



# U.S. ARMY GARRISON WIESBADEN

## FY19 DRINKING WATER CONSUMER CONFIDENCE REPORT





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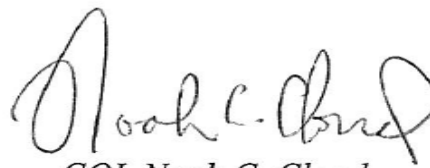
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Letter from the Garrison Commander

*Dear USAG Wiesbaden Community Member,*

*I am pleased to present USAG Wiesbaden's first annual Consumer Confidence Report that offers you, our valued customers, a transparent overview of our drinking water supply sources, water quality information, testing and results over the past fiscal year. Our goal is to provide you and your family with reliably safe and compliant drinking water. We are continually striving to improve our services, protect our vital water resources and maintain your trust by keeping you informed.*

*Here at USAG Wiesbaden, we are blessed with a sufficient supply of high quality drinking water. Please remember, we all play a part in protecting our environment, especially groundwater, which is key to replenishing our drinking water supply. By working together, we can preserve its quality and availability for generations to come.*



COL Noah C. Cloud

*USAG Wiesbaden Commander*



## 1. Where does my drinking water come from?

USAG Wiesbaden installations receive their drinking water from several local reputable German suppliers who ensure water quality is in strict compliance with the German Drinking Water Ordinance.

*Table 1: USAG Wiesbaden Water Systems, Suppliers and Sources*

Water System	Water Supplier	Source
1. Lucius D. Clay Kaserne	ESWE/Hessenwasser: Ried (Hassloch) <a href="https://www.hessenwasser.de/home.html">https://www.hessenwasser.de/home.html</a>	GW <sup>1</sup>
2. Army Family Housing Areas: Aukamm, Crestview, and Hainerberg	ESWE/Hessenwasser: Ried (Hassloch)/ Taunus/Niedernhausen <a href="https://www.hessenwasser.de/home.html">https://www.hessenwasser.de/home.html</a>	GW
3. Amelia Earhart Center	ESWE/Hessenwasser: Schierstein/Taunus <a href="https://www.hessenwasser.de/home.html">https://www.hessenwasser.de/home.html</a>	GW and GWUDISW <sup>2</sup>
4. Golf Course Rheinblick	ESWE/Hessenwasser: Ried (Hassloch)/Schierstein <a href="https://www.hessenwasser.de/home.html">https://www.hessenwasser.de/home.html</a>	GW and GWUDISW
5. Mainz Kastel Station	Mainz Netze GmbH: Petersaue/Hof-Schönau <a href="https://www.mainzer-netze.de/trinkwasser/trinkwasserqualitaet/">https://www.mainzer-netze.de/trinkwasser/trinkwasserqualitaet/</a>	GWUDISW
6. McCully Barracks and Wackernheim Range	Rheinhessische Energie Wackernheim <a href="https://www.rheinhessische.de/wasser.html">https://www.rheinhessische.de/wasser.html</a>	GW and GWUDISW
7. Darmstadt Training Center (DAGGER)	HSE Hessenwasser <a href="https://www.hessenwasser.de/home.html">https://www.hessenwasser.de/home.html</a>	GW

Note: Report does not include water supplied to Army operational areas at Mainz Kastel Housing (i.e. Heavy Equipment Repair Shop) and Egelsbach Transmitter facilities.

<sup>1</sup> Groundwater

<sup>2</sup> Groundwater under the direct influence of surface water

The majority of our water supply comes from groundwater that travels through purifying sand and activated carbon filtration to remove impurities prior to distribution. The water quality is *hard* meaning it is high in essential minerals, such as calcium and magnesium.

Although healthy for consumption, hardness causes white scaling to develop on appliances and around faucets. These mineral deposits are easily removable with vinegar or lemon juice. Hard water can contribute to dry skin, and soap not rinsing off easily. Therefore, residents may consider using German soaps and beauty products formulated for use in hard water.

## 2. Is our water safe to drink?

Yes, our water is safe to drink. Continual maintenance of the distribution systems and ongoing water testing assures our water remains safe. In addition to the treatment and testing performed by water suppliers, the Directorate of Public Works (DPW) Sanitation Branch operates and maintains each installation's water distribution system. DPW personnel are on call 24 hours per day, 7 days per week to maintain a continuous supply of safe and compliant drinking water. They conduct daily water quality field-testing to verify systems are operating properly, ensure water systems remain pressurized, and maintain sufficient disinfectant residual.

To verify our water remains safe, Landstuhl Regional Medical Center Environmental Health Service conducts monthly bacteriological and water quality monitoring at multiple locations throughout the garrison. In addition, Public Health Command-Europe (PHCE), a German and U.S. accredited laboratory, routinely conducts water sampling and analyses of over 60 parameters ([see Section 10](#)). PHCE consistently reports that USAG Wiesbaden water quality complies with German Final Governing Standards (GFGS) regulations. DPW Environmental Division provides overall management and technical oversight of the Drinking Water Program to ensure water remains safe and compliant.

## 3. What about lead in the water?

There are no known lead pipes in use at USAG Wiesbaden, and lead testing verifies our water

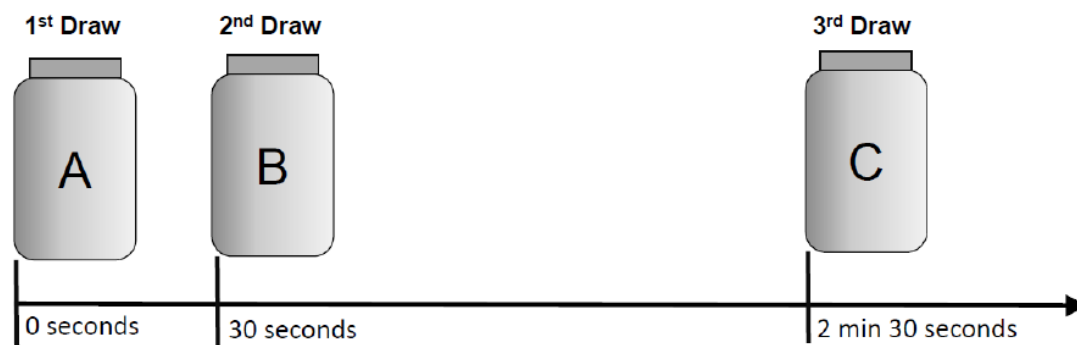


supply is well below the regulatory action level. Lead is a naturally occurring metal found in small amounts throughout our environment including groundwater. Lead is not absorbed through the skin from washing or bathing. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children.

In addition to the GFGS required Lead & Copper Rule monitoring conducted by PHCE ([see results in Section 9](#)), USAG Wiesbaden is an active participant in the Army-wide, 5-year lead testing campaign to ensure primary drinking water taps in child occupied facilities and occupied Army Family Housing units are safe.

Lead testing completed in FY16 confirmed safe drinking water in USAG Wiesbaden community facilities occupied by children aged 6 and under. Re-testing will occur in FY21 to verify water remains safe. DPW Environmental Division is on track in achieving the Army's goal of having 100% of occupied Army Family Housing units tested by the end of FY20, and asks residents to participate in the upcoming sampling events, if requested. Recurring testing of homes on a 5-year schedule will begin again in FY21.

Figure 1 illustrates the sampling procedure after a water stagnation period of at least 8 hours. About 8% of the kitchen faucet first draw samples (A: first cup (250 mL) of water after 8 hours) reported results above the action level, which is likely attributable to lead leaching from the brass within the faucet to the water. In these cases, DPW quickly coordinates faucet replacements, which have proven effective at reducing lead levels.



*Figure 1: Timing of sample collection set after a water stagnation period of at least 8 hours using 250-milliliter samples containers*

Nearly all second draw (B) and third draw (C) testing results report lead well below the action level, emphasizing the importance of flushing your tap until noticeably colder (30 seconds to 2 minutes) after extended periods of non-use before using the water for consumption purposes. DPW notifies all residents of their lead sampling results within 14 days of receiving the results. Lead testing results are too numerous to include in this report, but are available by contacting DPW Environmental Division during business hours at 0611-143-**548-4092/4093**.

Information on lead in drinking water, testing methods, and steps you can take to minimize exposure wherever you are staying is available at <https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water>.

#### **4. What about copper in Clay Kaserne barracks' water?**

Lead and Copper Rule monitoring reported copper above action levels in several Clay Kaserne barracks. This is likely attributable to copper leaching from the interior pipes within the barracks into the water that is stagnant due to lack of use from low occupancy. This again emphasizes the importance of allowing the cold water to run prior to use for drinking or cooking purposes.

Unlike lead, copper is essential for health with a Recommended Dietary Allowance (RDA) of 900 micrograms per day. Excessive copper exposure though can cause stomach and intestinal distress short-term, liver and kidney damage long-term, and complications of Wilson's disease in genetically predisposed people.

Steps taken to effectively reduce copper levels in barrack drinking water include educating occupants to flush cold water before use, and filtering water at shared kitchens and fountains. Permanent solutions underway include replacement of brass faucets and accessible copper piping within barracks, and installation of automatic flushing devices to reduce water stagnation.

#### **5. What else is being done to ensure our water remains safe?**

Additional monitoring conducted to ensure water remains safe includes the following:

##### McCully Barracks Increased Nitrate Monitoring:

Per the GFGS, increased quarterly monitoring for nitrates began on McCully Barracks in 2012 when nitrate was initially reported above 5 parts per million (ppm). In FY19, nitrate concentration ranged between 4 and 5.3 ppm and remains consistently well below the maximum contaminant level (MCL) of 10 ppm.

Elevated nitrate levels in water are usually attributable to fertilizer applications from farming. Nitrate levels may rise quickly for short periods because of rainfall or agricultural activity. Levels above 10 milligrams per liter (mg/L) of nitrate in drinking water is a health risk for infants less than 6 months of age as it can cause blue baby syndrome. If you are drinking the water at McCully Barracks and breast-feeding, or preparing baby formula with the water, seek advice from your health care provider.

##### Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) Water Supply Testing:

USAG Wiesbaden drinking water supplies were tested for PFOA and PFOS in FY17 per Department of Defense (DoD) direction after Environmental Protection Agency (EPA) established health advisory levels.

PFOA/PFOS are compounds found in everyday life products, such as carpets, clothing, fabrics for furniture, food packaging, cookware, firefighting foams and other materials needing resistance

to water, grease, and stains. The results for USAG Wiesbaden water supplies were all reported well below the EPA's lifetime health advisory levels for these emerging contaminants.

#### Testing Hot Shower Water for Legionella Bacteria:

Although not yet required stateside, the GFGS requires annual monitoring of hot water for Legionella bacteria in multi-family and community facilities having showers with large hot water heaters.

Breathing in water droplets containing high Legionella levels greater than 10,000 colony-forming units per 100 milliliters, (CFU/100mL) can cause Legionnaires disease, a type of severe pneumonia. Persons over 50 years old, smokers or those with compromised immune systems are most susceptible to infection. Children are rarely affected. Legionella typically becomes a concern in poorly maintained hot water systems, where water is not hot enough to kill the bacteria or if water remains stagnant for long periods.

In FY19 at USAG Wiesbaden, a certified German Laboratory collected representative hot water samples (1 sample per stairwell or 2 per facility) from 145 buildings for Legionella analyses. Seven of the buildings tested reported legionella above the 100 CFU/100 mL GFGS action level requiring notification of occupants and corrective actions including technical inspection of boilers, replacement of hot water circulation pumps, raising hot water temperatures and flushing lines.

## **6. Why do we conduct so much testing? – Required information per EPA**

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 can pick up and dissolve various natural and synthetic substances to include:

- ❖ *Microbes*, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- ❖ *Inorganics*, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- ❖ *Pesticides and herbicides*, which may come from agriculture, urban stormwater runoff, and residential uses.
- ❖ *Organic chemicals*, including synthetic and volatile organics from industrial processes, petroleum production, gas stations, urban stormwater runoff, and septic systems.
- ❖ *Radioactive materials*, which can be naturally occurring or the result of oil or gas production and mining activities.



Drinking water, including bottled water, may also contain small amounts of impurities that do not necessarily pose a health risk. Some people may be more vulnerable to impurities in drinking water than the general population.

Persons undergoing chemotherapy or organ transplants, with immune system disorders, some elderly and infants may be at a higher risk of waterborne illness. These people should seek advice about drinking water quality from their health care providers. More information on drinking water quality and potential health effects is available by visiting the EPA website at <https://www.epa.gov/ground-water-and-drinking-water/safe-drinking-water-information> or by calling the EPA Safe Drinking Water Hotline at 001-800-426-4791.

## 7. What can I do to improve my drinking water quality?

You can take an active role at further improving the drinking water quality at your tap for you and your family by following the EPA Best Management Practices listed below, which are applicable wherever you live or are visiting:

- ❖ **Flush cold water before initial daily use.** At the start of each day or after extended periods of non-use, flush the cold-water tap by running the water for about 30 seconds or until it becomes noticeably colder indicating you are receiving fresh water. No need to waste this stagnant flush water as it is useful for watering plants or cleaning purposes.
- ❖ **Use only cold water, not hot water** to prepare food, drinks and especially baby formula. Hot water is more aggressive at leaching metals from plumbing so be sure to use only cold water for drinking water purposes and then heat it when hot water is needed.
- ❖ Twice per year, **clean the aerator screens** at the end of your faucets. Sediment and mineral deposits accumulate on faucet aerators degrading water quality. Removing and soaking the aerators in vinegar overnight dissolves these deposits, improving flow and water quality. As needed, replacement aerators are available at the Hainerberg Self-Help Store (Building 7802, 0611-143-**548-4072**). Make sure to bring the old aerators along, as there are several different types.
- ❖ **Consider using a water filter**, which may reduce the hardness, remove chlorine, and improve taste. Be sure to replace the filter at proper intervals to prevent bacteria from developing.

DPW Environmental Division recommends residents use their kitchen cold-water taps as the primary source of drinking water since these are the taps tested for lead, and likely used more often so provide fresher water.

## 8. What can I do to conserve water and protect the environment?

Water is a precious resource that is not limitless or cheap. USAG Wiesbaden consumes over 160 million gallons of water every year at a rising cost of roughly \$1.6 million dollars. Due to recent drought conditions in Germany, water suppliers have requested USAG Wiesbaden reduce water consumption and conserve water. DPW water conservation measures taken and underway include reducing irrigation and installing low-flow plumbing fixtures during housing and office renovations. You too can conserve water and protect the environment by:

- ❖ Not letting the water run while shaving or brushing teeth;
- ❖ Only running the dishwasher and washing machine when full;
- ❖ Promptly reporting water leaks to DPW Customer Service at 0611-**548-4357** or [usarmy.wiesbaden.imcom-europe.list.dpw-customer-rep@mail.mil](mailto:usarmy.wiesbaden.imcom-europe.list.dpw-customer-rep@mail.mil);
- ❖ Effectively using flush water for cleaning, watering plants, washing hands, etc.;
- ❖ Not using toilets for trash disposal. Dispose of tissues, cotton balls, etc. in the trash bin instead;
- ❖ Only washing vehicles at the Auto Skills Center on Clay North, or off-post commercial facilities;
- ❖ Only changing oil and servicing your vehicle at vehicle maintenance areas;
- ❖ Never flushing medicine down the drain where it can reenter the environment. Return unneeded medications and prescription drugs to the Wiesbaden Army Health Clinic;
- ❖ Never flushing hazardous products down the drain. Bring unneeded household hazardous materials to the Clay Kaserne Recycling Center;
- ❖ Extinguishing cigarette butts in ashtrays or residual waste bins only. Discarded cigarette butts can start fires and pollute storm water with toxins;
- ❖ Immediately reporting spills of hazardous substances to the USAG Wiesbaden Fire Department at 0611-705-**117**;

## 9. What are our water quality testing results?

Per the GFGS, your water is tested for a wide variety of parameters that must remain below the regulatory limit. This limit, called the maximum contaminant level (MCL) establishes the regulatory criteria to protect human health. If a level exceeds the MCL, it is a violation. PHCE consistently reports our water complies with the GFGS water quality criteria for the drinking water parameters evaluated each fiscal year.

The contaminants listed in Tables 2-8 were the only substances detected, although testing included many other parameters. This allows an easy comparison of the impurities detected to the MCL. The reporting period for this report is October 1, 2018 to September 30, 2019; however, not all parameters require annual monitoring per the GFGS. In those cases, the tables list the results and dates of the most recent testing.

**Quick view at definitions and units:**

- ❖ 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 allow a margin of safety.
- ❖ 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.
- ❖ Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
- ❖ Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- ❖ 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 addition of a disinfectant is necessary for control of microbial contaminants.
- ❖ Units: The units of measurement used in the tables are *ppm*, which stands for the concentration in parts per million (or 1 drop in 1 million gallons); *ppb* is even smaller and stands for parts per billion (or 1 drop in 1 billion gallons); *pCi/L* stands for picocurie per liter and describes the radiological activity.

Table 2: Lucius D. Clay Kaserne Water Quality Summary

LEAD AND COPPER – Tested at customers taps twice per year.								
Contaminant	EPA’s Action Level(AL)	Ideal Goal (EPA’s MCLG)	90% of Test Levels Were Less Than...	# of Tests with Levels above EPA’s Action Level	Lowest Level	Highest Level	Violation	Typical Sources
Lead (Aug 2019)	90% of samples <15 ppb	0 ppb	7.0 ppb	0 out of 40	0.50 ppb	12 ppb	No	Corrosion of household plumbing
Copper (Aug 2019)	90% of samples <1.3 ppm	1.3 ppm	1.4 ppm	5 out of 40 (4 in Barracks)	0.02 ppm	2.90 ppm	Above AL	Corrosion of household plumbing
INORGANIC CHEMICALS								
Contaminant	Highest Level Allowed (EPA’s MCL)	Ideal Goal (EPA’s MCLG)	Your Water Results		Sample Date		Violation	Typical Sources
Aluminum	No Standard*	N/A	0.02 ppm		24 Jun 19		No	Erosion of natural deposits
Barium	2.0 ppm	2.0 ppm	0.14 ppm		24 Jun 19		No	Erosion of natural deposits
Fluoride	4 ppm	2.0 ppm	0.1 ppm		24 Jun 19		No	Erosion of natural deposits
Nitrate (measured as Nitrogen)	10 ppm	10 ppm	0.5 ppm		24 Jun 19		No	Runoff from fertilizer use
Sodium	No Standard*	N/A	17 ppm		24 Jun 19		No	Erosion of natural deposits
DISINFECTANT RESIDUALS – triennial monitoring								
Contaminant	MCLG or MRDLG	MCL, TT or MRDL	Your Water Results		Sample Date		Violation	Typical Sources
Total Trihalomethanes	N/A	80 ppb	20 ppb (Annual Average Clay & Newman Village)		10 Jul 18		No	Sum total of disinfection by-products
Total Haloacetic Acids	N/A	60 ppb	<6 ppb (Annual Average Clay & Newman Village)		10 Jul 18		No	Sum total of disinfection by-products
RADIOLOGICAL ACTIVITY								
Contaminant	MCLG or MRDLG	MCL, TT or MRDL	Your Water Results		Sample Date		Violation	Typical Sources
Gross Alpha Activity, calculated	0 pCi/L	15 pCi/L	0 pCi/L		23 Apr 18		No	Erosion of natural deposits
Gross Beta Activity, total	0 pCi/L	50 pCi/L	3.3 pCi/L		23 Apr 18		No	Decay of natural and man-made deposits
Combined Radium 226/228 Activity	0 pCi/L	5 pCi/L	0.33 pCi/L		23 Apr 18		No	Erosion of natural deposits

\* No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.



*Table 3: Army Family Housing Areas Aukamm, Crestview and Hainerberg Water Quality Summary\*\**

LEAD AND COPPER – tested at customers taps twice per year								
Contaminant	EPA’s Action Level	Ideal Goal (EPA’s MCLG)	90% of Test Levels Were Less Than...	# of Tests with Levels above EPA’s Action Level	Lowest Level	Highest Level	Violation	Typical Sources
Lead (Aug 2019)	90% of samples <15 ppb	0 ppb	7.4 ppb	0 out of 20	0.4 ppb	10 ppb	No	Corrosion of household plumbing
Copper (Aug 2019)	90% of samples <1.3 ppm	1.3 ppm	0.4 ppm	0 out of 20	0.02 ppm	1.10 ppm	No	Corrosion of household plumbing
INORGANIC CHEMICALS								
Contaminant	Highest Level Allowed (EPA’s MCL)	Ideal Goal (EPA’s MCLG)	Your Water Results		Sample Date		Violation	Typical Sources
Aluminum	No Standard*	N/A	0.02 ppm		25 Jun 19		No	Erosion of natural deposits
Barium	2.0 ppm	2.0 ppm	0.08 ppm		25 Jun 19		No	Erosion of natural deposits
Nitrate (measured as Nitrogen)	10 ppm	10 ppm	1.1 ppm		25 Jun 19		No	Runoff from fertilizer use
Sodium (ppm)	No Standard*	N/A	11 ppm		25 Jun 19		No	Erosion of natural deposits
DISINFECTANT RESIDUALS – triennial monitoring								
Contaminant	MCLG or MRDLG	MCL, TT or MRDL	Your Water Results		Sample Date		Violation	Typical Sources
Total Trihalomethanes	N/A	80 ppb	<2.6 ppb		10 Jul 18		No	Sum total of disinfection by-products
Total Haloacetic Acids	N/A	60 ppb	<6.0 ppb		10 Jul 18		No	Sum total of disinfection by-products
RADIOLOGICAL ACTIVITY								
Contaminant	MCLG or MRDLG	MCL, TT or MRDL	Your Water Results		Sample Date		Violation	Typical Sources
Gross Alpha Activity, calculated	0 pCi/L	15 pCi/L	0 pCi/L		25 Jun 19		No	Erosion of natural deposits
Gross Beta Activity, total	0 pCi/L	50 pCi/L	2.3 pCi/L		25 Jun 19		No	Decay of natural and man-made deposits
Combined Radium 226/228 Activity	0 pCi/L	5 pCi/L	0.41 pCi/L		25 Jun 19		No	Erosion of natural deposits

\* No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

\*\* Includes Hainerberg Schools, Lodge and PX.

*Table 4: Amelia Earhart Center Water Quality Summary*

LEAD AND COPPER – tested at customers taps twice per year								
Contaminant	EPA’s Action Level	Ideal Goal (EPA’s MCLG)	90% of Test Levels Were Less Than...	# of Tests with Levels above EPA’s Action Level	Lowest Level	Highest Level	Violation	Typical Sources
Lead (Jun 2017)	90% of samples <15 ppb	0 ppb	0.9 ppb	0 out of 5	0.5 ppb	1.0 ppb	No	Corrosion of household plumbing
Copper (Jun 2017)	90% of samples <1.3 ppm	1.3 ppm	0.55 ppm	0 out of 5	0.36 ppm	0.59 ppm	No	Corrosion of household plumbing
INORGANIC CHEMICALS								
Contaminant	Highest Level Allowed (EPA’s MCL)	Ideal Goal (EPA’s MCLG)	Your Water Results		Sample Date		Violation	Typical Sources
Aluminum	No Standard*	N/A	0.03 ppm		25 Jun 19		No	Erosion of natural deposits
Barium	2.0 ppm	2.0 ppm	0.1 ppm		25 Jun 19		No	Erosion of natural deposits
Fluoride	4.0 ppm	2.0 ppm	0.2 ppm		25 Jun 19		No	Erosion of natural deposits
Nitrate (measured as Nitrogen)	10 ppm	10 ppm	0.7 ppm		25 Jun 19		No	Runoff from fertilizer use
Sodium	No Standard*	N/A	29 ppm		25 Jun 19		No	Erosion of natural deposits
DISINFECTANT RESIDUALS – annual monitoring								
Contaminant	MCLG or MRDLG	MCL, TT or MRDL	Your Water Results		Sample Date		Violation	Typical Sources
Total Trihalomethanes	N/A	80 ppb	1.1 ppb		25 Jun 19		No	Sum total of disinfection by-products
Total Haloacetic Acids	N/A	60 ppb	< 6.0 ppb		25 Jun 19		No	Sum total of disinfection by-products
RADIOLOGICAL ACTIVITY								
Contaminant	MCLG or MRDLG	MCL, TT or MRDL	Your Water Results		Sample Date		Violation	Typical Sources
Gross Alpha Activity, calculated	0 pCi/L	15 pCi/L	0 pCi/L		25 Jun 19		No	Erosion of natural deposits
Gross Beta Activity, total	0 pCi/L	50 pCi/L	5.1 pCi/L		25 Jun 19		No	Decay of natural and man-made deposits
Combined Radium 226/228 Activity	0 pCi/L	5 pCi/L	0.56 pCi/L		25 Jun 19		No	Erosion of natural deposits

\* No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

*Table 5: Golf Course Rheinblick Water Quality Summary\*\**

INORGANIC CHEMICALS						
Contaminant	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Your Water Results	Sample Date	Violation	Typical Sources
Fluoride	4 ppm	10 ppm	0.1 ppm	24 Jun 19	No	Erosion of natural deposits
Nitrate (measured as Nitrogen)	10 ppm	10 ppm	0.6 ppm	24 Jun 19	No	Runoff from fertilizer use
Sodium	No Standard*	N/A	155 ppm	24 Jun 19	No	Erosion of natural deposits, Water softeners

\* No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

\*\* As a transient non-community water system (TNCWS), applicable testing at Rheinblick Golf Course is limited to inorganics and ammonium/nitrates.

*Table 6: Mainz Kastel Station Water Quality Summary*

LEAD AND COPPER – tested at customers taps twice per year								
Contaminant	EPA’s Action Level	Ideal Goal (EPA’s MCLG)	90% of Test Levels Were Less Than...	# of Tests with Levels above EPA’s Action Level	Lowest Level	Highest Level	Violation	Typical Sources
Lead (Aug 2019)	90% of samples <15 ppb	0 ppb	2.8 ppb	0 out of 5	0.6 ppb	4.1 ppb	No	Corrosion of household plumbing
Copper (Aug 2019)	90% of samples <1.3 ppm	1.3 ppm	0.50 ppm	0 out of 5	0.03 ppm	0.57 ppm	No	Corrosion of household plumbing
INORGANIC CHEMICALS								
Contaminant	Highest Level Allowed (EPA’s MCL)	Ideal Goal (EPA’s MCLG)	Your Water Results		Sample Date	Violation	Typical Sources	
Aluminum	No Standard*	N/A	0.03 ppm		24 Jun 19	No	Erosion of natural deposits	
Barium	2.0 ppm	2.0 ppm	0.46 ppm		24 Jun 19	No	Erosion of natural deposits	
Fluoride	4.0 ppm	2.0 ppm	0.2 ppm		24 Jun 19	No	Erosion of natural deposits	
Nitrate (measured as Nitrogen)	10 ppm	10 ppm	0.4 ppm		24 Jun 19	No	Runoff from fertilizer use	
Sodium	No Standard*	N/A	80 ppm		24 Jun 19	No	Erosion of natural deposits	
DISINFECTANT RESIDUALS – annual monitoring								
Contaminant	MCLG or MRDLG	MCL, TT or MRDL	Your Water Results		Sample Date	Violation	Typical Sources	
Total Trihalomethanes	N/A	80 ppb	9.4 ppb		25 Jun 19	No	Sum total of disinfection by-products	
Total Haloacetic Acids	N/A	60 ppb	<6 ppb		25 Jun 19	No	Sum total of disinfection by-products	
RADIOLOGICAL ACTIVITY								
Contaminant	MCLG or MRDLG	MCL, TT or MRDL	Your Water Results		Sample Date	Violation	Typical Sources	
Gross Alpha Activity, calculated	0 pCi/L	15 pCi/L	0 pCi/L		24 Apr 18	No	Erosion of natural deposits	
Gross Beta Activity, total	0 pCi/L	50 pCi/L	5 pCi/L		24 Apr 18	No	Decay of natural and man-made deposits	
Combined Radium 226/228 Activity	0 pCi/L	5 pCi/L	0.73 pCi/L		24 Apr 18	No	Erosion of natural deposits	

\* No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.



Table 7: McCully Barracks and Wackernheim Range Water Quality Summary

LEAD AND COPPER – tested at customers taps twice per year								
Contaminant	EPA’s Action Level	Ideal Goal (EPA’s MCLG)	90% of Test Levels Were Less Than...	# of Tests with Levels above EPA’s Action Level	Lowest Level	Highest Level	Violation	Typical Sources
Lead (June 2017)	90% of samples <15 ppb	0 ppb	2.9 ppb	0 out of 6	< 0.2 ppb	3.0 ppb	No	Corrosion of household plumbing
Copper (June 2017)	90% of samples <1.3 ppm	1.3 ppm	0.078 ppm	0 out of 6	<0.002 ppm	0.17 ppm	No	Corrosion of household plumbing
INORGANIC CHEMICALS								
Contaminant	Highest Level Allowed (EPA’s MCL)	Ideal Goal (EPA’s MCLG)	Your Water Results		Sample Date	Violation	Typical Sources	
Aluminum	No Standard*	N/A	0.03 ppm		25 Jun 19	No	Erosion of natural deposits	
Barium	2.0 ppm	2.0 ppm	0.12 ppm		25 Jun 19	No	Erosion of natural deposits	
Fluoride	4.0 ppm	2.0 ppm	0.15 ppm		25 Jun 19	No	Erosion of natural deposits	
Nitrate (measured as Nitrogen)	10 ppm	10 ppm	4.2 ppm**		25 Jun 19	No	Runoff from fertilizer use	
Sodium	No Standard*	N/A	32 ppm		25 Jun 19	No	Erosion of natural deposits	
DISINFECTANT RESIDUALS – annual monitoring								
Contaminant	MCLG or MRDLG	MCL, TT or MRDL	Your Water Results in McCully Wackernheim		Sample Date	Violation	Typical Sources	
Total Trihalomethanes	N/A	80 ppb	4 ppb	20 ppb	25 Jun 19	No	Sum total of disinfection by-products	
Total Haloacetic Acids	N/A	60 ppb	<6 ppb	6.9 ppb	25 Jun 19	No	Sum total of disinfection by-products	
RADIOLOGICAL ACTIVITY								
Contaminant	MCLG or MRDLG	MCL, TT or MRDL	Your Water Results		Sample Date	Violation	Typical Sources	
Gross Alpha Activity, calculated	0 pCi/L	15 pCi/L	0 pCi/L		24 Apr 18	No	Erosion of natural deposits	
Gross Beta Activity, total	0 pCi/L	50 pCi/L	2.8 pCi/L		24 Apr 18	No	Decay of natural and man-made deposits	
Combined Radium 226/228 Activity	0 pCi/L	5 pCi/L	1.01 pCi/L		24 Apr 18	No	Erosion of natural deposits	

\* No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

\*\*Quarterly nitrate monitoring levels ranged from 4.0 to 5.3 mg/L.

*Table 8: Darmstadt Training Complex (DAGGER) Water Quality Summary*

LEAD AND COPPER – tested at customers taps twice per year								
Contaminant	EPA’s Action Level	Ideal Goal (EPA’s MCLG)	90% of Test Levels Were Less Than...	# of Tests with Levels above EPA’s Action Level	Lowest Level	Highest Level	Violation	Typical Sources
Lead (Aug 2018)	90% of samples <15 ppb	0 ppb	2.0 ppb	0 out of 6	1.1 ppb	5.4 ppb	No	Corrosion of household plumbing
Copper (Aug 2018)	90% of samples <1.3 ppm	1.3 ppm	0.037 ppm	0 out of 6	0.0013 ppm	0.220 ppm	No	Corrosion of household plumbing
INORGANIC CHEMICALS								
Contaminant	Highest Level Allowed (EPA’s MCL)	Ideal Goal (EPA’s MCLG)	Your Water Results		Sample Date		Violation	Typical Sources
Nitrate (measured as Nitrogen)	10 ppm	10 ppm	2.2 ppm		26 Jun 19		No	Runoff from fertilizer use
Sodium	No Standard*	N/A	160 ppm		26 Jun 19		No	Erosion of natural deposits
DISINFECTANT RESIDUALS – triennial monitoring								
Contaminant	MCLG or MRDLG	MCL, TT or MRDL	Your Water Results		Sample Date		Violation	Typical Sources
Total Trihalomethanes	N/A	80 ppb	5.1 ppb		26 Jun 19		No	Sum total of disinfection by-products
Total Haloacetic Acids	N/A	60 ppb	<6 ppb		26 Jun 19		No	Sum total of disinfection by-products
RADIOLOGICAL ACTIVITY								
Contaminant	MCLG or MRDLG	MCL, TT or MRDL	Your Water Results		Sample Date		Violation	Typical Sources
Gross Alpha Activity, calculated	0 pCi/L	15 pCi/L	1.2 pCi/L		25 Apr 18		No	Erosion of natural deposits
Gross Beta Activity, total	0 pCi/L	50 pCi/L	3.5 pCi/L		25 Apr 18		No	Decay of natural and man-made deposits
Combined Radium 226/228 Activity	0 pCi/L	5 pCi/L	0.276 pCi/L		25 Apr 18		No	Erosion of natural deposits

\* No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

## 10. What is the water tested for?

Table 9: Parameters requiring monitoring per German Final Governing Standards

Inorganics	Volatile Organic Compounds (VOCs)	Additionally Analyzed Parameters
Ammonia	Benzene	Alkalinity
Cyanide, free	Bromodichloromethane	Calcium
Fluoride	Bromoform	Magnesium
Nitrate (as Nitrogen)	Carbon tetrachloride	Phosphorus, total
Nitrite (as Nitrogen)	Chlorobenzene	Saturation (Langelier) Index
Total Nitrate and Nitrite	Chloroform	Total dissolved solids
	Dibromochloromethane	Total hardness (calculated)
	1,2-Dichlorobenzene	
	1,1-Dichloroethene	
	cis-1,2-Dichloroethene	
	trans-1,2-Dichloroethene	
	1,2-Dichloropropane	
	Ethylbenzene	
	Methyl t-butyl ether	
	Methylene chloride	
	Naphtalene	
	Styrene	
	Tetrachloroethene	
	Toluene	
	1,2,4-Trichlorobenzene	
	1,1,1-Trichloroethane	
	1,1,2-Trichloroethane	
	Trichloroethene	
	Vinyl Chloride	
	Xylene, Total	
	Trihalomethanes, total	
	Di (2-ethylhexyl) adipate	
	Di (2-ethylhexyl) phthalate	
Metals	Radiological Activity	
Aluminum	Gross Alpha Activity, total	
Antimony	Gross Alpha Uncertainty	
Arsenic	Gross Alpha Minimum Detect Activity	
Barium	Gross Alpha Activity (calculated)	
Beryllium	Gross Beta Activity, total	
Boron	Gross Beta Uncertainty	
Cadmium	Gross Beta Minimum Detect Activity	
Chromium	Uranium	
Copper	Radium – 228 Activity	
Lead	Radium – 228 Uncertainty	
Mercury	Radium – 228 Minimum Detect Activity	
Nickel	Radium – 226 Activity	
Selenium	Radium – 226 Uncertainty	
Sodium	Radium – 226 Minimum Detect Activity	
Thallium	Combined Radium 226/228	
Organic Compounds (PAHs)		
Benzo(a)pyrene		
Total PAHs		
Benzo(b)fluoranthene		
Benzo(k)fluoranthene		
Benzo(g,h,h)perylene		
Indeno(1,2,3-cd)pyrene		
Disinfectant Byproducts		
Trihalomethanes, total		
Bromodichloromethane		
Bromoform		
Chloroform		
Dibromochloromethane		
Haloacetic Acids, total		
Dibromoacetic acid		
Dichloroacetic acid		
Monobromoacetic acid		
Monochloroacetic acid		
Trichloroacetic acid		

## **Customer input welcome**

Our valued customers do not need to wait for Town Hall meetings to discuss water supply and drinking water quality. For more information on this report or drinking water quality in general, please visit the DPW-Environmental Division website at:

<https://home.army.mil/wiesbaden/index.php/my-fort/all-services/environmental> or call 0611-143-**548-4092/4093** during working hours. The Environmental Division welcomes your ideas and comments to improve this report and our services.



## Acronyms and definitions

Acronym	Meaning
<b>AL</b>	Action Level. A level below the maximum contaminant level that if exceeded requires initiation of additional monitoring and possible operational actions.
<b>Disinfectant Byproducts</b>	They can form when disinfectants, such as chlorine, react with naturally present compounds in the water.
<b>DoD</b>	Department of Defense
<b>DPW</b>	Directorate of Public Works
<b>EPA</b>	United States Environmental Protection Agency
<b>FY</b>	U.S. Government Fiscal Year. FY20 starts on 1 October 2019 and ends on 31 September 2020.
<b>GW</b>	Ground Water
<b>GWUDISW</b>	Ground Water Under Direct Influence of Surface Water
<b>GFGS</b>	German Final Governing Standards (latest edition 2017)
<b>MCL</b>	Maximum Contaminant Level. The highest level of a contaminant allowed in drinking water before some type of action is required. If results exceed the MCL, they are marked as violation.
<b>MCLG</b>	Maximum Contaminant Level Goal. The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow a margin of safety.
<b>mg/L</b>	Metric unit of measure meaning milligrams per liter. 1 mg/l corresponds to 1 minute in 2 years, or a single penny in \$10,000.
<b>mL</b>	Milliliter (1 cup or 8 ounces equals 236.5 mL)
<b>MRDL</b>	Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
<b>MRDLG</b>	Maximum residual disinfectant level goal. 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.
<b>Parameter</b>	Substance being tested for
<b>pCi/L</b>	Metric unit of measure meaning picocuries per liter.
<b>PFOA</b>	Perfluorooctanoic Acid
<b>PFOS</b>	Perfluorooctane Sulfonate
<b>PHCE</b>	Public Health Command-Europe
<b>ppb</b>	Parts per billion (or 1 drop in a billion gallons)
<b>ppm</b>	Parts per million (or 1 drop in 1 million gallons)
<b>RDA</b>	Recommended Dietary Allowance or popularly called the Recommended Daily Allowance.
<b>TNCWS</b>	Transient Non-Community Water System
<b>USAG</b>	United States Army Garrison