



Drinking Water Quality Annual Report for Calendar Year's 2021

Gwangju Air Base, ROK
(Published: June 2022)



This annual report summarizes the quality of water delivered by Gwangju AB. Under the "Consumer Confidence Reporting Rule" of the federal Safe Drinking Water Act (SDWA), community water systems are required to report this water quality information to the consuming public. Presented in this report is information on the source of our water, its constituents and the health risks associated with any contaminants. Our goal is to provide you with a safe and dependable supply of drinking water. **At Gwangju AB, the drinking water system is safe and reliable.**

“A copy of this Water Quality Report in Korean can be obtained by contacting the Kunsan Bioenvironmental Engineering office at 315-782-4670 or by Korean cellphone at 063-470-4670. This report is designed to further public understanding about public water systems and potential hazards”

“이 보고서에는 귀하의 식수에 대한 중요한 내용이 실려있습니다. 그러므로 이 보고서를 이해할 수 있는 사람한테 번역해 달라고 부탁하시기 바랍니다. 보고서에 대한 질문은 생물환경공학과 063-470-4670 로 문의하시기 바랍니다.”

1. Drinking Water Sources for Gwangju AB

The primary water source for Gwangju AB is the Hwang Yong River. The water supplied to Gwangju AB is treated at the Duknam Water Treatment Plant (WTP). The Duknam WTP receives its water from the Juam Reservoir, which is supplied by the Hwang Yong River. The water then undergoes flocculation, settling, filtration, GAC (granulated activated carbon) filtration, and chlorination. There is a water treatment plant on Gwangju AB that performs disinfection of the water by chlorine addition prior to distribution to the base. For more information on these water sources, please contact Bioenvironmental Engineering (BE) Flight at DSN 315-782-6541.

2. Common Sources of Drinking Water Contamination

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 sub-stances resulting from the presence of animals or human activity. Contaminants that may be present in source or untreated water include:

- ◆ **Microbial contaminants**, such as viruses and bacteria, which 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**, which may come from agriculture, urban storm water runoff, and residential uses.
- ◆ **Organic chemical contaminants**, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can come from gas stations, urban storm water runoff, and septic systems.

- ◆ **Radioactive Contaminants**, which can be naturally-occurring or the result of oil/gas production and mining activities.
- ◆ 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. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.
- ◆ 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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).
- ◆ The contractor group, Hanhwa 63 City, manages the maintenance and operations of the drinking water supply and distribution system. Hanhwa 63 City personnel operate on 24 hour work shifts to ensure the system is pressurized and maintains sufficient chlorine residual.
- ◆ The BEE Flight (8 OMRS/SGXB) monitors the quality of the drinking water provided to consumers and addresses any health related concerns. Analysis is conducted by certified laboratories.
- ◆ **The Drinking Water Working Group (DWWG), required by AFI 48-144** is held quarterly in the BE Conference Rm (Bldg. 409) by members of Civil Engineering (CE) Utility Shop, CE Environmental Element, and BE. The DWWG meets to address all local drinking water issues involving compliance, risk reduction, and continuous improvement. DWWG has the authority to call a special meeting with Public Affairs (PA), Base Legal (JA), or other related members as needed. Consumers are welcome to attend this meeting; please call 315-782-6541 for more information.

3. Drinking Water Monitoring

Kunsan AB BE routinely monitors for over 80 contaminants using certified laboratories and approved methods in accordance with the 2020 Korean Environmental Governing Standards (KEGS) and (EPA) Standards.

- **Microbial contaminants** sampling is conducted monthly at distribution points (such as dormitories, AAFES food court and the contingency clinic), to include analysis for the levels of pH and chlorine in the water. A total of 36 microbiological samples were taken and no samples were positive for microbial contaminants.
- **Other contaminants** (*inorganic, pesticides & herbicides, organic chemical and radioactive contaminants*) are monitored on different frequencies respectively. Some contaminants are only monitored every 4 years and for those, the last sampling results are listed on Table 1. The contaminants listed in the table were the only primary contaminants detected in our drinking water.

Table 1. Contaminant Groups and Monitoring Frequencies

Contaminant	Chemical Name	Monitoring Frequency	Sampling Location
Microbial	Total coliform, Fecal coliform, pH, Free Available Chlorine ** (3 Total)	Monthly	Bldg. 243 Bldg. 2106 BX Food-court
Inorganic Compounds	Metals, (e.g. lead, copper, selenium, arsenic, mercury, nickel, sodium, etc.) ** (2 Total)	Annually	Entry Point Bldg. 1209
	Nitrate, Nitrite ** (2 Total)		
	Asbestos		
Volatile Organic Compounds (VOC)	Benzene, Trichloroethylene, Carbon Tetrachloride, etc. ** (2 Total)	Annually	Entry Point Bldg. 1209

Synthetic Volatile Organic Compounds (SVOC)	Pesticides, Herbicides, PCBs, etc. ** (2 Total)	Annually	Entry Point Bldg. 1209
Disinfectant By-Products	Total Trihalomethanes (TTHM) Total Haloacetic Acids (HAA5) ** (2 Total)	Annually	Entry Point Bldg. 1209
Lead & Copper From Plumbing Materials	Lead, Copper ** (7 Total)	Annually	7 locations
Radiological Compounds	Gross Alpha and Beta, Radium 226/228, Uranium ** (1 Total)	Every 4 years (all 4 quarters)	Bldg. 238
*PFOS/PFOA	PFOS/PFOA ** (1 Total)	Quarterly	Bldg 238

****All regulated chemicals listed in KEGS Chapter 3, Table 3-4, 3-6, 3-8, and 3-9**

4. Potential Health Effects & 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 from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

About Lead in Drinking Water: If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Hanhwa 63 City is responsible for providing high quality of 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. BE monitors lead and copper in housing annually. **All test results for lead have met KEGS drinking water requirements.** If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

6. Monitoring Results in Calendar Year 2021

Table 2: Gwangju AB Water System Detected Contaminants from 1 January to 31 December, 2021

Substances	Violation ? Yes / No	Units	Detected Levels In Your Water	MCL	Last Sample d	Likely Source of Contamination
				EPA (KEGS)		
Inorganics Monitoring Frequency: Annually for *Nitrate, every 3 years for other Inorganics <i>Only chemicals detected are listed below</i>						
Barium	No	mg/L	0.0062	2.0	Dec 21	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits

Fluoride	No	mg/L	0.055	4.0	Dec 21	Erosion of natural deposits
Nitrate	No	mg/L	0.42	1.0	Dec 21	Runoff from fertilizer use, Leaching from septic tanks & sewage Erosion of natural deposits
Total Nitrate/Nitrite	No	mg/L	0.42	10.0	Dec 21	Runoff from fertilizer use, Leaching from septic tanks & sewage Erosion of natural deposits
Disinfectant By-Products Monitoring Frequency: Annually <i>Only chemicals detected are listed below</i>						
Substances	Violation ? Yes / No	Units	Annual Average	EPA (KEGS)	Last Sample d	Likely Source of Contamination
TTHM	No	mg/L	0.0356	0.08	Dec 21	By-product of drinking water disinfection
HAA5	No	mg/L	0.0403	0.06	Dec 21	By-product of drinking water disinfection
Lead and Copper Monitoring Frequency: Annually						
Substance	Violation? Yes / No	90 th Percentile	AL ¹ EPA (KEGS)	Last Sampled		Likely Source of Contamination
Lead	No	0.0086	0.015	Aug 21		Leeching from pipes into water
Copper	Yes	1.666	1.0	Aug 21		Leeching from pipes into water
PFOS/PFOA Monitoring Frequency: Quarterly						
Although PFOS/PFOA's are unregulated from KEGS, the Air Force is taking aggressive measures to reduce the risk of mission-related PFOS/PFOA contamination to installation and supporting communities' drinking-water sources. Kunsan BE Flight will continue to monitor these contaminants quarterly.						
Substances	Violation? Yes / No	Units	Annual Average	EPA	Last Sampled	Likely Source of Contamination
PFOS	No	ppt	1.2	70.0	Dec 21	Synthetic fluorinated organic compounds, nonstick cookware, stain-resistant fabric and carpet, some food packaging and the Firefighting agent Aqueous Film Forming Foam, or AFFF
PFOA	No	ppt	0.7			

Lead and Copper Notice:

During the semi-annual water sampling event conducted August 2021, Bioenvironmental Engineering (BE) collected water samples from base housings and dormitories to test for copper levels in the drinking water.

What is being done?

For the time being, BE plans on sampling on a six month-basis. BE, in coordination with Base Maintenance Contract, will keep all residents posted on findings and recommendations.

What should I do?

BE recommends for residents to run their faucet for at least 30 seconds before consuming water. This action will flush out most copper particles – *empirical evidence shows that copper levels present decrease to negligible levels in the line by just letting your tap run for 30 seconds.* NOTE: The risk of copper ingestion exposure from showering, washing hands, cleaning dishes, brushing teeth, and washing face is minimal. Please continue to adhere to flushing your lines prior to consuming water for drinking or cooking purposes.

Terms Defined

Action Level (AL) - Indicates the level of a harmful or toxic substance/activity which requires medical surveillance, increased industrial hygiene monitoring, or biological monitoring.

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no expected health risk. MCLGs allow for a margin of safety.

N/A - Not applicable, No MCL established

Treatment Technology: A required process intended to reduce the level of a contaminant in drinking water.

Customer Views Welcome!

Currently, a routine public meeting for drinking water is not held at your installation. However, if you have any specific questions or concerns on your drinking water, please contact the Kunsan AB BE office at 315-782-6541 or email at usaf.kunsan.8-mdg.mbx.8mdos-sgoj@mail.mil. Members can also contact the Environmental Program Manager of Hanhwa 63 City at 786-6317. You can always contact the BE office for any additional information on drinking water or questions about this Consumer Confidence Report (CCR).

For more information on this report or base drinking water quality, please contact Bioenvironmental Engineering at 315-782-6541.

This CCR was prepared by Kunsan AB Bioenvironmental Engineering (8 OMRS/SGXB) and will be posted on the Kunsan AB homepage <http://www.kunsan.af.mil/>. Information about EPA water regulations can be found at: <http://www.epa.gov>.