



**DEPARTMENT OF THE AIR FORCE
711TH HUMAN PERFORMANCE WING (AFRL)
WRIGHT-PATTERSON AFB OHIO**

MEMORANDUM FOR AFGSC/CC

FROM: USAFSAM/CC
2510 Fifth Street, Bldg 840
Wright-Patterson AFB OH 45433

SUBJECT: Trip Report for USAFSAM visit to Air Force Global Strike Command missile bases

EXECUTIVE SUMMARY

A combined team of experts from USAFSAM/Defense Centers for Public Health – Dayton, AFGSC/SG and Defense Health Agency completed visits to the active operational missile bases at F.E. Warren AFB, Malmstrom AFB and Minot AFB from 27 February – 07 March 2023.

Overall, there were no factors identified that would be considered immediate concerns for acute cancer risks. Additionally, there was nothing specifically noted at Malmstrom’s main base or operational missile sites that would indicate a specific reason for increased cancer or environmental risks above those found at the other missile bases (or other Air Force bases). This does not mean that continued study will not occur though. USAFSAM is dedicated to transparently and fully investigating the cancer concern brought forward. Finally, there were some items identified that could be accomplished to improve overall long-term operational and environmental conditions and mitigate future risks while we continue to investigate. These are identified in the summary and recommendations sections below.

The objectives of the visits were accomplished. The reception by the bases was outstanding and the team received exceptional support from leadership and incredible access to personnel and mission areas. The team learned much about history, facility construction and operations while evaluating local environmental, occupational, industrial, and agricultural factors. USAFSAM personnel consistently messaged our shared concerns about the cancer cases and our interest in providing appropriate care, monitoring and information sharing with past/current/future missile community members (Missileers and other associated career fields). The collective information gained will be utilized by USAFSAM to develop epidemiologic studies to further investigate Non-Hodgkin’s Lymphoma and wider cancer concerns within the Missile Community and will also help develop future occupational and environmental sampling efforts.

TORY W. WOODARD
Colonel, USAF, MC
Commander

SUMMARY OF OBSERVATIONS

- The team did not identify any factors that would be considered immediate concerns for acute cancer risks.
- There was nothing specifically noted at the Malmstrom visit that pointed to any particular current occupational or environmental hazard that would indicate a reason for increased cancers or environmental risks above those currently found at the other missile bases (or other USAF bases).
- USAFSAM team took effort to avoid assumptions that issues are only in the MAFs/LCCs and considered locations beyond MAFs, to include the local town and base environmental conditions to capture concern regarding potential on-base and off-base hazards and exposures.
- All three Missile bases have BE and CE teams that are well-versed in local base water supply and potential contaminants. Most are no longer using on-base wells (at the main base) and have been tied to municipal water systems for some time. Water quality with specific monitoring for PFOS/PFOA in base wells and community water sources will continue IAW EPA guidelines, local water departments and USAF policies.
- Missileers sit alert in the LCCs roughly twenty-five percent of their initial assignment time. The USAFSAM team was therefore unable to account for additional risk factors such as smoking, family history, or other local environmental factors or exposures (industrial/agricultural). These unknown risk factors are potential contributors to health risks, thus continued practice of healthy lifestyle practices and communication with medical providers about individual's unique risk factors is encouraged.
- Crews continue to burn paper and other products in the LCC. This practice should be discouraged, and safer alternatives should be explored. These could involve shredders, or if burning is absolutely required options or methods for burning these items in a secure area of the MAF that is better ventilated is encouraged.
- Overall suspicion of crews regarding the water quality in the LCCs was noted. This has been a decades-long perception. While the water is tested weekly by the Facility Manager, and routinely by Bioenvironmental, these results are often not communicated well to the Crews. In one location the Crews said they never received any water reports, but an inspection of the Facility Manager's board a few feet away actually had the most recent water testing results performed by Bioenvironmental stapled to the board.
- There are labels on some junction boxes or equipment racks that state "PCBs" are present, both in the LCCs and the LFs. But most Crews and Maintenance stated they believed the PCB-containing components had been removed in the 1990s or early 2000s. This discrepancy was noted at multiple bases and could tend to further concerns from Missile community members as to what hazards are present.
- Multiple crews reported seeing insulation on HVAC and other components that they were worried contained asbestos. It is likely that most asbestos-containing insulation has previously been removed, especially in high-traffic areas like the LCEB areas. Remediation or increased communication to reassure crews may be appropriate.

RECOMMENDATIONS

Immediate

- Work with SPO and other appropriate agencies to determine status of PCBs in components in the MAFs, LCCs and LFs. If PCBs are no longer present, then signage and labels on equipment should be updated as appropriate.
- Each base has 15 MAFs/LCCs. Each has unique geography, water quality factors and environmental conditions. While a representative sampling of multiple MAFs may meet a minimum investigative requirement, we recommend a comprehensive plan that evaluates each MAF/LCC location separately. USAFSAM will provide recommendations for renewed baseline testing in the LCCs and will assist bases with this testing and development of future environmental sampling plans.
- Cease burning of materials in the LCC, whenever possible. Investigate alternate methods of destruction and/or burn items in a well-ventilated area.
- Improve communication between missile career field personnel and medical personnel. Share concerns and discuss openly. This will improve medical personnel understanding of operational and environmental risks and hazards and will allow improved communication down to lowest level of current actions and response to crew concerns.

Long-Term

- Prioritize needed preventive maintenance or environmental upgrades to LCCs while we await rollout of the Sentinel weapons system. Recommend invest in actions now to assure optimal work site health and to build trust with crews and community. Apply any current lessons learned as we develop the crew quarters for the Sentinel system.
- Consider additional deep cleaning of LCCs to include HVAC systems/ductwork, blast valves, LCC bathroom vents, bed mod vents, etc.
- Clearly demarcate safe boundary areas for RF radiation sources (UHF antenna, etc.)
- Improved access for BE and PH staff to MAF/LCC areas. This will improve system understanding, response and communication. Many crews expressed unfamiliarity with BE process and were unaware of services that could be requested from BE or PH.
- Consolidate and standardize CE manuals across the enterprise to decrease potentially unnecessary workload and achieve consistency across the MAF/LCCs for routine environmental and water assessment activities.
- Assess parking and signage in critical areas to assure MAF air intakes are free from vehicle exhaust.
- Investigate utility of installing secondary water filters in the LCC crew area, if indicated and feasible
- Investigate potential for improved all-weather tactical vehicles that balance crew protection, driving safety, weather conditions and operational necessity.
- Monitor/review any new materials to be installed in LCCs. If they have an odor or potential for initial off-gassing, recommend review or delaying installation if necessary.
- Medical personnel will continue to review and investigate occupational and environmental risks. Ensure occupational surveillance exams and periodic health assessments capture appropriate screening for missile community related hazards.