MesaWater DISTRICT®

2022 Public Health Goals Report

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Mesa Water

Meets all State and Federal drinking water standards

Performs over 30,000 water quality analyses per year

Has never exceeded DW standards for any chemical constituent

Publishes water quality data annually in the consumer confidence report

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Public Health Goals Reporting

California Public Water Systems must produce publicly available report every 3 years.

Item to Address	Description
Exceedance	Detection of any contaminant in DW exceeding public health goal (PHG)
Risk	Public health risks associated with detected PHG contaminants
BAT	Best available technology (BAT) to reduce concentration
Cost	Aggregate cost estimates for using BAT to bring water levels below PHG

Addresses requirements from California Health and Safety Code (§116470)

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PHGs, MCLs, and MCLGs

PHG	California Office of Environmental Health Hazard Assessment (OEHHA) develops PHGs for all constituents with MCLs and proposed MCLs. Defined as level where drinking water contaminant does not pose any significant risk to human health. Recommended, non-enforceable targets
MCL	Enforceable regulatory limit defined as highest level of contaminant allowed in DW Set as close as technically and economically feasible to PHGs Set in consideration of both treatment technologies and cost of compliance
MCLG	Reported when OEHHA has not adopted a PHG for a constituent Represents the maximum contaminant level goal (MCLG) adopted by USEPA

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Water Quality Data

Sources (100% local GW typical)

- Groundwater
  - Clear wells
  - MWRF
- Imported Water (extremely limited)

Years covered by report

- CY 2019
- CY 2020
- CY 2021

Data also summarized in publicly-available Water Quality Reports 2020-2022

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Reporting Guidelines

- ACWA workgroup prepared guidelines
- 2022 guidelines include
  - Annualized capital and O&M treatment costs for BATs indexed to 2021 costs
- OEHHA provided health risk information for PHG reports
  - Health risk categories
  - Numerical health risks based on lifetime exposure for each PHG contaminant

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Summary of Contaminants

Parameter	Category of Risk	Groundwater (GW) or Surface Water (SW)	Description
INORGANIC CHEMICALS			
Arsenic	Carcinogen	GW (2 wells)	Naturally occurring element in rocks, sediments; can also come from industrial processes.
Bromate	Carcinogen	SW	Disinfection byproduct formed from reaction with bromide in source water and disinfection with ozone.
RADIOACTIVITY			Radionuclides have unstable nuclei that can spontaneously decay and release radiation. They can be found in natural deposits.
Gross Alpha Particle Activity	Carcinogen	GW (1 well)	Measure of overall radioactivity in water from alpha particles.
Gross Beta Particle Activity	Carcinogen	SW	Measure of overall radioactivity in water from a total of 168 beta particles and photon emitters.
Combined Radium-226/228	Carcinogen	SW	Measure of the two most common isotopes of radium; often present in surface runoff or from leaching of natural deposits.
Uranium	Carcinogen	GW (4 wells) and SW	Naturally occurring radionuclide that is often introduced via erosion.

Summary of Contaminants - Occurrence

Parameter	Units	PHG or (MCLG)	MCL	DLR	Concentration Groundwater	Concentration Surface Water
INORGANIC CHEMICALS						
Arsenic	µg/L	0.004	10	2	ND - 2.3 (2 wells)	NA
Bromate	µg/L	0.1	10	1	NA	ND - 8.1
RADIOACTIVITY						
Gross Alpha Particle Activity	pCi/L	(0)	15	3	ND – 3.8 (1 well)	NA
Gross Beta Particle Activity	pCi/L	(0)	50	4	NA	ND - 7
Combined Radium-226/228	pCi/L	0.019[a]	5	Na[b]	NA	ND - 2
Uranium	pCi/L	0.43	20	1	ND - 2.8 (4 wells)	ND - 3

[a] Based on the PHG for Ra-228. Combined Ra-226/228 does not have a PHG but has an MCLG of zero
[b] Combined radium does not have a DLR, but Ra-226 and Ra-228 have individual DLRs of 1 pCi/L

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Summary of Contaminants - BATs

Parameter	GW or SW	Best Available Technologies
INORGANIC CHEMICALS		
Arsenic	GW (2 wells)	AA, C/F, IX, LS, O/F, RO
Bromate	SW	RO
RADIOACTIVITY		
Gross Alpha Particle Activity	GW (1 well)	RO
Gross Beta Particle Activity	SW	IX, RO
Combined Radium-226/228	SW	IX, RO, LS
Uranium	GW (4 wells) and SW	RO
ALL CONTAMINANTS	Both	RO

TREATMENT/CONTROL TECHNOLOGIES

AA = activated alumna
C/F = coagulation/filtration
IX = ion exchange
LS = lime softening
O/F = oxidation/filtration
RO = reverse osmosis

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Summary of Contaminants – Cost

Parameter	Unit	PHG or (MCLG)	Best Available Technologies	Aggregate Cost Per Year	Cost Per Connection Per Year
INORGANIC CHEMICALS					
Arsenic	µg/L	0.004	AA, C/F, IX, LS, O/F, RO	$3,940,000 (IX)	$162 (IX)
Bromate	µg/L	0.1	RO	$2,370,000 - $3,840,000	$97 - $157
RADIOACTIVITY					
Gross Alpha Particle Activity	pCi/L	(0)	RO	Note 1	Note 1
Gross Beta Particle Activity	pCi/L	(0)	IX, RO	$1,920,000 (IX)	$79 (IX)
Combined Radium-226/228	pCi/L	0.019[2]	IX, RO, LS	$1,920,000 (IX)	$79 (IX)
Uranium	pCi/L	0.43	RO	Note 1	Note 1
ALL CONTAMINANTS[1]	–	--	RO	$13,000,000 - $20,400,000	$534 - $837

[1] Estimated cost to remove all contaminants by RO, assuming entire production volume is treated in a centralized facility.
[2] Based on the PHG for Radium-228. Combined radium-226/228 does not have a PHG but has an MCLG of zero.

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Mesa Water

Provides a 100% local drinking water supply

Meets all State and Federal drinking water standards

Has never exceeded DW standards for any chemical constituent

Has fully met the reporting requirements for the unenforceable public health goals

Provides safe, reliable drinking water that is protective of public health

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Thank You!

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