2023 CONSUMER CONFIDENCE REPORT

Report Covers Calendar Year: January 1, 2023 - December 31, 2023

REPORTE ANUAL SOBRE LA CALIDAD DEL AGUA DEL 2023*

El reporte abarca del día 1 de Enero al 31 de Diciembre del 2023

Public Water System (PWS) Information

PWS Name:	Kino Ranch # 2	**PWS ID #**	AZ04-12015	**Owner/Operator Name:**	City of Nogales
Utilities Director:	Alejandro Barcenas			**Contact Person and Title:**	Ruben Artana, Utilities
Telephone #	(520) 287-6571	**Fax #**	(520) 287-8352	**E-mail**	rartana@nogalesaz.gov

Please note: The report must contain a brief explanation regarding contaminants, which may reasonably be expected to be found in drinking water. This explanation may include the language of paragraph 40 CFR 141 . 153 (h)(1)(i) and 40CFR 141.153 (h)(1)(iii)shown below, or the system may use their own comparable language

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Our water source(s):	**Ground Water / Upper Santa Cruz Water shed**

* Este reporte contiene información muy importante sobre la calidad del agua.

Es muy importante que busque a una persona que pueda ayudarle a traducirlo al español o se puede comunicar al (520) 285-5754 para obtener ayuda sobre este reporte en español.

Drinking Water Contaminants

Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides that may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and also may come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants, that can be naturally occurring or be the result of oil and gas production and mining activities.

Vulnerable Population

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV-AIDS or other immune system disorders, some elderly, and infants can be particularly at risk of infections. These people should seek advice about drinking water from their health care providers. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and microbiological contaminants call the EPA *Safe Drinking Water Hotline* at 1-800-426-4791.

Source Water Assessment

Based on the information currently available on the hydrogeologic settings of and the adjacent land uses that are in the specified proximity of the drinking water source(s) of this public water system, the department has given a low risk designation for the degree to which this public water system drinking water source(s) are protected. A low risk designation indicates that most source water protection measures are either already implemented, or the hydrogeology is such that the source water protection measures will have little impact on protection.

Definitions

AL = Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements.
MCL = Maximum Contaminant Level - The "Maximum Allowed" is the highest level of a contaminant that is allowed in drinking water.
MCLG = Maximum Contaminant Level Goal - The "Goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health.
MFL = Million fibers per liter.
MRDL = Maximum Residual Disinfectant Level.
MRDLG = Maximum Residual Disinfectant Level Goal.
MREM = Millirems per year – a measure of radiation absorbed by the body.
NA = Not Applicable, sampling was not completed by regulation or was not required.
ND = Not Detectable, results are below the laboratory sample detection limit.
NTU = Nephelometric Turbidity Units, a measure of water clarity.
PCi/L = Picocuries per liter - picocuries per liter is a measure of the radioactivity in water.
PPM = Parts per million or Milligrams per liter (mg/L).
PPB = Parts per billion or Micrograms per liter (µg/L).
PPT = Parts per trillion or Nanograms per liter.
PPQ = Parts per quadrillion or Picograms per liter.

ppm x 1000 = ppb
ppb x 1000 = ppt
ppt x 1000 = ppq

TT = Treatment Technique - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Health Effects Language

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. "High nitrate levels in drinking water can cause blue baby syndrome". Nitrate levels may rise quickly for short periods-of-time because of rainfall or agricultural activity. If you are caring for an infant, and detected nitrate levels are above 5 ppm, you should ask advice from your health care provider.

If **arsenic** is less than or equal to the MCL, your drinking water meets ADEQ (Arizona Department of Environmental Quality) and EPA's standards. ADEQ and EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. ADEQ and EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Lead Information Statement:

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. **Kino Ranch # 2** Is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at *www.epa.gov/safewater/lead.*

Water Quality Data

Microbiological (RTCR)	Violation Y or N	Number of Positive Samples	Positive Sample(s) Month & Year	MCL	MCLG	Samples per Month or Year	Likely Source of Contamination
Total Coliform	N	0	0	0	0	2/month 24/year	Human and animal fecal waste
Fecal Indicator (coliphage, enterococci and/or E. coli)	N	0	0	0	0	2/month 24/year	Human and animal fecal waste

Disinfectants	Violation Y or N	Running Annual Average (RAA) Or Highest Level Detected	Range of All Samples (L-H)	MRDL	MRDLG	Samples per Month or Year	Likely Source of Contamination
Chlorine (ppm)	N	0.54ppm	0.40 – 0.65ppm	MRDL = 4	MRDLG = 0	2/month 24/year	Water additive used to control microbes
Disinfection By-Products	**Violation Y or N**	**Running Annual Average (RAA) Or Highest Level Detected**	**Range of All Samples (L-H)**	**MCL**	**MCLG**	**Sample Month or Year**	**Likely Source of Contamination**
Haloacetic Acids (HAA5) (ppb)	N	<0.002ppb	ND	60	N/A	2023	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM) (ppb)	N	1.5 ppb	1.5 ppb	80	N/A	2023	Byproduct of drinking water disinfection
Lead & Copper	**Violation Y or N**	**90th Percentile AND Number of Samples Over the AL**	**Range of All Samples (L-H)**	**AL**	**ALG**	**Year Sample Dates**	**Likely Source of Contamination**
Copper (ppm)	N	ND	ND	AL = 1.3	ALG = 1.3	7/19/2022	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	N	ND	ND	AL = 15	0	7/19/2022	Corrosion of household plumbing systems; erosion of natural deposits
Radionuclides	**Violation Y or N**	**Running Annual Average (RAA) Or Highest Level Detected**	**Range of All Samples (L-H)**	**MCL**	**MCLG**	**Year Sample Dates**	**Likely Source of Contamination**
Alpha Emitters (pCi/L) (This is Gross Alpha 4000)	N	(14.5 pCi/L)	(14.5 pCi/L)	15	0	2018	Erosion of natural deposits
Combined Radium 226 & 228 (pCi/L)	N	ND	ND	5	0	2018	Erosion of natural deposits
Inorganic Chemicals (IOC)	**Violation Y or N**	**Running Annual Average (RAA) Or Highest Level Detected**	**Range of All Samples (L-H)**	**MCL**	**MCLG**	**Year Sample Dates**	**Likely Source of Contamination**
Antimony (ppb)	N	< .1ppb	ND	6	6	2023	Discharge from petroleum refineries; fire retardants; ceramics, electronics and solder

Arsenic (ppb)	N	8.5ppb	8.5 – 8.5ppb	10	0	2023	Erosion of natural deposits, runoff from orchards, runoff from glass and electronics production wastes
Asbestos (MFL)	N	<0.20MFL	ND	7	7	2021	Decay of asbestos cement water mains; erosion of natural deposits.
Barium (ppm)	N	.2ppm	ND	2	2	2023	Discharge of drilling wastes; discharge from metal refineries; Erosion of natural deposits
Beryllium (ppb)	N	.1ppm	ND	4	4	2023	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Cadmium (ppb)	N	< .5ppb	ND	.5	.5	2023	Corrosion of galvanized pipes; natural deposits; metal refineries; runoff from waste batteries and paints
Chromium (ppm)	N	.1ppm	ND	100	100	2023	Discharge from steel and pulp mills; Erosion of natural deposits
Cyanide (mg/L)	N	.25 mg/L	ND	200	200	2021	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories
Fluoride (ppm)	N	.45ppm	.45 - .45ppm	4	4	2023	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Mercury (ppb)	N	.02ppb	ND	2	2	2023	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills and cropland.
Nitrate (ppm)	N	<.10ppm	ND	10	10	2023	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Nitrite (ppm)	N	< .5ppm	ND	1	1	2023	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium (ppb)	N	.5ppb	ND	50	50	2023	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Sodium (ppm)	N	59ppm	59ppm	N/A	N/A	2023	Erosion of natural deposits
Thallium (ppb)	N	.01ppb	ND	2	0.2	2023	Leaching from ore-processing sites; discharge from electronics, glass, and drug
Synthetic Organic Chemicals (SOC)	**Violation Y or N**	**Running Annual Average (RAA) Or Highest Level Detected)**	**Range of All Samples (L-H)**	**MCL**	**MCLG**	**Year Sample Dates**	**Likely Source of Contamination**
2,4-D (ppb)	N	< .01ppb	ND	70	70	2022	Runoff from herbicide used on row crops
Alachlor (ppb)	N	< .01ppb	ND	2	0	2022	Runoff from herbicide used on row crops
Atrazine (ppb)	N	< .05ppb	ND	3	3	2022	Runoff from herbicide used on row crops
Benzo (a) pyrene (PAH) (ppt)	N	< .02ppt	ND	200	0	2022	Leaching from linings of water storage tanks and distribution lines
Carbofuran (ppb)	N	< .5ppb	ND	40	40	2022	Leaching of soil fumigant used on rice and alfalfa
Chlordane (ppb)	N	<.1ppb	ND	2	0	2022	Residue of banned termiticide
Dalapon (ppb)	N	< .1ppb	ND	200	200	2022	Runoff from herbicide used on rights of way
Dibromochloropropane (ppt)	N	< .01ppt	ND	200	0	2022	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
Dinoseb (ppb)	N	< .2ppb	ND	7	7	2022	Runoff from herbicide used on soybeans and vegetables
Diquat (ppb)	N	< .4ppb	ND	20	20	2022	Runoff from herbicide use

Dioxin [2,3,7,8-TCDD] (ppq)	N	ND	ND	30	0	2022	Emissions from waste incineration and other combustion; discharge from chemical factories
Endothall (mg/L)	N	< .5 mg/L	ND	100	100	2022	Runoff from herbicide use
Endrin (ppb)	N	< .01ppb	ND	2	2	2022	Residue of banned insecticide
Ethylene dibromide (ppt)	N	< .01ppt	ND	50	0	2022	Discharge from petroleum refineries
Glyphosate (ppb)	N	< .6ppb	ND	700	700	2022	Runoff from herbicide use
Heptachlor (ppt)	N	< .01ppt	ND	400	0	2022	Residue of banned temiticide
Hexachlorobenzene (ppb)	N	< .05ppb	ND	1	0	2022	Discharge from metal refineries and agricultural chemical factories
Lindane (ppt)	N	< .01ppt	ND	200	200	2022	Runoff/leaching from insecticide used on cattle, lumber, gardens
Methoxychlor (ppb)	N	< .05ppb	ND	40	40	2022	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Oxamyl [Vydate] (ppb)	N	< .5ppb	ND	200	200	2022	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
Pentachlorophenol (ppb)	N	< .04ppb	ND	1	0	2022	Discharge from wood preserving factories
Picloram (ppb)	N	< .1ppb	ND	500	500	2022	Herbicide runoff
Simazine (ppb)	N	< .05ppb	ND	4	4	2022	Herbicide runoff
Toxaphene (mg/L)	N	< .5mg/L	ND	3	0	2022	Runoff/leaching from insecticide used on cotton and cattle
Volatile Organic Chemicals (VOC)	**Violation Y or N**	**Running Annual Average (RAA) Or Highest Level Detected**	**Range of All Samples (L-H)**	**MCL**	**MCLG**	**Year Sample Dates**	**Likely Source of Contamination**
Benzene (ppb)	N	< .5ppb	ND	5	0	2021	Discharge from factories; leaching from gas storage tanks and landfills
Chlorobenzene (ppb)	N	< .5ppb	ND	100	100	2021	Discharge from chemical and agricultural chemical factories
Dichloromethane (ppb)	N	< .5ppb	ND	5	0	2021	Discharge from pharmaceutical and chemical factories

Ethylbenzene (ppb)	N	< .5ppb	ND	700	700	2021	Discharge from petroleum refineries
Styrene (ppb)	N	< .5ppb	ND	100	100	2021	Discharge from rubber and plastic factories; leaching from landfills
Tetrachloroethylene (ppb)	N	< .5ppb	ND	5	0	2021	Discharge from factories and dry cleaners
Trichloroethylene (ppb)	N	< .5ppb	ND	5	0	2021	Discharge from metal degreasing sites and other factories
Toluene (ppb)	N	< .5ppb	ND	1	1	2021	Discharge from petroleum factories
Vinyl Chloride (ppm)	N	< .3ppm	ND	2	0	2021	Leaching from PVC piping; discharge from chemical factories
Xylenes (ppm)	N	< .5ppm	ND	10	10	2021	Discharge from petroleum or chemical factories

All contaminants listed below were tested for and were NOT found in our water. These contaminants are considered Non-Detect or not present:

Inorganic Compounds (Last tested 5/2023): Antimony, Barium, Beryllium, Cadmium, Chromium, Cyanide, Mercury, Selenium and Thallium.

Synthetic Organic Compounds (Last tested 5/2021): 2,4-D, 2,4,5-TP (a.k.a. Silvex), Acrylamide, Alachlor, Atrazine, Benzo (a) pyrene (PAH), Carbofuran, Chlordane, Dalapon, Di (2-ethylhexyl) adipate, Di (2-ethylhexyl) phthalate, Dibromochloropropane, Dinoseb, Diquat, Dioxin [a.k.a. 2,3,7,8-TCDD], Endothall, Endrin, Epichlorohydrin, Ethylene dibromide, Glyphosate, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, Hexachlorocyclo pentadiene, Lindane, Methoxychlor, Oxamyl (a.k.a. Vydate), PCBs [Polychlorinated biphenyls], Pentachlorophenol, Picloram, Simazine, Toxaphene

Volatile Organic Compounds (Last tested 5/2021): Benzene, Carbon tetrachloride, Chlorobenzene, o-Dichlorobenzene, p-Dichlorobenzene, 1,2-Dichloroethane, 1,1-Dichloroethylene, cis-1,2 Dichloroethylene, trans-1,2-Dichloroethylene, Dichloromethane, 1,2-Dichloropropane, Ethylbenzene, Styrene, Tetrachloroethylene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, Toluene, Vinyl Chloride, Xylenes.

Water Quality Table – Unregulated Contaminants

Your drinking water was also sampled for the presence and concentration of 29 different per- and polyfluoroalkyl substances, some known by the acronyms PFAS, PFOA, PFNA, PFHxS, PFBS, and GenX, a group of contaminants in the final stages of becoming regulated by the EPA. PFAS are man-made chemicals that are resistant to heat, water, and oil. They have been used since the 1940s to manufacture various consumer products, including fire-fighting foam and stain resistant, water-resistant, and nonstick items. Many PFAS do not break down easily and can build up in people, animals, and the environment over time. Scientific studies have shown that exposure to certain PFAS can be harmful to people and animals, depending on the level and duration of exposure.

To learn more about this group of chemicals, we encourage you to read the ADEQ's "PFAS 101 Fact Sheet" and to visit the ADEQ website at https://www.azdeq.gov/pfas-resources

* EPA is proposing a Hazard Index MCL to limit any mixture containing one or more of PFNA, PFHxS, PFBS, and/or GenX Chemicals. The Hazard Index considers the different toxicities of PFNA, GenX Chemicals, PFHxS, and PFBS. For these PFAS, water systems would use a hazard index calculation to determine if the combined levels of these PFAS in the drinking water at that system pose a potential risk and require action (Source: EPA Fact Sheet: Understanding the PFAS National Primary Drinking Water Proposal Hazard Index).

The following contaminants were tested for in May and September, 2023 and **were not detected in the water**:

11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)

1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)

1H, 1H, 2H, 2H-perfluorohexane sulfonic acid (4:2 FTS)

1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)

4,8-dioxa-3H-perfluorononanoic acid (ADONA)

9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)

hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)

nonafluoro-3,6-dioxaheptanoic acid (NFDHA)

Perfluoro-3-methoxypropanoic acid (PFMPA)

Perfluoro-4-methoxybutanoic acid (PFMBA) Perfluorobutanesulfonic acid (PFBS)

Perfluorobutanoic acid (PFBA)

Perfluorodecanoic acid (PFDA)

Perfluorododecanoic acid (PFDoA)

Perfluoroheptanesulfonic acid (PFHpS)

Perfluoroheptanoic acid (PFHpA)

Perfluorohexanesulfonic acid (PFHxS)

Perfluorohexanoic acid (PFHxA)

Perfluorononanoic acid (PFNA)

Perfluorooctanesulfonic acid (PFOS)

Perfluorooctanoic acid (PFOA)

Perfluoropentanesulfonic acid (PFPeS)

Perfluoropentanoic acid (PFPeA)

Perfluoroundecanoic acid (PFUnA)

n-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)

n-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)

Perfluorotetradecanoic acid (PFTA)

Perfluorotridecanoic acid (PFTrDA)

One Metal	Detected (Y/N)	Average	Range of All Samples (Low-High)	MRL (ppb)	Analytical Methods
Lithium (ppb)	N	N/D	N/D	9 µg/L	EPA 200.7, SM 3120 B, ASTM D1976–20

Violation Summary (for MCL, MRDL, AL, TT, or Monitoring & Reporting Requirement)

Violation Type	Explanation	Time Period	Corrective Action
NONE			