**DEPARTMENT OF THE ARMY**
**INSTALLATION MANAGEMENT COMMAND**
**HEADQUARTERS, U.S. ARMY GARRISON ALASKA**
**1046 MARKS ROAD #6000**
**FORT WAINWRIGHT, ALASKA 99703-6000**

November 21, 2024

Directorate of Public Works

Subject: Submission of the Final 2023 Gerstle River Test Site Land Use Control Inspection Report to the State of Alaska Department Environmental Conservation.

Ms. Erica Blake
Remedial Project Manager
Alaska Department of Environmental Conservation
610 University Avenue
Fairbanks, AK 99709

Dear Ms. Blake:

This letter documents transmission of the Final 2023 Gerstle River Test Site Land Use Control Inspection Report to the State of Alaska Department Environmental Conservation (ADEC).

A digital copy of the document will be provided to you. If you would like to receive a hard copy of this document, please notify us within the next few weeks.

If you have questions or concerns regarding this action please contact Melissa Shippey, Primary RPM at (907) 361-9622 or melissa.s.shippey.civ@army.mil.

Sincerely,

Melissa Shippey, RPM

Melissa Shippey
Restoration Program Manager,
Directorate of Public Works

CF:
HQ, USAG FWA CERCLA Information Repository (w/o encls)

Final

# 2023 Land Use Controls Inspection Report
# Gerstle River Test Site

U.S. Army Garrison Alaska

Gerstle River Test Site-UST #450 and #451:
HQAES No. 2202A.1001
ADEC File No. 141.26.008
ADEC Hazard ID 24980

Contract W911KB-20-D-0005
Task Order W911KB-21-F-0111

November 2024

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Final

# 2023 Land Use Controls Inspection Report

# Gerstle River Test Site

Contract W911KB-20-D-0005
Task Order W911KB-21-F-0111

November 2024

Prepared For:

U.S. Army Garrison Alaska

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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AAC | Alaska Administrative Code |
| ADEC | Alaska Department of Environmental Conservation |
| ADNR | Alaska Department of Natural Resources |
| AOC | area of concern |
| ATV | all-terrain vehicle |
| bgs | below ground surface |
| Bristol | Bristol Environmental Remediation Services, LLC |
| CFR | Code of Federal Regulations |
| COC | contaminant of concern |
| CRREL | Cold Regions Research and Engineering Laboratory |
| DA | Department of the Army |
| DERP | Defense Environmental Restoration Program |
| DMO | Demand Maintenance Order |
| DPW | Directorate of Public Works |
| EC | engineering control |
| ECR | Excavation Clearance Request |
| EPIC | Environmental Photographic Interpretation Center |
| FES | Fairbanks Environmental Services |
| GB | G-Series nerve agent Sarin |
| GIS | geographic information system |
| GPS | global positioning system |
| GREA | Gerstle River Expansion Area |
| GRTS | Gerstle River Test Site |
| HQAES | Headquarters Army Environmental System |
| IC | institutional control |
| LTM | Long Term Management |
| LUC | Land Use Controls |
| N/A | not applicable |
| NBC | nuclear biological chemical |
| OCA | Operation Cleanup Alaska |
| ORV | off-road vehicle |
| SAP | Sikes Act Permit |
| SOP | standard operating procedure |
| USAG Alaska | U.S. Army Garrison Alaska |
| USARTRAK | U.S. Army Recreation Tracking System |
| USATHAMA | U.S. Army Toxic and Hazardous Materials Agency |
| UST | underground storage tank |
| VX | V-series nerve agent, [2-(Diisopropylamino)ethyl]-O-ethyl methyl phosphonothioate |
| WELTS | Well Log Tracking System |

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## EXECUTIVE SUMMARY

The purpose of this report is to evaluate the implementation and effectiveness of land use controls (LUCs) associated with the underground storage tank (UST) and landfill areas in the Administrative Area of the Gerstle River Test Site (GRTS), as well as other GRTS areas of concern (AOCs) identified in the data gap analysis. LUCs at this site consist of institutional controls (ICs) and engineering controls (ECs).

The 2023 assessment documented that LUCs have been implemented and were effective at each of the AOCs. No corrective actions were taken at the time of inspection. It is recommended that more robust signs and posts be installed at the asbestos debris landfill in the Administrative Area. In addition, it is recommended that the administrative area signs are updated to identify the specific AOCs and LUC restrictions more clearly.

An Excavation Clearance Request (ECR) review was conducted; no ECRs were issued for the GRTS in 2023. The LUC assessment also included a review of the U.S. Army Garrison Alaska (USAG Alaska) geographic information system (GIS)-based database to determine if updates were required; no updates were required.

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# 1.0 INTRODUCTION

This report documents the land use control (LUC) inspection activities conducted during 2023 at the Gerstle River Test Site (GRTS). LUCs at the site consist of institutional controls (ICs) and engineering controls (ECs): ICs are legal or administrative actions (property transfer or property use restrictions) and ECs are engineered barriers or deterrents (fences, signs, and landfill caps). LUCs are designed to prevent or minimize the risk of human exposure to hazardous substances.

The implementation and effectiveness of LUCs associated with the underground storage tank (UST) Sites #450/451 in the Administrative Area (Alaska Department of Environmental Conservation [ADEC] file number 141.26.008) of the GRTS were evaluated and ensured LUCs complied with the State of Alaska Decision Letter associated with UST sites #000[1], #449[1], #450, and #451 (ADEC 2014). Additionally, LUCs are implemented for the landfills in the Administrative Area and GRTS areas of concern (AOCs) identified in the data gap analysis (ADEC file numbers 141.26.001, 141.26.010, and 141.38.039). Environmental Compliance Consultants (ECC) performed this work under contract to the U.S. Army Corps of Engineers, Contract Number W911KB-20-D-0005 (Task Order W911KB-21-F-0111). The work was completed according to the 2023 Two-Party Sites Work Plan (U.S. Army Garrison Alaska [USAG Alaska] 2023) and the Long-Term Management (LTM) Plan (Fairbanks Environmental Services [FES] 2019).

The annual LUC assessment also includes a review of any Excavation Clearance Request (ECR) issued for the site and a review of the USAG Alaska geographic information system (GIS)-based database to determine if updates were required.

## 1.1 Source Area Tracking Numbers

The GRTS source areas are tracked in the ADEC Contaminated Sites database (ADEC 2021), which is maintained by the ADEC project manager assigned to the site and by the Army in the Headquarters Army Environmental System (HQAES) for funding purposes. The source area descriptions, along with the HQAES and ADEC IDs, are summarized in Table 1-1.

**Table 1-–1 GRTS Source Area Tracking Numbers**

| HQAES SITE DESIGNATION | ADEC HAZARD ID | ADEC FILE NUMBER | SITE NAME | CURRENT PROGRAM | STATUS |
|---|---|---|---|---|---|
| 2202A.1001 | 866 | 141.38.039 | Gerstle River Test Site | Two-Party | Open |
| 2202A.1006 | 25020 | 141.26.001 | Gerstle River Test Site – UST #000 | Two-Party | Cleanup Complete |
| | 25564 | 141.26.010 | Gerstle River Test Site – UST #449 | Two-Party | Cleanup Complete |

[1] The UST sites #000 and #449 were closed as Cleanup Complete with no ICs as a result of a site investigation conducted in 2009 and 2010 (FES 2011).

| HQAES SITE DESIGNATION | ADEC HAZARD ID | ADEC FILE NUMBER | SITE NAME | CURRENT PROGRAM | STATUS |
|---|---|---|---|---|---|
| | 24980 | 141.26.008 | Gerstle River Test Site Administrative Area – UST #450 and #451 | Two-Party | Cleanup Complete with ICs |

**Notes:**
For definitions, refer to Acronyms and Abbreviations section.

## 1.2 Background

### 1.2.1 Site Location

The GRTS is an active Army maneuver training area located approximately 35 miles southeast of Delta Junction, near Fort Greely, Alaska, and approximately 100 miles southeast of Fairbanks, Alaska. The GRTS consists of an approximately 20,000-acre area and was acquired by the U.S. Army in 1952. The Gerstle River bounds the site to the southeast, with the western corner of the site extending into the foothills of the Granite Mountains, and the northern portion of the site situated in the Tanana Lowlands. The 80,000-acre Gerstle River Expansion Area (GREA) borders the site on the remaining three sides; GREA is a Formerly Used Defense Site and will not be discussed further in this report. The location of the GRTS is shown on Figure 1.

The GRTS was leased to the U.S. Department of Defense from the state of Alaska in the 1950s and 1960s for chemical and conventional munitions and materials testing. This included testing and surveillance of rocket motors, surveillance and function tests of riot control munitions and agents, insecticides, land mines with V-series nerve agent (VX), 115mm M55 rockets with G-series nerve agent Sarin (GB) and VX, flame munitions (incendiary bursters, flame throwers, etc.), smoke pots, smoke grenades, gas masks, chemical agent test kits, bulk fuel containers, and blasting kits. Chemical munitions testing ended in 1967 (U.S. Army Toxic and Hazardous Materials Agency [USATHAMA] 1976).

### 1.2.2 Previous Investigations

Cleanup operations were conducted at the GRTS starting in 1968. By 1970, munitions were made inert or removed from the site, and testing equipment was decontaminated and removed or disposed of in onsite landfills (USATHAMA 1976).

#### *1.2.2.1 Records Review*

Several detailed records searches were conducted between 1976 and 2004, and an aerial photography review was conducted to identify potentially contaminated areas or contaminant sources remaining in the GRTS. A comprehensive aerial photography analysis was conducted in 1986 and identified various ground scars and stains (Environmental Photographic Interpretation Center [EPIC] 1986).

#### *1.2.2.2 Data Gap Analysis*

In 2014, a data gap analysis was completed for the GRTS to collect, consolidate, and evaluate information associated with the testing, cleanup, and investigation activities at the GRTS. Based on this review, several AOCs were identified where additional evaluation and/or characterization was recommended to fully evaluate potential risk to human health and the environment (FES 2014a). These AOCs included former Test Grids, Debris Burial Areas, Ground Scars or Ground Stains, Administrative Area USTs, and other miscellaneous sites where chemical munitions tests or other activities may have been conducted.

Sampling and evaluation activities included geophysical surveys and soil, groundwater, sediment, and surface water sampling. Formal site investigations and removal actions have also been conducted at the GRTS. A summary of investigations conducted at the GRTS is included in the Data Gaps Analysis (FES 2014a).

#### *1.2.2.3 Landfill Closure*

Buildings 1501 and 1502 in the Administrative Area were demolished in fall 2004, and the debris was buried onsite in two landfills. One landfill was designated for asbestos-containing material (Permit #SWG0301000), and one landfill was designated for non-asbestos material (Permit #SWG0303000). Although the landfills were permitted by ADEC, the building debris landfills were not properly documented for closure with the State of Alaska at the time of construction.

The GRTS Admin Area contains the following landfill sites: one ACM Debris Burial Area and one building Debris Burial Area. Also in the Admin Area is the UST #450/451 site. Other AOCs outside the Admin Area are listed in section 2.2 table 2-1 of this document.

Collection of the required data to support landfill closure was completed by Bristol Environmental Remediation Services, LLC (Bristol) in 2017, as described in the Sump Decommissioning Report (Bristol 2019). The boundaries of the landfills were identified using geophysical survey methods, and the corners of the landfills were surveyed and monumented by a professional land surveyor. Bristol submitted a technical memorandum in the 2019 Sump Decommissioning report which met the requirements for closure of both administrative area landfills.

#### *1.2.2.4 Drinking Water Well*

A drinking water well (Well 17) associated with Building 1501 was installed in 1955. The depth to groundwater measured at the time of well installation was approximately 458 feet below ground surface (bgs). Groundwater underlying the Administrative Area at the GRTS is not currently used as a drinking water source and is not anticipated to be used in the foreseeable future.

Activities were conducted in 1995 to retrieve the pump and piping from the well, resulting in the top 7 or 8 sections of pipe being removed but not the pump. It is believed that the well collapsed approximately 100 feet below the ground surface. During demolition of Building 1501 in 2004, the well was reportedly bent over and/or buried at approximately 4 to 6 feet bgs.

An attempt to locate the drinking water well was made in 2017. As-built drawings were used to establish the approximate location and coordinates of the well and an initial test pit was

excavated at the presumed well location, but the well was not located. EM-61 geophysical survey equipment was then used in an attempt to locate the well. The survey identified several anomalies that were then excavated; the anomalies found were either surface metal or buried metal debris. The general area of the reported well location was then excavated. An excavator was used to dig a test pit covering an area 15 feet by 12 feet to a depth of 8 feet in an attempt to find the well. The well was not found (Bristol, 2019).

A search for potential water supply wells in the area was made using the Alaska Department of Natural Resources (ADNR) Well Log Tracking System (WELTS; ADNR 2018). The nearest well is approximately 2.8 miles northeast of the GRTS boundary, south of the Alaska Highway.

#### *1.2.2.5 Sump Decommissioning and Administrative Area Site Inspection*

A sump, discharge line, and piping associated with former Building 1501 in the Administrative Area were decommissioned in 2017. Prior to decommissioning, approximately 1,250 gallons of liquid and 6 drums of sludge were recovered from the sump and properly disposed of. The concrete sump, approximately 45 linear feet of drainage piping, and approximately 105 linear feet of discharge piping was then removed from the ground. Confirmation soil samples exceeded RSLs in soil for arsenic, mercury, and benzo(a)pyrene. The arsenic detections were believed to be associated with naturally occurring sources. Though mercury and benzo(a)pyrene exceeded the RSLs, neither of the detections exceeded the ADEC Method 2 human health cleanup levels.

Due to the RSL exceedances and several detections of compounds greater than 1/10th of the ADEC cleanup level, the sump decommissioning detections were further evaluated through the ADEC cumulative risk calculations and conceptual site model (CSM). The noncarcinogenic cumulative hazard index for these compounds was 0.4 (less than the ADEC criteria of 1), and the carcinogenic risk was 6 x 10-6 (less than the ADEC criteria of 1 x 10-5). Based on these results, no further evaluation of these potential source areas associated with the former buildings, the sump, or the sump discharge in the Administrative Area of the GRTS was recommended.

A site inspection was also conducted in 2017 to evaluate potential contaminant sources associated with the former buildings in the Administrative Area that had not been fully investigated. Eleven test pits were excavated in areas identified from site drawings that may be associated with contaminant releases. Potential sources included below floor drains and outside doorways where contaminants may have been disposed. The test pit excavations identified metal pipe sections (possibly associated with floor drains), miscellaneous concrete, metal, and wood building debris, and a corrugated metal pipe filled with sandy gravel. The only analyte exceeding the RSL in test pit samples was arsenic, which was attributed to naturally occurring sources. All other contaminants were either not detected or detected at concentrations less than 1/10th of the Human Health soil cleanup level (USAG Alaska 2018).

### 1.2.3 Current and Future Land Use

The GRTS is owned by the federal government, although the land surrounding the site (GREA) is owned by the state of Alaska. Current uses of the site include military training, firewood

harvesting (by permit only), and recreation (including hunting, fishing, trapping, off-road vehicle use, and berry picking). There are currently no physical restrictions preventing access to the site (e.g., fence or gate), but access is restricted through policy by USAG Alaska. Recreational users of the site must obtain a Sikes Act Permit (SAP), and then check in through the U.S. Army Recreation Tracking System (USARTRAK) prior to accessing the site. The USARTRAK system provides information regarding temporary closures due to military training, as well as permanently restricted areas within the GRTS.

The future use of the site is expected to remain for military training purposes. The nearest residential dwellings are approximately 3 miles north of the GRTS along the Alaska Highway. The nearest community is the native community of Healy Lake, which is approximately 16 miles to the northeast of the site.

## 1.3 Objectives

The objectives of the LTM Plan were to establish:

- LUCs to comply with the State of Alaska Decision Letter associated with UST sites #000, #449, #450, and #451 (ADEC 2014)
- LUCs to protect the landfills in the Administrative Area[2]
- LUCs across the GRTS

**Table 1-2 AOCs for GRTS and GREA**

| CATEGORY | GRTS AREA OF CONCERN | Characteristics |
|---|---|---|
| Test Grids | Test Grid 1 | Former munitions storage area for VX mines, GB rockets, and flame munitions |
| | Test Grid 2 | Site of chemical munitions testing. |
| | Test Grid 3-7 | Site of chemical munitions testing. |
| | Test Grid 8 | Site of static and dynamic chemical munitions testing. |
| | Test Grid 8A | Site of 155mm Howitzer simulant-filled high explosives. |
| | Test Grid 8B | Static, dynamic, and aerial burst test site for simulant-filled high explosives. |
| | Test Grid 9A | Static, dynamic, and aerial burst test site for simulant-filled high explosives. |
| Debris Burial Areas Outside of the Administration Area | Blueberry Lake Disposal Pit #1 | Area may contain multiple disposal pits that were used at different times and for different purposes. |

[2] The visual inspection of the landfill is a requirement of the ADEC Solid Waste permit and not a requirement of the Defense Environmental Restoration Program (DERP). However, the landfill inspection was concurrently performed with the LUC inspections for efficiency purposes during this inspection cycle.

| CATEGORY | GRTS AREA OF CONCERN | Characteristics |
|---|---|---|
| | Blueberry Lake Disposal Pit #2 | Area may contain multiple disposal pits that were used at different times and for different purposes. One site was used for neutralization and disposal of chemical agents. |
| | CRREL Area E/Test Grid 2 Debris Burial Area | Geophysical investigation by CRREL in 2006 showed the site was disturbed to depths greater than 4m, and that most shallow debris had been removed. |
| | CRREL Area F/OCA Disposal Pit | A geophysical investigation by CRREL in 2006 showed two large burial trenches and a third smaller area containing buried metal debris. |
| | CRREL Areas G and H | Potential buried debris was identified in these areas during the geophysical investigation conducted by CRREL in 2006. |
| | NBC Toxic Gas Yard | Site reports indicate that known chemical agents stored at the site were destroyed in 1969. |
| Debris Burial Areas Inside of the Administration Area[3] | Administrative Area Building Debris Burial Area | Debris from Buildings1501and 1502 demolition. |
| | Administrative Area Asbestos Debris Burial Area | Debris from Buildings1501and 1502 demolition. |
| | Former Fueling Station USTs#450 and #451 | Sampling identified LOP contamination 10 - 20 feet bgs. Site is “Cleanup Complete with ICs”. |

## 1.4 LUC Requirements

The LUCs at the GRTS are based on UST closure letters (ADEC 2014), the Decision Document for the USTs in the Administrative Area (FES 2014b), the LTM Plan (FES 2019), and the Garrison Policy #38 (see Section 1.4.1). LUCs not identified in these documents are being implemented by the Army voluntarily. The purpose of implementing LUCs at the GRTS is to eliminate the potential exposure to contaminants remaining in place by human or ecological receptors. The LUCs being implemented are listed below and additional descriptions are provided in the following sections (Sections 1.4.1 through 1.4.6).

- Informational signs describing the location and details of the restrictions at the entrance to the Administrative Area at the GRTS (see Section 1.4.2).

[3] Information for Administration Area provided by *Data Gap Analysis Report, Gerstle River Test Site, Alaska* (September 2014) FES.

- Restriction on excavation into contaminated soil without an approved soil management plan.
- Requirement to obtain ADEC contaminated sites program approval prior to relocating contaminated soil to the ground surface or moving it off site, in accordance with Title 18 of the Alaska Administrative Code (AAC), Chapter 75.325 (ADEC 2023), and prohibit movement or use of contaminated material that results in a violation of 18 AAC 70 water quality standards (ADEC 2020).
- Addition of the LUC restrictions to the Outdoor Recreation Regulations and SAP process for the GRTS area (see Section 1.4.3).
- Inclusion of the LUC boundaries and restrictions in the USAG Alaska GIS-based LUC database (see Section 1.4.6).
- Update of LUC boundaries and restriction details in Army Mapper.
- Implementation of LUC inspections and reporting.

### 1.4.1 Garrison Policy #38

Garrison Policy #38 provides authority to implement restrictions applicable to contiguous and noncontiguous property under the control of USAG Alaska, Fort Wainwright. The Policy describes the following restrictions:

- Construction, maintenance, repairs, and authorized training activities conducted anywhere within active ranges and training areas that involve soil disturbing activities impacting soils 6 inches or more bgs in known contaminated areas shall comply with LUC requirements in addition to Range Control directives and standard operating procedures (SOPs; Section 4(a) of the Policy).
- Prior to the start of soil disturbing activities impacting soils 6 inches or more bgs anywhere on the site, the following items must be obtained: a Directorate of Public Works (DPW)-approved Work Order (Department of the Army [DA] Form 4283) or DPW-approved Service Order, a signed and approved ECR from the DPW Customer Service Desk, and a completed and signed Project Checklist for Environmental Concerns (Section 4(b) of the Policy).
- Any type of soil disturbing activity conducted in an area of suspected contamination must be described in a Work Plan that is approved by the U.S. Army and ADEC (Section 4(c) of the Policy).
- If any readily identified or potentially hazardous waste, buried waste containers, discarded military munitions, unexploded ordnance, munitions debris, “unusual debris”, or other forms of contamination are identified; personnel should be immediately removed from the area and DPW Environmental and Range Control must be notified (Section 4(d) of the Policy).

Another important component of the Policy is the ability for enforcement. Penalties for violating this policy include the full range of statutory and regulatory sanctions for military and civilian personnel (Section 3(e) of the Policy).

### 1.4.2 Informational and Warning Signs

The informational sign posted at the entrance to the Administrative Area at the GRTS also includes site boundaries and details regarding the LUCs. Signs were placed at locations where major trails cross onto the GRTS. The signs alert site visitors to the GRTS boundary so they are aware that they are entering the site.

A warning sign was placed at each side of the asbestos landfill perimeter to meet the requirements of Title 40 of the Code of Federal Regulations (CFR), Part 51.154(b). The warning signs contain the text:

ASBESTOS WASTE DISPOSAL SITE
DO NOT CREATE DUST
BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH

### 1.4.3 Outdoor Recreation Regulations

The Outdoor Recreation Regulations was developed to manage hunting, fishing, trapping, offroad vehicle (ORV), and other recreation on Fort Wainwright-managed lands as described in Section 3.6 of the LTM Plan (FES 2019). Management of these activities is particularly applicable to the data gap AOCs since the sites are spread across the GRTS and may be in locations where these activities may take place. The most current rules/regulations and USAG Alaska Integrated Natural Resources Management Plan is available from Regulations - USAG Alaska - iSportsman.

In addition to the use restrictions, persons 16 years of age and older must obtain a SAP prior to participating in recreational activities on Fort Wainwright training lands. A SAP may be obtained from USAG Fort Wainwright online from Home - USAG Alaska - iSportsman. Holders of a SAP are responsible for knowing and obeying temporary, long-term, and permanent closures of and within training areas. The information for the restrictions at the GRTS is included in the rules and regulations, which is available at the time the SAP is obtained. The restrictions for the GRTS also apply to the UST #450/451 site.

### 1.4.4 LUCs at the Administrative Area Landfills

In addition to the site-wide LUCs described in Section 4.1 of the LTM Plan (FES 2019), site-specific LUCs were developed for the building demolition debris and asbestos-containing debris landfills in the Administrative Area. The LUCs will ensure the integrity of each landfill is maintained, and no exposure to buried debris occurs that is detrimental to human health or the environment. Annual inspections of the landfills were completed using checklists (provided in Appendix B) as described in Section 2.1.2.

### 1.4.5 Excavation Clearance Request Review

Work activities that involve ground disturbance activities of six inches or more bgs must go through the Environmental Routing and Approval Process for Facilities Engineering Work Request (DA Form 4283), Demand Maintenance Order (DMO), and ECR/Dig Permit.

ECRs are administrative or governmental LUCs that can be used to minimize or prevent exposure to contaminants in various media, including soil and groundwater. Prior to the commencement of any excavation or other soil disturbing activities impacting soil six inches or more bgs; contractors must obtain an ECR, USAG Alaska Form 81-E, and complete a Project Checklist for Environmental Concerns. The ECR form is updated annually to clearly alert the user about procedures to follow when potential contamination is encountered.

### 1.4.6 GIS and LUC Source Area Description Table Review

An important component of the LUCs is maintaining the locations and descriptions of the LUCs in the Fort Wainwright DPW GIS. The boundaries in Figure 2 may be revised as additional information regarding the sites is obtained.

The USAG Alaska Fort Wainwright LUC is updated in the GIS as needed. Spatial boundary updates are completed by a DPW GIS specialist using source area boundaries from global positioning system (GPS) data, drawings, or other relevant source area information. The GIS includes the boundaries of each LUC, as well as a summary of the contaminants of concern (COCs) and restrictions present at each AOC.

In addition, a detailed description of the GRTS LUCs is summarized in Source Area Description Table A-1 presented in Appendix A.

# 2.0 LUC ASSESSMENT RESULTS

The goal of this assessment was to determine whether the LUC requirements are being met at the GRTS AOCs. This section summarizes the LUC assessment process and Section 3 presents concerns identified by the LUC assessment in 2023. LUC inspection forms and photographs documenting inspection activities are presented in Appendices B and C, respectively.

## 2.1 GRTS Administrative Area

### 2.1.1 Administrative Area USTs Inspection

An annual inspection of the LUCs associated with UST site #450/451 at the GRTS Administrative Area was conducted on 24 August 2023. No visual soil disturbance was noted. No clutter or trash was present, no evidence of vandalism or trespassing was observed, and no evidence of land use change was noted. The UST #450/451 site was overgrown with vegetation.

The informational signs at the site show SAP and Sportsman information, and also includes maps with general areas of military training use and closure dates from the fall 2020 season. Signage indicating land use for active traplines was posted. The maps do not include specific AOC boundaries or LUC restrictions. The LUC inspection form is included in Appendix B.

### 2.1.2 Administrative Area Landfill Inspection

Two landfills are located in the administrative area. One is a building demolition debris landfill. The other is an Asbestos containing building demolition debris landfill.

#### *2.1.2.1 Building Demolition Debris Landfill*

The building demolition debris landfill was inspected on 24 August 2023. This was a one-time use landfill for the containment of non-asbestos demolition debris from the admin area buildings (permit # SWG0303000). The inspection is summarized as follows:

- No signs were found at the site.
- ATV tracks were observed in vegetation on top of the cell, but no soil disturbance or damage was observed. Vegetation is matted from ATV tires passing through the area repeatedly. No other disturbance to the landfill cap occurred.
- The cap is 100% vegetated.

Signage should be installed at various points around the landfill berm to comply with LUC requirements. No other issues were identified.

#### *2.1.2.2 Asbestos Debris Landfill*

The asbestos debris landfill was inspected on 24 August 2023. This was a one-time use landfill for the containment of non-asbestos demolition debris from the admin area buildings (permit # SWG0301000). The inspection is summarized as follows:

- None of the signs reposted in 2021 were observed onsite.
- ATV tracks were observed in vegetation on top of the cell, but no soil disturbance or damage was observed.
- The cap is 100% vegetated.

Signs should be replaced on more permanent posts with permanent fixtures. The signs should be located where they can easily be read.

## 2.2 Other GRTS AOC Inspections

LUC inspections were conducted at 15 other AOCs at the GRTS on 24 August 2023. No major compliance concerns were identified.

A summary of the GRTS AOCs where LUC site inspections were conducted is presented in Table 2-1 and AOC locations are shown on Figure 2.

**Table 2-1 Other GRTS AOC Inspections Summary**

| CATEGORY | GRTS AREA OF CONCERN | INSPECTION NOTES[4] |
|---|---|---|
| Test Grids | Test Grid 1 | No evidence of use for any recreational activity. |
| | Test Grid 2 | No evidence of use for any recreational activity. |
| | Test Grid 3-7 | No evidence of use for any recreational activity. |
| | Test Grid 8 | No evidence of use for any recreational activity. |
| | Test Grid 8A | No evidence of use for any recreational activity. |
| | Test Grid 8B | No evidence of use for any recreational activity. |
| | Test Grid 9A | No evidence of use for any recreational activity. |
| Debris Burial Areas Outside of the Administration Area[5] | Blueberry Lake Disposal Pit #1 | No evidence of use for any recreational activity. |
| | Blueberry Lake Disposal Pit #2 | No evidence of use for any recreational activity. |
| | CRREL Area E/Test Grid 2 Debris Burial Area | No evidence of use for any recreational activity. |

[4] Compliance concerns include issues including damaged signage, soil disturbance, or land use changes are mentioned here. These concerns are further addressed in Section 3. See LUC inspection forms in Appendix B for full inspection details.

[5] The inspections at the Administration Area Building Demolition Debris and Asbestos Debris Landfills are presented in Section 2.2.

| CATEGORY | GRTS AREA OF CONCERN | INSPECTION NOTES[4] |
|---|---|---|
| | CRREL Area F/OCA Disposal Pit | No evidence of use for any recreational activity. |
| | CRREL Areas G and H | No evidence of site access. |
| | NBC Toxic Gas Yard | No evidence of use for any recreational activity. |
| | Explosives Storage Area | No evidence of use for any recreational activity. |
| Other Miscellaneous Sites | Exploration Test Boring | No evidence of use for any recreational activity. |

**Notes:**
For definitions, refer to Acronyms and Abbreviations section.

### 2.3 Excavation Clearance Request Review

No ECRs were issued during 2023 for the GRTS. However, the six-inch bgs fire pit first noted in the 2021 inspection was observed in the northeast corner of the Explosives Storage Area. No other soil disturbances were observed during the 2023 inspections.

### 2.4 GIS and LUC Database Update

This assessment also covered a review of site wide LUCs at USAG Alaska in order to update the GIS and LUC Database. The GIS database is maintained by the Fort Wainwright DPW Environmental office. Only Master Planning, Engineering, and Fort Wainwright DPW can access the GIS to make changes.

No updates to the GIS database or to the descriptions in the LUC Source Area Description Tables were required.

## 3.0 COMPLIANCE CONCERNS AND FOLLOW-UP ACTIONS FOR 2023

This section identifies LUC compliance concerns at AOCs that were identified during 2023 LUC inspections, and actions that were initiated during 2023 at the GRTS as a result of the LUC inspection.

### 3.1 Compliance Concerns and Actions Initiated

#### 3.1.1 Administrative Area USTs Compliance Concerns

- None

##### *3.1.1.1 Administrative Area USTs Compliance Actions Taken*

- None

### 3.1.2 Administrative Area Landfill Compliance Concerns

The following LUC compliance concerns were identified at the Administrative Area landfills:

- None of the four signs were observed at the asbestos debris landfill. Signs Missing.
- ATV tracks were observed on top of the caps at both the building demolition debris and asbestos debris landfills.

#### *3.1.2.1 Administrative Area Landfill Compliance Actions Taken*

- None

### 3.1.3 Other GRTS Compliance Concerns

The following LUC compliance concerns were identified at the GRTS:

- A hunting camp was observed at the Explosives Storage Area. Shallow digging, less than six inches bgs, for a fire pit was observed in the northeast corner.

#### *3.1.3.1 Other GRTS Compliance Actions Taken*

- None.

## 3.2 Recommended Follow-Up Actions in 2024

### 3.2.1 Administrative Area USTs

It is recommended that the informational signs are updated each year with closure dates for military training. It is also recommended that the signs identify AOC boundaries and LUC restrictions more clearly (similar to the example informational signs presented in Appendix A of the LTM Plan [FES 2019]).

### 3.2.2 Administrative Area Landfills

ATV tracks were observed alongside and on top of the caps of both the demolition debris and asbestos debris landfills. At the asbestos debris landfill, the signposts of four warning signs were replaced in 2021. However, it is recommended that more robust posts be used in the future because none of the signs were observed in 2023.

## 4.0 REFERENCES


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USAG Alaska. 2022 (May). *2022 Two-Party Sites Work Plan, Fort Wainwright, Alaska.* Final. Prepared by Paragon-Jacobs Joint Venture.

U.S. Army Toxic and Hazardous Materials Agency (USATHAMA). 1976. *Installation Assessment of Gerstle River Test Site. Records Evaluation Report Number 105, Volume 1*. Aberdeen Proving Ground, MD.

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# FIGURES

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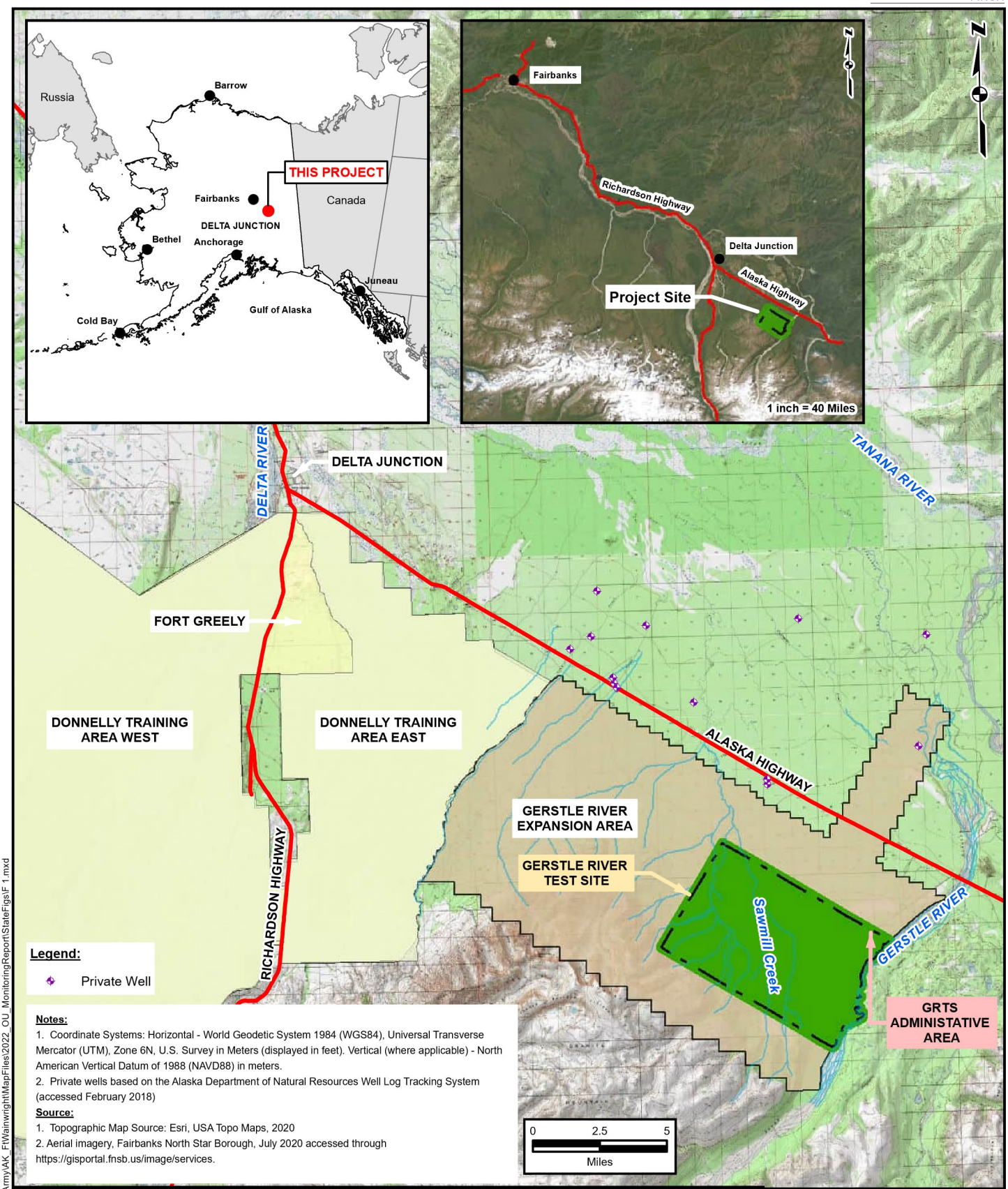
1 INCH




**Notes:**

1. Coordinate Systems: Horizontal - World Geodetic System 1984 (WGS84), Universal Transverse Mercator (UTM), Zone 6N, U.S. Survey in Meters (displayed in feet). Vertical (where applicable) - North American Vertical Datum of 1988 (NAVD88) in meters.
2. Private wells based on the Alaska Department of Natural Resources Well Log Tracking System (accessed February 2018)

**Source:**

1. Topographic Map Source: Esri, USA Topo Maps, 2020
2. Aerial imagery, Fairbanks North Star Borough, July 2020 accessed through https://gisportal.fnsb.us/image/services.

Document Path: \\dc1vs01\GISProj\AlArmyAK_FtWainwright\MapFiles\2022_OU_MonitoringReport\StateFigs\F 1.mxd

# 2022 LAND USE CONTORLS INSPECTION REPORT

U.S. Army Garrison Alaska

## GERSTLE RIVER TEST SITE LOCATION FOR IC INSPECTIONS

DATE: 7/31/2023

PROJECT No.: D3436302

P.M. / DRAWN: K.M. / J.W.

FIGURE: 1

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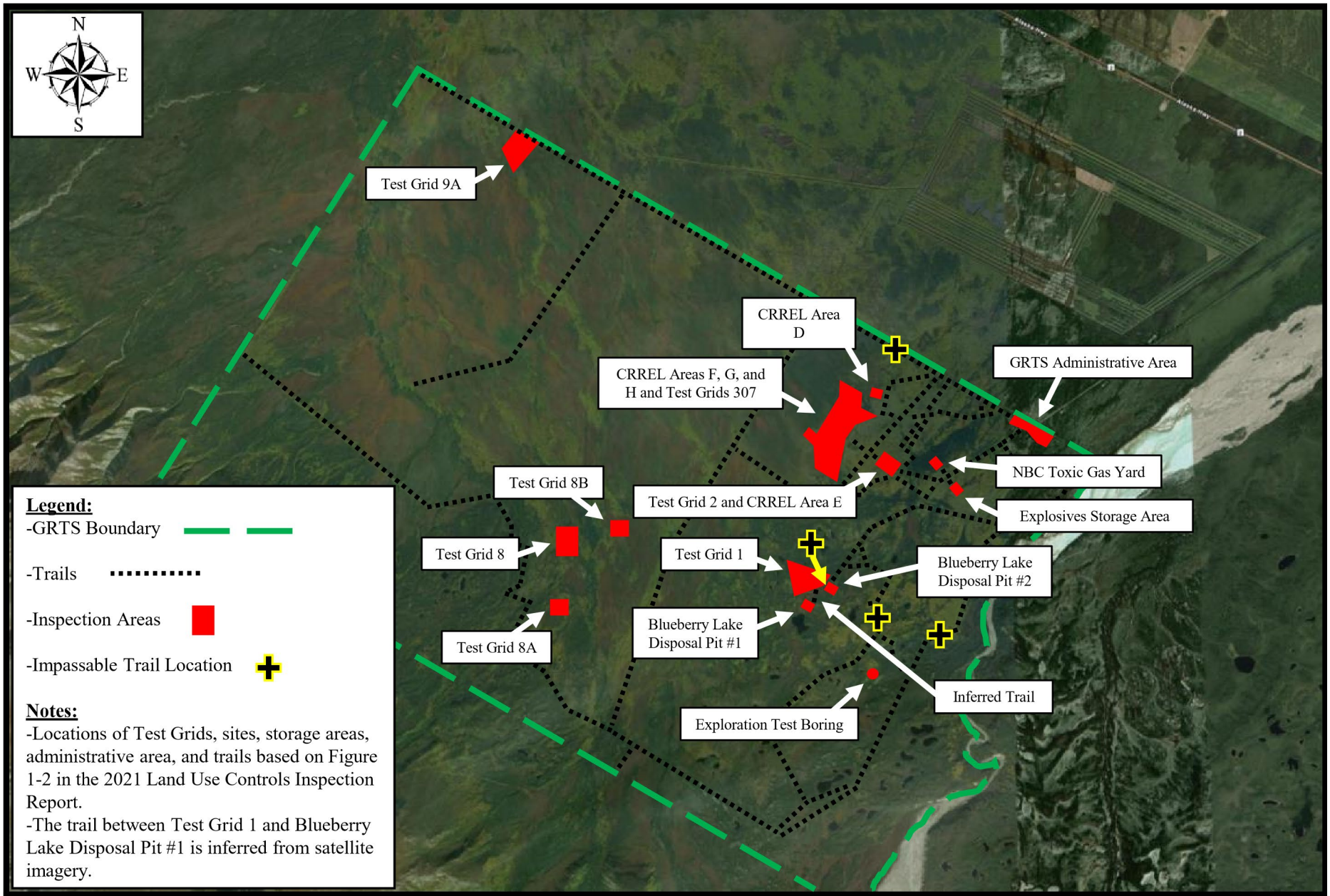


| | | | |
|---|---|---|---|
| FIGURE **2** | PROJECT: Paragon: EI & M FWA 2022 | **2022 Gerstle River Test Site IC Inspection Map** (SOURCE: ArcGIS Earth) | |
| | DRWG BY: GMN | | |
| | DATE: 19 October 2021 | | |
| | SCALE: 1" = 6,400' | **Gerstle River** Alaska, USA | |
| | SHEET: 1 OF 1 | | |

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| Point ID | Latitude | Longitude |
|---|---|---|
| 1900 | 63°47 32.71146" | 145°02'03.43601" |
| 1901 | 63°47'32.19832" | 145°02'01.94317" |
| 1902 | 63°47'31.89166" | 145°02'02.50088" |
| 1908 | 63°47'32.32227" | 145°02'04.15997" |
| 1904 | 63°47 32.94571" | 145°02'03.98789" |
| 1905 | 63°47'34.06051" | 145°02'02.14814" |
| 1906 | 63°47'33.59691" | 145°02'00.71734" |
| 1097 | 63°47 '32.48309" | 145°02'02.55137" |

**Gerstle River Test Site Land Use Controls Inspection Report**
**Ft Greely, AK**

PARAGON

| Project Manager: | Carime Lechner | May-07-2024 |
|---|---|---|
| Esri, TomTom, FAO, NOAA, USGS, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community, Esri, USGS | | Figure: 3 |
| Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere | | |

N

0 70 140 Feet

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# APPENDIX A
# LAND USE CONTROLS
# SOURCE AREA DESCRIPTION TABLE

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**Table A-1 Gerstle River Test Site Land Use Controls Potential Source Area List w/ Status**

| | |
|---|---|
| **Source Area Name** | Administrative Area UST #450 and #451 |
| **HQAES Number** | 2202A.1001 |
| **FFA Designation** | Two-Party |
| **Source Area Status** | Cleanup Complete with ICs |
| **Media of Concern** | Soil |
| **Contaminant(s) of Concern** | Xylenes, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Naphthalene |
| **Soil LUC/IC** | Access to the site is restricted without a valid SAP. Excavation at this site is restricted without an approved soil management plan. ADEC contaminated sites program approval must be obtained prior to relocating contaminated soil to the ground surface or moving it off site. |
| **Water LUC/IC** | None |
| **Source Area Description** | UST #450 and #451 were associated with a fueling station in the Administrative Area of the GRTS. UST #450 was a 500-gallon gasoline tank, and UST #451 was a 500-gallon diesel fuel tank. Underground piping and a pump shed were also associated with the USTs. Each of the tanks and the associated components were removed in 1994.<br><br>Three soil samples were collected from the excavated soils at the time of the tank removal in 1994 (OST 1994). Soil samples were not collected from the bottom of the excavation due to safety concerns. UVOST and subsurface soil sampling was conducted in the former tank area and immediate vicinity in 2009 using a Geoprobe 6610DT drill rig (FES 2011). Additional subsurface soil samples were collected in 2010 using a Geoprobe 8040DT drill rig to delineate the vertical extent of soil contamination.<br><br>The results from the 1994 sampling did not exceed ADEC migration to groundwater cleanup levels. Sampling results from 2009 showed ADEC migration to groundwater exceedances for GRO, DRO, ethylbenzene, xylenes, EDB, 1,2,4-Trimethylbenzene, and naphthalene. The only migration to groundwater cleanup level exceedance in 2010 was DRO. However, due to the depth to groundwater at the site (approximately 450 feet bgs), the most stringent of the soil direct contact, ingestion, or inhalation cleanup levels were used to determine potential exposure routes. The only exceedances of these cleanup levels were xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene. |
| **Reference Documents** | FES. 2011. *Investigation of Abandoned Underground Storage Tank Sites in the Administrative Area*. Gerstle River Test Site, AK. July 2011.<br>FES. 2014. *Decision Document for the Underground Storage Tank Sites in the Administrative Area*. Gerstle River Test Site, Alaska. September 2014.<br>Oil Spill Technology. 1994. *Underground Storage Tank Closure UST Site Assessment and Recommendations, Fort Wainwright Alaska.* October. |

**Acronyms and Abbreviations:**

ADEC – Alaska Department of Environmental Conservation
bgs – below ground surface DRO – diesel range organics
EDB – 1,2-dibromoethane
FES – Fairbanks Environmental Services
GRO – gasoline range organics
GRTS – Gerstle River Test Site
IC – institutional control
LUC – Land Use Control
SAP – Recreation Access Permit
UST – underground storage tank
UVOST – ultra-violet optical screening tool

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# APPENDIX B
# FIELD FORMS AND NOTES

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## Institutional Control Inspection Form — Ft. Wainwright, Alaska

Site Name: GRTS

HQAES ID:

Date and Time: 8/24/23 1000

Operable Unit/Status:

Ground Conditions: Dry

Weather Conditions: Overcast, 55°F wind 0-5 mph

Inspector: O Barrera, J Klynstra

### Remedy Includes:

- [X] Access Controls (signs, fences, gates, ect)
- [ ] Air Sparge Soil Vapor Extraction
- [ ] Surface Water Containment
- [X] Institutional Controls
- [ ] Landfill Cover
- [ ] Monitored Natural Attenuation
- [ ] Other

### Access and Institutional Control (IC)s

| | | | | Notes |
|---|---|---|---|---|
| Fencing | [ ] Damaged | [ ] Intact | [X] N/A | |
| Gate(s) | [ ] Damaged | [ ] Intact | [X] N/A | |
| Signage | [X] Damaged | [ ] Intact | [ ] N/A | Signs Missing @ Landfills |
| Other Security Measures | [ ] Damaged | [ ] Intact | [X] N/A | |
| IC(s) properly implemented | [X] Yes | [ ] No | [ ] N/A | Signage @ Perimeter of Property |
| IC(s) Adequate | [X] Yes | [ ] No | [ ] N/A | |
| Vandalism/Trespassing Evident | [ ] Yes | [X] No | [ ] N/A | |
| Land Use Changes Evident | [ ] Yes | [X] No | [ ] N/A | |

### General Site Conditions

| | | | |
|---|---|---|---|
| Vegetation in acceptable condition | [X] Yes | [ ] No | [ ] N/A |
| Clutter or Trash Present | [ ] Yes | [X] No | [ ] N/A |
| Visual evidence of unauthorized soil disturbance below 6 inches, on site | [ ] Yes | [X] No | [ ] N/A |
| Unauthorized groundwater use | [ ] Yes | [X] No | [ ] N/A |

### Monitoring Wells

- [ ] All required wells located — [ ] Properly Secured — [X] N/A
- [ ] Maintenance needed (describe below) — [ ] Good condition — [X] N/A

Comments:

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# APPENDIX C
# PHOTOGRAPH LOG

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**Photo 1: Administrative Area informational sign.**

**Photo 2: Administrative Area landfill, near the center of the site, ATV tracks observed but no soil disturbance or damage observed, looking west.**


**Photo 3: Administrative Area Active Trapline signage, looking south.**


**Photo 4: Perimeter signage along northern edge of GREA, looking south.**


**Photo 5: Warning sign along Sawmill Creek bank, looking east.**

**Photo 6: Blueberry Lake Disposal Pit #1, looking west.**

**Photo 7: Blueberry Lake Disposal Pit #1 southern fence line, looking west.**

**Photo 8: Blueberry Lake Disposal Pit #2, looking south.**

**Photo 9: Blueberry Lake Disposal Pit #2 fence line, looking south.**

**Photo 10: Tree down along main trail near Admin area.**

# APPENDIX D
# RESPONSE TO COMMENTS

THE STATE of ALASKA
GOVERNOR MICHAEL J. DUNLEAVY

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Site Program

610 University Avenue
Fairbanks, AK 99709
Main: 907.451.2143
Fax: 907.451.2155

File No.: 141.26.008
141.38.039

**Electronic Delivery Only**

November 13, 2024

Department of the Army
Directorate of Public Works
ATTN: AMIM-AKP-E (M. Shippey)
1046 Marks Road
Fort Wainwright, AK 99703

Subject: DEC responses to comments for the *Draft 2023 Land Use Controls Inspection Report, Gerstle River Test Site, U.S. Army Garrison Alaska* Dated September 2024

Dear Ms. Shippey:

The Alaska Department of Environmental Conservation (DEC) has provided review comments on the above-referenced document describing the 2023 land use control (LUC) inspection at the Gerstle River Test Site (GRTS) located near Fort Greely, Alaska. The purpose of the above-referenced document is to evaluate the effectiveness of LUCs associated with the Gerstle River Test Site (GRTS). In 2023, no corrective actions were taken. An Excavation Clearance Request (ECR) review was conducted and no ECR's were issued for the GRTS. The report recommends more robust signs and posts be installed at the asbestos debris landfill, and that the administrative area signs are updated to identify the specific AOCs and LUC restrictions more clearly.

All responses to comments have been accepted (see enclosure). Please provide a clean final so DEC can conduct a comment backcheck prior to approval. If there are any questions, please contact me by phone at (907) 451-2182 or by email at erica.blake@alaska.gov.

Sincerely,

Erica Blake
Environmental Program Specialist

Enclosure: 2024.11.13 DEC RTCs_GRTS

cc via email: Bob Hazlett, USACE
Julie Allan, USACE

**REVIEW COMMENTS** **PROJECT: Gerstle River Test Site**
**DOCUMENT: Draft 2023 Land Use Controls Inspection Report, Gerstle River Test Site (dated September 2024)**

| ALASKA DEPT. OF ENVIRONMENTAL CONSERVATION | DATE: 10/8/2024<br>REVIEWER: Erica Blake<br>PHONE: (907) 451-2182 | Action taken on comment by: | | | |
|---|---|---|---|---|---|
| **Item No.** | **Drawing Sheet No., Spec. Para.** | **COMMENTS** | **REVIEW CONFERENCE A - comment accepted W - comment withdrawn (if neither, explain)** | **ARMY RESPONSE** | **ADEC/EPA RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)** | **ARMY RESPONSE** |
| 1 | Section 1.4.2 | Section 3.1.2 states these signs are missing, which means the requirements of Title 40 of the Code of Federal Regulations (CFR), Part 51.154(b) are not being met. | | The Army will coordinate with the USACE contracting personnel to get the signage replaced in 2025. | Agree. | |
| 2 | Section 1.4.3 | Does the Supplement provided to site users applying for a SAP get updated? Please clarify.<br>There is a version of the SAP appended to the 2019 LTM work plan, Has the Supplement changed since then? If so, could an updated copy be appended to this report? | | https://usag-alaska.isportsman.net/<br><br>Regulations - USAG Alaska - iSportsman<br><br>The first link provided above allows users to set up an account and get a permit to access a training area for recreation. This is the current process used to gain access to training areas for recreation.<br><br>The second link takes you to the updated rules/regulations and the USAG Alaska Integrated Natural Resources Management Plan (INRMP).<br><br>The "Supplement" referenced in the comment has not been in publication for many years. The language in the report will be updated to reflect that. | Agree. | |
| 3 | Section 2.1.2.1, PDF pg 20 | ATV tracks were observed, but there was no evidence of soil damage. Were there photos taken of this? None of the appended photos describe this. Please include a photo if there | A | Additional information about the landfill cap condition added to the | Agree with comment backcheck. | |

**REVIEW COMMENTS** **PROJECT: Gerstle River Test Site**
**DOCUMENT: Draft 2023 Land Use Controls Inspection Report, Gerstle River Test Site (dated September 2024)**

| ALASKA DEPT. OF ENVIRONMENTAL CONSERVATION | DATE: 10/8/2024<br>REVIEWER: Erica Blake<br>PHONE: (907) 451-2182 | Action taken on comment by: | | | |
|---|---|---|---|---|---|
| **Item No.** | **Drawing Sheet No., Spec. Para.** | **COMMENTS** | **REVIEW CONFERENCE A - comment accepted W - comment withdrawn (if neither, explain)** | **ARMY RESPONSE** | **ADEC/EPA RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)** | **ARMY RESPONSE** |
| | | was one taken, or add more information to one of the photo descriptions if one of the photos shows where there was evidence of ATV use. | | report. No further photos exist to show ATV tracks on the landfill cap. | | |
| 4 | Section 2.2, Table 2-1 | DEC recommends inspecting the Gerstle River Test Site late fall when the ground hardens, but before the first major snowfall. The site was inspected in late August when soft areas of the site were harder to navigate, and prior to hunting season. To appropriately assess recreational use, DEC recommend these inspections occur after hunting season concludes (late Sept/early Oct), but before the first major snow. | A | Gerstle River Test Site will be inspected later in the year moving forward. | Agree. | |
| 5 | Section 3.1.2, PDF pg 23 | What steps are being taken to address the lack of signage? | | See response to comment 1. | Agree. | |
| 6 | Section 3.1.3, PDF pg 23 | Please clarify what 'shallow' digging means? Is that less than 6 inches below ground surface? Greater than 6 inches below ground surface? | A | Additional text added to specify that the digging was less than 6 inches. | Agree. | |
| 7 | End of Comments | | | | | |