



Final No Further Action Proposed Plan for MMRP Site ZZ349 Small Arms Range

**Joint Base
Andrews Naval
Air Facility
Washington,
Maryland**

July 2023





Joint Base Andrews Naval Air
Facility Washington
Air Force Civil Engineer Center



Final Proposed Plan

U.S. Air Force Announces No Further Action Proposed Plan for MMRP Site ZZ349 Small Arms Range

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Introduction

This **Proposed Plan** presents the United States Air Force's (USAF's) proposed response of No Further Action for Military Munitions Response Program (MMRP) site ZZ349 (Small Arms Range [SAR], Building 2355). The site is located at Joint Base Andrews (JBA), Maryland. No further cleanup action or response is required at ZZ349, as the **Non-Time-Critical Removal Action** (NTCRA) conducted in 2014 was successful and no unacceptable human health or ecological risks remain at the site. This Proposed Plan highlights key information used to support the No Further Action decision and is intended by the USAF to inform the public so that they may be involved in the decision-making process. To assist the reader, key technical or administrative terms are in bold type. A glossary of these specialized terms is included at the end of this plan.

The USAF, the **lead agency** for cleanup activities at JBA, in consultation with U.S. Environmental Protection Agency Region 3 (EPA), the lead regulatory agency, and the **Maryland Department of the Environment** (MDE), issues this document as part of the public participation requirements under Section 117(a) of the **Comprehensive Environmental Response, Compensation and Liability Act of 1980** (CERCLA) and **Title 40 Code of Federal Regulations** (CFR), Section 300.430(f)(2). Title 40 CFR 300 is known as the **National Oil and Hazardous Substances Pollution Contingency Plan** (NCP), and it is the CERCLA regulation.

JBA was proposed for the **National Priorities List** (NPL) on July 28, 1998 and was formally placed on the NPL on May 10, 1999. The CERCLA Information System ID number for JBA is MD0570024000.

Mark Your Calendar for the Public Comment Period



Public Comment Period

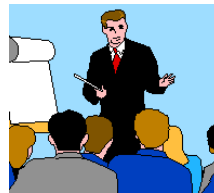
August 7, 2023 to September 6, 2023

Submit Written Comments

Questions and comments are welcomed at the public meeting, if it is held, or in writing during the **public comment period**. New information provided during the public comment period could result in the selection of a **remedial alternative** that differs from the **preferred alternative**.

The USAF, in consultation with the EPA, MDE, and **Prince George's County Health Department**, will review public comments on the Proposed Plan submitted during the public comment period. Information on how to submit public comments is provided on page 14.

Opportunity for Public Meeting



The public is encouraged to contact the USAF within the first 15 days of the comment period (no later than August 22, 2023) if they have an interest in attending a public meeting where the USAF will explain this Proposed Plan and respond to questions.

The USAF will issue additional public notices to announce the date, time, and location of any public meeting, if one is requested. Additional oral and written comments will also be accepted at a public meeting. See page 14 for more information.

If interested in attending a public meeting, please contact the 316th Wing Public Affairs Office e-mail at:
316WG.PA.COMMUNITYENGAGEMENT@us.af.mil.

Location of Administrative Record

A copy of this Proposed Plan is also available for public review in the **Administrative Record** (AR), a collection of technical documents that forms the basis of the selection of a cleanup remedy. A copy of the AR is available as part of the site's **Information Repository** for the site, which is located at the Prince George's County Memorial Library, Oxon Hill-Clinton Branch and online at <https://ar.afcec-cloud.af.mil/>. The address and hours for the library are listed in the "Community Participation" section on page 14.

To remediate contaminated sites at JBA, the Department of Defense and EPA entered into a **Federal Facilities Agreement** (FFA) that became effective January 11, 2012. The FFA establishes a procedural framework for developing and implementing response actions as required by CERCLA. The agreement also is designed to facilitate cooperation and communication between the USAF and EPA regarding the response actions. This Proposed Plan is required by Section 117(a) of CERCLA and Section 300.430(f)(2) of the NCP. CERCLA and the NCP require public participation in the process of selecting a cleanup remedy. USAF and EPA, in consultation with MDE, Prince George's County Health Department, and the public will select a final cleanup plan for the site. The selected cleanup plan will be announced in a local newspaper notice and document called the **Record of Decision** (ROD). The USAF and EPA encourage the public to review the following documents (which are located in the Administrative Record) to gain a better understanding of the site and the environmental investigation activities that led to the No Further Action decision:

- Phase I and Phase II Comprehensive Site Evaluation (Sky Research, Inc. [Sky], 2010)
- Remedial Investigation Report (HydroGeoLogic, Inc. [HGL], 2020)
- Feasibility Study (HGL, 2021).

Information on how to participate in the decision-making process is presented on page 14 of this Proposed Plan.

Site Background

Site Location

The former range addressed in this Proposed Plan is located with JBA in Prince George's County, Maryland, near the community of Camp Springs (**Figure 1**). Washington, DC is approximately 5 miles northwest of JBA. The site is located south of the western runway, within the airfield security area, east of Wisconsin Road, and north of Perimeter Road and adjacent to MMRP sites TS345 (Former Skeet and Trap Club, Buildings 2350 and 2351) and SR347 (Old Skeet Range, Building 2364) (**Figure 1**), which are addressed in a separate Proposed Plan. Given its proximity to the end of the runway and the **flightline**, the site is located in a restricted area of the base, behind the secure airfield fence.

JBA Description and History

JBA covers approximately 4,360 acres, which includes runways, airfields, industrial areas, and housing and recreational facilities. Residential housing is the second largest land use area on JBA after the airfield. The

majority of the housing is located on the west side of JBA.

Outdoor recreation land use includes golf courses, ball fields, a tennis court, a running track, a swimming pool, and picnic areas. The majority of the outdoor recreation facilities are concentrated west of the airfield in the southwest corner of JBA.

More than 12,000 active military personnel are stationed at JBA, which also employs more than 4,000 civilians. Currently, JBA is home to a variety of mission partners that include the following:

- 316th Wing – the JBA host wing
- Air Force District of Washington
- 79th Medical Wing
- 89th Airlift Wing
- Air National Guard Readiness Center
- 113th Wing, District of Columbia Air National Guard
- 459th Air Refueling Wing
- Naval Air Facility Washington.

The history of JBA, formerly Andrews Air Force Base, began during the Civil War (1861-1865) when the Union Army used the area as an encampment (JBA, 2012). In 1942, President Franklin D. Roosevelt ordered a military airfield to be built in the area. The airfield was named Camp Springs Army Air Field, and it became operational in 1943. In 1945, the name of the airfield was changed to Andrews Field in honor of Lt. Gen. Frank M. Andrews, a USAF founding father.

In 1947, when the USAF became a separate service, the name was changed to Andrews Air Force Base. In 2009, Andrews Air Force Base and the Naval Air Facility Washington became a joint base named Joint Base Andrews Naval Air Facility Washington or JBA.

JBA is best known for its special air missions – the transportation of senior government and military leaders. In March 1962, Andrews officially became the “Home of Air Force One,” the airplane for the President of the U.S.

Environmental Restoration Program

Past operational activities at JBA have resulted in releases of hazardous substances, pollutants, and **contaminants** to soil, **sediment**, surface water, and/or **groundwater** at sites across the base. Environmental investigations began in 1985 and are being pursued under the Environmental Restoration Program (ERP). The ERP, formerly called the Installation Restoration Program, was developed by the Department of Defense (DoD) in 1981. The purpose of the USAF's ERP is to identify, investigate, and cleanup site releases of hazardous substances, pollutants or contaminants on installations and former properties resulting from past practices that might pose a risk to human health and the environment. The USAF's ERP is operated in

compliance with all applicable legal requirements governing cleanup, including the Defense Environmental Response Program (DERP) statute (10 United States Code [USC] Section 2700-2711), and the CERCLA and its implementing regulations. Also, the ERP is guided by policy issued by DoD. The USAF's ERP addresses two categories of cleanup sites under DERP (i.e., IRP and MMRP) at active Air Force Reserve, Air National Guard, Base Realignment and Closure, and now U.S. Space Force installations in the United States and United States Territories. The ERP has issued 17 Proposed Plans and 16 decision documents with six decision documents documenting No Action at JBA. Eleven selected remedies have been implemented at JBA. This Proposed Plan is the eighteenth plan to be presented to the public for comment.

Military Munitions Response Program

The DERP was established by Section 211 of the Superfund Amendments and Reauthorization Act (SARA) of 1986. SARA Section 211 was codified in Title 10 of the USC Section 2701. Related sections in Title 10 of the USC, 10 USC Sections 2702-2706 and Sections 2810- 2811, further define the program. Three program categories have been established under DERP: Installation Restoration Program; MMRP; and the Building Demolition/Debris Removal Program.

The MMRP was established by the DoD in September 2001 under the authority of 10 USC Section 2710 to identify and respond to environmental and explosive safety hazards posed by **Munitions and Explosives of Concern (MEC)** and **Munitions Constituents (MC)** at closed, transferred, or transferring ranges. Pursuant to 10 USC Section 2710(e)(3), MCs means any materials originating from **unexploded ordnance**, discarded military munitions, or other military munitions, including explosive and nonexplosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions; MCs typically include metals (e.g., lead, arsenic, antimony, zinc) and explosive constituents. The Munitions Response Site Prioritization Protocol (MRSP) was published in the Federal Register in October 2005 (32 CFR Section 179). The MRSP was designed to meet the provisions of 10 USC Section 2710(b), which require that the DoD assign, to each defense site in the inventory required by 10 USC Section 2710(a), a relative priority for response activities based on the overall conditions at each location and taking into consideration various factors related to safety and environmental hazards. The MRSP designates sites as:

- **Munitions Response Area (MRA):** Any area on a defense site that is known or suspected to contain unexploded ordnance, discarded military munitions, or MC. As defined in 10 U.S.C. Section 2710(e)(3), MC refers to any materials originating from unexploded ordnance, discarded military munitions, or other military munitions, including explosive and nonexplosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions.
- **Munitions Response Site (MRS):** A discrete location within an MRA that is known to require a munition response.

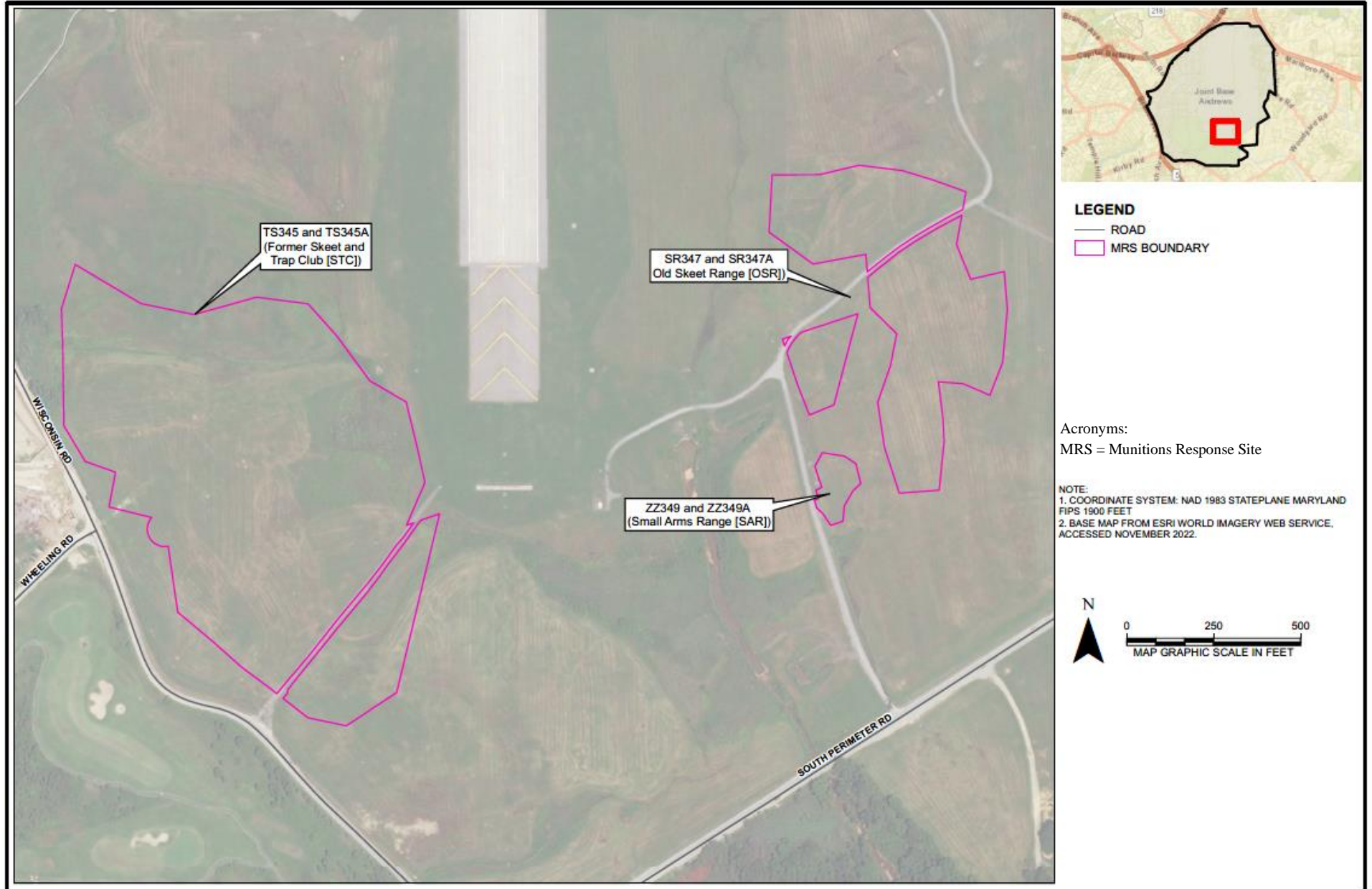
The SAR was identified as an MRA in the MMRP based on its former use for small arms gunner practice (i.e., a former pistol range) and information from environmental investigations, **risk assessments**, and cleanup activities which have been completed under DERP through the USAF's ERP resulted in the delineation of the SAR MRA into two MRSs (ZZ349 and ZZ349A).

Site Description and History

The SAR operated from 1959 to 1986. Historical documentation suggests that only small arms including .38 and .45 caliber rounds were used at the SAR, and there is no history of explosives use at the site.

The range is closed, and current site activity is limited to grounds maintenance. The current land use at the site can generally be considered open/maintained grass field areas to support the flightline at JBA. According to the **Installation Development Plan**, the location is designated as airfield pavement. There are no development plans identified for the site and the current land use will remain unchanged.

Figure 1 – Site Location Map



The historical delineation of the munition response sites (including the “A” sites) is presented on the following page.

Previous Investigations

The following subsections provide a summary of previous investigations completed at ZZ349 including the Phase I and II Comprehensive Site Evaluations (CSEs), NTCRA, **Remedial Investigation (RI)** and **Feasibility Study (FS)**.

Phase I and II CSEs

Under the MMRP, a Phase I CSE was conducted in 2007, and a Phase II CSE was conducted in 2010 (U.S. Army Corps of Engineers, 2009; Sky, 2010). The Phase I and II CSEs included visual surveys to identify any features related to MC and MEC. Items classified as potential MEC are defined as military munitions that are deemed unexploded ordnance, abandoned or discarded, or where MCs are present in soil, facilities, equipment, or other materials in high enough concentrations as to pose an explosive hazard. Items classified as munitions debris are defined as remnants of munitions (e.g., fragments, projectiles, shell casings, etc.). As expected, given no use of explosives at the site, no MEC were found at the SAR during the site reconnaissance. But the visual surveys found scattered small arms debris (i.e., lead projectiles and casing fragments) at the site. MRA boundaries were adjusted based on the results of the surveys.

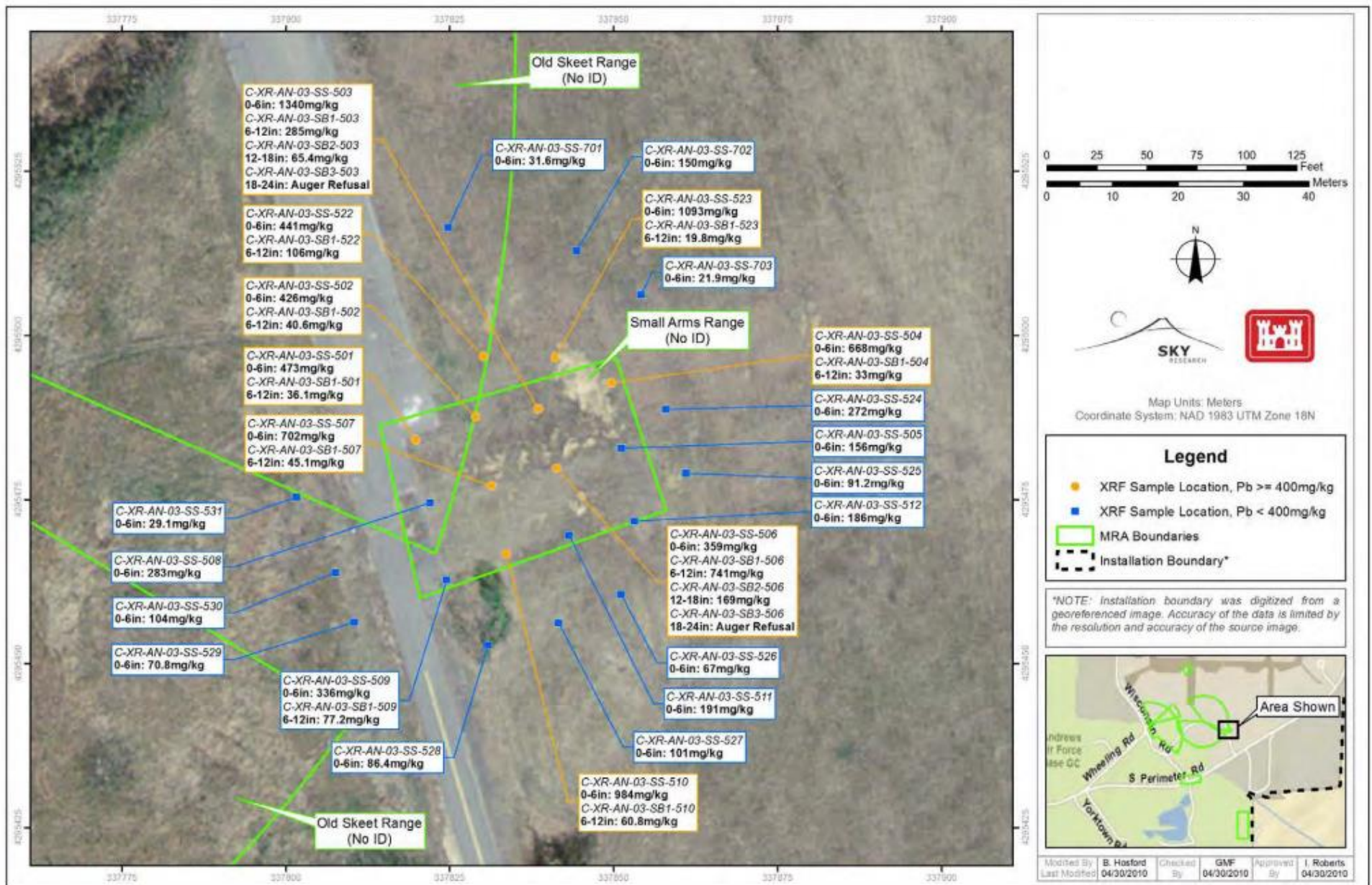
The Phase I CSE summarized the technical data, including chemical makeup, for the munitions associated with the site. During scoping for the Phase II CSE, the compounds identified in the chemical makeup of each munition were evaluated to determine the technical feasibility of analysis based on available laboratory methods. Based on this analysis, lead was the only MC selected for analysis during the Phase II CSE field investigation at the SAR. As such, source **sampling** was conducted at the SAR, and it included collection of soil samples on an established grid for **X-ray fluorescence (XRF)** analysis for lead. In general, soil sampling was conducted at the surface (0 to 6 inches below ground surface [bgs]) and continued vertically down at each point until detected concentrations of lead in soil were below the then MDE residential soil action level of 400 **milligrams per kilogram (mg/kg)**. If the lead concentration was greater than 400 mg/kg, soil sampling was stepped out horizontally in four directions. The sampling process continued horizontally and vertically until the apparent extent of lead contamination (greater than 400 mg/kg) in soil was identified. It should be noted that MDE reevaluated the soil screening levels to incorporate lower blood lead reference levels, codified in the State of Maryland in 2019, and subsequently updated their residential soil screening concentration to 200 mg/kg, effective July 1, 2020. **Figure 2** presents the XRF sampling results from the Phase II CSE.

Based on the investigation results, the Phase II CSE recommended the subdivision of the SAR MRA into separate MRSs, as follows, to facilitate further munitions actions:

- Small Arms Range ZZ349 MRS – (Contaminated) – Approximately 0.42 acre;
- Small Arms Range ZZ349A MRS – (Uncontaminated) – Approximately 0.12 acre.

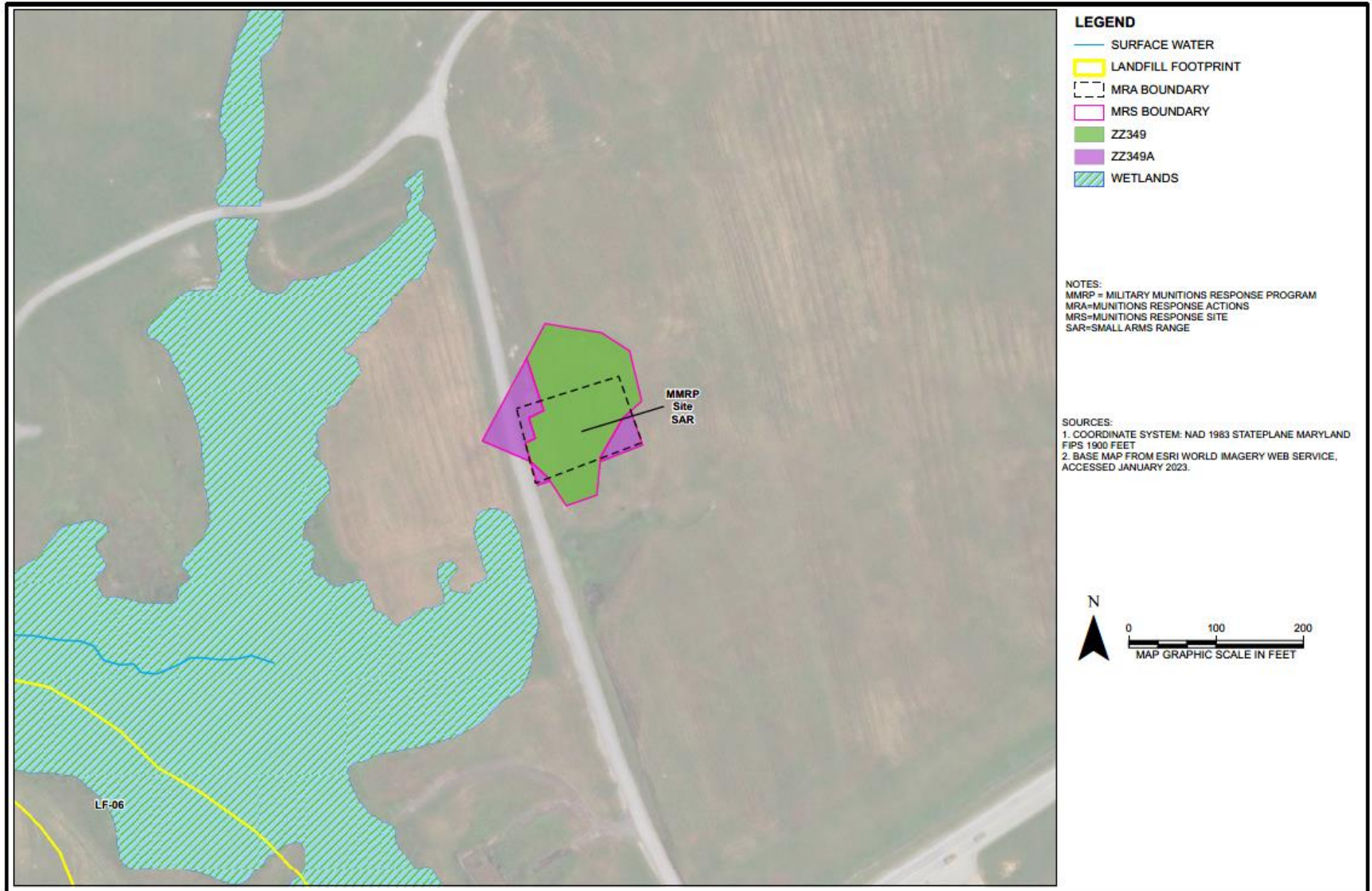
The results of the screening-level human health risk assessment conducted during the Phase II CSE indicated that removal action activities were warranted at ZZ349. The Phase II CSE recommended “No Further Action” for ZZ349A, as such ZZ349A was not included in FFA and is not recognized as a site by the USEPA (i.e., No CERCLA Action). However, the Air Force Civil Engineer Center tracks ZZ349 and ZZ349 A separately. The delineation of ZZ349 and ZZ349A is presented on **Figure 3**.

Figure 2 – Phase II CSE XRF Sampling Results Small Arms Range



Reference: Figure 5-8 from the Phase II CSE (Sky, 2010).

Figure 3 – Delineation of MRSs at the SAR



Non-Time Critical Removal Action

In 2012, EA Engineering, Science, and Technology, Inc. (EA) prepared an Engineering Evaluation/Cost Analysis (EE/CA) for the contaminated portions of JBA's MMRP sites including the SAR (EA, 2012a). The EE/CA determined that **excavation**, stabilization, and non-hazardous off-site disposal of treated soil could meet the removal action goal for the site. An Action Memorandum prepared in 2012 in support of the MMRP at JBA approved an NTCRA for the SAR (EA, 2012b). A screening level risk evaluation conducted as a component of the Phase II CSE indicated unacceptable levels of risk to maintenance and construction workers at the contaminated portions of the SAR from exposure to lead from surface and subsurface soil primarily through inhalation of dust, ingestion, and dermal contact. The **Remedial Action Objectives** (RAOs) were to remove lead soil contamination to residential human health screening levels.

A work plan was prepared to document the work activities required to execute the NTCRA (EA, 2014) and included modeling of the Phase II CSE lead data to determine the anticipated limits of lead concentrations exceeding the then MDE residential soil action level of 400 mg/kg that would require excavation to achieve RAOs.

The NTCRA was completed in September 2014 (EA, 2015a). In total, approximately 371 cubic yards of contaminated soil were excavated from ZZ349. Excavated soil was stabilized using a phosphate-based agent to render the material non-hazardous, as deemed appropriate based on analytical results. With respect to ZZ349, it is estimated that approximately 658 tons of non-hazardous soil were transported and disposed of at an off-site solid waste landfill. No hazardous soil was generated at or disposed of from the site.

Confirmatory sampling was conducted following excavation, including bottom and sidewall sampling. A total of approximately 82 samples for XRF analysis of lead were utilized to demonstrate attainment of the RAOs. The RAO for lead was considered to have been achieved if the **arithmetic average** concentration for lead was below 400 mg/kg. The resultant project average for lead at ZZ349 was 116.42 mg/kg, which was below the NTCRA RAO concentration of 400 mg/kg and below the current MDE lead soil screening value of 200 mg/kg. All RAOs were achieved during the removal action, and as a result any residual risk to humans from exposure to lead in soil at the site is within acceptable risk levels. The limits of excavation, excavation depths, and sampling grid along with the corresponding XRF sampling results are presented on **Figure 4**.

Screening-Level Ecological Risk Assessment

A Screening-Level Ecological Risk Assessment (SLERA) was performed in 2015 to characterize and quantify residual potential environmental impacts from contaminants in soil following the NTCRA. As requested by the EPA Region 3 Biological Technical Assistance Group (BTAG), surface soil samples (0 to 6 inches bgs) were collected from the perimeter of the NTCRA excavation boundaries. A total of 28 soil samples were collected, two of which were in the immediate vicinity of the SAR excavation perimeter (Refer to **Figure 5**). The soil samples were submitted for laboratory analysis of lead, antimony, arsenic, and PAHs. Although arsenic and antimony are two metals that can also be present at former shooting ranges, when evaluating and addressing human health, lead is the most prevalent MC and was used as the risk driver. Since ecological risk criteria for arsenic and antimony are different than for human health, analysis of arsenic and antimony was also included in the post-NTCRA sampling conducted in support of the SLERA, at the request of the BTAG, and to evaluate residual ecological risk. The SLERA concluded that these analytes are not anticipated to pose a risk to ecological receptors in surface soil (EA, 2015a).

Lead pellet densities in surface soil were also assessed in 2015, as lead shot pellets can present an ecological risk, specifically in avian populations (i.e., grit eating birds through ingestion of lead shot). A lead pellet density evaluation was conducted at ten locations, along the NTCRA excavation boundary. Sample locations were selected based on a visual survey of the ground surface. At each of the sample locations where the lead pellet density evaluation was conducted, soil was removed from a 1-foot by 1-foot square area to a depth of 1 inch and the lead shot sifted from the soil were counted to determine its density, presented as lead pellets per square foot. No lead shot pellet density sample locations were immediately adjacent to the SAR NTCRA boundaries; however, one location was located approximately 50 feet to the east of the SAR NTCRA boundaries and immediately south of the Old Skeet Range (Sample 8, Refer to **Figure 5**). At Sample 8, the results were above the surface soil lead pellet screening value of 10 pellets per square foot (at 68 pellets per square foot), which was the lead pellet screening level approved by EPA BTAG as being protective of ecological receptors. As a result, a supplemental lead pellet density evaluation was conducted in 2018 during completion of the RI, as outlined in the following subsection.

Remedial Investigation

A RI was conducted in 2018 and 2019. A copy of the RI Report, *Final Remedial Investigation Report MMRP Sites: Skeet and Trap Club (TS345), Old Skeet Range (SR347), and Small Arms Range (ZZ349) Joint Base Andrews, Maryland* (HGL, 2020) is available in the Information Repository, which is located at the Prince George's County Memorial Library, Oxon Hill-Clinton Branch.

The purpose of the RI was:

- to support supplemental lead pellet delineation in surface soil outside of the NTCRA excavation boundaries;
- to summarize previous investigations and response actions;
- to characterize the nature and extent of contamination; and,
- to determine and evaluate risks to human health and the environment.

As a component of the RI, a lead pellet density evaluation was conducted in 2018 to supplement the SLERA completed in 2015. Specifically, lead pellet densities were counted at three locations from outside the SAR NTCRA excavation boundaries (LP-38, LP-39, and LP-40) and from three step-out locations located east, south, and west of the 2015 sample location, Sample 8, to further delineate lead shot pellets in the vicinity of southern OSR NTCRA boundary. Lead pellet densities were evaluated in a manner consistent with the sampling conducted during the SLERA and as outlined in the section above. No lead shot was observed in any of the samples. Lead shot pellet density locations are presented on **Figure 5**.

The RI concluded that there are no remaining constituents that present **unacceptable risks** to human health and the environment at the SAR (ZZ349). Because the remaining level of lead in soil after execution of the NTCRA is below 200 mg/kg, there is no need to conduct a human health assessment.

Feasibility Study

If unacceptable risk is identified and cleanup is needed, a FS is performed to evaluate and compare the cleanup alternatives. For the SAR (ZZ349), the results of previous response actions (i.e., the NTCRA) and analysis of the supplemental data gathered during the RI indicated that there are no remaining contaminants that present unacceptable risks to human health and the environment. The approved RI Report concluded that No Further Action is warranted at the SAR, and therefore no remedial alternatives were developed for this site in the FS (HGL, 2021). Rather, “a concise FS statement” was included in Section 6.4 of the FS, as required under the FFA.

Figure 4 - NTCRA Removal Boundaries and Post-Excavation Confirmation Sampling Results

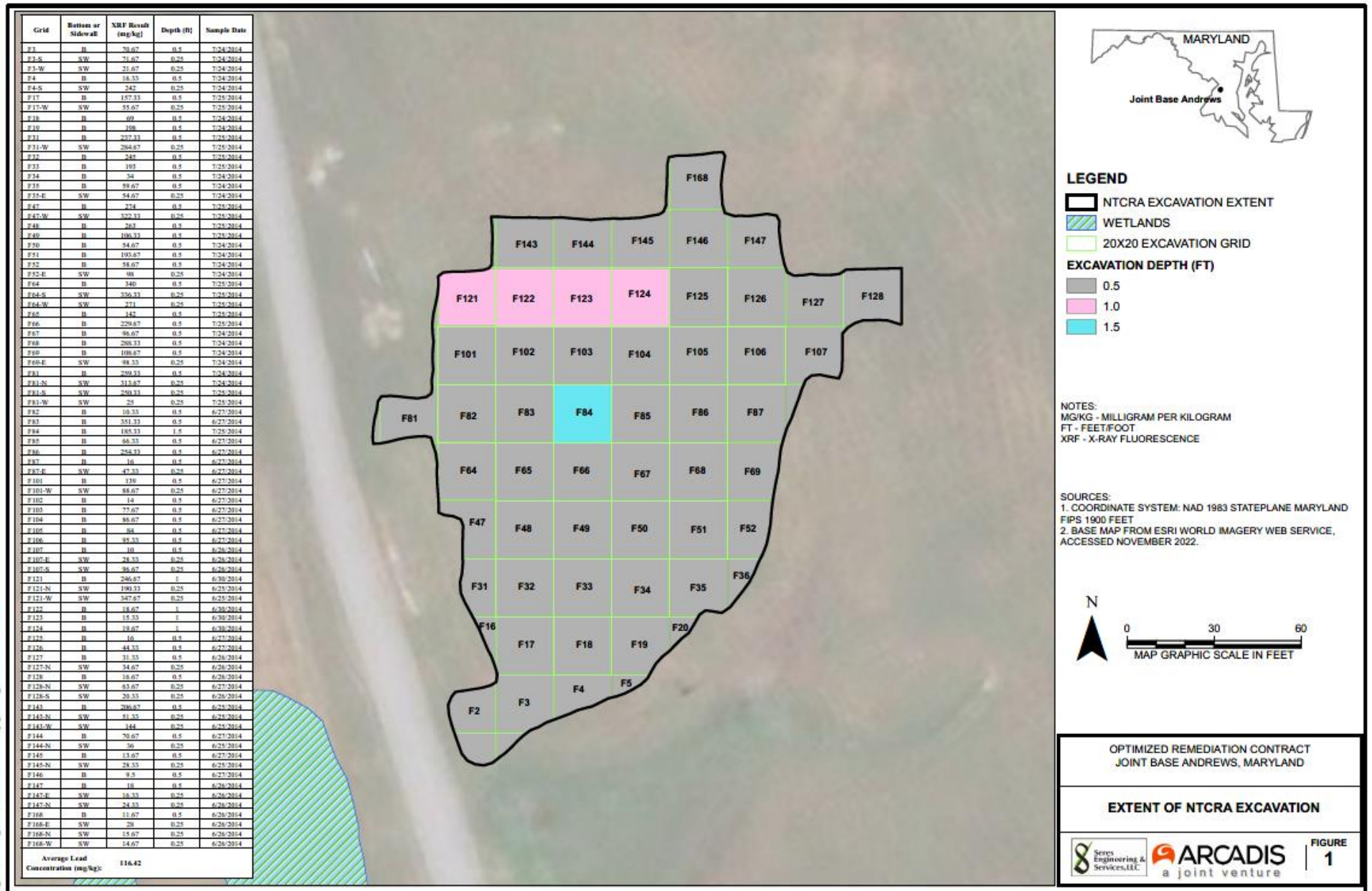
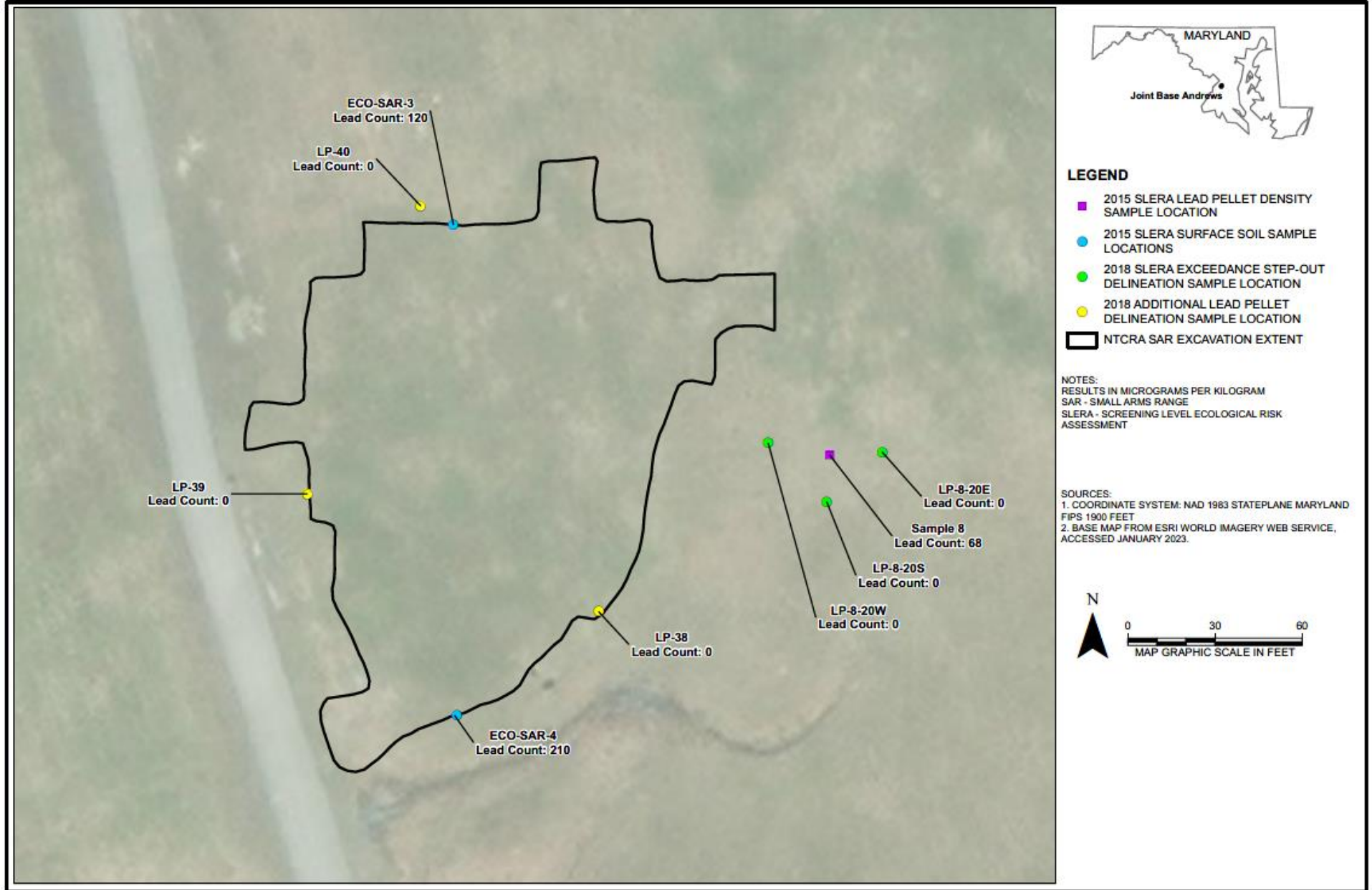


Figure 5 – SLERA Surface Soil and Lead Pellet Density Sample Locations (2015 and 2018)



Site Characteristics

This section summarizes the site characteristics (i.e., wildlife habitat, geology, hydrogeology, surface water hydrology) as summarized in technical documents prepared for the site. Additional details can be obtained from the Final RI Report (HGL, 2020). Copies of all pertinent technical documents are available in the Information Repository, which is located at the Prince George's County Memorial Library, Oxon-Hill-Clinton Branch.

Wildlife Habitat

The SAR is characterized by open and maintained (mowed) grass fields. A wetland is west of the SAR (**Figure 3**). The site is currently used as part of the southern approach to the runways at JBA. While the runways at the southern approach are flat, the surrounding topography contains slopes and various navigational and security features. The area is an unattractive location for wildlife because of aircraft noise, disruption from aircraft operations, and few trees within the site boundaries. The site also includes features to dissuade birds from inhabiting the area. No rare, threatened, or endangered species were identified in the vicinity of the SAR.

Geology

The shallowest portion of the subsurface consists of fill material that includes sand, **silt**, gravel, and recycled concrete. This fill mixture ranges from 3 to 7 feet in thickness. Below the fill, the subsurface comprises the **Upland Deposits** (50 feet thick) overlying the **Calvert Formation** (70 to 100 feet thick). The Upland Deposits consist of grayish-orange sand with silt and gravel. The Calvert Formation consists of greenish-grey silt and clay and serves as an **aquitard**.

Hydrogeology

The **groundwater table** at the site is first encountered in the Upland Deposits at depths between 4 and 22 feet bgs, depending on surface topography and season. Generally, groundwater flows in an easterly to southeasterly direction and eventually discharges into Piscataway Creek, which originates just south of the west runway. The groundwater flows an average of 49 feet per year through the Upland Deposits. The Calvert Formation aquitard restricts the vertical (downward) flow of shallow groundwater in the Upland Deposits at the site.

Groundwater is not utilized for drinking water purposes on JBA, and the average depth to groundwater is less than 20 feet at the site. A potentially complete exposure pathway was identified during the Phase I CSE for current and future site workers partaking in intrusive activities that may expose workers to possible MC-impacted groundwater at the site. However, the physical

properties of the MC (i.e., lead) associated with the munition items used at the site indicate that MC transport to groundwater is unlikely. Specifically, lead generally has limited mobility in soil, due to its tendency to bind to organic matter. As a result, the groundwater pathway is considered only marginally viable. During scoping for the Phase II CSE, the probability of appreciable groundwater impacts from past munitions-related activities was determined to be low and a groundwater assessment was not deemed necessary, unless the Phase II CSE soil investigation identified significant soil contamination (Sky, 2009). Based on the shallow (less than 5 feet bgs) nature and extent of soil impacts at the site, it was determined that groundwater sampling was not required.

Surface Water Hydrology

JBA straddles the drainage divide separating the Potomac River Basin to the west and the Patuxent River Basin to the east. The surface water drainage divide extends north to south through the base in the vicinity of the runways. Piscataway Creek is the major surface water drainage feature at JBA. Piscataway Creek is a tributary of the Potomac River, and its headwater is north of Landfill 06 (LF-06) in the JBA airfield (Tetra Tech, Inc., 2007); see **Figure 2**. Piscataway Creek is located within the lower Potomac River Area Sub-Basin and is classified in accordance with Code of Maryland Regulations 26.08.02.07 as Class I waters, meaning that the creek “shall be protected for water contact recreation, fishing, and protection of aquatic life and wildlife.”

A Base-wide Ecological Risk Assessment conducted in March 2005 by CH2M Hill found that lead exceeded TRVs in sediment and surface water in the headwaters of Piscataway Creek. The suspected potential source of the lead contamination at the time the Ecological Risk Assessment was prepared included TS345, LF-06, and LF-05 (CH2M Hill, 2005). Further assessment of these media has occurred as a component of the investigations conducted at LF-06.

Site Contamination

Available historical information documents that only small arms were used at JBA's MMRP sites, including ZZ349. The site operated from 1959 to 1986. Prior to closure, small arms bullets and casings were found on the ground.

Due to these previous activities, a **source area** of lead contamination was identified during the Phase II CSE sampling at the SAR (from lead bullets and fragments). The NTCRA was successful in removing the lead-impacted soil at the SAR (ZZ349), and any residual risk to humans from exposure to impacted soil are within acceptable risk levels. A SLERA was performed following the NTCRA to characterize and quantify residual potential environmental impacts from contaminants in soil and confirmed that concentrations

What is Risk?

What is Human Health Risk and How is it Calculated?

A human health risk assessment estimates “baseline risk.” This is an estimate of the likelihood of health problems occurring to people exposed to the site if no cleanup action were taken. The USAF established a four-step process based on EPA guidance to estimate baseline risk at a site. The four-step process includes:

- Step 1: Analyze Contamination**
- Step 2: Estimate Exposure**
- Step 3: Assess Potential Health Impacts**
- Step 4: Characterize Site Risk**

In **Step 1**, the USAF looks at the concentrations of contaminants found at a site as well as scientific studies on the effects these contaminants have had on people (or on animals, when human studies are unavailable). Comparisons between site-specific concentrations and concentrations established by the EPA as generic screening levels that are protective of residential exposure help the USAF to determine which site-related contaminants are most likely to pose the greatest threat to human health. Contaminants that were detected at the site at a level greater than the EPA screening levels are evaluated further in the risk assessment.

In **Step 2**, the USAF considers the different ways that people might be exposed to the contaminants identified in Step 1, the concentrations that people might be exposed to, and the potential frequency and duration of exposure. Using this information, a “**reasonable maximum exposure**” scenario is calculated that portrays the highest level of human exposure reasonably expected to occur. A central tendency **exposure scenario** may also be considered to describe median, rather than upper limit, exposures.

In **Step 3**, the USAF uses the information from Step 2, combined with information on the **toxicity** of each contaminant, to assess potential health risks from exposure. The USAF considers two types of risk: cancer risk and non-cancer hazard. The likelihood of any kind of cancer resulting from exposure to a site is generally expressed as an upper-bound probability, for example, a “1 in 10,000 probability.” In other words, for every 10,000 people that could be exposed, one extra cancer may occur as a result of exposure to site contaminants. An extra cancer case means that one more person could get cancer than would normally be expected to from all other non-site-related causes. For non-cancer health effects, the USAF calculates a “**hazard index**.” The key concept here is that a “threshold level” or dose (measured usually as a hazard index of less than or equal to 1) exists below which non-cancer health effects are not expected to occur, even in sensitive receptors.

In **Step 4**, the USAF determines whether exposure to site-related contaminants would be expected to cause health problems in sensitive receptors. The results of the three previous steps are combined, evaluated, and summarized. The USAF adds the potential risks from the individual contaminants to determine the total risk resulting from exposure to site-related contaminants.

of arsenic, lead, and antimony are not anticipated to pose a risk to ecological receptors in surface soil.

Supplemental lead pellet density sampling was conducted during completion of the RI, which confirmed that lead pellet counts along the boundary of the SAR are less than 10 pellets per square foot, which was the lead pellet screening level approved by the EPA Biological Technical Assistance Group as being protective of ecological receptors, and no additional response action for the SAR is required.

Principal Threats

There are no **principal threats** in soil at the site, as analysis of the data gathered to-date indicates that the potential contaminants detected in the soil do not present unacceptable risk to human health and the environment.

Scope and Role of Response

In accordance with the ERP, USAF considers **remedial actions** for sites that have confirmed unacceptable risk to human health or the environment from historical activities at the site. The RI confirmed that completion of the NTCRA successfully addressed unacceptable risks to human health and the environment at ZZ349 and the site is suitable for **unlimited use/unrestricted exposure (UU/UE)**. Therefore, No Further Action is deemed necessary at this site.

Summary of Site Risks

No unacceptable human health or ecological risks remain at ZZ349. As documented in the NCTRA Report (EA, 2015a) and RI (HGL, 2020). The 2014 NTCRA was successful in removing the lead-impacted soil at the SAR (ZZ349), and any residual risk to humans from exposure to impacted soil is within acceptable risk levels. Because the remaining average lead level in soil is below 200 mg/kg, there is no need to conduct a human health risk assessment. A SLERA was performed following the NTCRA to characterize and quantify residual potential environmental impacts from contaminants in soil and confirmed that concentrations of arsenic, lead, and antimony are not anticipated to pose a risk to ecological receptors in surface soil (EA, 2015b). Supplemental lead pellet density sampling was conducted during completion of the RI, which confirmed that lead pellet counts along the boundary of the SAR are less than 10 pellets per square foot, which was the lead pellet screening level approved by the EPA Biological Technical Assistance Group as being protective of ecological receptors (EA, 2015a). A No Further Action remedial decision is warranted because no unacceptable human health or ecological risk remains at ZZ349.

Community Participation

Administrative Record Address and Hours

The USAF makes information regarding the proposed response of No Further Action for ZZ349 available to the public by maintaining a copy of the AR as part of the information repository for the site.

The information repository is located at:

Prince George's County Memorial Library
Oxon Hill-Clinton Branch
6200 Oxon Hill Road
Oxon Hill, Maryland, 20745

Telephone: (301) 839-2400

Library Hours

Monday, Thursday, Friday: 10:00 a.m. – 6:00 p.m.
Tuesday and Wednesday: 12:00 p.m. – 8:00 p.m.
Saturday: 10:00 a.m. – 5:00 p.m.
Sunday: Closed

The AR can also be accessed online at <https://ar.afcec-cloud.af.mil/>.

Public Notice

In addition, site information is made available to the public by publishing announcements in a local newspaper (*The Prince George's County Enquirer-Gazette*).

JBA hosts a public interest website (<http://www.jba.af.mil/About-Us/Environmental-Mission/>) informing the community about environmental activities at JBA.

The USAF encourages interested persons to use these resources to learn more about the site and the CERCLA activities that have been conducted at JBA.

Public Meeting

The USAF has not scheduled a public meeting for this Proposed Plan because of the historically low public interest regarding JBA sites. For example, no members of the public attended the Proposed Plan public meeting held on July 13, 2015 for Site 26, Fire Training Area No. 4, and Solid Waste Management Units 75 and 76 – former Water Towers, and Historic Base Chapel. However, the USAF encourages the public to contact the USAF if they are interested in attending a public meeting regarding this Proposed Plan.

The public may request a meeting for this Proposed Plan within the first 15-days of the public comment period (no later than August 22, 2023) by contacting the JBA 316th Wing Public Affairs Office at the following e-mail address:
316WG.PA.COMMUNITYENGAGEMENT@us.af.mil

Should a public meeting be scheduled, the USAF will issue additional public notices in local newspapers to announce the date, time, and location of any public meeting for the site. Members of the project team will be in attendance to explain the preferred alternative and respond to questions regarding the site. Additional oral and written comments will be accepted at a public meeting.

Public Comment Period

The 30-day public comment period for this Proposed Plan begins on August 7, 2023, and ends at midnight on September 6, 2023. However, the comment period will be extended upon receipt of a timely request or a request to hold a public meeting. All comments received at the public meeting and during the public comment period will be summarized, and responses will be provided in the **responsiveness summary** section of the ROD. The ROD is the document that presents the selected remedy and is also included in the AR.

Written Comments

Written comments may be submitted up to midnight on September 6, 2023, via mail or e-mail and should be directed to:

316th Wing Public Affairs Office
William A. Jones III Building
1500 West Perimeter Road, Room 2330
Joint Base Andrews, MD 20762

316th Wing Public Affairs community engagement e-mail:

316WG.PA.COMMUNITYENGAGEMENT@us.af.mil

Although not required, a Comment Form is provided at the end of this Proposed Plan for convenience. If you have any questions about the public comment process or to submit comments orally, contact the 316th Wing Public Affairs Office at (240) 612-4428.

The Next Step

The USAF, in consultation with EPA, the MDE, and Prince George's County Health Department, will evaluate public reaction to the preferred alternative (No Further Action) for this Proposed Plan during the public comment period and the public meeting (if held) before deciding on the final remedy.

Based on new information or public comments, the USAF may modify its proposed decision. If there are significant changes to this Proposed Plan prior to finalization of the selected alternative, it will be reissued for public comment.

The USAF's final choice of action will be issued in a ROD. A Responsiveness Summary, documenting and responding to written and oral comments received from

the public, will be issued in the ROD. When the ROD is finalized, the USAF will announce the selected cleanup plan in a local newspaper advertisement and place a copy of the ROD in the Information Repository for the site located at the Prince George's County Memorial Library, Oxon Hill-Clinton Branch Library.

References

CH2M Hill, 2005. *Final Basewide Ecological Risk Assessment (Step 7)*, Andrews Air Force Base, Maryland. Prepared for the Air Force Center for Environmental Excellence. March.

EA, 2012a. *Final Engineering Evaluation/Cost Analysis. Former Skeet and Trap Club, Small Arms Range, and Old Skeet Range*, Joint Base Andrews. April 2012.

EA, 2012b. *Final Action Memorandum. Former Skeet and Trap Club, Small Arms Range, and Old Skeet Range*, Joint Base Andrews. June 2012.

EA, 2014. *Final Removal Action Work Plan, Former Skeet and Trap Club, Small Arms Range, and Old Skeet Range*, Joint Base Andrews, Maryland. February 2014.

EA, 2015a. *Final Non-Time-Critical Removal Action Report, MMRP Site 34 – Skeet and Trap Club (CTC, TS345), MMRP Site 36 – Small Arms Range (SAR, ZZ349), and MMRP Site 35 – Old Skeet Range (OSR, SR347)*, Joint Base Andrews, Maryland. August 2014.

EA, 2015b. *Draft Screening-Level Ecological Risk Assessment Rev. 02, Former Skeet and Trap Club (TS345), Small Arms Range (ZZ349), and Old Skeet Range (SR347)*, Joint Base Andrews, Maryland. September 2015b.

HGL, 2020. *Final Remedial Investigation Report MMRP Sites: Skeet and Trap Club (TS345), Old Skeet Range (SR347), and Small Arms Range (ZZ349)* Joint Base Andrews, Maryland. August 2020.

HGL, 2021. *Feasibility Study MMRP Sites: Site 34 The Skeet and Trap Club TS345 (Buildings 2350 and 2351), Site 36 The Small Arms Range ZZ349 (Building 2355), and Site 37 The Old Skeet Range (Building 2364)* Joint Base Andrews, Maryland. May 2021.

JBA (Joint Base Andrews). 2012. *Joint Base Andrews History*. September 2012. <http://www.jba.af.mil/About-Us/Fact-Sheets/Display/Article/336384/joint-base-andrews-history/>. Accessed on November 16, 2012.

Sky, 2009. *Andrews Air Force Base, Maryland Comprehensive Site Evaluation Phase II. Final Work Plan, Revision 3. Military Munitions Response Program*. September 2009.

Sky, 2010. *Andrews Air Force Base, Maryland Comprehensive Site Evaluation Phase II. Draft Report Military Munitions Response Program*. May 2010.

Tetra Tech, Inc., 2007. *Final Report for the Remedial Investigation at LF-06, LF-07, and Base Lake North Area*, Andrews Air Force Base, Maryland. May.

U.S. Army Corps of Engineers, 2009. *Comprehensive Site Evaluation Phase I Final Report*, Andrews Air Force Base, Maryland. August 2009.

Glossary

Administrative Record (AR) – A record or file made available to the public that includes all information considered and relied on in selecting a remedy for a site.

Aquitard – Geological formation that may contain groundwater but is not capable of transmitting significant quantities of it under normal hydraulic gradients. May function as a confining bed, limiting the groundwater flow direction.

Arithmetic average – The sum of a collection of numbers divided by the count of numbers in the collection (in this context the sum of lead concentrations in mg/kg divided by the number of samples collected)

Calvert Formation – A geologic formation consisting of greenish-grey silt and sandy clay that underlies the Upland Deposits; top of formation found at 24 to 42 feet below ground surface within the site; serves as an aquitard.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – Passed in 1980 and amended in 1986, CERCLA is commonly referred to as the Superfund Law. It provides for liability, compensation, cleanup, and emergency response in connection with the cleanup of inactive hazardous substance disposal sites that endanger public health and safety of the environment. CERCLA is codified at 42 U.S.C. §§ 9601 to 9675.

Contaminants – A compound or element that, upon exposure, will or may reasonably be anticipated to cause certain specified harmful health effects.

Excavation – The act of digging to remove something.

Exposure scenario – A set of facts, assumptions, and inferences about how exposure takes place that aids the risk assessor in evaluating, estimating, or quantifying exposure of a human to a hazardous substance.

Feasibility Study (FS) – Based on data collected during the RI, options for cleanup actions or remediation are developed and evaluated in an FS. The criteria for evaluating remedial alternatives include their short-term and long-term effectiveness, cost, and acceptance by the surrounding community and state.

Federal Facilities Agreement (FFA) – A document that establishes a procedural framework for developing and implementing response actions as required by CERCLA. The agreement also is designed to facilitate cooperation and communication between the Air Force and EPA.

Flightline – The area of an airfield, specifically the parking area and the maintenance hangars, where aircraft taxi, land/take-off, are loaded, offloaded, and serviced.

Groundwater – Water beneath the ground surface that fills spaces between materials such as sand, soil, or gravel to the point of saturation. In aquifers, groundwater occurs in quantities sufficient for drinking water, irrigation, and other uses. Groundwater may transport substances that have percolated downward from the ground surface as it flows towards its point of discharge.

Groundwater table – The level below the ground surface where the soil or rock is completely saturated with water.

Hazard Index – The ratio of the daily intake of chemicals from on-site exposure divided by the reference dose for those chemicals. The reference dose represents the daily intake of a chemical not expected to cause adverse health effects.

Information repository – A single reference source for information about environmental restoration activities at the installation. It shall, at a minimum, contain items made available to the public, including documentation that is in the administrative record and all public documents associated with a Restoration Advisory Board (RAB), if a RAB has been formed.

Installation Development Plan – The Installation Development Plan provides the commander and key decision-makers with a summary of JBA's current and future capability to support its assigned missions. The overall goal of the plan is to provide a framework for programming, design, and construction, and effective resource management.

Lead Agency - The agency that provides the on-scene coordinator/remedial project manager to plan and implement response actions under the NCP; the lead agency for remedial actions and removal actions other than emergencies (40 CFR 300.5).

Maryland Department of the Environment (MDE) – The State of Maryland regulatory agency that assures activities conducted at Joint Base Andrews are compliant with the state's environmental regulations.

milligrams per kilogram (mg/kg) – A unit of measure expressing the weight of a substance (i.e., a contaminant) by the weight of the medium containing it (i.e., soil). A milligram per kilogram is the same as one part per million.

Munitions Constituents – Any materials that originate from unexploded ordnance (UXO), discarded military munitions, or other military munitions, including explosive and non-explosive materials, and emission,

degradation, or breakdown elements or such ordnance or munitions (10 U.S.C. 2710 (e)(4)).

Munitions and Explosives of Concern (MEC) – Military munitions that are 1) unexploded ordnance, as defined in 10 U.S.C. 101(e)(5); 2) abandoned or discarded, as defined in 10 U.S.C. 2710(e)(2); 3) munitions constituents (e.g., TNT, RDX) present in soil, facilities, equipment, or other materials in high enough concentrations to pose an explosive hazard.

Munitions Response Area (MRA) – Any area on a defense site that is known or suspected to contain MEC and/or **munitions constituents** (e.g., former ranges, or firing-in buttresses).

Munitions Response Sites (MRSs) – A discrete location within an MRA that is known to require munitions response. The entire acreage of the MRA must be accounted for in the subdivision into one or more MRSs. Every acre within an MRA is part of an MRS and is subject to the Military Munitions Response Prioritization protocol.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP) – The NCP is located at 40 Code of Federal Regulations Part 300. The purpose of the NCP is to provide the organizational structure and procedures for preparing and responding to discharges of oil and releases of hazardous substances, pollutants, or contaminants. The NCP is the CERCLA regulation.

National Priorities List – The list, compiled by EPA pursuant to CERCLA Section 105, identifies the uncontrolled or abandoned hazardous substances releases in the U.S. that are priorities for long-term remedial evaluation and response.

Non-Time Critical Removal Action (NTCRA) – When site contamination or conditions poses an immediate threat to human health and the environment an expedited cleanup may be warranted. Expedited cleanup actions (i.e., removals) can be classified as either emergency, time-critical, or non-time-critical depending on the extent and type of contamination. For an NTCRA a planning period of at least six months is available before on-site activities must begin to address priority risks.

Prince George's County Health Department – The county organization that assures that activities conducted by Joint Base Andrews within Prince George's County are compliant with the county's health and environmental ordinances.

Principal Threats – Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur.

Preferred Alternative - The alternative presented in the Proposed Plan, which is based on the analysis presented in the administrative record and ongoing discussions between the lead and support agencies and the affected community.

Proposed Plan – A public participation requirement of CERCLA and the NCP, in which the lead agency summarizes and presents to the public the preferred cleanup strategy and rationale. The Proposed Plan also summarizes the alternatives presented in the detailed analysis of the FS and solicits public review and comment.

Public comment period – A time for the public to review and comment on various documents and actions taken by Joint Base Andrews and regulatory agencies. A 30-day comment period is required by Title 40 Code of Federal Regulations Section 300.430(f)(3)(C) to provide a sufficient opportunity for community members to review the administrative record file and comment on the Proposed Plan.

Reasonable maximum exposure – The highest level of human exposure to a contaminant reasonably expected to occur.

Record of Decision (ROD) – An official public document that explains which cleanup alternative(s) will be implemented at National Priorities List sites. The ROD is based on information and technical analysis generated during the RI and FS and considers public comments and community concerns. The ROD explains the remedy selection process and is issued by Joint Base Andrews in consultation with the EPA, the state, and local regulatory agencies, following the public comment period.

Remedial alternative – An option to clean up a hazardous waste site.

Remedial investigation (RI) – An RI involves data collection and site characterization activities intended to identify the type and magnitude of contamination present at a site. The RI includes sampling, monitoring, and gathering sufficient information to evaluate potential risk to human health and the environment and determine the necessity for remedial action.

Remedial actions – The response actions that stop or substantially reduce a release or threatened release of hazardous substances.

Remedial action objectives (RAOs) – Site-specific objectives developed based on an evaluation of the potential risks to public health and to the environment. The future protection of environmental resources and the means of minimizing long-term disruption to existing facility operations also are considered.

Responsiveness summary – A summary of oral and written public comments received by the lead agency during a comment period and its responses to these comments. The responsiveness summary is an important part of the ROD, highlighting community concerns for decision-makers.

Risk assessments – An evaluation and estimation of the current and future potential for adverse human health or environmental effects resulting from exposure to contaminants.

Sampling/samples – A sample is a portion, piece, or segment that is representative of a whole thing, group, or species. Sampling is the act of collecting a sample.

Sediment – Sediment is topsoil, sand, and minerals washed from the land into water, usually after rain or snow melt. Sediment collects in the bottom of creeks, rivers, reservoirs, and harbors.

Silt – Finely divided particles of soil or rock, often carried in cloudy suspension in water and eventually deposited as sediment. It is smaller than sand particles but larger than clay particles.

Source area – A specific area in which contaminants are released.

Title 40 Code of Federal Regulations – Title 40 is the U.S. law for protection of the environment. Part 300 of Title 40 is known as the National Oil and Hazardous Substances Pollution Contingency Plan.

Toxicity – The quality or strength of a substance being poisonous or harmful to plant, animal, or human life.

Unacceptable risk – There is risk involved in many areas of life. Environmental risk means a potential for harm to human health and/or the environment. Unacceptable risk means that the potential for harm is too high.

Unexploded Ordnance – Explosive weapons (e.g., bombs, bullets, shells, grenades, mines, etc.) that did not explode when they were employed and still pose a risk of detonation.

Unlimited Use/Unrestricted Exposure (UU/UE) - A term used to describe when contamination at a site has been reduced to levels that are safe for any land use, including residential land uses.

Upland Deposits – A geologic formation, consisting of variable discontinuous layers of gravel, sand, silt, and clay that underlie the site. The formation can be found from 1 foot to 41 feet below ground surface within the site boundaries. Groundwater can be found within this formation at depths ranging from 8 to 23 feet below ground surface.

X-ray fluorescence (XRF) – An analytical technique used to determine the elemental composition of

materials in the field. Handheld XRF analyzers determine the chemistry of a sample by measuring the fluorescent X-ray emitted from a sample when it is excited by a primary X-ray source.

Proposed Plan for ZZ349

Joint Base Andrews Naval Air Facility Washington, Camp Springs, Maryland

Use This Space to Write Your Comments

Your input on the Proposed Plan is important to the United States Air Force. Comments provided by the public are valuable in helping us select a final remedy for the site.

Although not required, you may use this sheet to write your comments to mail. Use additional paper if needed. Comments must be postmarked or e-mailed by midnight September 6, 2023. If you have any questions about the public comment process, contact the 316th Wing Public Affairs Office at 316WG.PA.COMMUNITYENGAGEMENT@us.af.mil

Mail your comments to:

**316th Wing Public Affairs Office
William A. Jones III Building
1500 West Perimeter Road, Room 2330
Joint Base Andrews, MD 20762**

Or e-mail your comments to:

316WG.PA.COMMUNITYENGAGEMENT@us.af.mil

Comments can be submitted orally over the telephone at: (240) 612-4428

[illegible]

Name

Affiliation

Address

City, State, Zip

Fold on the lines, secure open bottom edge with clear tape, place first class stamp, and mail

Place
Stamp
Here

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William A. Jones III Building
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