Operational Range Assessment
Shepherd Field Air National Guard Base

Air Force Operational Range Assessment Program February 2024

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 (MC) 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 DAF Operational Range Assessment Program (ORAP), established to comply with DoD policy, sets forth procedures for consistently conducting ORAs throughout the Air Force. The DAF 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).

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

Installation Overview

Shepherd Field Air National Guard Base (SFANGB) occupies 343.23 acres spread across four non-contiguous parcels of land in eastern West Virginia near Martinsburg. The main base is located in the northeast portion of the Eastern West Virginia Regional Airport (EWVRA). Lands comprising SFANGB are leased from the EWVRA.

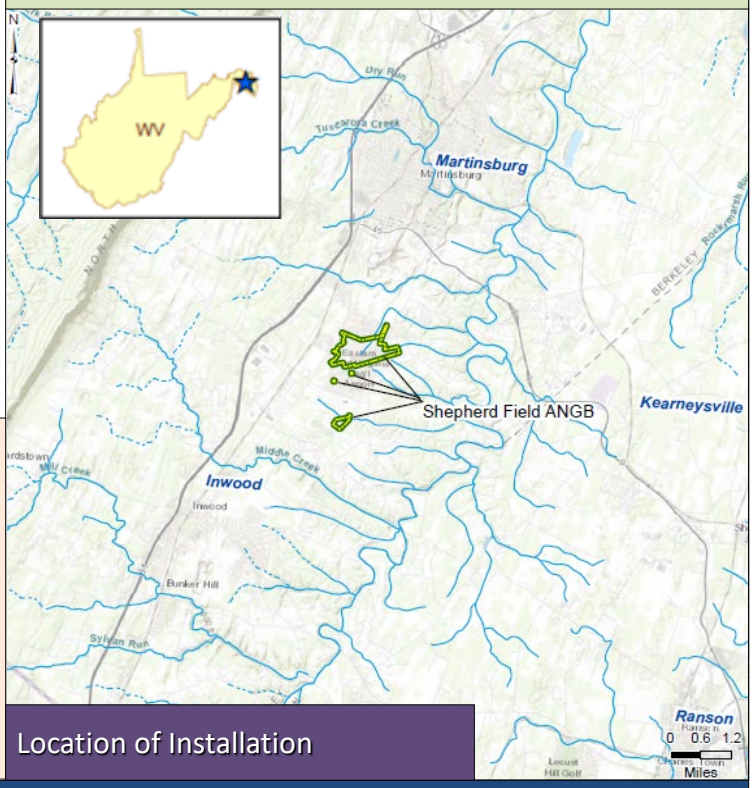
ORAP Findings: February 2024 ORA Report

SFANGB has one operational small arms range.

- MC (primarily metals) may potentially be transported via stormwater to surface water
- No actual or substantial threat of an off-range release of MC was identified
- No unacceptable risks to human health or the environment were identified

Next Steps

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



Location of Installation

Installation Overview Continued

SFANGB has one operational range used for military training involving munitions – a small arms range (SAR). Assessment of the SAR is discussed below.

The installation also contains a Munitions Storage Complex. However, no range activities occur at the storage complex (no MC source) as such it is not further evaluated under the ORAP.

SAR Overview

The southern most parcel of SFANGB is referred to as the SAR parcel. The SAR parcel covers approximately 28.55 acres. Although the entire parcel is set aside for training, no known or suspected range activities have occurred outside of the 0.50-acre confines of the partially contained SAR. Aside from the SAR the parcel is undeveloped and composed of mixed hardwoods. The surrounding area is undeveloped woodlands with a residential development located to the southwest.

The SAR was constructed in 1993 for small caliber proficiency training. The range is enclosed by a chain-link fence and consists of a covered firing line, 20 firing lanes, concrete floor, concrete sidewalls, overhead baffles, and an earthen back berm. The range is used approximately two times per month for proficiency training with frangible and non-frangible ammunition. Spent casings are collected for recycling and material from the range floor is containerized for disposal.

SAR Assessment Overview

In 2009 a report was issued documenting findings of the initial assessment of the SAR under the ORAP at SFANGB.

The Phase 1 ORA indicated MC from activities could potentially be transported via surface water and groundwater migration pathways. However, review of existing sample data reflected no detectable levels of MC (lead). The ORA concluded there is no threat of an off-range release and no unacceptable risks. No further action beyond the periodic review was recommended.

SAR Assessment Overview Continued

In 2024 a report was issued documenting findings of the periodic assessment of the SAR under the ORAP at SFANGB.

The periodic Phase 1 ORA confirmed range layout and use as well as documented changes to the conceptual site model. MC (primarily metals) deposited on infrastructure and in soils (back berm) from training activities may potentially be transported during rain events to a catch basin. Silt fencing material is utilized to prevent larger material from entering the basin. The basin directs runoff to a on-range grassy area.

The effort further evaluated transport mechanisms and confirmed stormwater runoff to be a potentially viable MC migration mechanism. The potential for MC to leach to potable groundwater was deemed unlikely due to the confining nature of overlying shale beds. Shallow groundwater is likely to discharge to nearby surface water. Wetlands are located downgradient of the SAR parcel.

Incomplete source-receptor interactions (exposure pathways) to human and ecological receptors were identified for air, soil, and groundwater. An incomplete exposure pathway was also identified for surface water/sediment to human receptors as surface water intakes are located upgradient of the SAR and any potential exposure via recreational use of surrounding stream and creek would be intermittent and short-term. A potentially complete exposure pathway was identified for surface water/sediment to ecological receptors due to a noticeable drainage pattern and downgradient wetlands.

No risks were identified for off-range human receptors. No unacceptable risks to off-range ecological receptors is suspected; however, due to the potential for MC to be transported via stormwater and given downgradient wetlands the SAR was recommended to have an initial Phase 2 ORA during the next periodic implementation of the ORAP at SFANGB.

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/