

Former Grosse Ile Naval Air Station, Grosse Ile, Michigan

AOC 20, Quonset Hut, Proposed Plan

Final

July 2021

U.S. Army Corps of Engineers, Louisville District
600 Dr. Martin Luther King, Jr. Place
Room 351
Louisville, KY 40202-2239

FUDS Project Number E05MI012304



**US Army Corps
of Engineers®**

Statement of Independent Technical Review

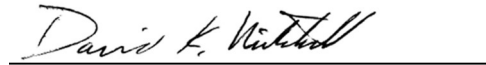
CH2M has completed the final Proposed Plan for Area of Concern (AOC) 20, Quonset Hut, at the Former Grosse Ile Naval Air Station Grosse Ile (NASGI), located in Grosse Ile, Wayne County, Michigan, FUDS Project number E05MI012304 under contract number W912QR-16-D-0007, delivery order no. W912QR-18-F-0399.

Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of data quality objectives; technical assumptions; methods, procedures, and materials to be used; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing U.S. Army Corps policy. Significant concerns and explanation of the resolutions are documented within the project file. As noted above, all concerns resulting from independent technical review of the project have been considered.



Date: July 21, 2021

Kimberly Amley
Project Manager, CH2M



Date: July 21, 2021

David Mitchell
Independent Technical Reviewer, CH2M



**US Army Corps
of Engineers**

Proposed Plan

Area of Concern 20, Quonset Hut, Former Naval Air Station Grosse Ile, Grosse Ile, Michigan

Louisville District

Formerly Used Defense Site Property Number: E05MI0123

July 2021

Introduction

The U.S. Army Corps of Engineers (USACE), in cooperation with the Michigan Department of Environment, Great Lakes, and Energy (EGLE; formerly Michigan Department of Environmental Quality), issues this **Proposed Plan** to solicit input from the public on the No Further Action decision for Area of Concern (AOC) 20, Quonset Hut (Site). AOC 20 is located within the Former Naval Air Station Grosse Ile (NASGI) in Wayne County, Grosse Ile, Michigan, approximately 14 miles southwest of Detroit. The former NASGI is located on the south end of Grosse Ile (Figure 1). Investigation and response activities for this project were completed under the Defense Environmental Response Program (DERP) (Department of Defense [DoD] 2018) and Formerly Used Defense Sites (FUDS) program policy ER 200-3-1 (USACE, 2004). FUDS properties are properties that were owned by, leased to, or otherwise possessed by the United States and under the jurisdiction of

the Secretary of Defense that were transferred from DoD control prior to October 17, 1986. AOC 20 was in use from approximately 1929 through the closure of former NASGI in 1969 under the jurisdiction of the Secretary of Defense. The property that includes AOC 20 was transferred from DoD control prior to October 17, 1986, and meets the definition of a FUDS property. The FUDS program policy stipulates that **hazardous substances, pollutants, or contaminants** are to be addressed in accordance with the provisions of the **Comprehensive Environmental Response, Compensation, and Liability Act of 1980**, as amended by the **Superfund Amendments and Reauthorization Act of 1986** 42 U.S.C. 9601 et seq. (CERCLA), the **National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR 300 (NCP)**, and applicable DoD and Army policies. (A glossary of specialized terms used in this Proposed Plan begins on page 6. Words included in the glossary are indicated in **bold type** the first time they appear in this Proposed Plan.)

Mark Your Calendar for the Public Comment Period

Public Comment Period: September 1, 2021, to October 5, 2021

Submit Written Comments



Comments on the Proposed Plan will be accepted during the public comment period.

Submit written comments to the addresses provided below (postmarked by October 5, 2021).

Charles Delano

Public Affairs Specialist

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Attend the Public Meeting: September 16, 2021, 6:00 p.m.

Merle Solomon Board Room on the second floor of the Grosse Ile Township Hall. During this public meeting, USACE will provide an overview of the AOC, investigation findings, and the preferred alternative; answer questions; and receive public comments.

Information Repository Locations

Copies of this document and other site-related materials are available online at <http://www.lrl.usace.army.mil/GrosseIleNavalAirStation/> and at:

**Bacon Memorial District
Library**
45 Vinewood Street
Wyandotte, MI
(734) 246-8357

USACE Louisville District
Romano Mazzoli Federal
Building
600 Martin Luther King, Jr. Place
Louisville, KY 40202-2232
(502) 315-3829

USACE has determined contamination resulting from historical DoD activities at AOC 20 does not pose an unacceptable risk to human health and the environment as defined by the NCP; therefore, USACE acting in accordance with Section 121 of CERCLA, as well as with the FUDS program policy, has determined that a No Further Action decision at AOC 20 is protective of human health and the environment, and **five-year reviews** are not required. This Proposed Plan provides the rationale for the No Further Action decision and explains how the public can participate in the decision-making process.

Information relied upon by USACE in making its decision may be found in the **Administrative Record**, copies of which may be found at the Information Repositories identified on page 1.

Comments on the Proposed Plan can be submitted during the **public comment period**, which runs from September 1, 2021, to October 5, 2021. USACE, with support from EGLE, will select the **remedy** or make a No Further Action decision for the Site after reviewing and considering information submitted during the public comment period. Community involvement is critical, and the public is encouraged to review and comment on this Proposed Plan.

The selected remedy or decision, along with responses to all comments received on the Proposed Plan, will be documented in a **Decision Document** for the Site.

USACE is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of CERCLA and Section 300.430(f)(3) of the NCP.

Site Description and History

AOC 20 is part of the Former NASGI, FUDS property number E05MI0123. The land used to develop the NASGI facility was formerly used for farming (Groh farm). In September 1929, a 346-acre Naval Reserve Aviation Base was constructed. In 1932, the State of Michigan purchased the airport and leased it to the Naval Reserve Aviation Base (Keisel, K.M. and the Grosse Ile Historical Society, 2011). The Navy

purchased or appropriated approximately 602 acres previously owned by the State of Michigan and private landholders between 1940 and 1942. In 1942, the Navy changed the facility designation to "U.S. Naval Air Station." The Army acquired 52.53 acres from the Navy and an additional 10.55 acres from the surrounding landowners from 1954 through 1957 for use as a Nike Missile Site (Nike Site D-51) and used the site through 1963.

Current use of the former NASGI facility includes the Grosse Ile Commerce Park and Municipal Airport, the 40-acre Gibraltar Bay Unit of the Detroit River International Wildlife Refuge (part of former Nike Missile Site D-51), and the U.S. Environmental Protection Agency (EPA) Large Lakes Research Center, which occupies several former NASGI buildings across an approximately 3-acre site located adjacent to AOC 20 (EEG, 2007). The airport leases buildings on 8 acres of land north of Groh Road to small, light-industrial companies.

AOC 20 is currently an undeveloped, natural area adjacent to and west of a wetland area associated with the Detroit River and east of Grosse Ile Municipal Airport Runway 4/32 (southeast runway) (**Figure 2**). Land Use at AOC 20 is Nonresidential Land Use and zoned as Airport District, A-1. The future use of the former NASGI property is anticipated to remain as an airport. The future use of AOC 20 is anticipated to remain as a natural area.

AOC 20 was part of a 20-acre Missile Magazines/Ordnance Storage area used primarily by the Navy for explosives storage. Based on review of historical aerial photographs, the Quonset Hut was constructed prior to 1951 and demolished in 1993. Although munitions were formerly stored in ordnance areas, the Ordnance **Archives Search Report** (USACE, 1998) did not identify the presence of **ordnance and explosives** (OE) or historical evidence of OE presence during preparation of the Ordnance Archives Search Report. All former storage areas were removed under various USACE projects with no OE being discovered. No burial or disposal areas were located during the archives search or site visit. AOC 20 was discovered in 1993 during facility-

wide underground storage tank removal efforts. Drums were found staged near the Quonset Hut building (EEG, 2007). In 1993, the Quonset Hut Explosives Igloo was demolished, and approximately 72 drums containing various types of materials were removed from the AOC (EEG, 2007). USACE determined surface soil in the drum storage area would be voluntarily removed. Surface soil was voluntarily removed by USACE from an approximate area of 35 feet by 45 feet to a depth of approximately 2 feet below ground surface (bgs) (Parsons, 1998).

AOC 20 Characteristics

AOC 20 encompasses an area approximately 100 feet by 100 feet east of southeast runway, southwest of Quarry Lake, south of the unnamed east-west access road, and within the fenced boundary of the airport (**Figure 2**). AOC 20 is east of and lower in elevation than the southeast runway. The land surface across AOC 20 is predominately flat.

AOC 20 is bounded on all sides by land designated for airport use (i.e., Nonresidential Land Use). Access to the AOC is controlled, and visitors require an escort and/or communication with the airport tower. The grass is maintained adjacent to the southeast runway and extending east to between 100 and 140 feet. Beyond 100 to 140 feet of maintained grass, taller swamp grasses, trees, and shrubs are present.

Several environmental investigation and response activities have been performed to determine the nature and extent of contamination and whether contaminant concentrations in site media pose an unacceptable risk to human health and the environment. The investigation and response activities included the drum and voluntary surface soil removal action in 1993, historical ordnance records review in 1998, and a phased **Remedial Investigation (RI)** completed between 2002 and 2006. Although the 2007 RI concluded no further action was necessary, USACE determined that additional RI was warranted to be conservative and protective. In 2019, additional RI activities were conducted on previously collected data to characterize the

nature and extent of **chemicals of potential concern (COPCs)** related to known or documented DoD activities. The findings are presented in the *Final AOC 20, Quonset Hut, Remedial Investigation Addendum Report* (Final RI Addendum Report) (USACE, 2020).

Soils at AOC 20 consist of clay with varying amounts of silt to approximately 10 feet bgs. A silty, low-plasticity clay layer is present at approximately 8 feet bgs in borings advanced across the AOC. Limestone **bedrock** is present at approximately 10 feet bgs (EEG, 2007). A cross sectional figure that shows the soil underlying AOC 20 is presented in the phased RI report (EEG, 2007).

Groundwater was encountered at approximately 8 feet bgs at AOC 20 in soil borings and temporary wells installed as part of the phased RI (EEG, 2003). No permanent monitoring wells were installed at AOC 20. Depth to groundwater varies from ground surface to 14 feet in the area east of AOC 20 and up to 28 feet in areas north of the southeast runway. Shallow groundwater is encountered within thin, disconnected lenses of sand and fine gravel within the clay lake (lacustrine) deposits. These thin lenses do not produce enough yield for a potable drinking water source (EEG, 2007). Groundwater in bedrock was not assessed at AOC 20. The regional groundwater flow direction in the area of AOC 20 is south towards the Detroit River (**Figure 3**) (EEG, 2003). The only drinking water source for Grosse Ile is surface water from a water treatment plant in Wyandotte, Michigan. The potable drinking water intake is located upgradient of and approximately 1 mile north of the former NASGI facility, in the Detroit River. Bedrock wells on Grosse Ile and in most of Wayne County yield water that is too highly mineralized for human consumption. Township municipal code § 268-20 requires water outlets not sourced from the municipal system which could be used for potable or domestic purposes to be labelled "WATER UNSAFE FOR DRINKING."

There is no surface water body present on AOC 20; therefore, surface water and sediment were not assessed. The nearest surface water bodies to AOC 20 are Gibraltar Bay, located

approximately 400 feet south of the AOC, and Quarry Lake, located approximate 600 feet east-northeast of the AOC y (EEG, 2007).

Surface Soil

Surface soil samples at AOC 20 are defined as soil samples collected within 2 feet of ground surface. No surface soil samples were collected at AOC 20 because the surface soil from the entire temporary staging area was removed to 2 feet bgs in 1993.

Subsurface Soil

Subsurface soil samples at AOC 20 are defined as soil samples collected at depths greater than 2 feet bgs. Sixteen subsurface soil samples were collected at AOC 20 during multiple investigations between 1993 and 1996. Samples were analyzed for **volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs),** and metals. Subsurface soil analytical results were screened against Federally established EPA Residential Soil Regional Screening Levels (RSLs) (EPA, 2019) and applicable State of Michigan Part 201 Cleanup Criteria and Screening Levels (MDEQ, 2018). Metals in surface soil were first assessed against **regional background levels** presented in the 2015 State of Michigan Background Soil Survey for the Huron-Erie Lobe (MDEQ, 2015). If concentrations were greater than regional background levels, the concentrations were then compared to the EPA Residential Soil RSLs and applicable State of Michigan Part 201 Criteria and Screening Levels. The soil sample locations are presented on **Figure 4**.

There were no metal COPCs detected at concentrations greater than background levels and project action levels. The only organic COPC detected in subsurface soil at levels greater than project action levels and at least one applicable criterion was the SVOC benzo(a)pyrene. The findings are presented in the Final RI Addendum Report (USACE, 2020).

Groundwater

Two groundwater samples were collected from AOC 20. Samples were analyzed for VOCs, SVOCs, PCBs, and metals. The only COPCs detected in groundwater were bis(2-

ethylhexyl)phthalate and barium. Bis(2-ethylhexyl)phthalate is a common laboratory contaminant and a common component of polyvinyl chloride. Because groundwater at AOC 20 is encountered within thin, disconnected silt lenses, is highly mineralized, and there is insufficient yield to sustain a potable source, the drinking water pathway is not relevant. Given the low **hydraulic conductivity**, and the distance to the nearest surface water body, the groundwater-surface water interface pathway is not a relevant pathway at AOC 20. Therefore, no screening levels for groundwater were identified because no relevant pathways associated with groundwater were present at AOC 20. Therefore, bis(2-ethylhexyl)phthalate and barium were not identified as COPCs. The groundwater sample locations are presented on **Figure 4**.

Summary of Site Risks

A baseline risk assessment was conducted as part of the RI Addendum to characterize potential risks to human health and ecological populations (plants and animals). This section summarizes the findings of the human health and ecological risk assessments.

Human Health Risks

Based on the current and potential future Land Use activities on AOC 20, and to evaluate baseline conditions for unlimited use and unrestricted exposure for all Receptor/Land Uses, the following potential receptors were identified:

- Current and future trespassers (adults and youths ages 7-16, including hunters) through direct contact and dust emissions.
- Current and future site visitors (adults and youths ages 7-16, including teachers and students) through direct contact and dust emissions.
- Current and future maintenance workers (conducting landscaping) through direct contact and dust emissions.
- Future utility workers (if utility lines in the 0- to 3-foot interval were installed/need to be repairs) through direct contact and dust emissions.

- Hypothetical future residents through direct contact and dust emissions.

The Final RI Addendum Report (USACE, 2020) included a human health risk assessment. Using the EPA Residential Soil RSL, one COPC, benzo(a)pyrene, was identified. The maximum detected benzo(a)pyrene concentration (169 µg/kg) in subsurface soil was greater than the EPA Residential Soil RSL based on a target risk of 1×10^{-6} and target hazard quotient (HQ) of 0.1. Based on the human health risk assessment, benzo(a)pyrene concentrations in soil are within EPA-acceptable levels and not identified as a **chemical of concern (COC)**. A summary of the human health risk assessment is as follows:

- The EPA Residential Soil RSL based on a target risk of 1×10^{-6} is 110 µg/kg; since the risk level is directly related (linear) with concentration, 169 µg/kg yields a risk of 2×10^{-6} .
- The EPA Residential Soil RSL based on a target HQ of 1 is 18,000 µg/kg; since the HQ is directly related (linear) with concentration, 169 µg/kg yields an HQ of 0.01.
- The EPA acceptable risk range (NCP) is 1×10^{-6} to 1×10^{-4} , and 169 µg/kg yields an estimated risk (2×10^{-6}) within EPA-acceptable levels.
- The EPA threshold HQ is 1, and 169 µg/kg yields an estimated HQ (0.01) within EPA-acceptable levels.
- Benzo(a)pyrene concentrations in soil are within EPA-acceptable levels.

No COCs were identified for the Residential Receptor. Therefore, the site meets Residential Land Use and unlimited use and unrestricted exposure conditions. Additionally, benzo(a)pyrene maximum concentrations in soil did not exceed the State of Michigan Part 201 Residential Soil Criteria and Screening Levels. The State of Michigan uses an excess lifetime cancer risk of 1×10^{-5} as their decision criteria for risks. No further actions are required from a human health perspective.

Ecological Risks

The surface soil was excavated to approximately 2 feet bgs in 1993. There is no surface water body located on AOC 20. Additionally, there is no hydraulic connection between the groundwater and surface water. An ecological assessment was not conducted because there are no ecologically relevant pathways anticipated at AOC 20.

Remedial Action Objectives

Typically, under the CERCLA process, **remedial action** objectives are developed for protection of human health and the environment. Based on the findings and conclusions of the Final RI Addendum Report (USACE, 2020), no COCs were identified for the Residential Receptor, and no further action is necessary to protect human health or the environment at AOC 20. Therefore, no remedial action objectives need to be developed for AOC 20.

Summary of Remedial Alternatives

The findings and conclusions in the Final RI Addendum Report (USACE, 2020) demonstrate no COCs were identified for the Residential Receptor, indicating no further action is necessary to protect human health or the environment at AOC 20. Therefore, development of remedial alternatives for AOC 20 is not required.

Evaluation of Remedial Alternatives

A **feasibility study**, including an evaluation of alternatives, was not conducted because it was determined that no further action was necessary to protect human health and the environment at AOC 20.

Preferred Alternative

The RI Addendum results support the determination that there are no COCs identified for human health or the environment at AOC 20. As no COCs have been identified, USACE, in coordination with EGLE, is recommending no further DoD action as the preferred alternative for AOC 20 at the

former NASGI. EGLE concurs with USACE's recommendation for no further action as the preferred alternative. The preferred alternative may change in response to public comment. If the recommendation is selected, no additional environmental investigation or environmental response action associated with AOC 20 will be performed, and USACE's environmental actions will be considered complete.

■ **Community Participation**

Public participation is a component of **remedy** selection. USACE and EGLE are requesting input from the community on the Proposed Plan to take no further action. The comment period extends from September 1, 2021, to October 5, 2021.

The comment period provides an opportunity for public involvement in the decision-making process for the proposed action. USACE and EGLE will consider all public comments before selecting the remedy or making a No Further Action decision. The public is encouraged to review and comment on this Proposed Plan. During the public comment period, the public is encouraged to review documents located in the Administrative Record pertinent to the investigation and development of the proposed remedy for the Site.

If the public would like to comment in writing on the Proposed Plan, please mail or email written comments (postmarked or emailed no later than October 5, 2021) to the address provided on page 1 of this Proposed Plan.

USACE plans to hold a public meeting at 6:00 p.m., September 16, 2021. The meeting will provide an opportunity for the public to verbally comment on this Proposed Plan.

■ **Key References**

Ellis Environmental Group, LC (EEG). 2003. *Interim Remedial Investigation Report for Former Nike Site D-51, Grosse Ile, MI*. November.

Ellis Environmental Group, LC (EEG). 2007. *Remedial Investigation Report, Phases I and II, Former Naval Air Station Grosse Ile, MI*. May.

Keisel, K.M. and the Grosse Ile Historical Society. 2011. *Images of Aviation: U.S. Naval Air Station Grosse Ile*, Arcadia Publishing.

Michigan Department of Environmental Quality (MDEQ). 2015. *Michigan Background Soil Survey 2005*. (Updated 2015.) https://www.michigan.gov/documents/deq/deq-rrd-MichiganBackgroundSoilSurvey_495685_7.pdf.

Michigan Department of Environmental Quality (MDEQ). 2018. *Cleanup Criteria Requirements for Response Activity*. (Formerly the Part 201 Generic Cleanup Criteria and Screening Levels.) https://www.michigan.gov/deq/0,4561,7-135-3311_4109-251790--,00.html.

Parsons Engineering Science, Inc. (Parsons). 1998. *Expanded Field Investigation Final Report for the Former Grosse Ile Naval Air Station/Nike Site D-51, Grosse Ile, Michigan*. September.

U.S. Army Corps of Engineers (USACE). 2004. *Environmental Quality Formerly Used Defense Sites (FUDS) Program Policy Regulation No. ER 200-3-1*. May.

U.S. Army Corps of Engineers (USACE). 2020. *Final AOC 20, Quonset Hut Remedial Investigation Addendum Report*. September.

U.S. Department of Defense. 2018. *Defense Environmental Restoration Program (DERP) Management*. No. 4715.20. <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodm/471520m.pdf>.

U.S. Environmental Protection Agency (EPA). 2019. *Regional Screening Levels for Chemical Contaminants at Superfund Sites*. November.

■ **Glossary**

Administrative Record: A file of documents that form the basis for the selection of a response action compiled and maintained by the lead agency.

Archives Search Report: A detailed investigation to report on past munitions and explosives of concern activities conducted on an installation. The principal purpose of the Archives Search is to assemble historical records and available field data, assess potential ordnance presence, and recommend follow-up actions at a Defense Environmental Restoration Program – Formerly Used Defense Sites. There are four general steps in an

Archives Search: Records search phase, site safety and health plan, site survey, and archives search report including risk assessment.

Bedrock: Unbroken, solid rock overlain by soils and rock fragments.

Chemical of Concern (COC): Chemicals detected in environmental media that may cause unacceptable risk to human health or ecological receptors.

Chemical of Potential Concern (COPC): Chemicals detected in environmental media that may cause unacceptable risk to human health or ecological receptors.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law established in 1980 and modified in 1986, also known as "Superfund." CERCLA established a nationwide process for cleaning up hazardous waste sites that potentially endanger public health and the environment.

Decision Document: A CERCLA requirement that documents the final cleanup decision for a site, provides the rationale for selecting the cleanup remedy, and establishes performance goals for achieving cleanup.

Defense Environmental Response Program (DERP): A program authorized by the Congress in 1986 that promotes and coordinates efforts for the evaluation and cleanup of contamination at Department of Defense installations and Formerly Used Defense Sites.

Feasibility Study: A study undertaken by the lead agency to develop and evaluate options for remedial action. The RI data are used to define the objectives of the response action, to develop remedial action alternatives, and to undertake an initial screening and detailed analysis of the alternatives. The term also refers to a report that describes the results of the study.

Five-Year Reviews. Under CERCLA, periodic reviews are required to evaluate whether a remedy selected for a contaminated site, where hazardous substances remain at levels that potentially pose an unacceptable risk, remains protective of human health and the

environment. Such reviews must be conducted every 5 years or may be conducted more frequently, if necessary, regardless of the alternative selected.

Formerly Used Defense Site (FUDS): A facility or site which was under the jurisdiction of the Department of Defense before October 17, 1986 and owned by, leased to, or otherwise possessed by the United States at the time of actions leading to contamination by hazardous substances, for which the Department of Defense shall carry out all response actions with respect to releases of hazardous substance from that facility or site.

Groundwater: Water in a saturated zone or stratum beneath the surface of land or water.

Hazardous substance:

- any substance designated pursuant to section 311(b)(2)(A) of the Federal Water Pollution Control Act [33 U.S.C. 1321 (b)(2)(A)],
- any element, compound, mixture, solution, or substance designated pursuant to section 9602 of CERCLA,
- any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act [42 U.S.C. 6921] (but not including any waste the regulation of which under the Solid Waste Disposal Act [42 U.S.C. 6901 et seq.] has been suspended by Act of Congress),
- any toxic pollutant listed under section 307(a) of the Federal Water Pollution Control Act [33 U.S.C. 1317 (a)],
- any hazardous air pollutant listed under section 112 of the Clean Air Act [42 U.S.C. 7412], and
- any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act [15 U.S.C. 2606].

The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under

subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

Hydraulic Conductivity: A characteristic of soils and rocks that describes the ease with which water can move through pore spaces or fractures.

Michigan Department of Environment, Great Lakes, and Energy (EGLE; formerly Michigan Department of Environmental Quality): The state agency in Michigan responsible for enforcing state laws protecting the environment.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): The plan revised pursuant to 42 USC 9605 and found at 40 CFR 300 that sets out the plan for hazardous substance remediation under CERCLA.

Ordnance and explosive (OE): Anything related to munitions designed to cause damage to personnel or material through explosive force, incendiary action or toxic effects. OE is: bombs and warheads, missiles; artillery, mortar and rocket ammunition, small arms ammunition; antipersonnel and antitank mines; demolition charges; high explosives and propellants; depleted uranium rounds; military chemical warfare materials, and all similar and related items or components, explosive in nature or otherwise designed to cause damage to personnel or material (e.g., fuze, boosters/propellants or soils/media contaminated with explosives if the concentration is sufficient to be reactive.)

Pollutant or contaminant: Any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in

such organisms or their offspring; except that the term "pollutant or contaminant" shall not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of paragraph (14) and shall not include natural gas, liquefied natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas).

Polychlorinated biphenyls (PCBs): A group of manufactured chemicals used widely in industry, commonly in electrical equipment, until 1979, when their production was banned in the United States.

Proposed Plan: A document required by CERCLA that informs the public about alternatives that are considered for cleanup of a contaminated soil and identifies a preferred cleanup alternative.

Public comment period: A reasonable period of time, of at least 30 days, for the public to review and comment on various documents and actions.

Regional background level: The State of Michigan has established background metals concentrations based on the range of metals naturally occurring in geologically similar areas of the state. The levels are based on soil types (topsoil, sand, or clay) and the geographic locations (glacial lobes) presented in the 2015 Michigan Background Soil Survey (EGLE, 2015). The background metals concentrations are not related to a release of hazardous substances due to site activities. The glacial lobes have varying points of origin and traverse differing types of bedrock; therefore, the resulting glacial sediments have varying chemical characteristics based on the source-rock. The Huron-Erie Glacial Lobe background values are considered applicable for the former NASGI facility.

Release: Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles

containing any hazardous substance or pollutant or contaminant), but excludes

- any release which results in exposure to persons solely within a workplace,
- release of source, byproduct, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954 [42 U.S.C. 2011 et seq, and
- the normal application of fertilizer.

Remedial action: Those actions consistent with a permanent remedy taken instead of or in addition to removal actions in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health, welfare, or the environment. The term includes, but is not limited to, such actions at the location of the release as storage; confinement; perimeter protection using dikes, trenches, or ditches; clay cover; neutralization; cleanup of released hazardous substances and associated contaminated materials; recycling or reuse; diversion; destruction; segregation of reactive wastes; dredging or excavations; repair or replacement of leaking containers; collection of leachate and runoff; onsite treatment or incineration; provision of alternative water supplies; and any monitoring reasonably required to assure that such actions protect the public health, welfare, and the environment.

Remedial Investigation (RI): A process undertaken by the lead agency to determine the nature and extent of the problem presented by the release. The RI emphasizes data collection and site characterization and is generally performed concurrently and in an interactive fashion with the feasibility study. The RI includes sampling and monitoring, as necessary, and includes the gathering of sufficient information to determine the necessity for remedial action and to support the evaluation of remedial alternatives.

Remedy: The selected remedial action.

Semivolatile organic compounds (SVOCs): A group of organic compounds that tend to have a higher molecular weight and higher boiling point temperature. The health effects of these chemicals depend on their chemical nature and on the degree of exposure.

Superfund Amendments and Reauthorization Act of 1986: In addition to certain free-standing provisions of law, it includes amendments to CERCLA, the Solid Waste Disposal Act, and the Internal Revenue Code. Among the free-standing provisions of law is Title III of SARA, also known as the "Emergency Planning and Community Right-to-Know Act of 1986" and Title IV of SARA, also known as the "Radon Gas and Indoor Air Quality Research Act of 1986." Title V of SARA amending the Internal Revenue Code is also known as the "Superfund Revenue Act of 1986."

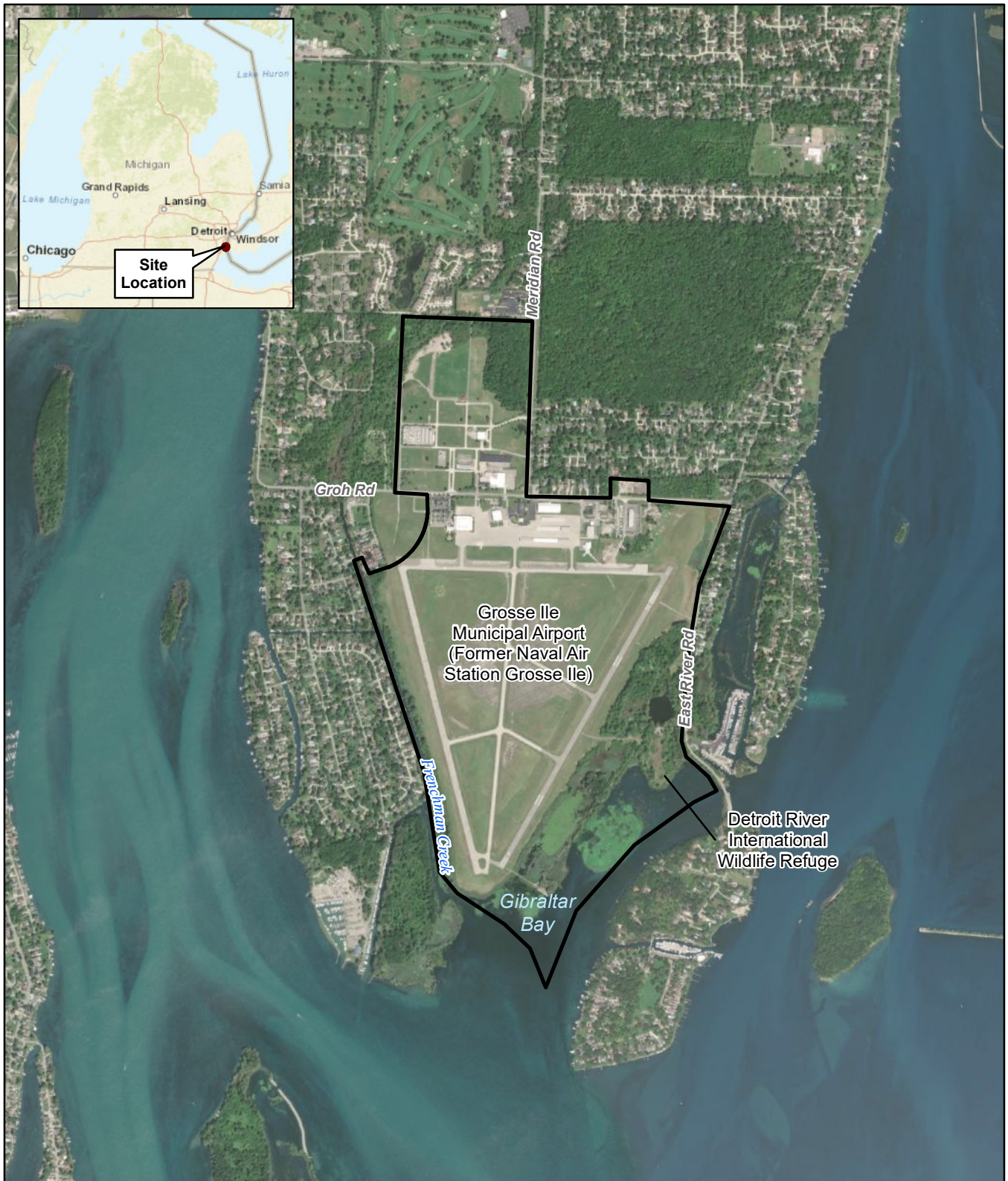
U.S. Army Corps of Engineers (USACE): The lead agency for implementing the Formerly Used Defense Site Program in Michigan for the Department of Defense.

Volatile organic compounds (VOCs): A group of organic chemicals that readily produce vapors at ambient temperatures. Some of these chemicals may have short- and long-term adverse health effects.


■ Abbreviations

AOC	Area of Concern
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	chemical of concern
COPC	chemical of potential concern
DERP	Defense Environmental Response Program
DoD	U.S. Department of Defense
EGLE	Michigan Department of Environment, Great Lakes, and Energy

EPA	U.S. Environmental Protection Agency	OE	ordnance and explosives
FUDS	Formerly Used Defense Site	PCB	polychlorinated biphenyl
MDEQ	Michigan Department of Environmental Quality	RI	Remedial Investigation
NASGI	Naval Air Station Grosse Ile	RSL	Regional Screening Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan	SVOC	semivolatile organic compound
		USACE	U.S. Army Corps of Engineers
		VOC	volatile organic compound



LEGEND

 Property Boundary

Source: Ellis Environmental Group, LC (EEG), 2007. Remedial Investigation Report, Phases I and II, Former Naval Air Station Grosse Ile, MI. May.

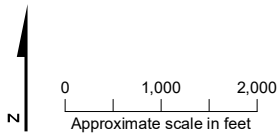


Figure 1. NASGI Site Location Map
Former Naval Air Station Grosse Ile
Grosse Ile, Wayne County, Michigan



LEGEND

- Area of Concern (AOC)
- Property Boundary

Source: Ellis Environmental Group, LC (EEG), 2007. Remedial Investigation Report, Phases I and II, Former Naval Air Station Grosse Ile, MI. May.

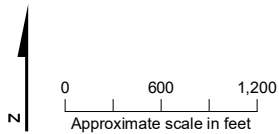


Figure 2. AOC 20 Site Location Map
Former Naval Air Station Grosse Ile
Grosse Ile, Wayne County, Michigan

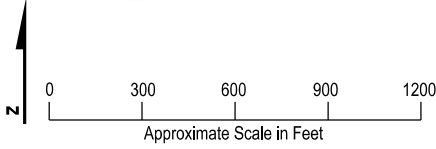
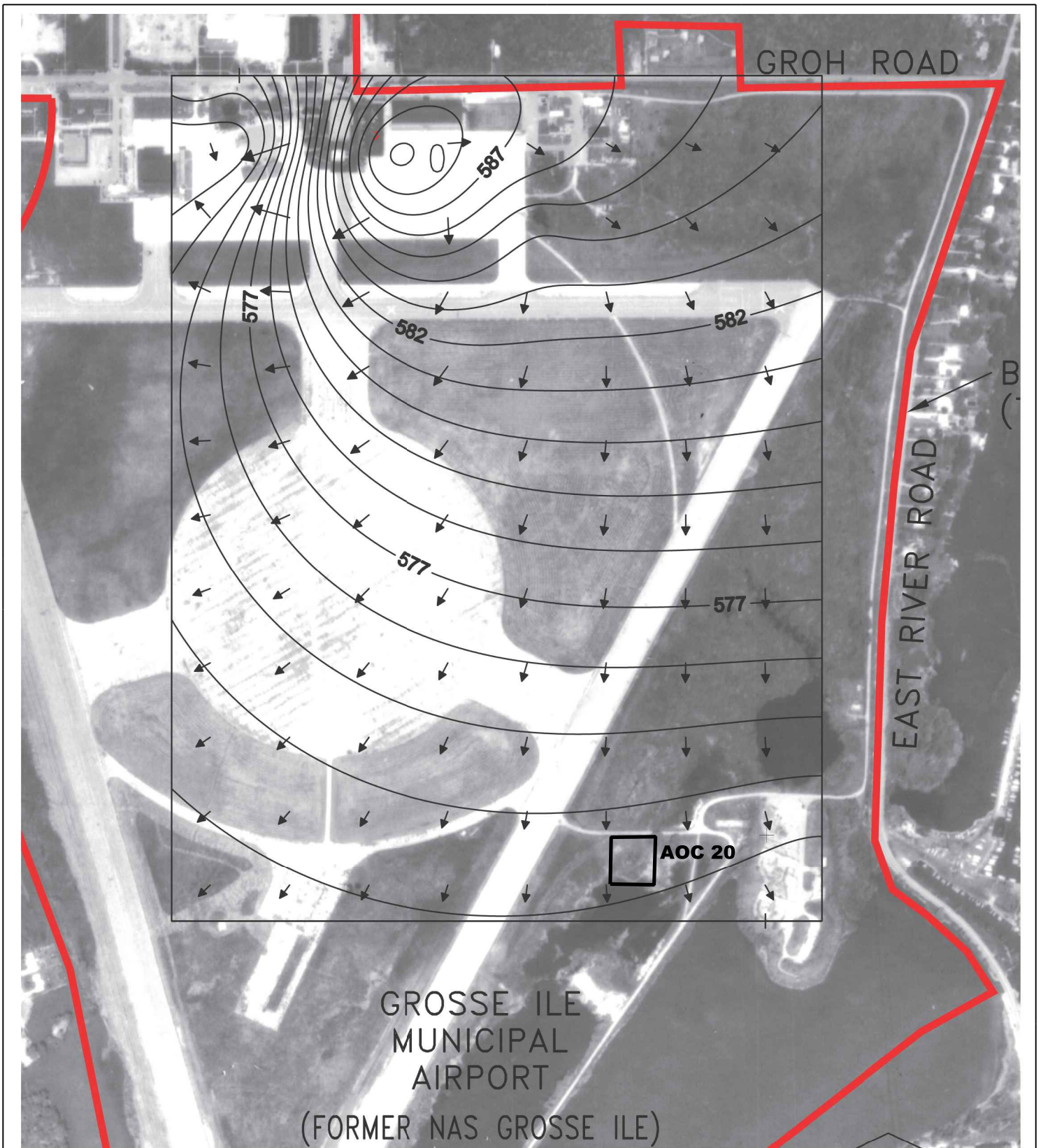


Figure 3. Regional Groundwater Flow Map
 Former Naval Air Station Grosse Ile
 Grosse Ile, Wayne County, Michigan

Source: Ellis Environmental Group (EEG), 2007

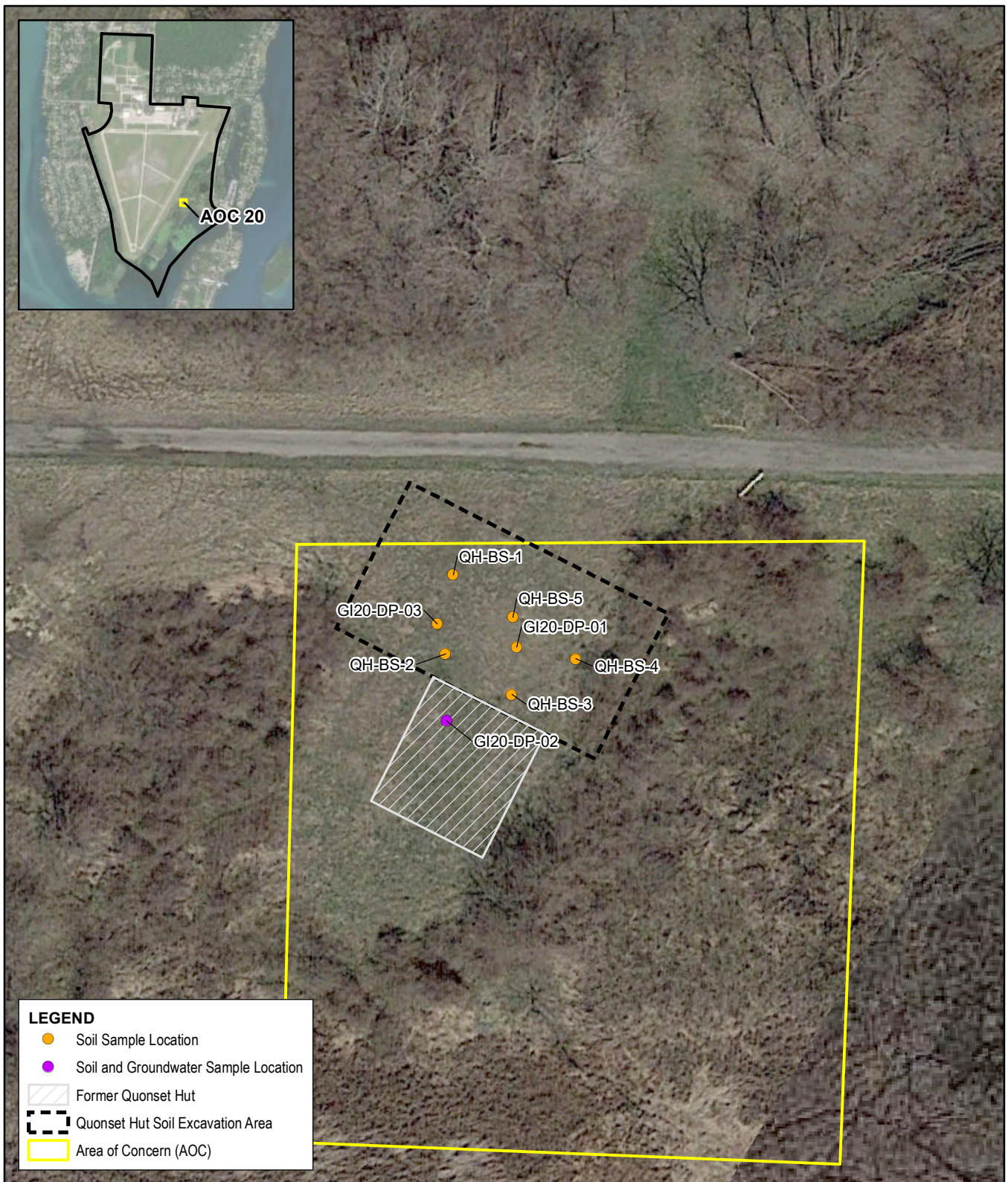
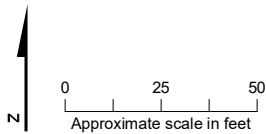


Figure 4. Historical Soil and Groundwater Sample Locations
 Former Naval Air Station Grosse Ile
 Grosse Ile, Wayne County, Michigan



Source: Ellis Environmental Group (EEG), Grosse Ile, Grosse Ile, Michigan. October 2006.
 Remedial Investigation, Former Naval Air Station. 2007