2024 Consumer Confidence Report

Annual Water Quality Report
RAF Alconbury
United Kingdom

Delivering A Clean Water Supply

This is an annual report on the water quality delivered by Royal Air Force Alconbury (RAFA). Bioenvironmental Engineering tests the drinking water quality for many constituents as required by the federal and United Kingdom regulations. This report shows the results of our monitoring for the period of 1 January ~ 31 December 2024. Department of the Air Force Instruction 48-144, *Drinking Water Surveillance Program*, and the United States Environmental Protection Agency (US EPA) require all community water systems to provide their consumers and annual water quality report. This report will help you understand where your drinking water comes from and what is in it. It will also help you to make informed choices that affect your family's health and help you understand the importance of protecting our drinking water sources.

The Journey of Your Water

The RAF Alconbury drinking water system draws water from the local supplier, Anglian Water. Anglian Water supplies the water for underground reservoirs which provide our day to day water supply.

RAFA's water supply is chlorinated using a sodium hypochlorite solution. Chlorine is added to the water supply for disinfection purposes and prevents bacteriological growth in the distribution system.

As a water wholesaler, Anglian Water publishes annual Water Quality Reports as well, which are located at: **http://www.anglianwater.co.uk/about-us/annual-reports/**

WATER SAMPLING FOR COMPLIANCE

Sources of Drinking Water

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 the water poses a health risk. More info about contaminants and potential health effects can be obtained from the US EPA's Safe Drinking Water Information website at:

https://www.epa.gov/ground-water-and-drinking-water/safe-drinking-water-information.

The sources of drinking water (both tap water 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.

Contaminants that may be present in source water include:

- *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 resulting 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 septic systems.
- *Organic chemical contaminants,* including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- *Radioactive contaminants,* which can be naturally occurring or resulting from oil and gas production and mining activities.

Water Monitoring Results Summary

In order to ensure that tap water is safe to drink, US EPA and the Final Governing Standard for United Kingdom (FGS-UK) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

Tables 1 ~ 6 list all of the primary drinking water standard contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The FGS-UK requires us to monitor certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one-year old. **NOTE: Terms and abbreviations used in this report are located on the final page.**

TABLE 1
DETECTION OF COLIFORM BACTERIA
1 JAN ~ 31 DEC 2024

Parameter and Units of Measure	Highest No. of Detection	MCL	Typical source of Bacteria
Coliform, Total	1	Two or more positive monthly sample	Naturally present in the environment
Coliform, Fecal or *E.coli*	0	A routine sample and a repeat sample are total coliform positive, and one of these is also fecal coliform or *E. coli* positive	Human and animal fecal waste

TABLE 2
LEAD AND COPPER
SEPTEMBER 2023

Parameter and Units of Measure	Samples Collected	Highest Level Detected (90th %)	Action Level	Sites Exceeding MCL	MCL	Typical source of Contaminant
Lead (mg/L)	25	0.00044	0.0075	0	0.015	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits.
Copper (mg/L)	25	0.37	0.65	0	1.3	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits.

TABLE 3 INORGANIC CONTAMINANTS 1 JAN ~ 31 DEC 2024				
Parameter and Units of Measure	**Highest Level Detected**	**Range of Levels Detected**	**MCL**	**Major Sources in Drinking Water**
Antimony (mg/L)	0.00043	<0.00043	0.005	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic (mg/L)	0.00034	<0.00034	0.01	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (mg/L)	0.021	0.020 ~ 0.021	2	Naturally occurring, discharged from industrial processes.
Boron (mg/L)	0.082	0.075—0.081	1	Released from rocks and soils through weathering
Bromate (mg/L)	0.004	<0.004	0.01	By-product of drinking water disinfection
Chromium (mg/L)	0.0021	0.00071 ~ 0.0021	0.05	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride (mg/L)	0.27	0.24 ~ 0.27	1.5	Erosion of natural deposits; water additive; discharge from fertilizer and aluminum plants
Nitrate (as N) (mg/L)	5.4	5.2 ~ 5.4	10	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrite (as N) (mg/L)	0.3	0 ~ 0.3	0.5	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits

Additional Information for Nitrate/Nitrite.
RAF Alconbury (RAFA) water does not exceed regulatory levels for nitrate/nitrite. However, RAFA water has above the action level for nitrate/nitrite. Nitrate/Nitrite in drinking water at levels above 10 mg/L is a health risk for infants of less than six months of age. High concentration level can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you area caring for an infant, you should ask for advice from your health care provider.

Additional Information for Bromate.
RAF Molesworth (RAFM) water does not exceed regulatory levels for Bromate. Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.

TABLE 4
VOLATILE ORGANIC COMPOUNDS
1 JAN ~ 31 DEC 2024

Parameter and Units of Measure	Highest Level Detected	Range of Levels Detected	MCL	Major Sources in Drinking Water
TTHMs [Total trihalomethanes] (mg/L)	0.034	0.022 ~ 0.034	0.08	By-product of drinking water disinfection
HAA5 [Haloacetic Acids] (mg/L)	0.01	0.005 ~ 0.01	0.06	By-product of drinking water disinfection

Additional Information for TTHMs & HAA5.
RAF Molesworth (RAFM) water does not exceed regulatory levels for Total Trihalomethanes (TTHMs) & Haloacetic Acids (HAA5). Drinking water containing HAA5 in excess of the MCL over many years may have an increased risk of getting cancer. Some people who drink water containing TTHMs in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

TABLE 5
RADIOACTIVE CONTAMINANTS
1 JAN ~ 31 DEC 2024

Parameter and Units of Measure	Highest Level Detected	Range of Levels Detected	MCL	Major Sources in Drinking Water
Gross Alpha (pCi/L)	<1.08	<1.08	15	Erosion of natural deposits
Gross Beta (pCi/L)	11.5	<1.08 ~ 11.5	27	Erosion of natural deposits

TABLE 6
SYNTHETIC ORGANIC CONTAMINANTS
1 JAN – 31 DEC 2024

Parameter and Units of Measure	Highest Level Detected	Range of Levels Detected	MCL	Major Sources in Drinking Water
Pesticides, total (calculated) (mg/L)	0.0005	0.00033 ~ 0.0005	0.0005	Leeching from farm land

What are per- and polyfluoroalkyl substances and where do they come from?

Per- and polyfluoroalkyl substances (PFAS) are a group of thousands of man-made chemicals. PFAS have been used in a variety of industrial and consumer products around the globe, including in the U.S., since the 1940s. PFAS have been used to make coatings and products that are used as oil and water repellents for carpets, clothing, food packaging, and cookware. They are also contained in some fire-fighting foams such as aqueous film-forming foam, or AFFF, used for fighting petroleum fires.

Is there a federal regulation for PFAS in drinking water?

Yes. On April 26, 2024, the Environmental Protection Agency (EPA) published a final National Primary Drinking Water Regulation for certain per- and polyfluoroalkyl substances (PFAS) under the Safe Drinking Water Act (SDWA). This rule went into effect on June 25, 2024 with a compliance deadline of April 26, 2029, five years from the date up publication. While the rule requires routine sampling for certain PFAS by no later than 2027, DoD has been sampling drinking water for PFAS compounds at all DoD-owned and operated water systems since 2017. Under the new rule, the following limits, called Maximum Contaminant Levels (MCL), were established, and DoD water systems will need to meet these levels by April 2029.

For systems where DoD provides drinking water, the Department is collecting the necessary sampling information and is taking actions to ensure compliance within the required 5-year timeframe. Currently, DoD is finalizing a policy on how to apply the EPA rule OCONUS.

TABLE 6
PER- AND POLYFLUOROALKYL SUBSTANCES
1 JAN ~ 31 DEC 2024

Parameter and Units of Measure	Highest Level Detected	MCL	Major Sources in Drinking Water
Perfluorooctanoic Acid [PFOA] (ppt)	3.1	4	Man-made chemicals used in various products and contained in foams for fighting petroleum fires.
Perfluorooctanesulfonic Acid [PFOS] (ppt)	5	4	Man-made chemicals used in various products and contained in foams for fighting petroleum fires.
Perfluorononanoic acid [PFNA] (ppt)	0	10	Man-made chemicals used in various products and contained in foams for fighting petroleum fires.
Perfluorohexanesulfonic Acid [PFHxS] (ppt)	2.4	10	Man-made chemicals used in various products and contained in foams for fighting petroleum fires.
Hexafluoropropylene oxide dimer acid [HFPO-DA/GenX] (ppt)	0	10	Man-made chemicals used in various products and contained in foams for fighting petroleum fires.
Hazard Index [HI]	0.2722	1	The Hazard Index (HI) is made up of a sum of fractions. Each fraction compares the level of each PFAS measured in the water to the highest level determined not to have risk of health effects

Has RAF Alconbury tested its water for water for PFAS?

Yes. In June 2024 samples were collected from RAF Alconbury water pump house.

We are informing you that the following PFAS compounds covered by the EPA PFAS drinking water rule were detected and the results are provided in Table 6. RAF Alconbury has been studying treatment alternatives to remove PFAS, and we will take action as required by the DoD OCONUS drinking water policy. **Additional sampling and its frequency, if needed, will also be determined once the DoD PFAS Policy for OCONUS installations have been finalized**. RAF Alconbury will be in compliance with the EPA PFAS drinking water MCL by the required deadline of April 2029. For more information on PFAS, please see **https://www.epa.gov/pfas**.

PFOA. Some people who drink water containing PFOA in excess of the MCL over many years may have increased health risks such as cardiovascular, immune, and liver effects, as well as increased incidence of certain types of cancers including kidney and testicular cancer. In addition, there may be increased risks of developmental and immune effects for people who drink water containing PFOA in excess of the MCL following repeated exposure during pregnancy and/or childhood.

PFOS. Some people who drink water containing PFOS in excess of the MCL over many years may have increased health risks such as cardiovascular, immune, and liver effects, as well as increased incidence of certain types of cancers including liver cancer. In addition, there may be increased risks of developmental and immune effects for people who drink water containing PFOS in excess of the MCL following repeated exposure during pregnancy and/or childhood.

PFNA. Some people who drink water containing PFNA in excess of the MCL over many years may have increased health risks such as elevated cholesterol levels, immune effects, and liver effects. In addition, there may be increased risks of developmental effects for people who drink water containing PFNA in excess of the MCL following repeated exposure during pregnancy and/or childhood.

PFHxS. Some people who drink water containing PFHxS in excess of the MCL over many years may have increased health risks such as immune, thyroid, and liver effects. In addition, there may be increased risks of developmental effects for people who drink water containing PFHxS in excess of the MCL following repeated exposure during pregnancy and/or childhood.

HFPO-DA. Some people who drink water containing HFPO-DA in excess of the MCL over many years may have increased health risks such as immune, liver, and kidney effects. There is also a potential concern for cancer associated with HFPO-DA exposure. In addition, there may be increased risks of developmental effects for people who drink water containing HFPO-DA in excess of the MCL following repeated exposure during pregnancy and/or childhood.

Hazard Index. Per- and polyfluoroalkyl substances (PFAS) can persist in the human body and exposure may lead to increased risk of adverse health effects. Low levels of multiple PFAS that individually would not likely result in increased risk of adverse health effects may result in adverse health effects when combined in a mixture. Some people who consume drinking water containing mixtures of PFAS in excess of the Hazard Index (HI) MCL may have increased health risks such as liver, immune, and thyroid effects following exposure over many years and developmental and thyroid effects following repeated exposure during pregnancy and/or childhood.

For Customers with Special Health Concerns

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, those with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

Copies of this report can be requested via mail by sending a self-addressed stamped envelope to:
423 MDS/SGOJ
ATTN: 2024 RAFA Water Quality Report
Unit 5610
APO, AE 09470

For more information please contact the 423rd Medical Squadron,
Bioenvironmental Engineering
(07808 403824)

TERMS USED IN THIS REPORT

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

ppm: parts per million

ppt: parts per trillion

pCi/L: picocuries per liter (a measure of radiation)

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

90th Percentile Level: The level of lead and copper at which 90% of drinking water samples taken in a system are below. Action level are exceeded based on the 90th percentile level. (e.g., 10 samples x 0.9 =9; thus, use 9th highest sample result to compare the action level). This mean 90% of results in the test set were below this level.

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

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

FGS-UK: Final Governing Standards for the United Kingdom - The governing environmental regulation for US military bases in the UK.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Health Advisory (HA): USEPA limit that establishes when actions should be taken to reduce exposure.