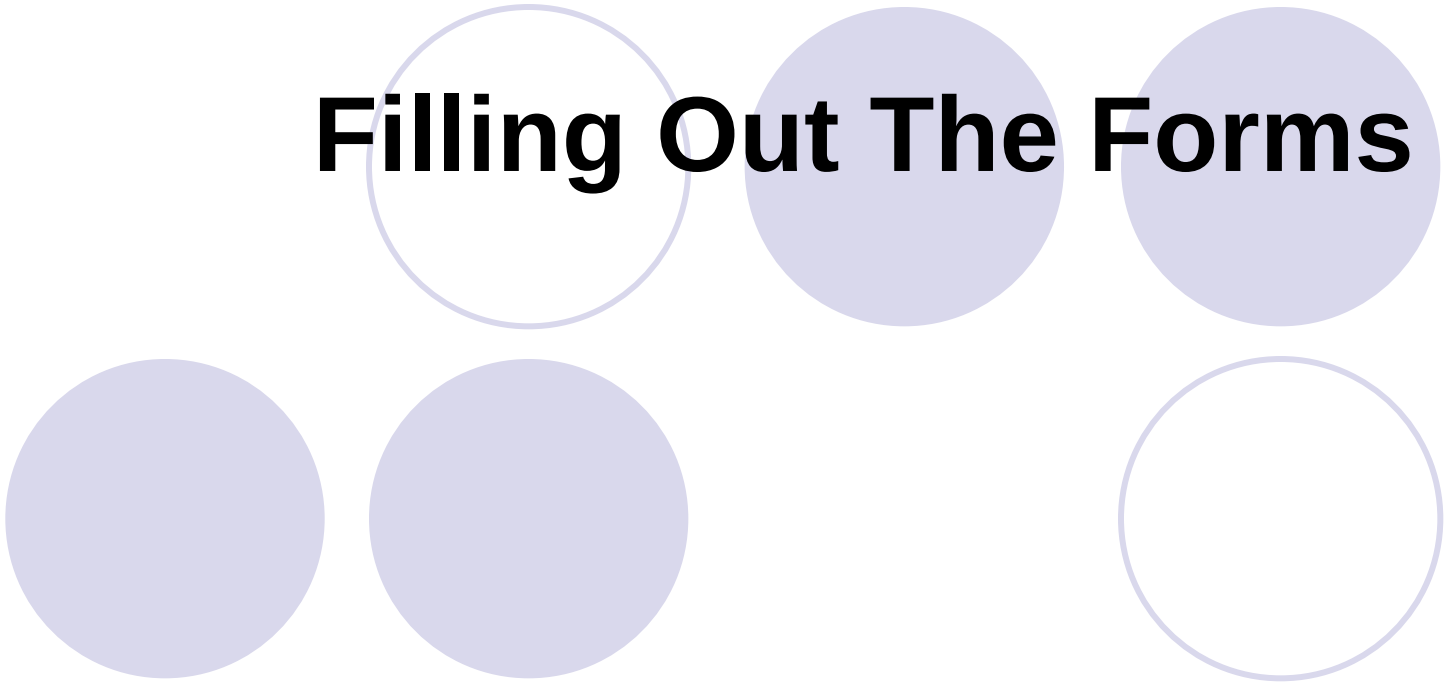
Radon-222: None

✓REMEMBER…

- Flush sample tap and reduce flow to an unaerated stream
  - **Exception Radon-222—Reduce flow to a trickle**
- Remove lid and fill to the neck
  - **Exception Radon-222—Fill with no air bubbles or headspace**
- Add preservation if required (Sequential Flow only)
- Mark bottle
- Keep samples refrigerated during storage and transport (4˚C/39˚F)
  - **Radon-222 has a 4-day holding time**

Chapter 7

Filling Out The Forms



Filling Out The Forms

- Microbiological Sample Request Form
  - Filling out the Form
  - Chain of Custody Documentation
- Examples of Microbiological Sample Request Form
- SLD Interactive Chemical Sample Request Form

Filling out the Form

- **WSS Code:**
  - Each PWS has a 9-digit code (NM35XXX-XX) number assigned by NMED
- **WSS Name:**
- **Collected By:**.
- **Date Collected:**
- **Sample Location:**
- **Time Collected:**
- **County:**
- **Type of system:**

Reason for Sampling:

- **Routine Samples:** Monthly/quarterly compliance
- **Special Samples:** Not for compliance monitoring
- **NMED Monitor Samples:** Collected by NMED. They may be in response to violations or disease outbreak
- **Other samples:** Do not fall into one of the other categories

Repeat Samples:

When positive results occur, check one of the boxes:

- **Original location**
- **Upstream**
- **Downstream**
- **Other location** option is for systems that only take one sample a month and need four repeat samples as a result

Remember…

- Print the number of the original positive sample for each repeat

- **Facility/WSS Mailing Address:**
- **Analysis: Drinking Water–Total Coliform and *E-coli;***
- **Analysis: Other**
  - Water systems may want to analyze their water for algae, iron and sulfur bacteria, or other aquatic organisms

Chain of Custody Documentation

- ALL samples must be sealed with red evidentiary seal tape and include a “Chain of Custody”
- This document identifies who has handled the sample
  - The time and date are also recorded at each step of the process
- Failure to properly document the chain of custody will result in sample rejection

NEW MEXICO WATER TESTING LABORATORY, INC.
P.O. BOX 1506
ESPAÑOLA, NEW MEXICO 87532
(505) 753-6028

NMED LAB # 9419

MICROBIOLOGICAL WATER REPORT

Date Received	Date Analysis Began
Sample No.	Time Received	Time Analysis Began

SAMPLE IDENTIFICATION

Water Supply System Name: Taos Municipal Water System

I.D. No.:

County: Taos

WSS Code No.: 0 7 5 - 2 9

COLLECTION INFORMATION

Date Collected (Mo Day Year): 0 6 3 0 0 8

Time Collected: 12:15 ☐ AM ☑ PM

Collected By: Violette V-Hirschfeld

Collection Location: 400 Camino de la Placita

TYPE OF SYSTEM

Check One:
☑ Community ☐ Non-Community ☐ Private Well

Sample Iced? ☑ Yes ☐ No Temp. 4-10°C

Disinfected ? ☑ Yes ☐ No Residual: 0.4 mg/L

TESTING REQUIRED

☑ Total Coliform & E. Coli
Method: Colilert

Repeat Locations:
☐ Downstream ☐ Upstream
☑ Original Loc. ☐ Other

Original Sample # 2235

REASON FOR SAMPLING

Check One:
☑ Routine Sample ☐ Special Sample
☑ Repeat Sample ☐ Monitoring Sample

LABORATORY TEST RESULTS

Drinking Water:

Type of Test: Colilert

Total Coliforms per 100 ml:
Present ☐ Absent ☐

E. coli per 100 ml:
Present ☐ Absent ☐

Fecal Coliforms: _____ Per 100 ml MF

Other Water Source

REJECTED SAMPLE

If one of the following is checked, please resample.
☐ Sample too old. Not received within _____ hours of collectic
☐ Temperature violation (above 10 C)
☐ Form incomplete. See circled item.
☐ Date or time discrepancy.
☐ Leaking sample.
☐ Quantity to great to permit agitation
☐ Turbid Culture
☐ Other

Comments:

Chain of Custody:

Relinquished By: _____ Received By: _____

Date/Time: _____ Date/Time: _____

Analyst _____

Date reported _____

Send Report to the following:

NAME TAOS (TOWN OF)

ADDRESS 400 CAMINO DE LA PLACITA

CITY TAOS, STATE NM

PHONE 505-751-2047 ZIP CODE 87571

TOWN OF RED RIVER

AWWT LABORATORY FACILITY

P.O. BOX 1020
RED RIVER, NM 87558
(505) 754-6671

Read all instructions on back of form

WATER SUPPLY SYSTEM / CUSTOMER NAME:

Name: Taos Municipal Water System
Mailing Address: 400 CAMINO DE LA PLACITA
City: TAOS, State: NM Zip: 87571
WSS Code No.
County: TAOS 0 7 5 - 2 9

COLLECTION INFORMATION:

Date Collected: MM 0 6 / DD 2 7 / YY 0 8
Time Collected: 0 2 : 3 0 ☐ AM √ PM
Collected By: Violette V-Hirschfeld
Sample Collection Point: 407 Camino de la Placita

TYPE OF SYSTEM: (Check ✔ One)

- [√] Community
- [ ] Non-Community
- [ ] Private Well
- [ ] Other - Specify

Do you have a disinfection system? √ Yes ☐ No
What is your chlorine residual? 0.4 mg/L

REASON FOR SAMPLING: (Check ✔ One)

- [ ] Routine Sample
- [ ] Special Sample
- [ ] NMED Monitor Sample
- [√] Repeat Sample
  - ☐ Downstream
  - √ Upstream
  - ☐ Original location
  - ☐ Other location

Original Lab # 2 2 3 5

Contact Person: Violette V-Hirschfeld
Telephone: 505-751-2047

LAB NO.:
Date Received:
Time Received:

MICROBIOLOGICAL WATER REPORT

Total Coliform per 100ml:
____ Present ____ Absent

E. Coli per 100ml:
____ Present ____ Absent

NOTES:

Type of Test - Colilert

Lot ____ Exp ____

REJECTED SAMPLE

**If one of the following is checked (✔), please resample.*

- ☐ Sample too old. Not received within ____ hours of collection.
- ☐ Temperature violation (above 10° C).
- ☐ Form incomplete. See circled item.
- ☐ Date discrepancy.
- ☐ Leaking sample.
- ☐ Quantity insufficient for testing.
- ☐ Quantity too great to permit agitation.
- ☐ Other:

Date Analysis:
Time Analysis:
Analyst:
Date Read: ____ Time: ____
Phoned Customer ☐ (✔) initials
Phoned Ed ☐ (✔) initials

Date:	Time:	Relinquished By: (Signature)	Received by: (Signature)	Date:	Time:
Date:	Time:	Relinquished By: (Signature)	Received by: (Signature)	Date:	Time:
Date:	Time:	Relinquished By: (Signature)	Received by: (Signature)	Date:	Time:

White - Lab File Yellow - E.D. Pink - Customer

NEW MEXICO DEPARTMENT OF HEALTH

WATER MICROBIOLOGY REQUEST FORM

LAB NO.

Scientific Laboratory Division
700 Camino de Salud NE - P.O. Box 4700
Albuquerque, NM 87196-4700
Phone # (505) 841-2537

DATE & TIME OF RECEIPT AT SLD

USER CODE: ☐ 55420 (NMED Monitor) ☐ 62000 (SDWA) ☑ 64000 (Private) ☐ Other:

SUBMITTER CODE : 060

WSS CODE NM35 243 - 30

WSS NAME Mountainair Water System

COLLECTED BY (please print) : Violette V. - Hirschfeld

DATE COLLECTED (MM / DD / YY) : 06 30 08

SAMPLE LOCATION (if private well, specify physical address) : 125 Main Street

TIME COLLECTED (24 hr. clock) : 11 26

COUNTY TORRANCE

Type of System (Check one):
- ☑ Community
- ☐ Non-Community
- ☐ Private Well
- ☐ Waste Water Treatment Plant
- ☐ Other:

Reason for Sampling (Check one):
- ☑ Routine Sample
- ☐ Special Sample
- ☐ NMED Monitor Sample
- ☐ Other:
- ☑ Repeat Sample
  - ☐ Downstream
  - ☑ Upstream
  - ☐ Original location
  - ☐ Other location

Original SLD # 20070301 8

Disinfected (Check one):
- ☑ Yes
- ☐ No

Residual: 0.4 mg/L

Attention to: CLIFF TAFOYA

Facility/WSS: Mountainair Water System 243-30

Address: PO Box 115

City: MOUNTAINAIR State: NM Zip Code: 87036

FOR SLD USE ONLY:

Temp. Control at SLD _____ °C

ANALYSIS

Drinking Water:	Waste Water:	Other:
☑ Total Coliform - Membrane filter	☐ E. coli count WWTP - Quanti-Tray	☐ Iron and Sulfur Bacteria
☑ Total Coliform - MMO - MUG	☐ Fecal Coliform - Membrane filter	☐ Pseudomonas
☐ Total Coliform - MPN (Dairy Only)	☐ Fecal Coliform - MPN	☐ Algae ID
☐ Standard Plate Count	☐ Fecal Streptococcus	☐ E. coli count source water - Quanti-Tray
	☐ EC-MUG MPN	☐ Salmonella / Shigella
		☐ Other:

INSTRUCTIONS:

How to collect sample:

***** You Must Use a SLD container** You can obtain a container from the Kit Preparation Unit at SLD.***

1. Choose a clean non-leaking tap without aerators, strainers or attachments.
2. Flush cold water 3-5 minutes before collecting sample.
3. Carefully remove cap and fill bottle to shoulder line without touching the lip of the bottle to tap rim. **Do Not Rinse Bottle**
4. Replace cap and secure tightly.
5. For Repeat Samples: Please indicate if sample is from the original location, downstream or upstream from the original location that was out of compliance. Otherwise, indicate that it is from another location. Also, indicate the SLD# for the original sample.

Packing and Shipping sample:

1. Refrigerate sample during transit to the lab by using packaged ice or suitable synthetic ice.
2. Sample must be received by lab within 24 hours of collection. (For exceptions, please call SLD)

Hours for receiving samples:

8:00 am to 4:00 pm, Monday - Wednesday
8:00 am to 4:30 pm, Thursday
No Samples Taken by SLD on Friday

No Samples Taken by SLD on Holidays and One Working Day Before a Holiday. Also Refer to the Calender You Can Pick Up at SLD's Kit Preparation Unit, Rm 119, West Side Dock

Chain of Custody requirements FOR REPEAT SAMPLES ONLY:

Repeat Sample bottles must have Chain of Custody evidentiary seal over cap and down two sides of the bottle.

Chain of Custody information to be filled out FOR ALL REPEAT SAMPLES.

REPEAT SAMPLES SUBMITTED WITH OUT INFORMATION BELOW AND USE SEALING TAPE ON REPEAT SAMPLE BOTTLES WILL RESULT IN SAMPLE REJECTION.

Sample Identified on reverse of this form was	PRINT NAME	SIGNATURE	Representing: (Company or Organization)	DATE	TIME
Collected by:	Violette V-Hirschfeld	*Violette V-Hirschfeld*	NMED-DWB	08-31-07	12:00
and	For Sampler: Sample container sealed:		☑ YES	☐ NO	
Placed in the care of:	Print Name Of Carrier John Carryall			08-31-07	12:25
and	For SLD Use Only : Box Seal intact:		☐ YES	☐ NO	
Relinquished to:					
and	For Intermediary: Sample Seal Intact:		☐ YES	☐ NO	
Relinquished to and Tested by:			SLD -EM		
	For SLD Analyst Use ONLY: Sample Seal Intact		☐ YES	☐ NO	

SLD Interactive Request Forms

http://www.sld.state.nm.us/Documents/INSTRUCTIONS.pdf

Chemical Analysis Request Form:
http://www.sld.state.nm.us/Documents/SLD-CB%20interactive%20form.pdf

Bacteriological Analysis Request Form:
http://www.sld.state.nm.us/Documents/waterform.pdf

NEW MEXICO DEPARTMENT OF HEALTH | **CHEMISTRY BUREAU** | **ANALYTICAL REQUEST FORM (INTERACTIVE)**

Request ID # Here

One Form Per Sample

Scientific Laboratory Division
700 Camino de Salud NE - PO Box 4700
Albuquerque, NM 87196-4700
Phone 505 841 2500

SLD Accession # Here

One Form Per Sample

SLD USE>>> ONLY | **DATE <<<TIME STAMP**

- ○ **55000** *(DWB - SDWA - fee-for-service)*
- ○ **55910** *(SWQB - MAS)*
- ○ **55420** *(DWB - non-reg. contaminants)*
- ○ **55920** *(SWQB - PSRS)*
- ○ **55321** *(GWB - remediation superfund)*
- ○ **64000** *(Individual client fee-for-service)*
- ○ **55410** *(GWB - pollution prevention)*
- ○ **OTHER** *(enter 5-digit user code)*

SLD USE - SAMPLE TEMPERATURE *(deg. C):*

SAMPLE PRIORITY: *(1, 2, 3 - call SLD if 1 or 2)*

SUBMITTER CODE *(3-digit):* | **WSS CODE** *(xxxxxxxxx):* | **SITE ID** *(DWB = 4-digit, SWQB = 13-chars):*

FACILITY / WSS NAME:

FACILITY LOCATION *(if no WSS complete boxes):* *County:* | *City:* | *State: NM, or change to:*

SAMPLING LOCATION:

DATE COLLECTED *(MM-DD-YY):* | **BY:** *Last Name:*

TIME COLLECTED *(HH:MM 24-hr):* | *First Name:*

SAMPLE INFO CONTACT *Phone:* | *Name if not collector:*

- ☐ *New / Change Address for Submitter ----------> Name:*
- ☐ *New / Change Address for WSS / Client ----------> Address:*
- ☐ *Send an additional report to ----------> City:*

FIELD DATA AND REMARKS ○ *Non-chlorinated* ○ *Chlorinated* *Residual (mg/l):* | *pH:* | *Conductivity (uS/cm):* | *Temperature (deg. C):*

Field remarks:

SAMPLING DOCUMENTATION

- ☐ *NMED monitoring*
- ☐ *Compliance*
- ☐ *Non-compliance*
- ☐ *Split with facility*
- ☐ *Grab sample*
- ☐ *Composite*
- ☐ *Finished water*
- ☐ *Raw water*
- ☐ *Confirmation*
- ☐ *Other*

Describe:

SAMPLE TYPE ○ *Filtered water* ○ *Non-filtered water* ○ *Soil/Sediment* ○ *Sludge* ○ *Blood* ○ *Urine* ○ *Tissue* ○ *Saliva* ○ *Swipe/Smear* ○ *Other air/liquid/solid* *Describe:*

PRESERVATION ☐ *None* ☐ *Shipped at < 4 C* ☐ *HCl added to pH < 2* ☐ *HNO_3 added to pH < 2* ☐ *H_2SO_4 added to pH < 2* ☐ *Asc. acid added* ☐ *SLD to acidify* ☐ *NaOH added to pH > 12* ☐ *Other* *Describe:*

HM ANALYSES SELECTION LIST	
OR ANALYSES SELECTION LIST	
RC ANALYSES SELECTION LIST	
WC ANALYSES SELECTION LIST	
ADDITIONAL ANALYSES	

FOR SLD USE ☐ *Field preservation confirmed* ☐ *Preserved to pH > 12 at SLD* ☐ *Preserved to pH < 2 at SLD* *Date/Initial:*

Lab Remarks:

Please use **CHAIN OF CUSTODY FORM** *when requirements mandate*

We, the undersigned, certify that on _____ (*Date*) at _____ (*Time*) the sample identified on the container(s) and this form by Request ID number _____ was transferred with evidentiary seal(s) *(check applicable box)* ○ *Not Present* ○ *Present & Intact* ○ *Present & Damaged*

Released by: _____ (*Signature*) & Received by: _____ (*Signature*)

Additional Transfer If Applicable

We, the undersigned, certify that on _____ (*Date*) at _____ (*Time*) the sample identified on the container(s) and this form by Request ID number _____ was transferred with evidentiary seal(s) *(check applicable box)* ○ *Not Present* ○ *Present & Intact* ○ *Present & Damaged*

Released by: _____ (*Signature*) & Received by: _____ (*Signature*)

Print Form

Form last modified on 08/09/06 by SLD Chemistry Bureau chief

Reset Form

Appendices

- Chemical & Radiological Baseline Monitoring of Drinking Water
  - Standardized Monitoring Framework
- Guidance for Developing a Sample Siting Plan for Public Water Systems
- Guidelines for Developing a Lead and Copper Sampling Plan
- Examples of Sampling Plans
  - Microbiological
  - Disinfectants and Disinfection By-products
  - Lead and Copper

CHEMICAL & RADIOLOGICAL BASELINE MONITORING OF DRINKING WATER

Chemical Monitoring

For inorganic chemicals, monitoring frequency is dependent upon the water source and contaminant being sampled.

ALL PWS MUST BE SAMPLED WITHIN 90 DAYS OF COMING ON LINE

Inorganic chemicals

CONFIRMATION & AVERAGING REQUIRED TO DETERMINE COMPLIANCE FOR NITRATE

PUBLIC NOTICE IS REQUIRED FOR FLOURIDE IF RESULT IS > 2 mg/L and **ALL OTHER MCL EXCEEDANCES**

Sample collection frequency

Groundwater

Nitrate----------	Annual (If 1 sample $\geq$ 5 mg/L, 1/41y at least 1 year) All systems No waiver
Nitrite----------	1 time only (if result is < .5 mg/L) All systems
Asbestos ----------	Every 9 years (1st period of cycle if no waiver)
Others ----------	CWS & NTNCWS Triennial - CWS & NTNCWS

Surface water

Nitrate----------	Quarterly (reduced to annual if none $\geq$ 5 mg/L) All systems
Nitrite----------	1 time only (if result is < .5 mg/L) All systems
Asbestos----------	Every 9 years (same as groundwater system) CWS & NTNCWS
Others----------	Annual - CWS & NTNCWS

A CONFIRMATION SAMPLE IS REQUIRED IF ANY MCL IS EXCEEDED

Sampling locations

Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment **except Asbestos (distribution – both distribution and source if source is vulnerable)**

Surface water systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point representative of each source after treatment

1 SULFATE SAMPLE FROM THE SOURCE FOR A NEW SYSTEM OR SOURCE - CWS & NTNCWS

Organic Chemicals

•Monitoring frequency varies depending on system size and whether contaminants are detected during initial monitoring

Monitoring frequencies:

•SOCs: 4 consecutive quarterly samples during the first compliance period (Systems >3300 with no detect can reduce to 2 quarterly samples (2 consecutive 6 month periods) in 1 year, per compliance period) (Systems<3300 with no detect can reduce to 1 sample per compliance period) CWS & NTNCWS

•VOCs: 4 consecutive quarterly samples during the first compliance period (**Groundwater** systems can reduce to 1 annual if no detects in initial round, then 1 X 3 years after 3 consecutive years of no detects)

Confirmation sample required if a DETECT of any VOC

Detect = ≥0.5 ug/L (1/4ly sampling required if compliance & confirmation are ≥0.5 ug/L)

Sampling locations

Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment

Surface water systems shall take a minimum of one sample

•At every entry point to the distribution system after any application of treatment, OR
•In the distribution system at a point representative of each source after treatment

TTHM/HAA5s: Systems that disinfect

•Groundwater systems < 10,000 population and Surface and Ground water under the influence of surface water <500 population—One sample per plant per year taken at a point in the distribution system reflecting maximum residence time during the warmest water temperature months (May thru September)

•Groundwater ≥ 10,000 population and Surface and Ground water under the influence of surface water 500-9,999 population —One sample per plant per year taken at a point in the distribution system reflecting maximum residence time during the warmest water temperature months (May thru September) Remaining samples taken at representative locations within the distribution system

•Additionally, groundwater sources should have one sample analyzed for maximum TTHM Potential

Chlorine/Chloramines

•All systems—Same location and frequency as TCR sampling
DBP Precursors

•Conventional filtration—Monthly for total organic carbon and alkalinity

Radiological Monitoring

Monitoring frequency

•Initial sampling consists of the analysis of an annual "Field Composite Sample" (4 consecutive quarterly samples)
•Thereafter, sampling according to standard monitoring framework of once every 3 years or greater depending on detection of contaminants.

Groundwater systems shall take samples at the entry point to the distribution system which representative of each well after treatment

Surface water systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or, in the distribution system at a point which is representative of each source after treatment

Turbidity Monitoring

Monitoring for turbidity must be accomplished on a daily basis for surface water sources and groundwater under the influence of surface water

•Sampling shall be done at representative entry points to the distribution system and according to Section 500 of the Drinking Water Regulations

Field Log Book Record

Written record used to trace possession and handling of samples from the moment of collection until shipment or delivery to the laboratory for analysis. All records should be done legibly in ink; Field records should be signed & dated

STANDARDIZED MONITORING FRAMEWORK

IOCs, SOCs, VOCs		Second Cycle									Third Cycle								
		1st Period			2nd Period			3rd Period			1st Period			2nd Period			3rd Period		
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Inorganic Contaminants (IOCs)[1]	**Groundwater (Below MCL)**																		
	Waiver[2]					x									x				
	No Waiver		x			x			x			x			x			x	
	Surface Water (Below MCL)																		
	Waiver[2]					x									x				
	No Waiver	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Groundwater and Surface Water (Above MCL)[3]																		
	Reliably and Consistently ≤ MCL for Groundwater Systems		x			x			x			x			x			x	
	Reliably and Consistently ≤ MCL for Surface Water Systems	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	> MCL or Not Reliably and Consistently ≤ MCL	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****
		02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
Synthetic Organic Contaminants (SOCs)	**Population >3,300 (Below Detection Limit)**																		
	Waiver		X			X			X			X			X			X	
	< Detect and No Waiver		**			**			**			**			**			**	
	Population ≤ 3,300 (Below Detection Limit)																		
	Waiver		X			X			X			X			X			X	
	< Detect and No Waiver		x			x			x			x			x			x	
	Above Detection Limit																		
	Reliably and Consistently ≤ MCL[4]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	≥ Detect or Not Reliably and Consistently ≤ MCL	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****
		02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
Volatile Organic Contaminants (VOCs)	**Groundwater (Below Detection Limit)**																		
	< Detect, Vulnerability Assessment, and Waiver[5]				x									x					
	No Waiver[6]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Surface Water (Below Detection Limit)																		
	< Detect, Vulnerability Assessment, and Waiver[7]		X			X			X			X			X			X	
	No Waiver[8]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Above Detection Limit																		
	Reliably and Consistently < MCL[4]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	≥ Detect or Not Reliably and Consistently ≤ MCL	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****

STANDARDIZED MONITORING FRAMEWORK

EXCEPTIONS		Second Cycle									Third Cycle								
		1st Period			2nd Period			3rd Period			1st Period			2nd Period			3rd Period		
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Nitrate	**CWSs & NTNCWSs**																		
	Surface Water with 4 Quarters of Results < 1/2 MCL[9]	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Groundwater Reliably and Consistently < MCL[9]	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	≥ 1/2 MCL	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****
	TNCWSs																		
	Standard Monitoring	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Nitrite		02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
	< 1/2 MCL					#									#				
	Reliably and Consistently < MCL[9]	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	≥ 1/2 MCL or not Reliably and Consistently < MCL	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****
Radio-nuclides		02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
	< Detection Limit				****							*						*	
	≥ Detection Limit but ≤ 1/2 MCL				****					*						*			
	> 1/2 MCL but ≤ MCL		!		****				*			*			*			*	
	> MCL			****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****
Asbestos		02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
	Waiver		X			X			X			X			X			X	
	No Waiver, Reliably and Consistently ≤ MCL, or vulnerable to asbestos contamination[10]	*									*								
	> MCL	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****

Legend

* = 1 sample at each entry point to distribution system (EPTDS).
** = 2 quarterly samples at each EPTDS. Samples must be taken during 1 calendar year during each 3-year compliance period.
**** = 4 quarterly samples at each EPTDS within time frame designated by the primacy agency.
X = No sampling required unless required by the primacy agency.
# = Systems must monitor at a frequency specified by the primacy agency.
! = When allowed by the primacy agency, data collected between June 2000 and December 8, 2003 may be grandfathered to satisfy the initial monitoring requirements due in 2004 for gross alpha, radium 226/228, and uranium.

[1]Until January 22, 2006 the maximum contaminant level (MCL) for arsenic is 50 µg/L; on January 23, 2006 the MCL for arsenic becomes 10 µg/L.

[2]Based on 3 rounds of monitoring at each EPTDS with all analytical results below the MCL. Waivers are not permitted under the current arsenic requirements, however systems are eligible for arsenic waivers after January 23, 2006.

[3]A system with a sampling point result above the MCL must collect quarterly samples, at that sampling point, until the system is determined by the primacy agency to be reliably and consistently below the MCL.

[4]Samples must be taken during the quarter which previously resulted in the highest analytical result. Systems can apply for a waiver after 3 consecutive annual sampling results are below the detection limit.

[5]Groundwater systems must update their vulnerability assessments during the time the waiver is effective. Primacy agencies must re-confirm that the system is non-vulnerable within 3 years of the initial determination or the system must return to annual sampling.

[6]If all monitoring results during initial quarterly monitoring are less than the detection limit, the system can take annual samples. If after a minimum of 3 years of annual sampling with all analytical results less than the detection limit, the primacy agency can allow a system to take 1 sample during each compliance period. Systems are also eligible for a waiver.

[7]Primacy agencies must determine that a surface water system is non-vulnerable based on a vulnerability assessment during each compliance period or the system must return to annual sampling.

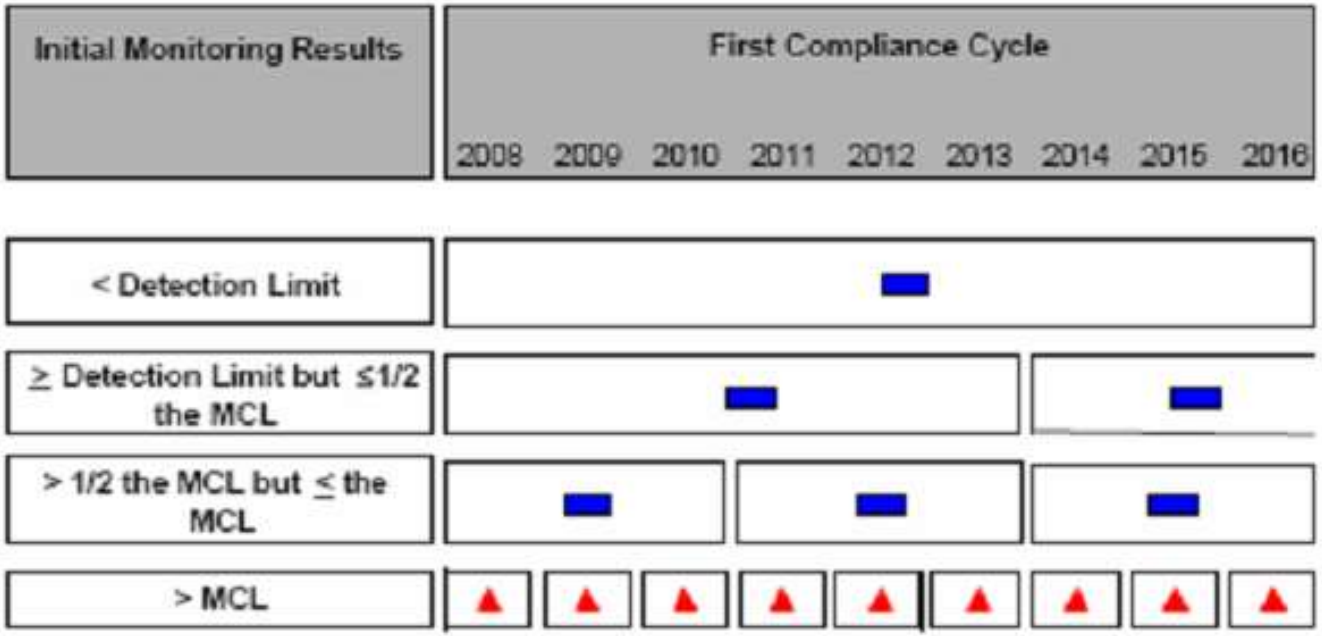
[8]If all monitoring results during initial quarterly monitoring are less than the detection limit, the system can take annual samples. Systems are also eligible for a waiver.

[9]Samples must be taken during the quarter which previously resulted in the highest analytical result.

[10]Systems are required to monitor for asbestos during the first 3-year compliance period of each 9-year compliance cycle. A system vulnerable to asbestos contamination due solely to corrosion of asbestos-cement pipe must take 1 sample at a tap served by that pipe. A system vulnerable to asbestos contamination at the source must sample at each EPTDS.

Standardized Monitoring Framework to Radionuclides

(Excluding the Beta Particle and Photon Emitters)



KEY

One sampling event.

4 consecutive quarterly samples. Systems with MCL violations must continue to take quarterly samples until 4 consecutive samples are at or below the MCL.

GUIDANCE FOR DEVELOPING A SAMPLE SITING PLAN FOR PUBLIC WATER SUPPLY SYSTEMS

The SDWA requires each PWS have a written sample siting plan to follow when collecting water samples

This outline provides guidance for developing a plan and submitting it to the State for approval

The sampling plan shall, at a minimum, include the following:

- A written description of the system
  - PWS Code #
  - Name of the system
  - Name, address, and phone # of the owner of the system
  - Name, address, and Phone # of the operator of the system
  - Population of the system or if seasonal, indicate the months of operation during the previous year

GUIDANCE FOR DEVELOPING A SAMPLE SITING PLAN FOR PUBLIC WATER SUPPLY SYSTEMS

- A map of the water supply system should include:
  - General layout of system including:
    - Sources
    - Entry points
    - Treatment facilities including disinfection facilities
    - Storage facilities
  - Not required for Small water supply systems such as restaurants and systems which have only one service connection
- Written description of the sampling sites should include:
  - Address of the site
  - Location of the sampling tap at the site
  - Reference to the site's location on a schematic diagram
- The name of the laboratory(s) to be used for the system's microbiological analyses

GUIDELINES FOR SITE SELECTION FOR LEAD AND COPPER

- The main objective
  - Protect the public from contaminants resulting from corrosion in the piping system
  1. Determine number of samples needed based on population
  2. Evaluate construction materials in distribution system
  3. Determine Tier levels from chart and select sites

GUIDELINES FOR SITE SELECTION FOR LEAD AND COPPER

LCR TIER STRUCTURE			
Community		Non Transient Non-Community	
Has copper pipes with lead solder or lead pipes and/or served by lead service lines			
Tier 1	Structure-Installed 1983 through 1985 Single-Family Structures Or Multi-Family Structures—Make Up More Than20% Of Total Service Connections	Tier 1	Any Structure-Installed From 1983 through 1985
Tier 2	Multi-Family Structures-Installed by 1983 and after that make up 20% or less of Total service connections	Tier 2	N/A
Tier 3	Single Family Structures-Installed by 1982 or before	Tier 3	Any Structure-Installed by 1982 or Before
Other	Structures with other plumbing materials	Other	Structures with other plumbing materials

LEAD AND COPPER SAMPLE SITING PLAN

1. Map, sketch or schematic of your distribution system.
   - Clearly indicate the locations of the sampling sites.
2. Assign each sampling site an alphanumeric identifier as a location code.
   - The code for each sampling site must consist of three digits using letters, numbers, or a combination of both (for example: ABC, 123, or 1B3).
   - Add the location code for each sampling site to the map or sketch.
3. Compile a listing of the sampling sites showing:
   - Location code
   - Tier level
   - Site address
   - Description of the site
4. Add public water supply identification number and the name or your public water supply system to both the listing and the plan or sketch
5. Submit the map or sketch and the listing of the sampling sites to the State for review

- Note: Future changes to the sample siting plan must be reviewed by the State
  1. Written submittal of the requested change explaining the reason
  2. Submittal of revised map or sketch
  3. Submittal of revised site listing

MICROBIOLOGICAL INFORMATION FORM

New Mexico Environment Department	☐ **Community Water Supply System**
Drinking Water Bureau	☐ **Nontransient Noncommunity System** ☐ **Noncommunity System**

Section A – General Information	**Season Begin Date (MM/DD)**	**Season End Date (MM/DD)**

WSS Code#: NM35	**Water Supply System Name:**	**Service Area Type**	**County:**

System Location:	**System Phone#:**

System Mailing Address:	**Street/P.O. Box**	**City**	**State**	**Zip Code**

Name of System Owner:	**Type of Owner:**	**Owner Phone #:**

Owner's Mailing Address:	**Street/P.O. Box**	**City**	**State**	**Zip Code**

Name of System Operator:	**Level of Operator:**	**Operator Phone #:**

Operator's Mailing Address:	**Street/P.O. Box**	**City**	**State**	**Zip Code**

Population Served	**# of Connections**	System Serves Water to Public: Year Round ☐ Seasonally ☐	If seasonally enter daily population served during each month

Detail your sampling throughout the Month (include laboratory(s) to be used:

Jan.	**Feb.**	**Mar.**	**April**	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**

Description of action(s) taken when compliance or repeat samples are positive:

Information Furnished By: _____ Date: _____ Phone:_____

Plan Reviewed By: _____ Date: _____ Phone:_____

Sample Site Descriptions

Site #	Address /Description	Sample Tap Location At Site		Site #	Address /Description	Sample Tap Location at Site

SAMPLE PLAN
FOR RESIDUAL DISINFECTANT MEASUREMENT

Water System Name _____

Water System Number NM 35

Water System Type _____

Water Type _____

Population Served _____

Disinfectant Used _____

Name of Operator _____

Certification Level of Operator _____

Number of Microbiological Samples / Residual Disinfectant Measurements Required _____

Sampling Frequency ~~Monthly~~ / Quarterly

RESIDUAL DISINFECTANT MEASUREMENT PLAN – CHLORINE & CHLORAMINES

This information should match your microbiological sampling plan

Site #	Address/Description	Sample Tap Location at Site	Measurement Frequency
#1			January, May, September
#2			February, June, October
#3			March, July, November
#4			April, August, December

Information Furnished By: _____ Date: _____ Phone:_____

Plan Reviewed By: _____ Date: _____ Phone:_____

SAMPLE PLAN
FOR BYPRODUCTS (TTHMs/HAA5s) SAMPLING

Water System Name _____

Water System Number NM 35

Water System Type _____

Water Type _____

Population Served _____

Disinfectant Used _____

Name of Operator _____

Certification Level of Operator _____

Location of Maximum Residence Time:

Site #	Address/Description	Sample Tap Location at Site	Sampling Frequency (circle one)
#			Quarterly Yearly Every 3 years

Other Locations, as needed:

Site #	Address/Description	Sample Tap Location at Site	Sampling Frequency (circle one)
#			Quarterly Yearly Every 3 years

Information Furnished By: _____ Date: _____ Phone:_____

Plan Reviewed By: _____ Date: _____ Phone:_____

SAMPLE PLAN FOR LEAD AND COPPER SAMPLING

Water System Name _____

Water System Number NM 35

Water System Type _____

Population Served _____

Number of Lead and Copper Samples Required _____

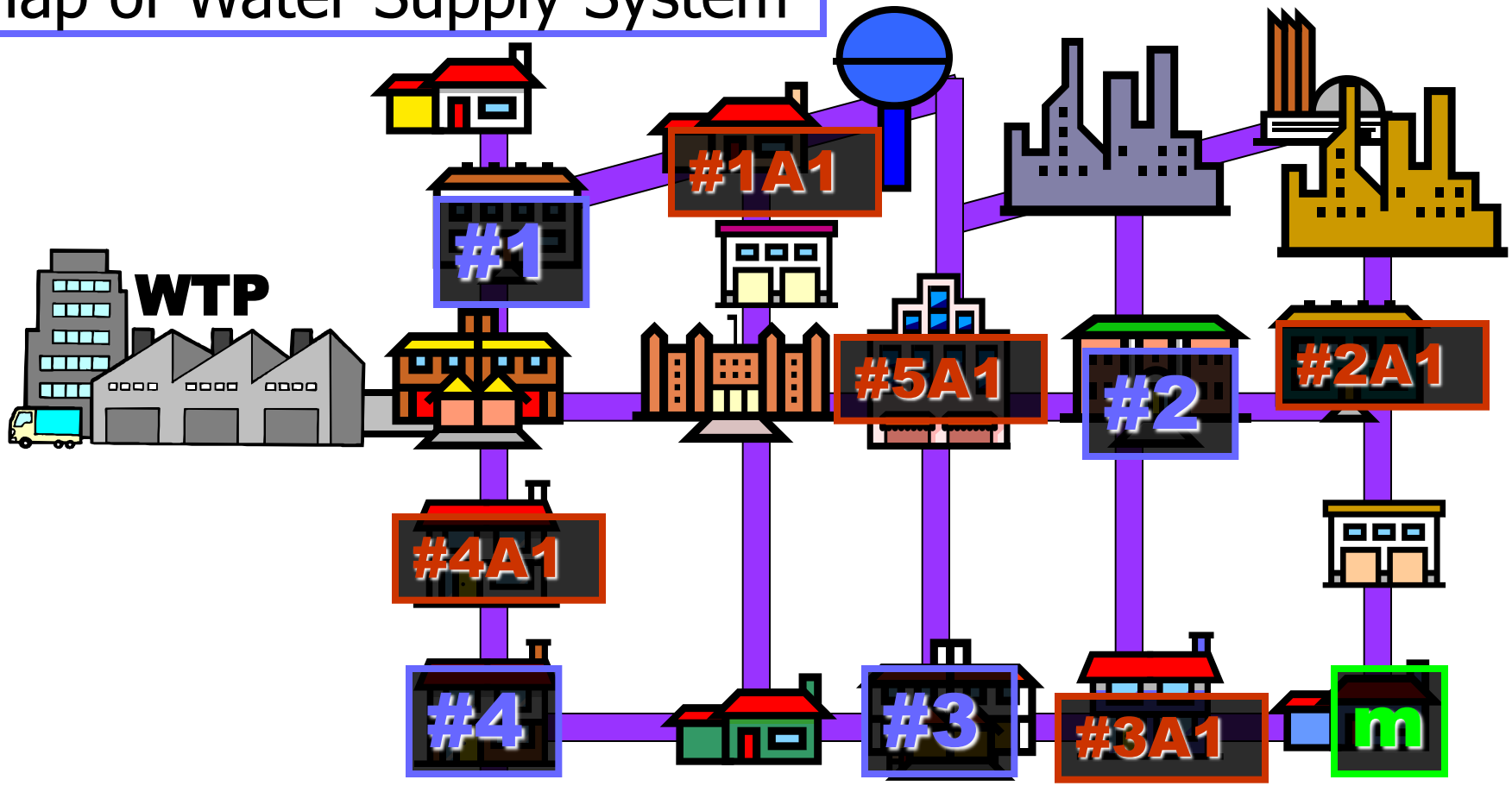
Sampling Frequency _____

Site Code (ex: ABC, 123, or 1B3)	Address	Description	Tier Level

Information Furnished By: _____ Date: _____ Phone:_____

Plan Reviewed By: _____ Date: _____ Phone:_____

Map of Water Supply System



Microbiological/ Chlorine Residual

#1 Jan., May, Sept.

#2 Feb., June, Oct.

#3 Mar., July, Nov.

#4 Apr., Aug., Dec.

TTHMs/HAA5s

June thru Sept.

m = MRT

Lead and Copper

June thru Sept.

#1A1 #4A1
#2A1 #5A1
#3A1

Additional Information

Field and Chemical Safety

Water Conservation Fee

Field and Chemical Safety

Many samples require the addition of acid for preservation

Always…Add acid to water, NOT water to acid

- Precautions to remember are:
  - Work in ventilated area
  - Do not inhale the fumes
  - Wear skin and eye protection

Field and Chemical Safety

- Burns—Flush under Cold Water
- Bleeding Cuts—Apply Pressure
- Spider Bites—Apply Ice & seek medical attention
- Acid on Skin or in Eyes—Wash for 15 min. with clean water & seek medical attention

Safety Data Sheets (SDS)

- Needed when a physical hazard is present
- Employers must:
  - Provide access to SDSs
  - Ensure that Labels & other warnings are displayed
  - Provide employees with Training

**** MATERIAL SAFETY DATA SHEET ****

Hydrochloric Acid
11155

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Hydrochloric Acid
Catalog Numbers:
A142J212, A142 212, A142-212, A142212, A142P 20, A142P-20, A142P20, A144 212 A144 500, A144 500LB, A144 612GAL, A144-20, A144-212, A144-500, A144-500L, A144-500LB, A144-612G, A144-612GAL, A144-612GL, A144212, A144500, A144500LB A144500LB02, A144612GAL, A144C 212, A144C-2.5, A144C-212, A144C212, A144C212001, A144FP 500, A144FP500, A144P 20, A144P 500, A144P-1GA, A144P-1GAL, A144P-20, A144P20, A144P500, A1445 212, A1445 500, A1445-212, A1445-500, A1445212, A1445500, A1445I 212, A1445I-21, A1445I-212, A1445I212 A466 1, A466 250, A466 500, A466-1, A466-2, A466-250, A466-500, A4661, A4662, A466250, A466500, A481 212, A481-212, A481212, A508-212, A508-500, A508212 001, A508212 002, A508212001, A508212002, A508212003, A508212004, A5085K212, CRNA481 212, CRNA481212, S71942SCMF, SA431-500, SA48-1, SA48-20, SA48-4, SA48-500
Synonyms:
Chlorohydric acid, hydrogen chloride, muriatic acid, spirits of salt.
Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
7647-01-0	Hydrogen chloride	36-38%	231-595-7
7732-18-5	Water	62-64%	231-791-2

Hazard Symbols: C

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: Clear, colorless to faintly yellow.
Danger! Corrosive. Sensitizer. Causes eye and skin burns. May cause severe respiratory and digestive tract irritation with possible burns.
Target Organs: None.

Potential Health Effects
Eye:
May cause irreversible eye injury. Vapor or mist may cause irritation and severe burns. Contact with liquid is corrosive to the eyes and causes severe burns.
Skin:
May be absorbed through the skin in harmful amounts. Contact with liquid is corrosive and causes severe burns and ulceration.
Ingestion:
May cause circulatory system failure. Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. May cause corrosion and permanent tissue destruction of the esophagus and digestive tract.
Inhalation:
Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. May cause pulmonary edema and severe respiratory disturbances.
Chronic:
Prolonged or repeated skin contact may cause dermatitis. Repeated exposure may cause erosion of teeth.
May cause conjunctivitis and photosensitization.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed.
Skin:
Get medical aid. Rinse area with large amounts of water for at least 15 minutes. Remove contaminated clothing and shoes.
Ingestion:
Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.
Inhalation:

Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician:
Treat symptomatically and supportively.
No specific antidote exists.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Not flammable, but reacts with most metals to form flammable hydrogen gas. Use water spray to keep fire-exposed containers cool.
Extinguishing Media:
Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.
Autoignition Temperature: Not available.
Flash Point: Not available.
NFPA Rating: Not published.
Explosion Limits, Lower: Not available.
Upper: Not available.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:
Large spills may be neutralized with dilute alkaline solutions of soda ash, or lime. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not get on skin or in eyes. Do not ingest or inhale.
Storage:
Keep away from heat and flame. Do not store in direct sunlight. Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:
Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Hydrogen chloride	C 5 ppm; C 7.5 mg/m3	C 5 ppm; C 7 mg/m3	C 5 ppm; C 7 mg/m3
Water	none listed	none listed	none listed

OSHA Vacated PELs:
Hydrogen chloride:
C 5 ppm; C 7 mg/m3
Water:
No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment
Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.
Skin:
Wear appropriate protective gloves to prevent skin exposure.
Clothing:
Wear appropriate protective clothing to prevent skin exposure.
Respirators:
Follow the OSHA respirator regulations found in 29CFR 1910.134. Always use a NIOSH-approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Liquid
Appearance: Clear, colorless to faintly yellow.
Odor: Strong, pungent.
pH: 1.1 (0.1N sol).

Vapor Pressure: 760 mm Hg
Vapor Density: 1.257 (Air=1)
Evaporation Rate: 2.0 (Butyl acetate=1)
Viscosity: Not available.
Boiling Point: 230 F
Freezing/Melting Point: -101 F
Decomposition Temperature: 3239.6 F
Solubility: 82Dg/L water at 32F.
Specific Gravity/Density: 1.18-1.19 (Water=1)
Molecular Formula: HCl
Molecular Weight: 36.46

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable under normal temperatures and pressures.
Conditions to Avoid:
Incompatible materials, light.
Incompatibilities with Other Materials:
Acetals, acetic anhydride, alcohols + hydrogen cyanide, 2-aminoethanol, ammonium hydroxide, calcium carbide, calcium phosphide, cesium acetylene carbide, cesium carbide, chlorosulfonic acid, 1,1-difluoroethylene, ethylene diamine, ethyleneimine, fluorine, lithium silicide, magnesium boride, mercuric sulfate, oleum, perchloric acid, potassium permanganate, b-propiolactone, propylene oxide, rubidium acetylene carbide, rubidium carbide, silver perchlorate + carbon tetrachloride, sodium, sodium hydroxide, sulfuric acid, uranium phosphide, vinyl acetate. Substance polymerizes on contact with aldehydes or epoxides.
Hazardous Decomposition Products:
Hydrogen chloride, hydrogen gas.
Hazardous Polymerization: May occur.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#
CAS# 7647-01-0: MW4025000
CAS# 7732-18-5: ZC0110000
LD50/LC50:
CAS# 7732-18-5: Oral, rat: LD50 = 90 mL/kg.
CAS# 7732-18-5: Oral, rat: LD50 = 90 mL/kg.
Carcinogenicity:
Hydrogen chloride -
IARC: Group 3 carcinogen
Water -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
No information available.
Teratogenicity:
Embryo or Fetus: Stunted fetus, Inh rat TCLo=450 mg/m3/1H Specific Developmental Abnormalities: Homeostasis, Inh rat TCLo=450 mg/m3/1H.
Reproductive Effects:
No information available.
Neurotoxicity:
No information available.
Mutagenicity:
No information available.
Other Studies:
None.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Trout LC100-10 mg/L/24H Shrimp LC50-100-330 ppm Starfish LC50-100- 330mg/L/48H Shore crab LC50-240 mg/L/48H Chronic plant toxicity-100 ppm
Environmental Fate:
Substance will neutralize soil carbonate-based components.
Physical/Chemical:
No information available.
Other:
None.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.
RCRA D-Series Maximum Concentration of Contaminants: Not listed.
RCRA D-Series Chronic Toxicity Reference Levels: Not listed.
RCRA F-Series: Not listed.
RCRA P-Series: Not listed.
RCRA U-Series: Not listed.
Not listed as a material banned from land disposal according to RCRA.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT
Shipping Name: HYDROCHLORIC ACID, SOLUTION
Hazard Class: 8
UN Number: UN1789

Packing Group: II
IMO
No information available.
IATA
No information available.
RID/ADR
No information available.
Canadian TDG
Shipping Name: HYDROCHLORIC ACID
Hazard Class: 8(9.2)
UN Number: UN1789

**** SECTION 15 - REGULATORY INFORMATION ****

FEDERAL
TSCA
CAS# 7647-01-0 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA
Section 302 (RQ)
final RQ = 5000 pounds (2270 kg)
Section 302 (TPQ)
CAS# 7647-01-0: TPQ = 500 pounds
SARA Codes
CAS # 7647-01-0: acute.
Section 313
This material contains Hydrogen chloride (CAS# 7647-01-0, 36-38%) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.
Clean Air Act:
CAS# 7647-01-0 is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
CAS# 7647-01-0 is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
CAS# 7647-01-0 is considered highly hazardous by OSHA.
STATE
Hydrogen chloride can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
Not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level:
None of the chemicals in this product are listed.
INTERNATIONAL
European Labeling in Accordance with EC Directives
Hazard Symbols: hydrogen gas
Risk Phrases:
Safety Phrases:
S 2: Keep out of reach of children.
S 24/25: Avoid contact with skin and eyes.
S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 3/9: Keep in a cool, well-ventilated place.
S 28A: After contact with skin, wash immediately with plenty of water.
Canada
CAS# 7647-01-0 is listed on Canada's DSL/NDSL List.
CAS# 7732-18-5 is listed on Canada's DSL/NDSL List.
CAS# 7647-01-0 is listed on Canada's Ingredient Disclosure List.
CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.
Exposure Limits:
CAS# 7647-01-0: OEL-AUSTRALIA:TWA 5 ppm (7 mg/m3); OEL-AUSTRIA:TWA 5 ppm (7 mg/m3); OEL-BELGIUM:STEL 5 ppm (7 mg/m3); OEL-DENMARK:STEL 5 ppm (7 mg/m3); OEL-FINLAND:STEL 5 ppm (7 mg/m3);Skin; OEL-FRANCE:STEL 5 ppm (7.5 mg/m3); OEL-GERMANY:TWA 5 ppm (7 mg/m3); OEL-HUNGARY:STEL 5 mg/m3; OEL-JAPAN:STEL 5 ppm (7.5 mg/m3); OEL-THE NETHERLANDS:TWA 5 ppm (7 mg/m3); OEL-THE PHILIPPINES:TWA 5 ppm (7 mg/m3); OEL-POLAND:TWA 5 mg/m3; OEL-RUSSIA:STEL 5 ppm (5 mg/m3); OEL-SWEDEN:STEL 5 ppm (8 mg/m3); OEL-SWITZERLAND:TWA 5 ppm (7.5 mg/m3);STEL 10 ppm (15 mg/m3); OEL-THAILAND:TWA 5 ppm (7 mg/m3); OEL-TURKEY:TWA 5 ppm (7 mg/m3); OEL-UNITED KINGDOM:TWA 5 ppm (7 mg/m3);STEL 5 ppm (7 mg/m3); OEL-IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV; OEL-IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV.

**** SECTION 16 - ADDITIONAL INFORMATION ****

Additional Information:
No additional information available.
MSDS Creation Date: 1/09/1995 Revision #10 Date: 2/07/1997

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

Water Conservation Fee

74-1-13. Water conservation fee; imposition; definitions.

A. There is imposed on every person who operates a public water supply system; a water conservation fee in an amount equal to three cents ($0.03) per thousand gallons of water produced on which the fee imposed by this subsection has not been paid.

B. The "water conservation fund" is created in the state treasury and shall be administered by the department of environment. The fund shall consist of water conservation fees collected pursuant to this section. Balances in the fund at the end of any fiscal year shall not revert to the general fund but shall accrue to the credit of the fund. Earnings on the fund shall be credited to the fund.

C. Money in the water conservation fund is appropriated to the department of environment for administration of a public water supply program to:

1) Test public water supplies for the contaminants required to be tested pursuant to the provisions of Section 1412 of the federal Safe Drinking Water Act and finalized through July1, 1992, and collect chemical compliance samples as required by those provisions of the federal act;

2) Perform vulnerability assessments which will be wed to assess a public water supply's susceptibility to those contaminants; and

3) Implement new requirements of the Utility operators Certification Act [61-1-1 to 61-1-31 NMSA 1978] and provide training for all public water supply operators.

D. The taxation and revenue department shall provide by regulation for the manner and form of collection of the water conservation fee. All water conservation fees collected by the taxation and revenue department shall be deposited in the water conservation fund.

E. The fee imposed by this section shall be administered in accordance with the provisions of the Tax Administration Act [Chapter 7, Article 1 NMSA 1978], and shall be paid to the taxation and revenue department by each person who operates a public water supply system in the manner required by the department on or before the twenty-fifth day of the month following the month in which the water is product.

F. Each operator of a public water supply system shall register and comply with the provisions of Section 7-1-12 NMSA 1978 and furnish such information as may be required by the taxation and revenue department.

G. As used in this section:

1) "Person" means any individual or legal entity and also means, to the extent permitted by law, any federal, state or other governmental unit or subdivision or an agency, department or instrumentality thereof; and

2) "Public water 6upply system" means a system that provides piped water to the public for human consumption and that has at least fifteen service connections or regularly services an average of at least twenty-five individuals at least sixty days per year.

Regulation Pertaining to the
TAX ADMINISTRATION ACT
Section 7-1-15 NMSA 1978

I. 7-1-15. SECRETARY May SET Tax Reporting and Payment Intervals-The Secretary may, pursuant to regulation allow taxpayers with an anticipated tax liability of less than two hundred dollars ($200) a month to report and pay taxes at intervals which the secretary may specify However, unless specifically permitted by law, an interval shall not exceed six months

II. QUARTERLY AND SEMIANNUAL REPORTING - WATER CONSERVATION FEE
Persons who are liable for reporting the water conservation fee under Section 74-1-13 and whose anticipated aggregate liability for the fee is less than $200 a month may report and pay this fee at quarterly or semiannual intervals if the taxpayer applies for and obtains the prior approval of the secretary or the Secretary's delegate The semiannual reporting and payment intervals shall be only for the periods of January through June and July through December of any calendar year The quarterly reporting and payment intervals shall be only for the three- month periods ending March 31, June 30, September 30 and December 31 of any calendar year.

Persons who liable for reporting the water conservation fee may not change from reporting interval to another without the prior written approval of the security or the secretary's delegate except that the person may change without prior approval from quarterly or semiannual reporting to monthly if the person begins the monthly reporting with either the January or July reporting period.

As a condition of approving quarterly or semiannual reporting the secretary or the secretary's delegate may require the posting of a security bond or other accept able security in an appropriate amount payable to the State of New Mexico guaranteeing payment to the State of New Mexico of the TRD Regulation

WATER CONSERVATION FEE

REPORT PERIOD

Beginning (mm-yy) ____-____ Ending (mm-yy) ____-____

For Department Use Only

CRS I.D. 0 _____ 00 _

1. Total Gallons Subject to Fee ___,___,___,___
2. Line 1 divided by 1,000 ___,___,___
3. Line 2 x .03 = Total fee due $ ___,___.__
4. Penalty $ ___,___.__
5. Interest $ ___,___.__
6. TOTAL $ ___,___.__

Signature _____ Date _____

RPD-41109
INT. 5/93

Mail To: Taxation & Revenue Department, P.O. Box 25123, Santa Fe, NM 87504-5123

▼ RETAIN THIS PORTION FOR YOUR RECORDS ▼

RPD-41109
INT. 5/93

WATER CONSERVATION FEE

REPORT PERIOD

Beginning (mm-yy) ____-____ Ending (mm-yy) ____-____

For Department Use Only

CRS I.D. 0 _____ 00 _

1. Total Gallons Subject to Fee ___,___,___,___
2. Line 1 divided by 1,000 ___,___,___
3. Line 2 x .03 = Total fee due $ ___,___.__
4. Penalty $ ___,___.__
5. Interest $ ___,___.__
6. TOTAL $ ___,___.__

Please print your numbers like this:

9 8 7 6 5 4 3 2 1 0

WHO MUST FILE: Every person who operates a public water supply system with 15 service connections or regularly services an average of at least 25 individuals.

WHEN TO FILE: The Water Conservation Fee, Form RPD-41109, is due on or before the 25th day of the month following the month in which the water was produced.

REPORTING PERIOD: Reporting is on a monthly basis, from the first day of the month to the last day of the month.

Detach the top portion and submit with check made payable to: New Mexico Taxation and Revenue Department, P.O. Box 25123, Santa Fe, NM 87504-5123.

LINE INSTRUCTIONS

Enter your CRS identificaiton number.

1) Enter the total amount of gallons of water produced in the reporting period upon which the fee is due.
2) Divide line 1 by 1,000, rounding to the nearest whole number.
3) Multiply line 2 by .03. This equals the Total Fee Due.
4) Penalty is calculated as 2% of line 3 per month or partial month up to 10% of the fee due or $5.00, whichever is greater.
5) Interest for late filing is 1.25% of line 3 per month or partial month that this report is late.
6) Enter total of lines 3, 4 and 5.

Contact Information

- NMED Drinking Water Bureau
  - www.nmenv.state.nm.us/dwb/dwbtop.html
    - *Albuquerque Field Office – (505) 222-9500*
    - *Santa Fe Field Office – (505) 476-8600*
    - *Clovis Field Office – (505) 762-3728*
    - *Las Cruces Field Office – (505) 524-6300*

- USEPA website
  - www.epa.gov/safewater

- USEPA Safe Drinking Water Hotline
  - (800) 426-4791
    hotline-sdwa@epamail.epa.gov