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2024 Water Quality Report

NASA Ames Research Center, Moffett Field, California

Delivered July 2025

Our Drinking Water Quality and Source

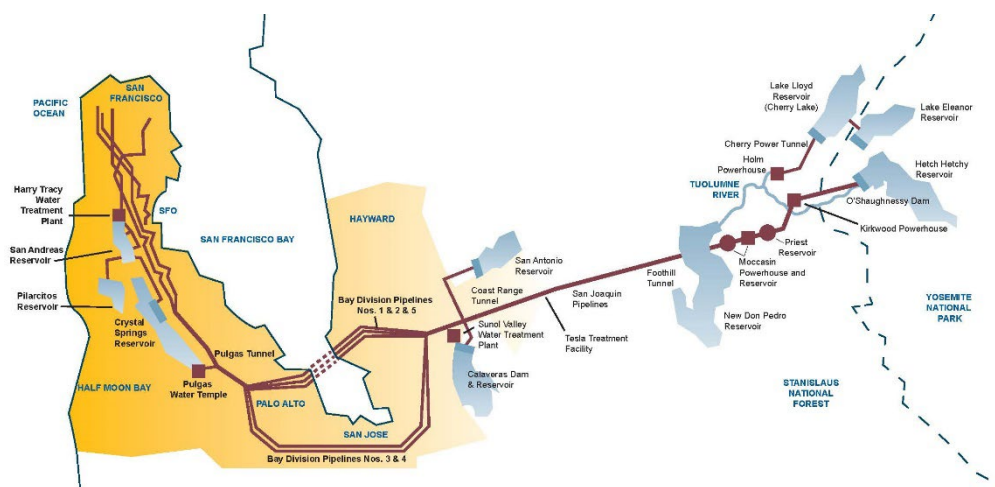
Federal and State law requires that NASA Ames Research Center (NASA Ames) make this Consumer Confidence Report every year by July 1st for the previous calendar year concerning the sources and quality of the water provided to our users and customers by our drinking water distribution system.

This report contains important information about your drinking water. Please contact Jeanne Sabin at 650-582-7321, jeanne.m.sabin@nasa.gov or Brian Kawashima at (650) 604-0269, brian.l.kawashima@nasa.gov for assistance.

En español: Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien. Para obtener ayuda en español, comuníquese con John Scarboro al (650) 604-6965 o john.h.scarboro@nasa.gov, quien coordinará un traductor.

For Calendar Year 2024, the water provided by the distribution system for NASA Ames (which includes Moffett Field) was monitored and analyzed by both the water supplier and NASA Ames in accordance with Federal and State regulations. This report presents the results of those analyses with the details shown in the table starting on Page 8.

Hetch Hetchy Water System Map



Areas Receiving Water

NASA Ames operates a permitted community drinking water system (California System No. 4300997) regulated by the State Water Resources Control Board (SWRCB). This system serves facilities and areas with Moffett Field

operated or overseen by NASA Ames, including the NASA Ames Campus, NASA Research Park, Wescoat Housing, Bay View, the Moffett Field Golf Club, the California Air National Guard, and the Army 63rd Regional Support Command. Areas of Moffett Field not connected to the NASA Ames drinking water system are not included in this report.

Where Your Water Comes From

NASA Ames receives drinking water exclusively from the San Francisco Public Utilities Commission (SFPUC), which manages surface water supplies primarily from the Tuolumne River watershed and Hetch Hetchy Reservoir in Yosemite National Park. Supplemental sources in Alameda and San Mateo Counties, and deep groundwater in northern San Mateo County, are available but were not used in 2024.

Water Treatment

SFPUC water is treated using ultraviolet (UV) light and chlorine disinfection to remove and prevent bacteriological growth. In addition, pH is adjusted to reduce pipe corrosion, fluoride is added to support dental health, and chloramine is added to maintain disinfectant residuals. Hetch Hetchy water is of such high quality that it meets criteria for filtration avoidance under federal regulations.

System Operations and Oversight

NASA Ames is responsible for maintaining water quality after delivery from SFPUC. This includes routine and emergency maintenance, routine water quality testing, leak investigations, valve maintenance, system flushing, and annual investments in infrastructure, compliance, and oversight.

Cross-Connection Control

NASA Ames manages a cross-connection control program to prevent contaminants from entering the drinking water system. Key protections in place include installation of backflow prevention devices, annual tests and inspections by certified professionals, education, and compliance coordination.

All temporary and permanent connections to the NASA Ames drinking water system, including use of hydrants and for construction activities, must be reviewed and approved by NASA. For more information and questions, please contact Jeanne Sabin at 650-582-7321, jeanne.m.sabin@nasa.gov.

Water Quality Monitoring

Water quality is monitored by both SFPUC and NASA Ames to comply with state and federal standards. This includes:

- All regulated chemical constituents with a primary or secondary Maximum Contaminant Limit (MCL)
- Bacteriological activity (Total Coliform and *E. coli*)
- Disinfection residuals
- Disinfection byproducts (Total Trihalomethanes and Haloacetic Acids)
- Field parameters, including pH, turbidity, color, odor, and temperature
- Lead and copper
- Unregulated chemical constituents being researched by the U.S. Environmental Protection Agency (EPA)

Results for all detected chemical constituents are summarized in the water quality table starting at Page 8.

Understanding Contaminants in Drinking Water

As water moves through the environment it may pick up natural minerals, or substances from animals or human activity. These are called contaminants, but the presence of a contaminant in drinking water does not necessarily mean the water is unsafe. Federal and state drinking water regulations set safe limits for contaminants to protect public health. For more information, call the EPA's Safe Drinking Water Hotline at 800-426-4791 or visit epa.gov/safewater.

Special Health Considerations

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised individuals, such as those undergoing cancer treatment, individuals who have received organ transplants, people with HIV/AIDS or other immune system disorders, some elderly adults, and infants, can be at increased risk of infections. These individuals should seek advice about drinking water from their healthcare providers.

SFPUC tests the water delivered to NASA Ames for microbial pathogens, including *Cryptosporidium*. *Cryptosporidium* is a microscopic parasite found in surface water that can cause gastrointestinal illness. In 2024, no *Cryptosporidium* was detected in the treated water delivered to NASA Ames. Although SFPUC uses filtration and disinfection to remove or inactivate most pathogens, some may still be present. *Cryptosporidium* must be ingested to cause illness and can be transmitted through means other than drinking water.

Guidelines for reducing the risk of infection from *Cryptosporidium* and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline at 800-426-4791 or at epa.gov/safewater.

Notice of Monitoring and Reporting Violation

On July 10, 2024, a routine water sample taken from California Air National Guard Building M650 tested positive for total coliform bacteria and negative for *E. coli* bacteria. However, due to a delay in communication of the laboratory results, NASA Ames did not complete the required follow-up sampling on July 11, 2024. This resulted in a monitoring and reporting violation under the Total Coliform Rule.

This was not, and is not, an emergency. Total coliform bacteria are generally harmless, but their presence can indicate that other, potentially harmful bacteria like *E. coli* could be in the water. As a precaution, additional sampling was conducted once the test results were communicated. Samples collected from Building M650 on July 31, 2024, and from Building M650, Building M653, and the SFPUC supply inlet (P500) on August 15, 2024, all tested absent for total coliform bacteria and *E. coli*.

There is nothing you need to do at this time. You do not need to boil your water or take other action. If you have specific health concerns, you may wish to consult your healthcare provider. NASA Ames has reviewed and improved internal coordination procedures with its laboratory and facilities contractors to prevent future communication delays.

To learn more, you may view the full public notice online at:

<https://environment.arc.nasa.gov/assets/files/2024%20Reporting%20Violation%20Public%20Notice.pdf>.

For questions or concerns, please contact Jeanne Sabin at 650-582-7321 or jeanne.m.sabin@nasa.gov.

Lead and Copper

Drinking water at NASA Ames meets all federal and state standards for lead and copper. As required by the EPA's Lead and Copper Rule, NASA Ames monitors lead and copper concentrations at indoor taps within selected buildings across the Center every three years. The most recent sampling occurred in September 2023. Results confirmed that the 90th percentile values for both lead and copper were below their respective Action Levels, and no regulatory violations occurred. Results are reported in parts per billion (ppb).

- **Lead:** 10.4 ppb (compared to the Action Level of 15 ppb)
- **Copper:** 91.6 ppb (compared to the Action Level of 1,300 ppb)

However, two buildings with individual sample results above the lead Action Level of 15 ppb were identified: Building M583C and Building N200. These buildings are among the oldest at NASA Ames. Building M583C is currently abandoned and scheduled for demolition. Building N200 remains in use and is equipped with NSF/ANSI-certified lead-removing filters at all drinking water fountains and bottle-filling stations.

These results do not indicate a systemic issue in the NASA Ames drinking water system. They reflect isolated conditions in aging building plumbing. The water supplied by SFPUC does not contain lead or copper. However, small amounts of these metals may leach into water through corrosion of building plumbing or fixtures.

The water distribution system was verified as having no lead piping supplying buildings in October 2024, with results available here: <https://environment.arc.nasa.gov/assets/files/2024%20Lead%20Service%20Line%20Inventory.pdf>. NASA Ames continues to evaluate and manage plumbing materials in older infrastructure that may contribute to lead levels at the tap.

Staff, visitors, and tenants are encouraged to run cold water for 30 seconds to 2 minutes before drinking or cooking, especially after periods of non-use, to help ensure freshness and reduce the potential for lead or copper exposure from building plumbing. Use of water filters is not required for any NASA buildings except N200. However, those who choose to use filters should select products that are certified to meet NSF/ANSI drinking water standards.

For residents of Wescoat Housing, questions about interior plumbing or water system components may be directed to housing management. NASA Ames remains committed to supporting all drinking water users in making informed choices and ensuring water safety across the entire facility.

For more information about lead in drinking water, testing methods, and steps to minimize exposure, visit epa.gov/lead or call the Safe Drinking Water Hotline at 800-426-4791.

Per- and Polyfluoroalkyl Substances (PFAS) Monitoring

PFAS are a group of synthetic chemicals used in a wide range of industrial and consumer applications since the 1940s, including firefighting foams, non-stick cookware, water-repellent fabrics, and food packaging. In 2024, PFAS were not detected in the drinking water provided to NASA Ames. For more information about PFAS and ongoing monitoring efforts, visit the EPA's website at www.epa.gov/pfas, the SWRCB's website at waterboards.ca.gov/pfas/, or the SFPUC's website at sfpub.gov/TapWater.

Fluoride and Fluoridation

SFPUC treats the water delivered to NASA Ames by adding fluoride to the naturally occurring level to help prevent and control tooth decay. SFPUC maintains a fluoride concentration of 0.7 parts per million (ppm). Contact your healthcare provider or the SWRCB if you have concerns about fluoridation. For additional information about fluoridation or oral health, visit the United States Center for Disease Control and Prevention (CDC)'s website at www.cdc.gov/fluoridation/, the SFPUC's website at sfpu.gov/TapWater, or the SWRCB's website at https://waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.html.

Protection of Watersheds

The SFPUC completes watershed sanitary surveys for the Hetch Hetchy source annually and for non-Hetch Hetchy surface water sources every five years. The latest sanitary surveys for the non-Hetch Hetchy watersheds were completed in 2021, for the period of 2016 to 2020. These surveys document the SFPUC's stringent watershed protection activities that are implemented with support from partner agencies, including the National Park Service and the United States Forest Service.

These surveys not only evaluate the sanitary conditions and water quality of the watersheds but also describe the results of watershed management activities conducted in the preceding years. Wildfires, wildlife, livestock, and human activities continue to be potential sources of contamination. For more information, please contact the San Francisco District Office of the SWRCB Division of Drinking Water at 510-620-3474.

SFPUC's Water Treatment Plants Recognized for Excellence

In 2024, the American Water Works Association (AWWA) recognized both the Sunol Valley and Harry Tracy Water Treatment Plants for outstanding performance in water quality. The awards were presented through the AWWA's Partnership for Safe Water, a voluntary program for utilities that consistently produce water exceeding regulatory requirements. These recognitions reflect SFPUC's commitment to high operational standards and benefit all users of the system, including the NASA Ames community.

Strategic Planning for Future Water Quality

SFPUC regularly updates its Water Quality Strategic Plan to anticipate future regulatory, operational, and environmental challenges. This planning effort guides infrastructure investment and operational priorities to protect drinking water quality throughout its system.

In 2024, the Water Quality Division updated its plan to reflect new research, risk assessments, and emerging trends. The updated strategic plan outlines key initiatives currently underway and future recommendations. More information is available at: <https://www.sfpuc.gov/about-us/policies-plans/water-quality-planning>.

Frequently Asked Questions

Q: Is NASA Ames drinking water safe?

A: Yes. The drinking water delivered to NASA Ames meets or exceeds all state and federal health standards. NASA Ames monitors the quality of water throughout its distribution system and works closely with its water supplier and regulatory agencies to ensure continued compliance and safety.

Q: Part of NASA Ames Research Center is located above a groundwater contamination plume. Does any of this groundwater enter the drinking water system?

A: No. NASA Ames does not use groundwater as a drinking water source, and contamination cannot enter the drinking water system. All drinking water is supplied by the San Francisco Public Utilities Commission (SFPUC), which delivers treated surface water from protected sources outside the region. There are no physical connections between the contaminated groundwater and the drinking water distribution system. The drinking water distribution system piping is constantly kept at high pressures (60 to 120 psi), which prevents groundwater from passively entering the drinking water piping. In addition, drinking water piping is made of material which does not allow groundwater contamination to permeate into the drinking water.

Q: Can I use bottled water if I choose?

A: Yes. Individuals who prefer bottled water for taste, convenience, or other personal reasons may choose to purchase and use it. However, NASA Ames cannot provide or fund bottled water services, as the drinking water meets all regulatory health standards. For federal staff, purchases using public funds are restricted to emergency or health-related exceptions.

Q: Is bottled water safer than tap water?

A: Not necessarily. Tap water provided at NASA Ames is subject to strict federal and state quality regulations. Bottled water is regulated by the U.S. Food and Drug Administration (FDA), while tap water is regulated by the U.S. Environmental Protection Agency (EPA). Both must meet safety standards, but bottled water is often chosen for taste or convenience, not for increased safety.

Q: What can I do if I have a water quality question or concern?

A: If you notice changes in water color, taste, odor, or pressure, or have any other water quality concern, please submit a service request or trouble call through your facility or building representative. For urgent questions or follow-up, contact Jeanne Sabin at 650-582-7321 or jeanne.m.sabin@nasa.gov.

Key Water Quality Terms

The following are definitions of key terms referring to standards and goals of water quality noted in the data table below.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the United States Environmental Protection Agency.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs or MCLGs as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste, and appearance of drinking water.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Primary Drinking Water Standard (PDWS): MCLs, MRDLs, and TTs for contaminants that affect health, along with their monitoring and reporting requirements.

Regulatory Action Level (RAL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

Turbidity: A water clarity indicator that measures the cloudiness of the water and is also used to indicate the effectiveness of a filtration system.

NASA Ames Research Center - Water Quality Data for Year 2024 ⁽¹⁾

DETECTED CONTAMINANTS	Unit	MCL/TT	PHG or (MCLG)	Range or Level Found	Average or [Max]	Typical Sources in Drinking Water
TURBIDITY						
Unfiltered Hetch Hetchy Water	NTU	5	N/A	0.3 - 0.5 ⁽²⁾	[2.1]	Soil runoff
Filtered Water from Sunol Valley Water Treatment Plant (SVWTP)	NTU	TT = Max 1	N/A	-	[0.4]	Soil runoff
	-	TT = Min 95% of samples ≤ 0.3 NTU	N/A	99.97%	-	Soil runoff
Filtered Water from Harry Tracy Water Treatment Plant (HTWTP)	NTU	TT = Max 1	N/A	-	[0.1]	Soil runoff
	-	TT = Min 95% of samples ≤ 0.3 NTU	N/A	100%	-	Soil runoff
DISINFECTION BYPRODUCTS AND PRECURSOR						
Total Trihalomethanes	ppb	80	N/A	23-59	41.0 ⁽³⁾	Byproduct of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	22.2 - 64.5 ⁽³⁾	41.7 ⁽³⁾	Byproduct of drinking water disinfection
Bromate	ppb	10	0.1	ND - 5.9	[3] ⁽⁴⁾	Byproduct of drinking water disinfection using ozone
MICROBIOLOGICAL						
<i>E. coli</i>	-	0 PS	(0)	-	-	Human or animal fecal waste
Total coliform ⁽⁵⁾	-	TT (No more than 1 positive/month)	(0)	1 detection ⁽⁶⁾	-	Naturally present in the environment
INORGANICS						
Chromium (VI)	ppb	10	0.02	ND - 0.2	0.1	Leaching from natural deposits
Fluoride ⁽⁷⁾ (raw water)	ppm	2.0	1	ND - 0.8	0.3	Erosion of natural deposits; water additive to promote strong teeth
Nitrate (as N)	ppm	10	10	ND - 0.4	ND	Erosion of natural deposits
Chlorine (including free chlorine and chloramine)	ppm	MRDL = 4.0	MRDLG = 4	0-3.19	1.93 ⁽⁴⁾	Drinking water disinfectant added for treatment

LEAD AND COPPER	Unit	RAL	PHG	Range	90th Percentile	Typical Sources in Drinking Water
Copper	ppb	1300	300	2.8 - 130 ⁽⁸⁾	91.6	Internal corrosion of water plumbing systems
Lead	ppb	15	0.2	ND - 27 ⁽⁹⁾	10.42	Internal corrosion of water plumbing systems

2024 Water Quality Report

National Aeronautics and Space Administration

CONSTITUENTS WITH SECONDARY STANDARDS	Unit	SMCL	PHG	Range	Average	Typical Sources in Drinking Water
Aluminum	ppb	200 (MCL = 1000)	600	ND - 59	ND	Erosion of natural deposits; some surface water treatment residue
Chloride	ppm	500	N/A	< 3 - 18	9.3	Runoff / leaching from natural deposits
Iron	ppb	300	N/A	< 6 - 41	14	Leaching from natural deposits
Manganese	ppb	50	N/A	< 2 - 2.7	< 2	Leaching from natural deposits
Specific Conductance	µS/cm	1600	N/A	31 - 317	193	Substances that form ions when in water
Sulfate	ppm	500	N/A	1 - 41	18	Runoff / leaching from natural deposits
Total Dissolved Solids	ppm	1000	N/A	24 - 169	102	Runoff / leaching from natural deposits
Turbidity	NTU	5	N/A	0.1 - 0.4	0.2	Soil runoff

NON-REGULATED WATER QUALITY PARAMETERS	Unit	ORL	Range	Average
Alkalinity (as CaCO ₃)	ppm	N/A	7.4 - 120	60
Bromide	ppb	N/A	<10 - 29	<10
Boron	ppb	1000 (NL)	23 - 65	41
Calcium (as Ca)	ppm	N/A	3.2 - 28	15
Chlorate ⁽¹⁰⁾	ppb	800 (NL)	24 - 597	144
<i>Giardia lamblia</i>	cyst/L	N/A	0 - 0.06	0.02
Hardness (as CaCO ₃)	ppm	N/A	8.4 - 106	60
Lithium	ppb	N/A	<2 - 4	<2
Magnesium	ppm	N/A	0.2 - 9.5	5.7
pH	-	N/A	7.66 - 9.00	8.41
Silica	ppm	N/A	4.9 - 9.9	7.5
Sodium	ppm	N/A	3.1 - 24	16
Total Organic Carbon ⁽¹¹⁾	ppm	N/A	1.1 - 1.8	1.5

KEY:	
< / ≤	Less than / Less than or equal to
Max	Maximum
Min	Minimum
N/A	Not Applicable
ND	Non-Detect
NL	Notification Level
NTU	Nephelometric Turbidity Unit
ORL	Other Regulatory Level
ppb	parts per billion (µg/L)
ppm	parts per million (mg/L)
PS	Number of Positive Samples
RAL	Regulatory Action Level
µS/cm	microSiemens/centimeter

Footnotes:

- (1) NASA Ames met all federal and state drinking water standards. The table includes only those contaminants that were detected in the water during calendar year 2024. All other regulated contaminants with a primary or secondary Maximum Contaminant Level (MCL) were tested as required, were not detected, and are therefore not included in these tables.
- (2) These are monthly average turbidity values measured every four (4) hours daily at Tesla Treatment Facilities.
- (3) This is the highest locational running annual average (LRAA) value, which is used to determine compliance with the Maximum Contaminant Level (MCL). One individual sample result exceeded the MCL. However, the running annual average remained well below the MCL and therefore all water within the NASA Ames drinking water system meets regulatory requirements.
- (4) This is the highest running annual average value.
- (5) Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present. During the past year, NASA Ames was required to conduct one Level 2 assessment. One Level 2 assessment was completed. In addition, NASA Ames was required to take six corrective actions, and completed all six of these actions.
- (6) One routine distribution sample collected on July 10, 2024, at Building M650 (California Air National Guard) tested positive for total coliform bacteria. Required follow-up samples were delayed due to a laboratory communication issue, resulting in a monitoring and reporting violation. Subsequent special and routine sampling found no total coliform bacteria at this or other locations. This was determined to be an isolated, non-systemic event.
- (7) Natural fluoride in Hetch Hetchy water was not detected. Elevated fluoride levels in raw water at both the Sunol Valley Water Treatment Plant (SVWTP) and Harry Tracy Water Treatment Plant (HTWTP) were attributed to transfers of fluoridated Hetch Hetchy water into local reservoirs. The fluoride level in SFPUC-delivered treated water ranged from 0.5 to 0.8 ppm, with an average of 0.7 ppm.
- (8) The most recent Lead and Copper Rule monitoring was in 2023. Zero (0) of 22 site samples collected at consumer taps had copper concentrations above the Action Level.
- (9) The most recent Lead and Copper Rule monitoring was conducted in 2023. Two (2) of 22 site samples collected at consumer taps had lead concentrations above the Action Level. These results came from Building M583C and Building N200, which are two of the oldest buildings at NASA Ames. Building M583C is abandoned and scheduled for demolition. Building N200 has NSF/ANSI-certified filters installed on all drinking water fountains and bottle filling stations. The 90th percentile value, used to determine compliance, was 10.4 ppb, which is below the Action Level. Therefore, all water within the NASA Ames drinking water system meets regulatory requirements.
- (10) The detected chlorate in the treated water is a degradation product of sodium hypochlorite used by the SFRWS for water disinfection.
- (11) The range and average values of Total Organic Carbon were from operational monitoring results at Tesla Treatment Facilities.

Note: For questions or additional information about the water quality data in this table, please contact: Jeanne Sabin, NASA ARC Water Compliance Program Manager, Email: jeanne.m.sabin@nasa.gov, Phone: (650) 582-7321

Your Questions and Concerns Are Valuable to Us

NASA Ames is responsible for collecting, recording, and responding to all concerns related to drinking water quality and water supply. It is critical that users report any issues so they can be investigated promptly and thoroughly.

If you notice a problem such as unusual taste, odor, discoloration, or low water pressure, or if you have general questions about the water system, there are several ways to report your concern:

- Submit a **Facilities Trouble Call** through the NASA Ames Maintenance Helpdesk at nasa.sharepoint.com/sites/arc-j-jcm/SitePages/troublecalldesk.aspx or call (650) 604-5212.
- Reach out to your **Building Facility Safety Manager (FSM)** or **onsite leadership**.
- Contact the **Water Quality Program** directly:
 - **Jeanne Sabin**, Water Compliance Program Manager
Email: jeanne.m.sabin@nasa.gov
Phone: (650) 582-7321

Your feedback helps ensure that NASA Ames continues to deliver safe and reliable drinking water to all users. Please do not hesitate to reach out with any questions or concerns.

Need Help or Have Questions?

If you have questions about this report or your drinking water, please contact:

- **Water Quality:** Jeanne Sabin, Water Compliance Program Manager
(650) 582-7321 | jeanne.m.sabin@nasa.gov
- **En español:** John Scarboro
(650) 604-6965 | john.h.scarboro@nasa.gov
Este informe contiene información muy importante sobre su agua potable. Para obtener ayuda en español, comuníquese con John Scarboro al (650) 604-6965 o john.h.scarboro@nasa.gov, quien coordinará un traductor.
- **Traditional Chinese:** 此份水質報告內有重要資訊。請找他人為你翻譯和解說清楚。
- **Maintenance Issues:** Ames Trouble Desk
(650) 604-5212
- **Health and Safety Concerns:** Please contact your assigned safety representative.

NASA Ames Environmental Management Division

<https://environment.arc.nasa.gov>