

Entry Point to the Distribution System: *Monitoring & Reporting*

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IMPORTANT ACRONYMS

- EPDS: Entry Point to the Distribution System
- POU: Point of Use Device
- IOC: Inorganic Contaminant
- SOC: Synthetic Organic Contaminant
- VOC: Volatile Organic Contaminant
- RAD: Radionuclides
- PWS: Public Water System
- CWS: Community Water System
- NTNC: Non-Transient Non-Community Water System
- TNC: Transient Non-Community Water System
- GW: Groundwater
- SW: Surface water (or Combined GW/SW)
- RCB: Reliably and Consistently Below
- MCL: Maximum Contaminant Level

Chemical
Contaminants

Inorganic Contaminants
(IOCs)

Volatile Organic
Contaminants (VOCs)

Synthetic Organic
Contaminants (SOCs)

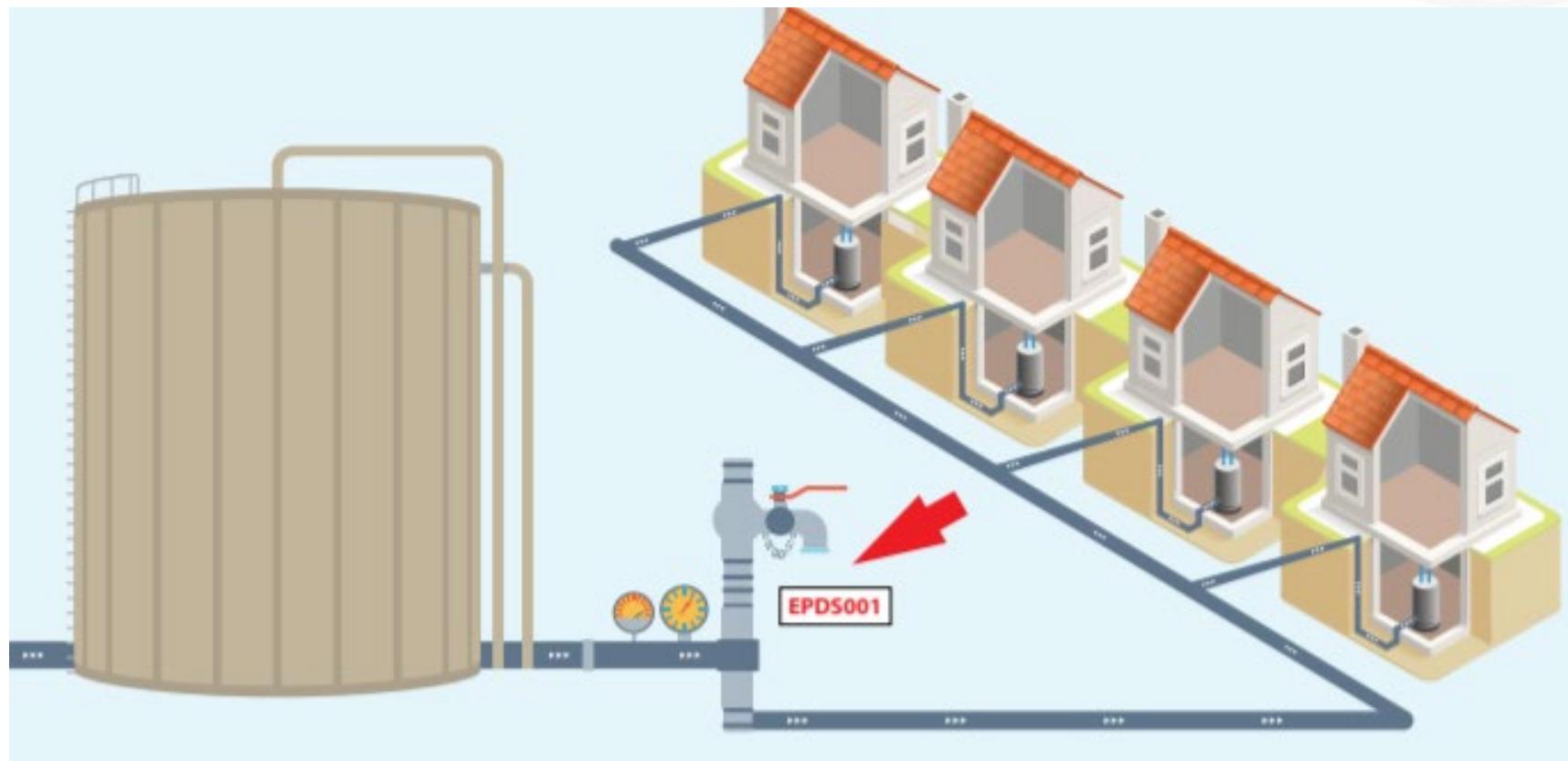
Radionuclides (RADs)

Entry Point to the Distribution System (EPDS)



Compliance Sampling Point located:

- On a finished water line
- **After** the well, disinfection, treatment, blending, & storage facilities – whichever is last in the process flow
- **Before** the first service connection



- Must contain a sampling tap, preferably without threads
- ADEQ's number should be clearly marked on each EPDS near the sample tap (e.g. EPDS001)
- Samples taken at an EPDS must have the EPDS number identified when reporting results
- The Monitoring Assistance Program (MAP) takes routine and reduced EPDS samples for PWSs participating in MAP (CWS & NTNC PWS serving <10,000 not state/federally owned)
 - Participating PWSs are responsible for increased sampling and reviewing sampling results from MAP



CHEMICAL CONTAMINANTS

The chemical contaminants were promulgated in phases collectively called the Phase II/V Rules or the Chemical Contaminant Rules. These rules regulate over 65 contaminants in three contaminant groups:

Inorganic
Contaminants
(IOCs)
(including
arsenic and
nitrate),

Volatile Organic
Contaminants
(VOCs), and

Synthetic
Organic
Contaminants
(SOCs).

Chronic drinking water contaminants can cause health effects after continuous long-term exposure at levels greater than the MCL. EPA health effects language generally describe the long term health impacts for an average adult consuming 2 liters of water per day with MCL exceedances.

The Chemical Contaminants Rules provide public health protection through the reduction of chronic, or long-term, risks from:

- Cancer,
- Organ damage,
- Circulatory system disorders,
- Nervous system disorders, and
- Reproductive system disorders.

There is an acute health risk from nitrate and nitrite.

- Methemoglobinemia or "blue baby syndrome" is caused from ingestion of high levels of nitrate or nitrite.

Acute drinking water contaminants can cause short term health effects within hours or days of exposure.



INORGANIC CONTAMINANTS (IOC)

LIST OF IOCS

Analyte Name	MCL (mg/L)	Major Sources in Drinking Water	Health Effects Language
Antimony (ppb)	0.006	Discharge from petroleum refineries; fire retardants; ceramics, electronics and solder	Some people who drink water containing antimony in excess of the MCL over many years may experience increases in blood cholesterol and decreases in blood sugar.
Arsenic (ppb)	0.010	Erosion of natural deposits, runoff from orchards, runoff from glass and electronics production wastes	Some people who drink water containing arsenic in excess of the MCL over many years may experience skin damage or circulatory system problems, and may have an increased risk of getting cancer
Asbestos (MFL)	7	Decay of asbestos cement water mains; Erosion of natural deposits	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
Barium (ppm)	1	Discharge of drilling wastes; discharge from metal refineries; Erosion of natural deposits	Some people who drink water containing barium in excess of the MCL over many years may experience an increase in blood pressure.
Beryllium (ppb)	0.004	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries	Some people who drink water containing beryllium in excess of the MCL over many years may develop intestinal lesions.
Cadmium (ppb)	0.005	Corrosion of galvanized pipes; natural deposits; metal refineries; runoff from waste batteries and paints	Some people who drink water containing cadmium in excess of the MCL over many years may experience kidney damage.
Chromium (ppb)	0.1	Discharge from steel and pulp mills; Erosion of natural deposits	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
Cyanide (ppb)	0.2	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.

LIST OF IOCS (Cont.)

Analyte Name	MCL (mg/L)	Major Sources in Drinking Water	Health Effects Language
Fluoride (ppm)	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.
Mercury (ppb)	0.002	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills and cropland.	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
Nitrate (ppm)	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Nitrite (ppm)	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Selenium (ppb)	0.05	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
Sodium (ppm)	N/A	Erosion of natural deposits	Erosion of natural deposits
Thallium (ppb)	0.002	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

Community (CWS)

- All IOCS, including Sodium

Non-Transient Non-Community (NTNC)

- All IOCS, except Sodium and Fluoride

Transient Non-Community

- Only Nitrates & Nitrites

Sampling is done at the Entry Point to the Distribution System (EPDS), unless specified by the regulatory agency (e.g. POUs)

Initial/Routine Monitoring

- GW Systems: 1 sample / every 3 years
- SW Systems: 1 sample / every year

Increased Monitoring

- (All IOCs) If one sample exceeds the MCL, then starts quarterly monitoring in the subsequent monitoring period
- (Nitrates only) If one sample exceeds the >50% of the MCL, then starts quarterly monitoring

MONITORING

141.23(b):
Asbestos
(CWS and NTNC only)

141.23(c):
Antimony, arsenic, barium,
beryllium, cadmium, chromium,
cyanide, fluoride, mercury,
nickel, selenium and thallium
(CWS and NTNC only)

141.23(d):
Nitrates
(All PWS)

141.23(e):
Nitrites
(All PWS)

Asbestos Monitoring

Who:

- CWS & NTNC

What:

- Asbestos can be in the source water or corrosion of asbestos-cement pipes

Where:

- EPDS or Distribution System taps (if vulnerable)

When:

- Routine: Within the first 3 years of each 9 year monitoring period
- Increased: Quarterly, when exceeding the MCL
- Increased to Routine: Must be RCB MCL
 - GW System: After a minimum of 2 quarterly samples
 - SW Systems: After a minimum of 4 quarterly samples
 - *Must be permitted in writing by the regulating agency*

Who:

- CWS & NTNC

What:

- Antimony, arsenic, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium and thallium

Where:

- Entry Point to the Distribution System

When:

- Routine: GW Systems: Every 3 Years | SW Systems: Every Year
- Increased: Quarterly, when exceeding the MCL
- Increased to Routine: Must be RCB MCL
 - GW System: After a minimum of 2 quarterly samples
 - SW Systems: After a minimum of 4 quarterly samples
 - *Must be permitted in writing by the regulating agency*

Nitrate Monitoring

Who:

- CWS, NTNC, & TNC

What:

- Nitrates are found anywhere and can cause blue baby syndrome resulting in infant death

Where:

- Entry Point to the Distribution System (EPDS) or POU

When:

- Routine: Annually
- Increased: Quarterly, when exceeding 5 mg/L (CWS and NTNC only)
 - SW Systems: Must go back on quarterly if at or exceeding 5 mg/L
 - TNC do not do increased monitoring
- Increased to Routine: After at least 4 consecutive quarters RCB MCL
 - GW Systems: Sample annually in the quarter with the highest result
 - SW Systems: Must be less than 5 mg/L for 4 consecutive quarters to return to routine annual sampling, in the quarter with the highest result
 - *Must be permitted in writing by the regulating agency*

Who:

- CWS, NTNC, & TNC

What:

- Nitrites are found anywhere and cause blue baby syndrome resulting in infant death

Where:

- Entry Point to the Distribution System (EPDS)

When:

- Routine: One sample every 9 years
- Increased: Quarterly, if routine sample exceeds 0.5 mg/L
 - TNC do not do increased monitoring
- Increased to Annual: After at least 4 consecutive quarters RCB MCL, can sample annually in the quarter with the highest result
 - *Must be permitted in writing by the regulating agency*

Where the results exceed the MCL, a confirmation sample must be collected as soon as possible after the initial sample was taken, but no more than two weeks at the same sampling point.

If a confirmation sample is taken for any contaminant, then the results of the initial and confirmation sample shall be averaged.

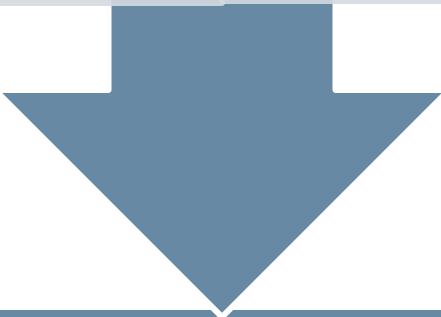
The resulting average shall be used to determine the system's compliance

NITRATE/NITRITE CONFIRMATION SAMPLES

Where nitrate or nitrite sampling results exceed the MCL, a confirmation sample must be taken within 24 hours of lab notification.

Systems unable to comply with the 24-hour sampling requirement must immediately notify persons served by the public water system in accordance with Tier 1 public notification requirements under subpart Q of this part.

Systems exercising this option must take and analyze a confirmation sample within two weeks of notification of the analytical results of the first sample.



If a confirmation sample is taken for any contaminant, then the results of the initial and confirmation sample shall be averaged. The resulting average shall be used to determine the system's compliance

< RETURN TO DRINKING WATER | COMPLIANCE ASSISTANCE

Inorganic Chemicals | Drinking Water Compliance Assistance

What to Do If There's an Exceedance

Nitrate or Nitrite Trigger Level

If a system exceeds the trigger level (5.0 mg/L for nitrate or 0.5 mg/L for nitrite), they must begin increased monitoring in the following quarter, until the system is able to obtain four consecutive quarters with results less than the maximum contaminant level (MCL) for groundwater systems and results less than the trigger level for surface water systems.

- Groundwater systems, with ADEQ approval, are granted annual monitoring in which samples are taken in the quarter with the highest results. Future trigger level exceedances that are less the MCL DO NOT trigger increase monitoring.
- Surface water systems, with ADEQ approval, are granted annual monitoring, in which samples are taken in the quarter with the highest results. Future trigger level exceedances DO trigger increase quarterly monitoring.

Nitrate or Nitrite Maximum Contaminant Level

If a system exceeds the MCL for nitrate or nitrite, a confirmation sample ~~will~~ be taken within 24 hours of being notified. If a confirmation sample is not taken within 24 hours of the notification date, the original sample will be used for compliance to indicate the system has exceeded the MCL. If a confirmation sample is taken, the average of the original sample and the confirmation sample will be used for compliance.

- If the average from the two results is less than the MCL and the trigger level, no further action is required.
- If the average from the two results is less than the MCL, but greater than the trigger level, increased quarterly monitoring is required.
- If the average of the two results more than the MCL, the MCL has been exceeded.

An MCL exceedance triggers an MCL violation, increased quarterly monitoring starting the following quarter, and a Tier 1 Public Notice.



CONTACT

Compliance Assistance Coordinators
[Find by County >](#)

DW Compliance Data Submittals
[Email >](#)



SEE MORE

[Monitoring Waiver Information >](#)



FORMS/TEMPLATES/PLANS

[DWAR 02 POU - IOCs POU >](#)
[DWAR 02B - Asbestos >](#)
[DWAR 02C - Asbestos Composite >](#)
[DWAR 02IN - IOCs >](#)
[DWAR 10 - IOCs Composite >](#)



PUBLIC NOTICE TEMPLATES

[Public Notice Requirements Flow Chart >](#)
[Certificate of Distribution >](#)
[Tier 1 Nitrate MCL >](#)
[Tier 1 No Nitrate Confirmation Sample >](#)
[Tier 1 Systems Authorized to Exceed Nitrate MCL >](#)
[Tier 2 Arsenic MCL >](#)
[Tier 2 Fluoride MCL >](#)
[Tier 2 MCL Exceedance at POU >](#)
[Tier 2 MCL >](#)
[Tier 2 Secondary Fluoride MCL >](#)
[Tier 3 Missed Monitoring >](#)

Monitoring quarterly, compliance with the MCL is determined by a running annual average at any sampling point.

- If the average at any sampling point is greater than the MCL, then the system is out of compliance.
- If any one sample would cause the annual average to be exceeded, then the system is out of compliance immediately.
- If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

Monitoring yearly, triennially, or every 9 years, the system is out of compliance with the maximum contaminant levels if the level of a contaminant is greater than the MCL.

- If the average of the original and confirmation samples exceed the MCL, then the system is out of compliance.
- If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

Compliance with the MCL for nitrate and nitrite is determined based on one sample if the levels of these contaminants are below the MCLs.

- If the average of the original and confirmation samples exceed the MCL, then the system is out of compliance.

COMMON MCLs TO REMEMBER

ARSENIC:

- 0.01 MG/L or
10 PPB

NITRATE:

- 10 MG/L

FLUORIDE:

- 4 MG/L
- Secondary
MCL (2 MG/L)

PUBLIC NOTICE

- Tier 1 (24 hours) {
 - Nitrate MCL
 - Nitrite MCL
- Tier 2 (30 days) {
 - MCL Violation – all other IOCs
- Tier 3 (365 days) {
 - Missed Monitoring Violations
 - Fluoride Secondary MCL
- No Public Notice {
 - Late Reporting Violations

Certificate of Public Notice Distribution and a copy of the public notice is due to ADEQ **within 10 days** of distributing the public notice

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IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Elevated Fluoride Levels Detected

This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/l) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provided by your community water system [name] has a fluoride concentration of [insert value] mg/l.

Dental fluorosis in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.

Drinking water containing more than 4 mg/l of fluoride (the U.S. Environmental Protection Agency's drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4 mg/l of fluoride, but we're required to notify you when we discover that the fluoride levels in your drinking water exceed 2 mg/l because of this cosmetic dental problem.

For more information, please call [name of water system contact] of [name of community water system] at [phone number]. Some home water treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-8-NSF-HELP.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by: [system].

State Water System ID#: [REDACTED]

Date distributed: [REDACTED]

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After Issuing the Notice
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HOW TO RETURN TO COMPLIANCE (RTC)



Monitoring and Reporting Violation “RTC”
when Systems send in their late data or the subsequent monitoring periods’ data

MCL Violation “RTC” when the RAA is below the MCL

- Need 4 consecutive quarters RCB MCL and written notification from ADEQ to reduce to annual or routine monitoring

Sample Point	Viol Type	Violation Name	Comp Achieved	Analyte Code	Analyte Name
EPDS001	02	MCL, AVERAGE	N	1040	NITRATE
EPDS001	03	MONITORING, ROUTINE MAJOR	Y	1040	NITRATE

IOCs can be removed from drinking water using various available technologies such as:

Coagulation
/Filtration

Lime
softening

Reverse
osmosis

Ion
exchange

Chlorine
oxidation

Activated
alumina

POUs

Questions about treatment options can be directed to: wqd_dwser@azdeq.gov

Point of Use (POU) Treatment



- Application located on the ADEQ website:
<http://azdeq.gov/engineering-review-point-use-drinking-water-review-application-information>
 - Submit application and Monitoring Plan to ADEQ

< RETURN TO DRINKING WATER ENGINEERING REVIEW

Engineering Review | Point-of-Use Drinking Water Review Application Information

Approval to Install and Approval of Installation

The Completeness Review Guide for Engineering Review (Form 222) provides a quick overview of the requirements for application submittals for Point-of-Use systems. The design review of Point-of-Use systems is conducted by the ADEQ Phoenix Office, except in Maricopa County where design review is conducted by the Maricopa County Environmental Services Department .

The primary components necessary for application per Form 222 are as follows:



CONTACT

[Engineering Review Email >](#)



SEE MORE

[DW Engineering Review Overview >](#)
[DW Facilities Review Application Information >](#)
[Engineering Bulletin 8 >](#)
[Engineering Bulletin 10 >](#)
[Application Time Frames >](#)



SYNTHETIC ORGANIC CONTAMINANTS (SOC)

Man-made organic (carbon based) chemicals that do not occur naturally in the environment

- Pesticides, herbicides, defoliants, fuel additives, ingredients for other organic compounds

Contaminate drinking water through:

- Agricultural runoff
- As part of a legally discharged waste stream
- Improper or illegal waste disposal
- Accidental spills
- As a byproduct of incineration

Many SOCs are known carcinogens (cancer causing) and are generally toxic and can have substantial health impacts from both acute (short-term) and chronic (long-term) exposure

LIST OF SOCs

Analyte Name	MCL (mg/L)	Detection Limit (mg/L)	Major Sources in Drinking Water	Health Effects Language
2,4-D	0.07	0.0001	Runoff from herbicide used on row crops	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
2,4,5-TP (a.k.a Silvex)	0.05	0.0002	Residue of banned herbicide	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
Alachlor	0.002	0.0002	Runoff from herbicide used on row crops	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
Atrazine	0.003	0.0001	Runoff from herbicide used on row crops	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties
Benzo(a)pyrene (PAH)	0.0002	0.00002	Leaching from linings of water storage tanks and distribution lines	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer
Carbofuran	0.04	0.0009	Leaching of soil fumigant used on rice and alfalfa	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
Chlordane	0.002	0.0002	Residue of banned termiticide	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer
Dalapon	0.2	0.001	Runoff from herbicide used on rights of way	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

LIST OF SOCs

Analyte Name	MCL (mg/L)	Detection Limit (mg/L)	Major Sources in Drinking Water	Health Effects Language
Di (2-ethylhexyl) adipate	0.4	0.0006	Discharge from chemical factories	Some people who drink water containing di (2-ethylhexyl) adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement or possible reproductive difficulties.
Di (2-ethylhexyl) phthalate	0.006	0.0006	Discharge from rubber and chemical factories	Some people who drink water containing di (2-ethylhexyl) phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
Dibromochloropropane	0.0002	0.00002	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive problems and may have an increased risk of getting cancer.
Dinoseb	0.007	0.0002	Runoff from herbicide used on soybeans and vegetables	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
Diquat	0.02	0.0004	Runoff from herbicide use	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
Dioxin [a.k.a 2,3,7,8-TCDD]	0.00000003	0.00000005	Emissions from waste incineration and other combustion; discharge from chemical factories	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
Endothall	0.1	0.009	Runoff from herbicide use	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
Endrin	0.002	0.00001	Residue of banned insecticide	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.

LIST OF SOCs

Analyte Name	MCL (mg/L)	Detection Limit (mg/L)	Major Sources in Drinking Water	Health Effects Language
Ethylene dibromide	0.00005	0.00001	Discharge from petroleum refineries	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
Glyphosate	0.7	0.006	Runoff from herbicide use	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
Heptachlor	0.0004	0.00004	Residue of banned termiticide	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
Heptachlor epoxide	0.0002	0.00002	Breakdown of heptachlor	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
Hexachlorobenzene	0.001	0.0001	Discharge from metal refineries and agricultural chemical factories	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
Hexachlorocyclopentadiene	0.05	0.0001	Discharge from chemical factories	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
Lindane	0.0002	0.00002	Runoff/leaching from insecticide used on cattle, lumber, gardens	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
Methoxychlor	0.040	0.0001	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties

LIST OF SOCs

Analyte Name	MCL (mg/L)	Detection Limit (mg/L)	Major Sources in Drinking Water	Health Effects Language
Oxamyl (a.k.a. Vydate)	0.2	0.002	Runoff/leaching from insecticide used on apples, potatoes and tomatoes	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
PCBs [Polychlorinated biphenyls]	0.0005	0.0001	Runoff from landfills; discharge of waste chemicals	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
Pentachlorophenol	0.001	0.00004	Discharge from wood preserving factories	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
Picloram	0.5	0.0001	Herbicide runoff	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
Simazine	0.004	0.00007	Herbicide runoff	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
Toxaphene	0.003	0.001	Runoff/leaching from insecticide used on cotton and cattle	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.

List of SOCs (cont.)

PWSs may sample for PCBs or the seven aroclors:

OR

PCBs	Detection Limit (mg/L)
Polychlorinated biphenyls (PCBs) (as decachlorobiphenyl)	0.0001

Aroclors	Detection Limit (mg/L)
1016	0.00008
1221	0.02
1232	0.0005
1242	0.0003
1248	0.0001
1254	0.0001
1260	0.0002

APPLICABILITY

Community (CWS)

- All SOCs

Non-Transient Non-Community (NTNC)

- All SOCs

Transient Non-Community

- Does not sample SOCs

Sampling is done at the Entry Point to the Distribution System (EPDS)

Initial Monitoring

- 4 consecutive quarters in one calendar year during a 3-year compliance period

Routine Monitoring

- Population \leq 3,300: 1 sample every 3 years
- Population $>$ 3,300: 2 samples every 3 years, taken in 2 different quarters in the same calendar year

SOC Waivers are issued for the entire SOC group

PWS is eligible to apply for a waiver if:

- Initial monitoring has been completed AND
- No detects in the past 3 consecutive annual samples

Systems must submit 1 or 2 complete SOC samples every 9 years depending on population:

Pop. \leq 3,300: 1 sample every 9 years

Pop. $>$ 3,300: 2 samples every 9 years, taken in 2 different quarters in the same calendar year

Waivers must be reapplied for every 3 years

- If fail to reapply within 3 years: return to routine triennial sampling

Waiver application available at azdeq.gov

MAP systems not eligible for SOC waiver

Detection Limit \geq SOC Contaminant Result \leq MCL

Increased (Quarterly)

- Quarterly monitoring begins the following quarter
 - Only the detected contaminant, not all SOCs
 - If heptachlor or heptachlor epoxide detected, monitor quarterly for both contaminants
 - If any aroclor is detected, must be reanalyzed using method 508A to quantitate PCBs (as decachlorobiphenyl)

Increased to Annual

- Annual sample taken in the quarter with the highest result
- GW: Must be RCB MCL for 2 consecutive quarters
- SW: Must be RCB MCL for 4 consecutive quarters
- *Must be permitted in writing by the regulating agency*

SOC Contaminant Result > MCL

Increased (Quarterly)

- Quarterly monitoring begins the following quarter
 - Only the detected contaminant, not all SOCs

Increased to Annual

- Annual sample taken in the quarter with the highest result
- Must have 4 consecutive quarters RCB MCL
- *Must be permitted in writing by the regulating agency*

REPORTING



*** PUBL
>>> TO BE

PWS ID Number

Sample Date Sample Time

Owner/Contact Email Address

SAMPLE TYPE

Compliance Monitoring

SAMPLE COLLECTION POINT

Entry Point to the Distribution System [EPDS: _____]

SAMPLE SITE ID [_____]

*** SYNTHE
>>> TO BE CC
Contaminant
Name

Analysis Method	MCL	Reporting Limit	Contaminant Name
		3x10 ⁻⁸	5x10 ⁻⁹ 2,3,7,8-TCDD (Dioxin)
0.07	0.0001	2,4-D (2,4-Dichlorophor	
0.05	0.0002	2,4,5-TP (Silh	
0.003	0.001	Toxaphene	
0.002	0.0002	Alachlor	
0.003	0.0001	Atrazine	
0.04	0.0009	Carbofuran	
0.001	0.0004	Pentachloro	
0.002	0.0002	Chlordane	
0.0002	0.0002	Dibromochlo	
0.00005	0.00001	Ethylene dibr	
0.0004	0.0004	Heptachlor	
0.0002	0.0002	Heptachlor e	
0.0002	0.0002	Lindane (BHI	
0.0002	0.00002	Benz[a]pyre	
0.2	0.001	Dalapon	
0.006	0.0006	Di(2-ethylhe	
0.4	0.0006	Di(2-ethylhe	
0.007	0.0002	Dinosob	

Specimen Number

DWAR 3: Revised 07/2019



DRINK
SYN
*** E



**DRINKING WATER ANALYSIS REPORT
AROCLOR**

*** Entry Point to the Distribution System (EPDS) Only ***

*** PUBLIC WATER SYSTEM INFORMATION ***
>>> TO BE FILLED OUT BY SYSTEM PERSONNEL <<<

PWS ID Number

Sample Date

Sample Time (24HR CLOCK)

Owner/Contact Email Address

SAMPLE TYPE

Compliance Monitoring

PWS Name

Owner/Contact Person

(_____) Owner/Contact Phone Number

SAMPLE COLLECTION POINT

Entry Point to the Distribution System [EPDS: _____]

SAMPLE SITE ID [_____]

*** SYNTHETIC ORGANIC
>>> TO BE COMPLETED BY LA

*** AROCLOR (PCB SCREENING TEST) ANALYSIS ***
>>> TO BE COMPLETED BY LABORATORY PERSONNEL <<<

Analysis Method	Reporting Limit	Contaminant Name	Cont. Code	Analysis Run Date	Result	Exceeds Reporting Limit *
	3x10 ⁻⁸	2,3,7,8-TCDD (Dioxin)				
0.02	0.0004	Diquat	0.00008	Aroclor 1016	2388	<input type="checkbox"/>
0.1	0.009	Endothall	0.02	Aroclor 1221	2390	<input type="checkbox"/>
0.002	0.00001	Endrin	0.0005	Aroclor 1232	2392	<input type="checkbox"/>
0.7	0.006	Glyphosate	0.0003	Aroclor 1242	2394	<input type="checkbox"/>
0.001	0.0001	Hexachlorobenzene	0.0001	Aroclor 1248	2396	<input type="checkbox"/>
0.05	0.0001	Hexachlorocyclopentadiene	0.0001	Aroclor 1254	2398	<input type="checkbox"/>
0.2	0.002	Oxamyl	0.0002	Aroclor 1260	2400	<input type="checkbox"/>
0.5	0.0001	Picloram				
0.004	0.00007	Simazine				
0.04	0.0001	Methoxychlor				
0.0005	0.0001	Polychlorinated biphenyls (PCB)				

*** LABORATORY
>>> TO BE COMPLETED BY LA

*** LABORATORY INFORMATION ***

>>> TO BE COMPLETED BY LABORATORY PERSONNEL <<<

Specimen Number	Com	Specimen Number	Comment
Lab ID Number [AZ_____]	Lab Name	Lab ID Number [AZ_____]	Lab Name
Lab Contact, Printed Name [_____]	Au	Lab Contact, Printed Name [_____]	Authorized Signature [_____]
PWS Notification Date #1 [_____]	#2 [_____]	All units must be reported in milligrams per liter (mg/L)	PWS Person Notified [_____]

All units must be reported in milligrams per liter (mg/L)
 Submit completed form to: E MAIL: WQD milligrams per liter (mg/L)
 MAIL: ADEQ Water Quality Compliance Data DWAR 3A: Revised 07/2019
 For questions visit: azdeq.gov/DWCompliance

Submit completed form to:

EMAIL: WQD_Compliance_Data@azdeq.gov -or- MAIL: ADEQ Water Quality Compliance Data Unit (MC 5415B-1),
 For questions visit: azdeq.gov/DWComplianceAssistance 1110 W. Washington St., Phoenix, AZ 85007

Compliance with the MCL is determined by a running annual average at any sampling point

- Systems monitoring annually or less frequently will not be considered in violation of the MCL until they complete 1 year of quarterly sampling
- If the average at any sampling point is greater than the MCL, then the system is out of compliance.
- If any one sample would cause the annual average to be exceeded, then the system is out of compliance immediately.
- If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

- Tier 2 (30 days) {
 - MCL Violations
- Tier 3 (365 days) {
 - Missed Monitoring Violations
- No Public Notice {
 - Late Reporting Violations

Certificate of Public Notice and a copy of the public notice is due to ADEQ **within 10 days** of distributing the public notice

Monitoring and Reporting Violation “RTC”

when systems send in
their late data or the
subsequent monitoring
period's data

MCL Violation “RTC” when the RAA is below the MCL

- Need 4 consecutive quarters
RCB MCL and written
notification from ADEQ to
reduce to annual monitoring



VOLATILE ORGANIC CONTAMINANTS (VOC)

Volatile Organic Contaminants (VOCs)

Carbon-containing compounds found in a variety of commercial, industrial, and residential products:

- Fuel oils, gasoline, solvents, cleaners and degreasers, paints, inks, dyes, refrigerants, pesticides, and more

VOCs

- Are mostly found in the environment as a result of human activity
- Evaporate easily from water into air at normal air temperatures

Contaminate drinking water through:

- Accidental spills
- Improper or illegal disposal

Many VOCs are known carcinogens (cancer causing) and are generally toxic and can have substantial health impacts from both acute (short-term) and chronic (long-term) exposure

VOC contamination in drinking water wells is a factor of

- Distance between the well and a source of contamination
- The amount dumped/spilled
- Depth of the well
- Local geology
- Time of travel
- Percentage of urban land use near wells



LIST OF VOCs

Analyte Name	MCL (mg/L)	Detection Limit (mg/L)	Major Sources in Drinking Water	Health Effects Language
Benzene	0.005	0.0005	Discharge from factories; leaching from gas storage tanks and landfills	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
Carbon tetrachloride	0.005	0.0005	Discharge from chemical plants and other industrial activities	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
Chlorobenzene	0.1	0.0005	Discharge from chemical and agricultural chemical factories	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
o-Dichlorobenzene	0.6	0.0005	Discharge from industrial chemical factories	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
p-Dichlorobenzene	0.075	0.0005	Discharge from industrial chemical factories	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
1,2-Dichloroethane	0.005	0.0005	Discharge from industrial chemical factories	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
1,1-Dichloroethylene	0.007	0.0005	Discharge from industrial chemical factories	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
cis-1,2-Dichloroethylene	0.070	0.0005	Discharge from industrial chemical factories	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

LIST OF VOCs

Analyte Name	MCL (mg/L)	Detection Limit (mg/L)	Major Sources in Drinking Water	Health Effects Language
trans-1,2-Dichloroethylene	0.1	0.0005	Discharge from industrial chemical factories	Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
Dichloromethane	0.005	0.0005	Discharge from pharmaceutical and chemical factories	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
1,2-Dichloropropane	0.005	0.0005	Discharge from industrial chemical factories	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
Ethylbenzene	0.7	0.0005	Discharge from petroleum refineries	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys
Styrene	0.1	0.0005	Discharge from rubber and plastic factories; leaching from landfills	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
Tetrachloroethylene	0.005	0.0005	Discharge from factories and dry cleaners	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
1,2,4-Trichlorobenzene	0.07	0.0005	Discharge from textile-finishing factories	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
1,1,1-Trichloroethane	0.2	0.0005	Discharge from metal degreasing sites and other factories	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.

LIST OF VOCs

Analyte Name	MCL (mg/L)	Detection Limit (mg/L)	Major Sources in Drinking Water	Health Effects Language
1,1,2-Trichloroethane	0.005	0.0005	Discharge from industrial chemical factories	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune system.
Trichloroethylene	0.005	0.0005	Discharge from metal degreasing sites and other factories	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
Toluene	0.001	0.0005	Discharge from petroleum factories	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
Vinyl Chloride	0.002	0.0005	Leaching from PVC piping; discharge from chemical factories	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
Xylenes	10	0.0005	Discharge from petroleum or chemical factories	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

APPLICABILITY

Community (CWS)

- All VOCs

Non-Transient Non-Community (NTNC)

- All VOCs

Transient Non-Community

- Does not sample VOCs

Sampling is done at the Entry Point to the Distribution System (EPDS)

Initial Monitoring



- 4 consecutive quarters

Routine Monitoring



- 1 sample every year

Reduced Monitoring (no waiver)



- GW Systems: 1 sample every 3 years
 - Must have no detects after 3 annual samples

VOC Waivers are issued for the entire VOC group

PWS is eligible to apply for a waiver if:

- No detects after initial monitoring
- No detects in the past 3 consecutive annual samples

Systems must submit 1 complete VOC sample every 3 or 6 years depending on source type:

GW Systems: 1 sample every 6 years

SW Systems: 1 sample every 3 years

Waivers must be reapplied for every 3 years

- If fail to reapply within 3 years: return to annual sampling

Waiver application available at azdeq.gov

MAP systems not eligible for VOC waiver

Detection Limit \geq VOC Contaminant Result \leq MCL

Increased (Quarterly)

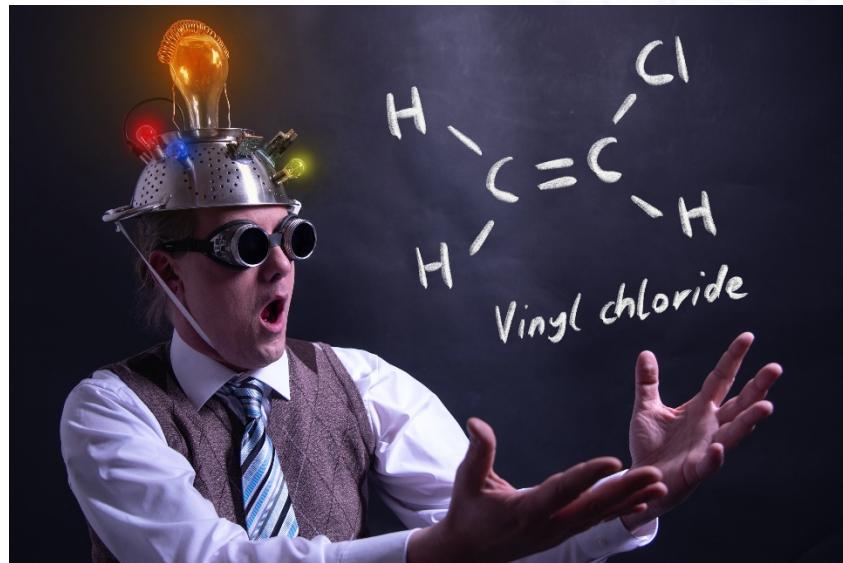
- Quarterly monitoring begins the following quarter
 - All VOCs at that sampling point

Increased to Annual

- Annual sample taken in the quarter with the highest result
- GW: Must be RCB MCL for 2 quarters
- SW: Must be RCB MCL for 4 quarters
- *Must be permitted in writing by the regulating agency*

If one or more of the following contaminants are detected,
PWS must monitor quarterly for vinyl chloride

- trichloroethylene
- tetrachloroethylene
- 1,2 - dichloroethane
- 1, 1, 1 - trichloroethane
- cis - 1, 2 - dichloroethylene
- trans - 1,2 dichloroethylene
- 1,1 – dichloroethylene



If first analysis does not detect vinyl chloride, then vinyl chloride monitoring can reduce to once per three year monitoring period

VOC Contaminant Result > MCL

Increased (Quarterly)

- Quarterly monitoring begins the following quarter
 - All VOCs at that sampling point

Increased to Annual

- Annual sample taken in the quarter with the highest result
- Must have 4 consecutive quarters RCB MCL
- *Must be permitted in writing by the regulating agency*

REPORTING



<div style="border: 1px solid black; padding: 5px;"> <p>DRINKING WATER ANALYSIS REPORT VOLATILE ORGANIC CHEMICALS *** Entry Point to the Distribution System (EPDS) Only</p> <p>*** PUBLIC WATER SYSTEM INFORMATION *** >>> TO BE FILLED OUT BY SYSTEM PERSONNEL <<<</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><input type="text"/> PWS ID Number</td> <td style="width: 50%;"><input type="text"/> PWS Name</td> </tr> <tr> <td><input type="text"/> Sample Date</td> <td><input type="text"/> Sample Time (24HR CLOCK)</td> </tr> <tr> <td colspan="2"><input type="text"/> Owner/Contact Email Address</td> </tr> <tr> <td colspan="2"> SAMPLE TYPE <input type="checkbox"/> Compliance Monitoring SAMPLE COLLECTION POINT <input type="checkbox"/> Entry Point to the Distribution System [EPDS <input type="text"/>] SAMPLE SITE ID <input type="text"/> </td> </tr> <tr> <td colspan="2"> For MCL or Composite Level Sam <input type="text"/> Original Violation Specimen Number <input type="text"/> SAMPLE TYPE <input type="checkbox"/> Confirmation-MCL - or - <input type="checkbox"/> </td> </tr> </table> </div>	<input type="text"/> PWS ID Number	<input type="text"/> PWS Name	<input type="text"/> Sample Date	<input type="text"/> Sample Time (24HR CLOCK)	<input type="text"/> Owner/Contact Email Address		SAMPLE TYPE <input type="checkbox"/> Compliance Monitoring SAMPLE COLLECTION POINT <input type="checkbox"/> Entry Point to the Distribution System [EPDS <input type="text"/>] SAMPLE SITE ID <input type="text"/>		For MCL or Composite Level Sam <input type="text"/> Original Violation Specimen Number <input type="text"/> SAMPLE TYPE <input type="checkbox"/> Confirmation-MCL - or - <input type="checkbox"/>		<div style="border: 1px solid black; padding: 5px;"> <p>DRINKING WATER ANALYSIS REPORTING FORM VOLATILE ORGANIC CHEMICALS (VOC) *** Entry Point to the Distribution System (EPDS) Only ***</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><input type="text"/> PWS ID Number</td> <td style="width: 50%;"><input type="text"/> PWS Name</td> </tr> <tr> <td colspan="2"> SAMPLE COLLECTION POINT <input type="checkbox"/> Entry Point to the Distribution System [EPDS <input type="text"/>] SAMPLE SITE ID <input type="text"/> </td> </tr> <tr> <td colspan="2" style="text-align: center;"> *** VOLATILE ORGANIC CHEMICAL ANALYSIS *** >>> TO BE COMPLETED BY LABORATORY PERSONNEL <<< </td> </tr> <tr> <td colspan="2"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Analysis Method</th> <th>MCL</th> <th>Reporting Limit</th> <th>Contaminant Name</th> <th>Cont. 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Compliance with the MCL is determined by a running annual average at any sampling point

- Systems monitoring annually or less frequently will not be considered in violation of the MCL until they complete 1 year of quarterly sampling
- If the average at any sampling point is greater than the MCL, then the system is out of compliance.
- If any one sample would cause the annual average to be exceeded, then the system is out of compliance immediately.
- If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

PUBLIC NOTICE

- Tier 2
(30 days) {
 - MCL Violations
- Tier 3 (365
days) {
 - Missed Monitoring Violations
- No Public
Notice {
 - Late Reporting Violations

Certificate of Public Notice and a copy of the public notice is due to ADEQ **within 10 days** of distributing the public notice

Monitoring and Reporting Violation “RTC”

when systems send in
their late data or the
subsequent monitoring
period's data

MCL Violation “RTC” when the RAA is below the MCL

- Need 4 consecutive quarters
RCB MCL and written
notification from ADEQ to
reduce to annual monitoring



RADIONUCLIDES (RAD)

History

1997

EPA set standards for beta and photon emitters, radium and gross alpha

DEC 2000

EPA finalized Radionuclides Rule with Uranium standards

JUNE 2000 - DEC 2003

ADEQ accepts Grandfather Data for Initial Monitoring requirements

DEC 2003

All CWS start Initial Monitoring

- More stringent MCL standards
- Revised monitoring requirements

Radionuclides (RADs)

- Radioactive contaminants that emit “ionizing radiation” when it decays
 - Radiation destabilizes nearby atoms as they travel through cells or other material
 - Which means *in the long-term*, it may cause cancer



SOURCES

Naturally Occurring

- Regional
 - Great Lakes
 - Mountains
- Geological
 - Sandstone aquifers
 - Shales
 - Phosphate deposits
 - Granitic formations

Man-Made

- Nuclear Weapons
- Hospitals
- Medical Facilities
- Industry / Labs
- Pharmaceuticals

LIST OF RADs

Analyte Name	MCL (pCi/L)	Detection Limit (pCi/L)	Major Sources in Drinking Water	Health Effects Language
Gross Alpha (excl. Radon & Uranium)	15	3	Erosion of natural deposits	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Combined Radium	5			
Radium 226		1	Erosion of natural deposits	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
Radium 228		1		

Analyte Name	MCL ($\mu\text{g}/\text{L}$)	Detection Limit ($\mu\text{g}/\text{L}$)	Major Sources in Drinking Water	Health Effects Language
Uranium	30	1	Erosion of natural deposits	Some people who drink water containing uranium in excess of the MCL over many years may have kidney problems or an increased risk of getting cancer.

APPLICABILITY

Community (CWS)

- All RADs

Non-Transient Non-Community (NTNC)

- Do not sample RADs

Transient Non-Community

- Do not sample RADs

Sampling is done at the Entry Point to the Distribution System (EPDS)

Initial Monitoring

- 4 consecutive quarters
- Final 2 quarters can be waived if Gross Alpha and Radium-228 are below Detection Limits – *must be requested in writing*

Reduced Monitoring

- Determined from previous results:
- 1 sample every 3 years, 6 years, OR 9 years

Increased Monitoring

- 4 consecutive quarters

MONITORING FREQUENCY

<u>Analysis</u>	<u>Result</u>	<u>Future Monitoring Schedule</u>
Gross Alpha	0 – 2.9 pCi/L	Once Every 9 years
	3.0 – 7.4 pCi/L	Once Every 6 years
	7.5 – 14.9 pCi/L	Once Every 3 years
	≥ 15.0 pCi/L <i>(must also test for Uranium)</i>	Quarterly
Combined Radium Radium 226 Radium 228	0 – 0.9 pCi/L	Once Every 9 years
	1.0 – 2.4 pCi/L	Once Every 6 years
	2.5 – 4.9 pCi/L	Once Every 3 years
	≥ 5.0 pCi/L	Quarterly
Uranium Activity (Total or Combined) $\mu\text{g}/\text{L} \times 0.67 \text{ pCi}/\mu\text{g} = \text{_____ pCi/L}$ $\text{pCi}/\text{L} \times 1.49 \mu\text{g}/\text{pCi} = \text{_____ } \mu\text{g}/\text{L}$	0 -0.9 $\mu\text{g}/\text{L}$	Once Every 9 years
	1.0 -14.9 $\mu\text{g}/\text{L}$	Once Every 6 years
	15.0 – 29.9 $\mu\text{g}/\text{L}$	Once Every 3 years
	≥ 30.0 $\mu\text{g}/\text{L}$	Quarterly

Monitoring frequency determination is made in writing by the regulating agency

- From Initial Monitoring
 - Determined from the running annual average of 4 consecutive quarters
- From Increased Monitoring
 - Determined from the running annual average of 4 consecutive quarters
- From Reduced Monitoring
 - Determined from the previous analytical results
 - An increase in the contaminant results may increase the monitoring frequency

MONITORING FREQUENCY

<u>Analysis</u>	<u>Result</u>	<u>Future Monitoring Schedule</u>
Gross Alpha	0 – 2.9 pCi/L	Once Every 9 years
	3.0 – 7.4 pCi/L	Once Every 6 years
	7.5 – 14.9 pCi/L	Once Every 3 years
	≥ 15.0 pCi/L <i>(must also test for Uranium)</i>	Quarterly
Combined Radium Radium 226 Radium 228	0 – 0.9 pCi/L	Once Every 9 years
	1.0 – 2.4 pCi/L	Once Every 6 years
	2.5 – 4.9 pCi/L	Once Every 3 years
	≥ 5.0 pCi/L	Quarterly
Uranium Activity (Total or Combined)	0 -0.9 µg/L	Once Every 9 years
	1.0 -14.9 µg/L	Once Every 6 years
	15.0 – 29.9 µg/L	Once Every 3 years
	≥ 30.0 µg/L	Quarterly

Monitoring frequency determination is made in writing by the regulating agency

RADs Contaminant Result > MCL

Increased (Quarterly)

- Quarterly monitoring begins the following quarter
 - Only that contaminant at that sampling point, not all RADs

Increased to Reduced

- Must have 4 consecutive quarters < MCL
- *Monitoring frequency change must be determined in writing by the regulating agency*

When Gross Alpha (GA) is $> 15 \text{ pCi/L}$

- Systems must test for uranium
- If not, GA can be used as a substitution

When Gross Alpha is $> 5 \text{ pCi/L}$

- Systems must test for Radium -226
- If not, GA can be used as a substitution
 - Only that contaminant at that sampling point, not all RADs

When Gross Alpha (incl. Rn & U) $> 15 \text{ pCi/L}$

- The Uranium result is subtracted and becomes Adjusted Gross Alpha

REPORTING



**DRINKING WATER ANALYSIS REPORTING FORM
RADIONUCLIDES (RADS)**
Adjusted Gross Alpha, Radium-226&-228, Uranium
*** Entry Point to the Distribution System (EPDS) Only *** Only ***

*** PUBLIC WATER SYSTEM INFORMATION ***
 >>> TO BE FILLED OUT BY SYSTEM PERSONNEL <<<

PWS ID Number	PWS Name
Sample Date	Sample Time (24HR CLOCK)
Owner/Contact Email Address	Owner/Contact Person
Owner/Contact Phone Number	
SAMPLE TYPE	<input type="checkbox"/> If Composite of Four Quarterly Samples Date Q1 Collected [] Date Q2 Collected [] Date Q3 Collected [] Date Q4 Collected []
SAMPLE COLLECTION POINT	<input type="checkbox"/> Entry Point to the Distribution System [EPDS]
SAMPLE SITE ID []	

*** RADIONUCLIDE ANALYSIS ***
 >>> TO BE COMPLETED BY LABORATORY PERSONNEL <<<

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analysis Run Date	Result	Exceeds MCL
15 pCi/L	3 pCi/L	Adjusted Gross Alpha	4000			<input type="checkbox"/>	
	3 pCi/L	Gross Alpha	4002				
		Radon	4004				
30 µg/L	1 µg/L	Combined Uranium *	4006			<input type="checkbox"/>	
		Uranium-234 *	4007				
		Uranium-235 *	4008				
		Uranium-238 *	4009				
5 pCi/L	1 pCi/L	Combined Radium (-226,-228)	4010			<input type="checkbox"/>	
	1 pCi/L	Radium-226	4020				
	1 pCi/L	Radium-228	4030				

*** LABORATORY INFORMATION ***
 >>> TO BE COMPLETED BY LABORATORY PERSONNEL <<<

Specimen Number	Comment []
Lab ID Number [AZ]	Lab Name []
Lab Contact, Printed Name []	Authorized Signature []
PWS Notification Date []	PWS Person Notified []

* Combined Uranium must be reported in micrograms per liter

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**DRINKING WATER ANALYSIS REPORTING FORM
RADIONUCLIDES (RADS)**
Adjusted Gross Alpha, Radium-226&-228, Uranium
*** Point of Use (POU) Only ***

*** PUBLIC WATER SYSTEM INFORMATION ***
 >>> TO BE FILLED OUT BY SYSTEM PERSONNEL <<<

PWS Name	Owner/Contact Person
Owner/Contact Phone Number	Owner/Contact Email Address
mail Address	
impliance Monitoring n-Compliance Monitoring	
PTION POINT [] mber [POU]	
SAMPLE TYPE <input type="checkbox"/> POU Confirmation	

*** RADIONUCLIDE POU ANALYSIS ***
 >>> TO BE COMPLETED BY LABORATORY PERSONNEL <<<

Reporting Limit	Contaminant Name	Cont. Code	Analysis Run Date	Result	Exceeds MCL
3 pCi/L	Adjusted Gross Alpha	4000		<input type="checkbox"/>	
	Gross Alpha	4002			
	Radon	4004			
1 µg/L	Combined Uranium	4006		<input type="checkbox"/>	
	Uranium-234	4007			
	Uranium-235	4008			
	Uranium-238	4009			
1 pCi/L	Combined Radium (-226,-228)	4010		<input type="checkbox"/>	
	Radium-226	4020			
	Radium-228	4030			

*** LABORATORY INFORMATION ***
 >>> TO BE COMPLETED BY LABORATORY PERSONNEL <<<

Comment []	
Lab Name []	Phone Number []
Name []	Authorized Signature []
PWS Person Notified []	

Submit completed form to:
EMAIL: WQD_Compliance_Data@azdeq.gov -or- **MAIL:** ADEQ Water Quality Compliance Data Unit (MC 5415B-1),
 For questions, go to: azdeq.gov/DWComplianceAssistance 1110 W. Washington St., Phoenix, AZ 85007.

Compliance with the MCL is determined by a running annual average at any sampling point

- If the running annual average at any sampling point is greater than the MCL, then the system is out of compliance.
- If any one sample would cause the annual average to be exceeded, then the system is out of compliance immediately.
- If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

Monitoring and Reporting Violation “RTC”

when systems send in
their late data or the
subsequent monitoring
period's data

MCL Violation “RTC” when the RAA is below the MCL

- Need 4 consecutive quarters
< MCL and written
notification from ADEQ to
reduce to annual monitoring

- Tier 2 (30 days) {
 - MCL Violations
- Tier 3 (365 days) {
 - Missed Monitoring Violations
- No Public Notice {
 - Late Reporting Violations

Certificate of Public Notice and a copy of the public notice is due to ADEQ **within 10 days** of distributing the public notice

uctions for Ch

radiological maximum dose to persons served ([System Name]). You must issue a revised notice if you may have more stringent limits.

Community systems must use:

- Hand or direct delivery
- Mail, as a separate notice

Noncommunity systems must use:

- Posting in conspicuous locations
- Hand delivery
- Mail

In addition, both community and noncommunity systems must include either e-mail, or delivery to consumers via letterhead, if available.

The notice on the revised notice must include all required parts.

Mandatory Language

Mandatory language must be included in this notice. This notice includes the following language where applicable [redacted] at either end.

Corrective Action

In your notice, describe the treatment method used to correct the violations. Depending on the type of violation, appropriate, or direct action may be taken.

- We are taking the problem into account when we issue this water system notice.
- We have initiated an investigation.

The media/filter that is to be changed will be replaced by your filter/provider.

For more information, contact [System Name] at [phone number].

This notice is being sent to you by [System Name].

Date distributed: [Date]

IMPORTANT INFORMATION / of-Use (POU) Devices

[System or Address] Has Level

Our water system recently tested the result to be above the drinking water standard. As our customers, you have a right to know what we did (are doing) to correct this situation.

We routinely monitor for the point-of-use device exceeds the maximum contaminant level. The average level of [contaminant] was found at [provide level].

What should I do?

- There is nothing you can do other corrective actions. Please contact your doctor.
- If you have a severe health condition, such as pregnancy, or are elderly, you may want to consult with your health care provider about corrective actions.

What does this mean?

This is not an emergency. [System Name] has inserted this template.

What is being done?

[Describe corrective action]

For more information, contact [System Name] at [phone number].

What is being done?

*Please share this information with other people who may not live in your homes, schools, or day care facilities that are distributing or receiving this water.

The media/filter that is to be changed will be replaced by your filter/provider.

For more information, contact [System Name] at [phone number].

This notice is being sent to you by [System Name].

Date distributed: [Date]

IMPORTANT INFO

[System] Has Level

Our water system recently violated drinking water standards over the past year. Even though we have corrected the problem, as our customers, you have a right to know what happened and what we did (are doing) to correct this situation. We routinely monitor for the maximum contaminant level. The average level of [contaminant] was found at [provide level].

What should I do?

- There is nothing you can do other corrective actions.
- If you have a severe health condition, such as pregnancy, or are elderly, you may want to consult with your health care provider about corrective actions.

What does this mean?

This is not an emergency. [System Name] has inserted this template.

What is being done?

[Describe corrective action]

For more information, contact [System Name] at [phone number].

What is being done?

[Describe corrective action]

Please share this information with other people who may not live in your homes, schools, or day care facilities that are distributing or receiving this water.

You can do this by posting this notice in a public place or distributing copies by hand or mail. This notice is being sent to you by [System Name]. State Water System ID#: [ID#]. Date distributed: [Date]

TIER 3 PUBLIC NOTICE

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Monitoring Requirements Not Met for [System Name]

Our water system violated drinking water standards over the past year. Even though we have corrected the problem, as our customers, you have a right to know what happened and what we did (are doing) to correct this situation. We are required to monitor your drinking water for specific contaminants on a regular basis. During [compliance period] we [did not monitor or test] or [did not complete all monitoring requirements]. For [contaminant(s)] we [did not monitor or test] or [did not complete all monitoring requirements] and therefore cannot be sure of the quality of our drinking water.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year. It also lists the required sampling frequency, the number of samples taken, when samples should have been taken, and the date on which follow-up samples were taken.

Contaminant	Required sampling frequency	Number of samples taken	When samples should have been taken	When samples were taken
Example: RAD5	1 sample every three years	0	2000-2002	February 2002

What is being done?

[Describe corrective action]

For more information, please contact [name of contact] at [phone number] or [mailing address].

Consumer Confidence Report (CCR): IMPORTANT DATES



Community Water Systems only

Tier 3 Public Notice (PN) requirement can be met via CCR as long as:

- CCR has all required language
- Violations Table is complete and accurate
- CCR approved/distributed by PN distribution due date

JULY 1st

- Deadline for CWS to distribute CCRs to consumers and primary agency
 - Needs to be a CWS for the entire calendar year prior to the deadline

OCTOBER 1st

- Deadline for CWS to submit proof of distribution to primary agency
 - Mailing Waiver or Certification
 - Or 90 Days after distribution/submittal to your primary agency,
WHICHEVER COMES FIRST

**Submit to
ADEQ by Email:**

- CCRRULE@AZDEQ.GOV
- County Compliance Assistance Coordinator

SUMMARY

Community (C)

- IOCs – *all*
- SOCs
- VOCs
- RADs

Non-Transient Non-Community (NTNC)

- IOCs – *except fluoride & sodium*
- SOCs
- VOCs

Transient Non-Community (TNC)

- IOCs – *only nitrate & nitrite*

Triggers Quarterly

- IOCs:
 - $>5\text{mg/L}$ nitrate
 - $>0.5\text{mg/L}$ nitrite
 - *MCL Exceedances*
- SOCs: *Detects, MCL Exceedances*
- VOCs: *Detects, MCL Exceedances*
- RADs: *MCL Exceedances*

MCL Violation

- Nitrate, Nitrite, & IOCs on routine/reduced:
Avg of RT & CO > MCL
- IOCs on quarterly:
RAA > MCL
- SOCs: *RAA > MCL*
- VOCs: *RAA > MCL*
- RADs: *RAA > MCL*

Public Notices

- Tier 1 (24hrs):
Nitrate/Nitrite MCL Violation
- Tier 2 (30 days):
IOC/SOC/VOC/RAD MCL Violation
- Tier 3 (365 days): *Missed Monitoring Violations, Fluoride SMCL*

ADEQ Safe Drinking Water Contacts:



Compliance Assistance Coordinator by County

County	County Code	CAC Name	Email	Phone Number
Apache	1	Matithia Eiland	Eiland.Matithia@azdeq.gov	602-771-4572
Cochise	2	Matithia Eiland	Eiland.Matithia@azdeq.gov	602-771-4572
Coconino	3	Jane Kim	Kim.Jane@azdeq.gov	602-771-4609
Gila	4	Matithia Eiland	Eiland.Matithia@azdeq.gov	602-771-4572
Graham	5	Emily Baldridge	Baldridge.Emily@azdeq.gov	602-771-4596
Greenlee	6	Emily Baldridge	Baldridge.Emily@azdeq.gov	602-771-4596
Maricopa	7	Tiffany Hua	Hua.Tiffany@azdeq.gov	602-771-4621
Mohave	8	Katherine Valentine	Valentine.Katherine@azdeq.gov	602-771-4699
Navajo	9	Jane Kim	Kim.Jane@azdeq.gov	602-771-4609
Pima	10, 20	Holli LaBrie	LaBrie.Holli@azdeq.gov	520-628-6742
Pinal	11	Jane Kim	Kim.Jane@azdeq.gov	602-771-4609
Santa Cruz	12	Holli LaBrie	LaBrie.Holli@azdeq.gov	520-628-6742
Yavapai	13	Arron Hieatt	Hieatt.Arron@azdeq.gov	602-771-2302
Yuma	14	Emily Baldridge	Baldridge.Emily@azdeq.gov	602-771-4596
La Paz	15	Katherine Valentine	Valentine.Katherine@azdeq.gov	602-771-4699

MAP Coordinator: Carling Olson

(602) 771-4518 | Olson.Carling@azdeq.gov