



Operational Range Assessment General Mitchell Air National Guard

Air Force Operational Range Assessment Program

December 2018

Background

DoD uses and manages operational ranges to support national security objectives and maintain the high state of operational readiness essential to its mission requirements. The Department conducts non-regulatory, proactive, and comprehensive operational range assessments (ORAs) to support the long-term sustainability of these ranges while protecting human health and the environment. The purpose of an ORA is to determine if there is a release or substantial threat of a release of munitions constituents from an operational range to an off-range area that exceeds an applicable regulatory standard or creates a potential unacceptable risk to human health or the environment.

The USAF Operational Range Assessment Program (ORAP), established to comply with DoD policy, sets forth procedures for consistently conducting ORAs throughout the Air Force. The USAF ORAP assessment methodology uses an installation-wide approach to verify the ORAP inventory and accomplish range-specific assessments. An Air Force ORA is comprised of two primary phases: Qualitative Assessment, Phase 1 and Quantitative Assessment, Phase 2 (if required).

- A Qualitative Assessment, Phase 1, encompasses records review, interviews, and a visual survey.
- A Quantitative Assessment, Phase 2, encompasses records review, interviews, visual survey, and environmental media sampling.

Installation Overview

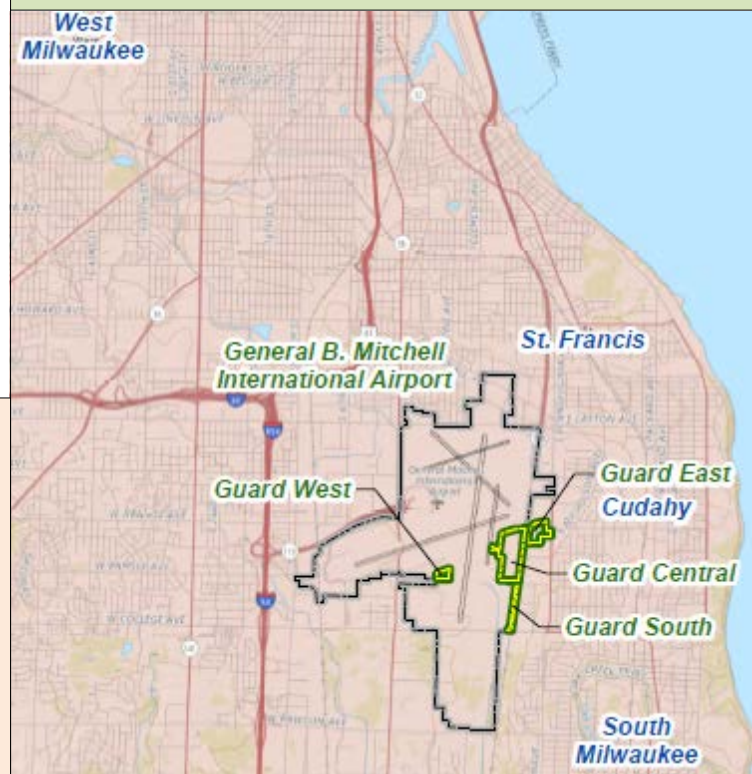
General Mitchell Air National Guard Base (ANGB) is located in Milwaukee County in eastern Wisconsin, approximately 6 miles south of downtown Milwaukee. The base, comprised of four areas, is within the eastern portion of the General Mitchell International Airport. The property is leased by the state of Wisconsin to the USAF, who licensed the property to the Wisconsin ANG.

ORAP Findings: March 2018 ORA Report

- Migration mechanisms were identified as unlikely to transport munitions constituents (MC) to off-range locations.
- No actual or potential off-range migration of MC exists for the area assessed.
- No unacceptable risks to human health or the environment were identified.

Next Steps

General Mitchell ANGB is scheduled to be assessed in accordance with USAF and DoD policy specifying periodic assessment at least every five years or sooner if significant changes occur that may impact assessment decisions.



Installation Overview Continued

During the implementation of the ORAP at General Mitchell ANGB, only one eligible range was verified and assessed under the USAF ORAP – a Small Arms Range (SAR). No other operational ranges or training areas exist at General Mitchell ANGB.

The following summaries USAF ORAP efforts for the SAR. This is the third ORA conducted at the SAR.

SAR Assessment Overview

The SAR is located in the southwestern portion of the General Mitchell ANGB Guard Central area. The SAR, used since 1970 for small arms training, has undergone modifications over the years. Currently the SAR has a primary use area encompasses 0.50 acres and includes a covered firing line, full-length masonry side walls followed by vegetated side berms, overhead baffles, a coarse sand and pea gravel range floor, and an earthen impact berm. The total footprint of the SAR is 3.86 acres which includes the primary use area and surface danger zone. Lead-containing munitions were used from 1970 through 2002 with frangible-only rounds being used since 2003. The SAR is used from three to five times per week. Most training is completed by ANG personnel with discrete instances of use by local law enforcement.

In 2010 the initial ORA Phase I was completed. The SAR was originally an uncovered range with side berms and an impact berm. At the time of the 2010 ORA, the SAR was partially contained with overhead baffles, side berms, an impact berm, and a bullet deflector located on top of the impact berm. The Phase I identified an MC source present within the surface and subsurface materials at the targets and the impact berm. Potential MC transport mechanisms were storm water runoff via the underdrain system and infiltration into soils. A one-time sample event at a nearby discharge outfall reported water was not impacted by metals (lead). Additionally, soil conditions effectively reduce the infiltration of metal MC. Source/receptor interaction were deemed unlikely to non-existent, and all exposure pathways identified as incomplete.

Range Name Assessment Overview Continued

The 2014 Phase I determined the SAR had renovations completed which altered the area previously assessed. The effort reconfirmed the earthen impact berm and the floor of the SAR as likely MC sources as no removal of lead or mining of source areas was reported to have occurred. Due to drainage system modifications, the potential transport of MC through surface water runoff was eliminated. The 2014 ORA verified surface water sampling results from the outfall pipe existing the SAR had no detection of MC metals. The SAR renovations included the importing of coarse-grained surface sand and pea gravel for the floor which promotes infiltration of stormwater. However, the percolation of dissolved MC metals would be reduced as native soils would likely bind metals to the soil matrix. The 2014 ORA concluded no complete human or ecological source/receptor interactions exist.

The 2018 Phase I confirmed findings from past ORAs in that a potential MC source is located on/within the range floor and historical impact berm. Although several renovations occurred at the SAR since the 2014 Phase I, no mining of the source areas has occurred. Additionally, the 2018 ORA clarified that material from the side berms was placed on the range floor, and the installed vegetative liner does not prevent precipitation infiltration. The 2018 ORA deemed all migration routes unlikely to transport MC with the exception of MC infiltration. The range floor promotes infiltration into subsurface soils, which are composed of clays that likely bind (adsorb) dissolved MC metals. However, as part of an upgradient environmental investigation in which metals are of concern recent sampling results of wells downgradient of the SAR detected lead in groundwater. The presence of lead in groundwater indicates the potential exists for metals to migrate to shallow groundwater. Due to a lack of an aquitard between shallow groundwater and the underlying regional drinking water aquifer, a potentially complete exposure pathway was identified. The 2018 ORA effort recommended a Phase II be conducted at the SAR to further evaluate the potential for MC to infiltrate to shallow groundwater.

For more information on this assessment or the Air Force Operational Range Assessment Program contact the Ranges Subject Matter Expert, Technical Branch, Environmental Quality Directorate, Air Force Civil Engineer Center
For more information on the DoD Operational Range Assessment Program visit <https://denix.osd.mil/orap/home/>