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Monterey Bay Analytical Services, Inc.

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Whether your water is safe or has problems that cause stains on plumbing, scaly deposits, bad taste, or potential health concerns, water analysis can identify the problem and enable you to make knowledgeable decisions regarding its use.

Features of a Sample Report

Once the lab has completed testing your water, you will receive a report. The cover page of your report indicates when the sample was received. The next page(s) identified as “Sample Results” contain the actual analysis results for your water sample(s). It will contain a list of contaminants tested (shown under the **Analyte** heading), the analytical method used (shown under the **Method** heading), the units of measurement (**Units**), and the analysis results (**Result**). The **Qualifier** column will identify conditions that may have affected the test, followed by the dilution factor (**Dilution**). The Practical Quantitation Limit (**PQL**) will identify the lowest concentration the laboratory can measure. The Maximum Contaminant Level (**MCL**) reflects the highest allowable standards for drinking water established by the EPA. Analyte concentrations exceeding primary MCLs can affect health. Primary MCLs are established for Arsenic, Nitrate, Cadmium, Lead, Chromium, Fluoride. Analytes exceeding Secondary MCLs can make the water aesthetically unpleasing. Secondary MCLs are established for Specific Conductance, Total Dissolved Solids, Chloride, and Sulfate. An important feature of the report is the units used to measure the contaminant level in your water. Milligrams per liter (mg/l) of water are used for substances like metals and nitrates. A



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milligram per liter is also equal to one part per million (ppm)--that is one-part contaminant to one million parts water. For substances like trace metals or pesticides, the units used are even smaller. In these cases, micrograms per liter ($\mu\text{g/L}$), i.e. parts per billion (ppb), are used. Some values like pH, hardness, conductance, and turbidity are reported in units specific to the test. The next section of your report identified as “**Quality Control Results**” includes the results of quality control analysis required to verify the accuracy of the data. This is followed by the “**Sample Conditions Upon Receipt**”, which will include comments about sample receiving by the laboratory. This section will also document notification of any MCL exceedances. The next section is a copy of the Chain of Custody form. This will have information about the sample collection process and may include field analysis results.

Retain your copy of the report in a safe place as a record of the quality of your water supply.

Water test parameters

The following tables provide a general guideline to common water quality parameters that may appear on your water analysis report. The parameters include analyte name, possible source of contaminant, maximum contaminant level (MCL) health risk parameters, and ideal range. These guidelines are by no means exhaustive. However, they will provide you with acceptable limits and some information about potential sources of the problem and effects.

Kind Regards

David Holland, Director

Guide to Interpreting Your Report

Analyte	Source of contaminate	Maximum contamination limit (MCL)	Possible health effect	Ideal range
Arsenic	Erosion of natural deposits; runoff from orchards	10 µg/L	Skin damage or problems with circulatory systems, and may have increased risk of getting cancer	<10 µg/L
Cadmium	Erosion of natural deposits	5 µg/L	Kidney damage	<5 µg/L
Chromium	Erosion of natural deposits	50 µg/L	Allergic dermatitis	<50 µg/L
Copper	Corrosion of household plumbing systems	1300 µg/L	Gastrointestinal distress Long term exposure: Liver or kidney damage	<1300 µg/L
Fluoride	Erosion of natural deposits	2.0 mg/L	Above 2 mg/L causes tooth discoloration, above 4 mg/L Bone disease (pain and tenderness of the bones)	<2 mg/L
Nitrate (as N)	Runoff from fertilizer use;	10 mg/L	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill.	<10 mg/L
pH	pH can alter corrosivity and solubility of contaminants. Low pH will cause pitting of pipes and fixtures or a metallic taste.	None	None	6.5 to 8.5
Specific Electrical Conductance (SEC or EC)	Reflects amount of minerals in water	None	None	<1600 µmhos/cm
Total Dissolved Solids (TDS)	Measures the total mineral content in the water	None	High concentrations cause scaly deposits, staining, or a salty, bitter taste.	<500 mg/L
Total Alkalinity as CaCO ₃	Primarily dissolved carbonate from	None	None	<250 mg/L

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Analyte	Source of contaminate	Maximum contamination limit (MCL)	Possible health effect	Ideal range
	soil or rock materials.			
Potassium	Occur naturally	None	None	<411 mg/L
Magnesium	Occur naturally in soil	None	Contributes to hard water	None
Calcium	Occur naturally in soil	None	Contributes to hard water	None
Sodium	Sodium is the sixth most abundant element on Earth and is widely distributed in soils, plants, water, and foods.		Salty or brackish taste	30-60 mg/L
Chloride	Naturally occurring mineral		High levels cause salty or brackish taste	< 250 mg/L
Sulfate (SO ₄)	occurs naturally in drinking water	None	High levels have laxative effect	< 250 mg/L
Iron	occurs naturally in drinking water	MCL (Secondary) 300 ug/L	rusty color; sediment; metallic taste; reddish or orange staining	<300 ug/L
Manganese	occurs naturally in drinking water	MCL (Secondary) 50 ug/L	black to brown color; black staining; bitter metallic taste	<50 ug/L
Sodium Adsorption Value	Calculation that indicates suitability of water for irrigation	None	None	Values >4 may need gypsum to improve soil permeability
Boron	occurs naturally in drinking water	None	None	Levels above 1 mg/L may affect sensitive plants
Carbonate as CO ₃	See alkalinity			
Hydroxide	See alkalinity			
Bicarbonate as HCO ₃	See alkalinity			

References:

<https://www.mbasinc.com/download/library/resources/interpreting-your-water-quality-report-8.pdf>

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Analyte	Source of contaminate	Maximum contamination limit (MCL)	Possible health effect	Ideal range
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https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/123TCP.html

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Perchlorate.html

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<https://archive.epa.gov/water/archive/web/html/sulfate.html>

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