

# BGES, INC.

ENVIRONMENTAL CONSULTANTS

**115 AIRPORT ROAD  
YAKUTAT, ALASKA**

**NATIONAL ENVIRONMENTAL POLICY ACT ENVIRONMENTAL ASSESSMENT  
GRANT NUMBER H80CS04208, PROJECT NUMBER 428**

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**Submitted to:**

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## LIST OF ACRONYMS

ACHP	-	Advisory Council on Historic Preservation
ADFG	-	Alaska Department of Fish and Game
AKDOT	-	Alaska State Department of Transportation
ASTM	-	American Society for Testing and Materials
BFE	-	Base Flood Elevation
BGES	-	BGES, Inc.
BMP	-	Best Management Practice
CAA	-	Clean Air Act
CBY	-	City and Borough of Yakutat
CEQ	-	Council of Environmental Quality
CERCLA	-	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	-	Code of Federal Regulations
CO	-	Carbon Monoxide
CWA	-	Clean Water Act
dB	-	Decibel
dBA	-	A-Weighted Decibel Scale
DFIRM	-	Digital Flood Insurance Rate Map
DNL	-	Day-Night Average Sound Level
EA	-	Environmental Assessment
EFH	-	Essential Fish Habitat
EIS	-	Environmental Impact Statement
EO	-	Executive Order
ESA	-	Endangered Species Act
FAA	-	Federal Aviation Administration
FEMA	-	Federal Emergency Management Agency
FIRM	-	Flood Insurance Rate Map
FPPA	-	Farmland Protection Policy Act
HHS	-	Health and Human Services
HRSA	-	Health Resources and Services Administration
IHS	-	Indian Health Service
IPaC	-	Information for Planning and Consultation
JVCP	-	Joint Venture Construction Program
LHS	-	Large Health Station
LID	-	Low Impact Development
MBTA	-	Migratory Bird Treaty Act
NAAQS	-	National Ambient Air Quality Standards
NEPA	-	National Environmental Policy Act
NFIP	-	National Flood Insurance Program
NGE-TFT	-	Northern Geotechnical Engineering, Inc. <i>d.b.a.</i> Terra Firma Testing
NHPA	-	National Historic Preservation Act
NO <sub>2</sub>	-	Nitrogen Dioxide
NOAA	-	National Oceanic and Atmospheric Administration
NOAA Fisheries	-	National Oceanic and Atmospheric Administration National Marine Fisheries Service
NPDES	-	National Pollutant Discharge Elimination System
NRCS	-	Natural Resources Conservation Service
NRHP	-	National Register of Historic Places

O <sub>3</sub>	-	Ozone
Pb	-	Lead
PM <sub>2.5</sub>	-	Particulates with aerodynamic diameters of 2.5 micrometers or less
PM <sub>10</sub>	-	Particulates with aerodynamic diameters of 10 micrometers or less
RCRA	-	Resource Conservation and Recovery Act
REC	-	Recognized Environmental Condition
SACF	-	Small Ambulatory Care Facility
SEARHC	-	South East Alaska Regional Health Corporation
SHPO	-	State Historic Preservation Officer
SO <sub>2</sub>	-	Sulfur Dioxide
THPO	-	Tribal Historic Preservation Officer
TSCA	-	Toxic Substances Control Act
USACE	-	United States Army Corps of Engineers
USC	-	United States Code
USDA	-	United States Department of Agriculture
USEPA	-	United States Environmental Protection Agency
USFWS	-	United States Fish and Wildlife Service
WSRA	-	Wild and Scenic Rivers Act
YCHC	-	Yakutat Community Health Center
YTT	-	Yakutat Tlingit Tribe

## 1.0 INTRODUCTION

### 1.1 The Environmental Assessment

This Draft Environmental Assessment (EA) documents the results of the evaluation of the potential environmental impacts of actions proposed by the Health Resources and Services Administration (HRSA) of the Department of Health and Human Services (HHS). The Yakutat Tlingit Tribe (YTT) has been selected to participate in the Joint Venture Construction Program (JVCP) operated by the Indian Health Service (IHS), another division of HHS, to construct a new Yakutat Community Health Center (YCHC). The YTT provides primary and preventive health care services to the Yakutat community; however, there is a need for increased capacity and availability of those services.

EAs assess the environmental effects of multiple actions and their impact in a given geographic area in order to determine the additive, synergistic, and cumulative effects of discrete activities in a development context. This EA will serve as a reference document for public review from interested parties.

This EA has been specifically designed to evaluate the proposed action and alternative actions for use of the awarded grant funds, encompassing a range of potential issues related to infrastructure development, land use planning, and construction including site improvements to support the proposed action or alternative actions. Completion of this EA ensures that the proposed action will be in compliance with the environmental review process required by the National Environmental Policy Act (NEPA) and its associated environmental laws allowing grant funds to be released for development expenses. This project-level environmental review will ensure that no extraordinary circumstances exist beyond the issues identified and evaluated within this document.

If the possibility or likelihood of major environmental impacts is identified with respect to the proposed action, further analysis will be required, potentially including the preparation of an Environmental Impact Statement (EIS). As a result of an EIS, the proposed action may require modification, mitigation, or cancellation.

This EA has been prepared pursuant to:

- The NEPA of 1969 (42 United States Code (USC) 4321 et seq.), which requires an environmental analysis for major federal Actions having the potential to impact the quality of the human environment;

- Council of Environmental Quality (CEQ) in 40 Code of Federal Regulations (CFR) 1500 – 1508, which implement the requirements of NEPA; and
- HHS General Administration Manual Part 30, Environmental Protection

## **1.2 Background**

One of the largest ‘counties’ in the country, the City and Borough of Yakutat (CBY) encompasses approximately 9,463 square miles. The population of Yakutat was approximately 662 in 2010. The YTT adopted the YCHC from Yak-Tat Kwaan, Inc. in 1997. The YTT utilizes a sliding scale to offer affordable health care to the community of Yakutat. The YCHC is a nonprofit public organization serving a medically-underserved population. The YCHC currently occupies approximately 4,100 square feet of building space, leased from within an 8,200-square foot building (Figure 1).

## **1.3 Purpose and Need for Action**

The YCHC relies heavily on interim providers who travel to Yakutat as needed from the South East Alaska Regional Health Corporation (SEARHC). The remote location of Yakutat and the weather conditions limit the reliability of depending on travelling providers. Alternatively, for patients who travel to Sitka for medical services, the trip requires multiple flights and overnight accommodations, which can be cost-prohibitive.

The proposed action, described below, will provide a larger facility to deliver a broad range of services to the Yakutat community; including primary care, dental, behavioral health, preventive care, emergency medical services, administrative and support functions, and a wellness center. The building will also contain spaces for integrated behavioral health, community aid health services, patient holding, a morgue, and itinerant staff quarters.

The new facility will be approximately 18,500 square feet in size, which meets the IHS criteria for a Small Ambulatory Care Facility (SACF) for a Large Health Station (LHS); and will have a projected capacity of 2,465 patient visits annually. Upon completion of the proposed action, IHS will fund employment of 20.5 full-time employees to help reduce issues associated with itinerant providers. However, the new building will include space for short-term lodging to be used as needed for itinerant providers.

## 2.0 PROPOSED ACTION AND ALTERNATIVES

The proposed construction of the new YCHC seeks to better serve the underserved community of Yakutat. To better serve this community requires additional space and staff. When such action is funded through federal dollars, an EA must be completed unless it fits into one of the categorical exclusions. The IHS and United States Department of Agriculture (USDA) have completed an Environmental Determination and have concluded that the proposed action qualifies as a categorical exclusion. However, in this case, the HRSA has specifically required that a NEPA EA and a Phase I Environmental Site Assessment (ESA) be completed. The September 2017 Phase I ESA prepared by BGES, Inc. is included in Appendix A.

In this EA, the proposed action is compared to other viable alternatives to ensure that the goals stated for the project are not better served by an alternative approach. Alternatives must be developed in order to examine the potential benefits compared to the proposed action. The alternative actions must also be compared to the proposed action in terms of impacts to a wide variety of areas. The impacts must be examined to determine whether they are temporary or permanent, and minor or major in nature. Where impacts are determined to potentially exist or will definitely exist, it is important that the EA examine if mitigation measures are necessary to minimize or possibly eliminate impacts to a given area.

According to the June 2017 *Site Selection and Evaluation Report* prepared by the YTT (Appendix B), five sites were considered for this project. Of the five sites, the proposed project site was selected as the optimal location for this project based on site access; site ownership; physical characteristics; access to utilities; storm-water management; solid waste; power, communication, and data systems; proximity to the Emergency Response System facility; an environmental determination; available services; sustainability; energy considerations; and security. Because the proposed project site was already selected as the optimal location for this project, no alternative locations will be further evaluated in this NEPA EA. Explanation of the proposed action and one identified alternative (no action) are presented in this section.

The alternatives must be examined for outcomes that may trigger other events. Sufficient examination must be completed to identify anticipated or reasonably foreseeable outcomes for all of the selected alternatives. No action may be taken that depends on a larger action taken previously or simultaneously to the proposed action. The proposed action and alternative action must be examined for similarity and cumulative effects of alternatives.

Alternatives considered for this draft EA include the proposed action consisting of construction of a new YCHC on the subject property, and a no-action alternative. It is presumed that the proposed action of construction of a new facility at the selected new site is the preferred option (Figure 2). The proposed action and alternative action are described briefly below. A chart comparing all identified or reasonably foreseeable potential impacts for the proposed action and the alternative action is included as Table 1. The proposed action and alternative action are evaluated for anticipated outcomes for related actions, future use, infrastructure, and site improvements.

### **Proposed Action (construction of new facility on new site)**

The proposed action includes acquisition of a new parcel and construction of a new health center. The proposed parcel is approximately 2.5 acres in size and is currently covered with thick vegetation (Figure 2). No evidence of previous development has been identified at this site. The property is located approximately 220 feet south of the intersection of Ocean Cape Road and Airport Road; and approximately 550 feet southeast of the current YCHC. The proposed area of ground disturbance is 81,361 square feet, which will include the new building, parking areas, driveway, and landscaped areas. Located near the AC grocery store and the school, the new facility will be easily-accessible to the community.

### **Alternative (no action)**

The alternative includes no action. Thus, the current YCHC would continue providing limited medical services from the space currently leased. No new property would be acquired and no new buildings would be constructed.

## **2.1 Comparison of Alternatives**

Table 1 illustrates a summary of the potential impacts resulting from the proposed action and the alternative action. This table was constructed using field investigation, review of available documents, and interviews with stakeholders and community leaders. Site-specific details determine the extent and severity of the localized impacts in each resource area and are identified in Section 3.0 below. In the table, minor impacts are italicized and major impacts are bolded.

## **3.0 ENVIRONMENTAL ANALYSIS**

The proposed action and alternative action are required to be examined in the context of the affected environment and the impacts that each action will have across 12 areas of concern. The areas of

concern are listed in this section. Each area will be examined for the proposed action and alternative action to determine whether the action will have no impact, minor impact, or significant impact. Site-specific environmental information will be evaluated for the proposed project, allowing for evaluation of unique environmental conditions or impacts. Any place of significant impact will be discussed in more detail. Sufficient examination must occur to determine if the proposed action or alternative action will have a significant impact.

The impact analyses have been conducted by gathering general data of the affected resource areas in relation to implementation. Using these data, the potential impacts and the significance levels have been assessed. Impacts that are minor in nature particularly because they are anticipated to be temporary are addressed as such and recorded in the context of their anticipated effect. Potential mitigation measures have also been identified to minimize impact levels. The text of this EA presents the results of this process with each resource area listed here:

- Geology and Soils
- Air Quality
- Water Quality
- Floodplains
- Wetlands
- Biological Resources
- Cultural Resources
- Socioeconomics
- Traffic
- Hazardous Materials and Wastes
- Noise
- Land Use

Portions of this discussion are broad and regional in nature. It does not include a complete inventory of each resource, but does provide information to characterize those resources. This section also describes the potential impacts that the alternative action could have on the identified resources. When mitigation is appropriate to avoid or reduce adverse impacts, these measures are also described.

### **3.1 GEOLOGY AND SOILS**

Soil resources provide a foundation for both plant and animal communities by establishing a substrate for plant growth and vegetative cover, for forestation, impervious ground cover, and for animal habitat and feeding. These resources are equally important in both terrestrial and aquatic environments. While there are few applicable regulations regarding soils, proper conservation principles can reduce erosion, decrease turbidity, and generally improve water quality.

One of the main tools for evaluating impacts to soils is the Farmland Protection Policy Act (FPPA) which requires Federal agencies to evaluate the effects (direct and indirect) of their activities before taking any action that could result in converting designated prime or unique farmland soils, or farmland soils of statewide and local importance for non-agricultural purposes. If an action would adversely affect farmland preservation, alternative actions that could avoid or lessen adverse effects must be considered. Determination of the level of impact on prime and unique farmland soils or farmland soils of statewide and local importance is done by the lead Federal agency (proponent), which inventories farmlands affected by the proposed action and scores the land as part of a Farmland Conversion Impact Rating (AD 1006 Form), for each alternative. In consultation with the proponent, Natural Resources Conservation Service (NRCS) completes the AD 1006 Form and determines the level of consideration for protection of farmlands that needs to occur under the FPPA (NRCS 2008).

### **3.1.1 Existing Conditions**

According to the December 2016 *Geotechnical Engineering Report* prepared by Northern Geotechnical Engineering, Inc. *d.b.a.* Terra Firma Testing (NGE-TFT), the subject property is underlain by “poorly-graded to well-graded sand and gravel” to at least 15 feet below ground surface. Several inches of organic material rest on the ground surface, and mature Sitka Spruce and Hemlock trees occupy the subject property.

A copy of the December 2016 *Geotechnical Engineering Report* prepared by NGE-TFT is included in Tab C of the *Site Selection and Evaluation Report* prepared by the YTT, in Appendix B.

### **3.1.2 Environmental Effects**

The following sections present potential environmental effects of the proposed action and alternative action on geology and soils.

#### **Proposed Action**

The construction of a new facility as described in the proposed action has the potential to affect geology and soils. Soils may be impacted during the construction or upgrade of infrastructure and utilities necessary to complete a building within all applicable building codes and zoning requirements due to trenching, grading, grubbing, and other ground disturbing activities.

Most specifically, area soils would likely be disturbed during construction activities within the immediate vicinity of areas of new construction and machinery/equipment staging. Vegetation loss

and soil loss would occur directly from disturbance or indirectly via wind or water. However, to minimize soil and vegetation loss, construction management should implement best management practices (BMPs), such as developing and implementing an erosion and sedimentation control plan, using silt fences or hay bales, re-vegetating disturbed soils, and maintaining site soil stockpiles; to prevent soils from eroding and dispersing off-site.

Should a specific action have the potential to impact prime or unique farmland, HRSA and the applicant would determine if the proposed site is within the limits of an incorporated city or if the site contains State-listed prime, unique, or important soils. If the site is within incorporated city limits or does not contain prime, unique, or important soils; the action complies with the FPPA and no further documentation is required. According to the September 2016 *Environmental Review and Determination* prepared by IHS (Appendix C), there are no prime or unique farmlands in the State of Alaska; and there are no Farmlands of Statewide Importance. Therefore, the proposed action will have no impact on important farmlands.

As required for new construction and to determine foundation requirements and any soil stabilization that may be necessary to allow for safe construction, NGE-TFT conducted a geotechnical study on the proposed site. NGE-TFT determined that the soil onsite is suitable for construction. Therefore, the native soil will be used to grade the site prior to construction of the building. It is not anticipated that any soil will be transported on or off site during the project. Because the proposed action will not alter the soil type in the vicinity of the project, and because the remainder of the subject property and the surrounding properties will remain undisturbed and densely-vegetated; the proposed action will have a minor, temporary impact on geology and soils.

### **Alternative – No Action**

This alternative does not include any action. Therefore, the applicant would not be required to comply with the FPPA or measures to control soil erosion. This alternative does not have the potential to affect geology or soils within the program area.

## **3.2 AIR QUALITY**

The Clean Air Act (CAA) requires that the U.S. Environmental Protection Agency (USEPA) establish primary and secondary National Ambient Air Quality Standards (NAAQS) for air pollutants that are considered harmful to the public and environment. Primary NAAQS are established at levels necessary, with an adequate margin of safety, to protect the public health, including the health of

sensitive populations such as asthmatics, children, and the elderly. Similarly, secondary NAAQS specify the levels of air quality determined appropriate to protect the public welfare from any known or anticipated adverse effects associated with air contaminants. The pollutants for which the USEPA has established ambient concentration standards are called criteria pollutants, and include ozone (O<sub>3</sub>), particulates that have aerodynamic diameters of 10 micrometers or less (PM<sub>10</sub>), fine particles with aerodynamic diameters less than 2.5 micrometers (PM<sub>2.5</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and lead (Pb). The Borough of Yakutat was not identified as a maintenance area or non-attainment area for any of the listed pollutants, indicating that these air pollutants have not been documented to exceed the NAAQS.

### **3.2.1 Existing Conditions**

Air quality may be affected by construction activities. Construction would be expected to raise PM counts along with slight increases in nitrogen oxides and carbon monoxides from construction equipment exhausts, both portable and stationary, for the duration of construction. A slight increase in air pollutants measured by the NAAQS should be anticipated due to increased traffic from clients visiting the new YCHC. None of the increases are anticipated to significantly raise the NAAQS for the community surrounding the construction site or post construction above de-minimis levels.

### **3.2.2 Environmental Effects**

The following sections present potential environmental effects of the proposed action and alternative action on air quality.

#### **Proposed Action**

The construction of a new building as described in the proposed action has the potential to affect air quality. However, the impacts would be localized and generally short-term since they are primarily related to construction activities and not long-term generation of pollutants.

Increased vehicle exhaust emissions and dust is anticipated during construction. Air pollutants are not anticipated to reach or exceed de-minimis levels, and Federal and state air attainment levels would not be expected to be exceeded. BMPs would be developed and implemented to cover and/or wet area soils during construction to minimize dust. BMPs can also be used to remove soils and dust particles from vehicles prior to exiting the construction site. Operation of construction equipment should be limited to daytime hours of operation to minimize the impact on residents. Normal operations and the

traffic increases associated with a few additional patients each day will also produce some effects on the local environment, but these effects are likely to be minimal.

The construction activities will include development of infrastructure and utilities, and could also include mechanical systems and equipment, such as emergency generators, boiler plants, cooling towers, and incinerators. All permitting requirements must be followed in the design, construction, and operations of these systems. If heating fuel is used in the new facility, off-gassing may adversely impact air quality, but this potential impact is anticipated to be minor.

### **Alternative – No Action**

This alternative does not include any action. Therefore, the applicant would not be required to comply with the CAA, or State air quality standards. This alternative does not have the potential to create an effect or change in air quality.

## **3.3 WATER QUALITY**

Water is a central component of any community for both the natural and human inhabitants. The availability of water, including surface water and groundwater, and the quality of those waters, play a critical role in determining the natural community structure and in supporting human activity.

The Clean Water Act (CWA) establishes the basic structure for regulating pollutant discharges to navigable waters of the U.S. It sets forth procedures for effluent limitations, water quality standards and implementation plans, national performance standards, and point source (e.g., municipal wastewater discharges) and nonpoint source programs (e.g., stormwater). The CWA also establishes the National Pollutant Discharge Elimination System (NPDES) under Section 402 and permits for dredged or fill material under Section 404 (USEPA 2008b).

The Wild and Scenic Rivers Act (WSRA) preserves selected rivers in a free-flowing condition and protects their local environments. These rivers possess outstanding scenic, recreational, geologic, fish and wildlife, historic, or cultural values.

### **3.3.1 Existing Conditions**

Yakutat is located within the Tongass National Forest, and on average, receives approximately 155 inches of rain per year. Monti Bay is located approximately 0.25 mile northwest of the proposed project site, and Ophir Creek is approximately 380 feet southeast of the site. Ophir Creek flows

southwesterly through the Tongass National Forest, toward, and into Summit Lake.

### **3.3.2 Environmental Effects**

The following sections present potential environmental effects of the proposed action and alternative action on water quality.

#### **Proposed Action**

Based on the local topography for the proposed project site, excessive storm water run-off would flow southeasterly from the site and eventually drain into Ophir Creek. Minimal groundwater impacts are anticipated under the proposed action. Infiltration of precipitation to the aquifer will be slightly reduced by the building and any paved areas, which will also promote additional storm water runoff. Water quality should be verified prior to any decision to use groundwater for consumptive purposes. Temporary potential impacts to surface water are possible due to construction activities. The proposed project should consist of design features that minimize impermeable surfaces and implement a significant amount of vegetative buffer zone to facilitate infiltration. During construction, Low Impact Development (LID) technologies should be incorporated as part of building design and construction to reduce the impervious surfaces and associated runoff that may occur with the construction of a new facility. Storm water should be controlled on site and not discharged with pollutants, including sediment, that may impact Ophir Creek and eventually Summit Lake. BMPs implemented and maintained as discussed in Section 3.1.2 will minimize the potential impacts from storm water run-off.

#### **Alternative – No Action**

This alternative does not include any action. Therefore, the applicant would not be required to comply with the CWA or WSRA. This alternative does not have the potential to affect water quality.

### **3.4 FLOODPLAINS**

Executive Order (EO) 11988 (Floodplain Management) requires Federal agencies to avoid direct or indirect support of development within the 100-year floodplain whenever there is a practicable alternative. A floodplain is defined as the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, and including, at a minimum, that area subject to a 1 percent or greater chance of flooding in any given year. The critical action floodplain is defined as the 500-year floodplain (0.2 percent chance floodplain) (USEPA 1979). The 500-year floodplain as defined by 40 CFR 9 is an area, including the base floodplain, which is subject to inundation from a

flood having a 0.2 percent chance of being equaled or exceeded in any given year.

Flood zones are land areas identified by FEMA that describe the land area in terms of its risk of flooding. A flood insurance rate map (FIRM) is a map created by the National Flood Insurance Program (NFIP) for floodplain management and insurance purposes. Digital versions of these maps are called DFIRMs. A FIRM would generally show a community's base flood elevation (BFE), flood zones, and floodplain boundaries. However, maps are constantly being updated due to changes in geography, construction and mitigation activities, and meteorological events.

EO 11988 requires that Federal agencies proposing activities in a 100-year floodplain must consider alternatives to avoid adverse effects and incompatible development in the floodplain. In accordance with 44 CFR Part 9, critical actions, such as the development of hazardous waste facilities, hospitals, or utility plants, must be undertaken outside of a 500-year floodplain. If no practicable alternatives exist to locating an action in the floodplain, the action must be designed to minimize potential harm to, or within the floodplain. Furthermore, a notice must be publicly circulated explaining the action and the reasons for locating in the floodplain. When evaluating actions in the floodplain, FEMA applies the decision process described in 44 CFR Part 9, referred to as the Eight-Step Planning Process, to ensure that its actions are consistent with EO 11988. By its nature, the NEPA compliance process involves the same basic decision-making process as the Eight-Step Planning Process.

### **3.4.1 Existing Conditions**

FEMA has developed flood maps based on a flood frequency analysis completed by FEMA that update the flood risk data with information on storms that have occurred in the past 25+ years. FEMA currently uses FIRMs to determine elevation requirements for planning and redevelopment projects. FEMA requires that communities adhere to the elevation requirements established by BFE. There are more than 19,000 communities nationwide that participate in the NFIP. However, according to the FEMA online Flood Map Service Center, flood hazards have not been evaluated in the vicinity of the proposed project site.

Additionally, according to the September 2016 *Environmental Review and Determination* prepared by IHS, there are no known floodplains in the vicinity of the subject property or in Yakutat.

### 3.4.2 Environmental Effects

The following sections present potential environmental effects of the proposed action and alternative action on floodplains.

#### **Proposed Action**

The proposed action is not located within a known floodplain. Additionally, no known floodplains have been identified in the vicinity of the proposed project site. Therefore, the proposed action does not have the potential to affect known floodplains.

#### **Alternative – No Action**

This alternative does not include any action. Therefore, the applicant would not be required to comply with EO 11988 or local floodplain ordinances. This alternative does not have the potential to affect floodplains.

### 3.5 WETLANDS

Wetlands are an important component of ecosystem function and historically have been threatened by development. The US Army Corps of Engineers (USACE) is charged with protecting wetlands through the CWA and is empowered to issue permits under the CWA for activities that may affect wetlands.

While development of wetlands is certainly possible, grantees should avoid sites where filling or draining of wetlands or other activities would be required. The permitting process to fill a wetland could be lengthy and is best to be avoided, assuming equivalent sites are readily available.

EO 11990 (Protection of Wetlands) requires Federal agencies to follow avoidance, mitigation, and preservation procedures with public input before proposing new construction in wetlands. As with EO 11988, the same Eight-Step Planning Process is used to evaluate the potential effects of an action on wetlands. Formal legal protection of jurisdictional wetlands is promulgated through Section 404 of the CWA. A permit from the USACE may be required if an action has the potential to affect wetlands.

There are three different types of impacts associated with wetlands:

*Direct impacts* result from disturbances that occur within the wetland. Common direct impacts to wetlands include filling, grading, removal of vegetation, building construction and changes

in water levels and drainage patterns. Most disturbances that result in direct impacts to wetlands are controlled by State and Federal wetland regulatory programs.

*Indirect impacts* result from disturbances that occur in areas outside of the wetland, such as uplands, other wetlands or waterways. Common indirect impacts include influx of surface water and sediments, fragmentation of a wetland from a contiguous wetland complex, loss of recharge area, or changes in local drainage patterns. Given that most indirect impacts are beyond the authority of State and Federal wetland regulatory programs, wetland protection can be provided by a watershed management plan under local implementation.

*Cumulative impacts* are those impacts resulting from combined direct and indirect impacts to the wetlands over time.

### **3.5.1 Existing Conditions**

The proposed project site, located at 115 Airport Road in Yakutat, Alaska, is approximately 65 to 75 feet above sea level. According to the September 2016 *Environmental Review and Determination* prepared by IHS, “no estuarine, marine and freshwater wetlands exist at the proposed project location.”

### **3.5.2 Environmental Effects**

The following sections present potential environmental effects of the proposed action and alternative action on wetlands.

#### **Proposed Action**

Wetlands will not be directly impacted by the proposed action. Construction of the new YCHC will not fill or otherwise alter wetlands in Yakutat.

The construction of the new YCHC and parking areas will convert a substantial area from permeable to impermeable ground cover. This will result in a significant increase in surface water runoff during precipitation events. The runoff will flow generally southeast toward Ophir Creek, then southwest toward Summit Lake. The runoff is not anticipated to create new wetlands. The additional runoff from the planned construction of the new YCHC is anticipated to be minimal, and is not considered a significant impact.

Significant individual or cumulative impacts to wetlands are not anticipated as a result of the proposed action.

### **Alternative – No Action**

This alternative does not include any action. Therefore, the applicant would not be required to comply with EO 11990 or the CWA. This alternative does not have the potential to affect wetlands.

### **3.6 VEGETATION AND WILDLIFE**

Biological resources comprise naturally occurring and cultivated vegetative species and domestic and wild animal species and their habitats. Sensitive biological resources include plant and animal species listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA) or by a state agency pursuant to state law or regulation. Sensitive species also include species identified by the USFWS as candidates for possible listing as threatened or endangered pursuant to the ESA. Biological resources also include wetlands, which are important because they provide essential breeding, spawning, nesting, and wintering habitats for a major portion of the nation's fish and wildlife species.

The ESA establishes a Federal mandate to conserve, protect, and restore threatened and endangered plants and animals and their habitats. Section 7 of the ESA mandates that all Federal agencies must ensure that any action authorized, funded, or implemented is not likely to jeopardize the continued existence of a threatened or endangered species or result in the destruction of critical habitat for these species. To accomplish this, Federal agencies must consult with the USFWS or the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NOAA Fisheries) when taking action that has the potential to affect species listed as endangered or threatened or proposed for threatened or endangered listing.

The Migratory Bird Treaty Act (MBTA) makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird species listed in 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandoning eggs or young) may be considered a take, and is potentially punishable by fines and/or imprisonment. If an action is determined to cause a potential take of migratory birds, as described above, then a consultation process with the USFWS needs to be initiated to determine measures to minimize or avoid these impacts. This consultation should start as an informal process.

The Magnuson-Stevens Fishery Conservation and Management Act (as amended), also known as the Sustainable Fisheries Act, requires all Federal agencies that authorize, fund, or undertake activities or

proposed activities that may adversely affect Essential Fish Habitat (EFH), to consult with the NOAA Fisheries. The EFH provisions of the Sustainable Fisheries Act are designed to protect fisheries habitat from being lost due to disturbance and degradation.

### **3.6.1 Existing Conditions**

According to the September 2016 *Environmental Review and Determination* prepared by IHS, the subject property is not located within the ranges of any known endangered species or critical habitats. The MBTA, however, protects several bird species that may exist in the vicinity of the site. These species include Arctic Tern, Bald Eagle, Black Oystercatcher, Fox Sparrow, Kittlitz's Murrelet, Lesser Yellowlegs, Marbled Godwit, Marbled Murrelet, Olive-sided Flycatcher, Pink-footed Shearwater, Rufous Hummingbird, Short-billed Dowitcher, and Short-eared Owl. In order to verify this information, BGES, Inc. (BGES) consulted the USFWS online Information for Planning and Consultation (IPaC) tool on August 30, 2017 and requested an Official Species List specific to the subject property. The Official Species List indicates that zero threatened, endangered, or candidate species need to be considered for this project; and that no critical habitats are within the project area. A copy of the USFWS IPaC Official Species List is included in Appendix D.

Additionally, BGES consulted with the Alaska Department of Fish and Game (ADFG) Wildlife Biologist of the Threatened, Endangered, and Diversity Program. The ADFG representative indicated that "none of the species on the State of Alaska Endangered Species list will be impacted" by development on the subject property. A copy of the correspondence between BGES and the ADFG representative is included in Appendix E.

### **3.6.2 Environmental Effects**

The following sections present potential environmental effects of the proposed action and alternative action on vegetation and wildlife.

#### **Proposed Action**

The proposed action involves approximately 1 acre of deforestation. Although the subject property is not considered to provide any critical habitat, the vegetation onsite likely provides habitat to many species, including the protected bird species listed above. The remaining portions of the subject property (approximately 1.5 acres) will not be disturbed during the proposed action. The undisturbed habitat on the subject property and surrounding properties will help mitigate the minimal loss of

habitat during development of the new YCHC. Additionally, land clearing will be scheduled in accordance with the USFWS' land clearing timing guidance for Alaska, in an effort to avoid potential adverse impacts to migratory bird species.

The proposed action will result in the removal of trees and shrubs, and may displace small animals during the construction process. Displaced animals will relocate to adjacent undeveloped land outside of the construction footprint.

Significant individual or cumulative impacts to biological resources are not anticipated as a result of the proposed action.

### **Alternative – No Action**

This alternative does not include any action. Therefore, the applicant would not be required to consult with USFWS, NOAA Fisheries, or ADFG to comply with the ESA, MBTA, or the Sustainable Fisheries Act. This action does not have the potential to affect sensitive biological resources.

## **3.7 CULTURAL RESOURCES**

Section 106 of the National Historic Preservation Act (NHPA), as amended, and implemented by 36 CFR Part 800, requires Federal agencies to consider the effects of their actions on historic properties, and provide the State Historic Preservation Officer(s) (SHPO) and the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on Federal projects that would have an effect on historic properties prior to implementation. Historic properties are defined as archaeological sites, standing structures, or other historic resources listed in or eligible for listing in the National Register of Historic Places (NRHP).

Construction of medical centers on tribal lands, such as the proposed project site, requires consultation with tribal entities such as the Tribal Historic Preservation Officer (THPO), if one has been appointed. On tribal lands, additional concerns arise including protection of burial sites, and the protection of traditional cultural places.

### **3.7.1 Existing Conditions**

A request for Section 106 consultation, including a description of the project activities, a map showing the project limits of disturbance, and a list of NRHP-listed or eligible resources within one mile of the subject property, was submitted by IHS to the SHPO on June 17, 2016. IHS also submitted a request

for a Section 106 consultation to the THPO on the same date.

Cultural resources include evidence of the past activities and accomplishments of people. They include buildings, objects, locations, and structures that have scientific, historic, or cultural value. Cultural resources provide cultural, educational, aesthetic, inspirational, and/or economic value and give a sense of orientation to the nation. Cultural resources are protected under a number of federal laws and regulations, as well as numerous specific state statutes.

### **3.7.2 Environmental Effects**

The following sections present potential environmental effects of the proposed action and alternative action on cultural resources.

#### **Proposed Action**

A response from SHPO indicating No Adverse Effect to historic properties was received on August 9, 2016, and a response from THPO indicating No Adverse Effect to historic or cultural sites was received on October 15, 2016. Based on the No Adverse Effect responses from SHPO and THPO, the proposed action will have no impact on registered historic or culturally-significant properties. These responses are included in Appendix F.

Additionally, the proposed project site does not offer significant subsistence use, because of the thick vegetation.

#### **Alternative – No Action**

This alternative does not include any action. Therefore, this alternative does not have the potential to affect historic places or cultural resources.

### **3.8 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE**

One of the key federal mechanisms for evaluating socioeconomic impacts of actions is through EO 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations) that requires Federal lead agencies to ensure rights established under Title VI of the Civil Rights Act of 1964 when analyzing environmental effects.

HRSA, and most Federal lead agencies, determine impacts on low-income and minority communities as part of the NEPA compliance process. Agencies are required to identify and correct programs,

policies, and activities that have disproportionately high and adverse human health or environmental effects on minority or low-income populations. EO 12898 also tasks Federal agencies with ensuring that public notifications regarding environmental issues are concise, understandable, and readily accessible.

EO 13045 (Protection of Children from Environmental Health Risks and Safety Risks) requires Federal agencies to identify and assess health risks and safety risks that may disproportionately affect children. As with EO 12898, HRSA and most Federal lead agencies determine impacts on children as part of the NEPA compliance process.

### **3.8.1 Existing Conditions**

By its very nature, the proposed action described and evaluated within this EA serves to provide additional medical services to individuals and families in need. The awarded grant reflects an evaluation of the populations served through physical and program improvements provided by the YCHC. The proposed location of the medical center is in an area predominantly made up of low-income and minority populations to more effectively serve their needs.

### **3.8.2 Environmental Effects**

The following sections present potential environmental effects of the proposed action and alternative action on socioeconomics and environmental justice.

#### **Proposed Action**

The proposed action of constructing a new, larger health center and associated parking areas, if implemented, would result in beneficial impacts to individuals requiring medical services and local contractors that perform site work and construction services for the grantee. The new facility will allow health service providers to expand and improve their services.

Short-term impacts that may occur would include disruption of some services during the period of relocating the current YCHC staff and equipment to the new location upon completion of construction activities. The YCHC will examine and implement temporary services necessary to the continuation of services to the community to minimize this impact. Increased scheduling in off-hours would potentially address the needs of the client base during relocation.

### **Alternative – No Action**

This alternative does not include any action. Therefore, the applicant would not be required to comply with EOs 12898 or 13045. The outcome of this alternative would likely result in maintaining disproportionate health and safety risks to low-income and minority persons and to children; as these groups would likely be most affected by the lack of improved medical services.

## **3.9 TRAFFIC AND TRANSPORTATION**

The Alaska Department of Transportation (AKDOT) is responsible for the design, construction, and maintenance of the State of Alaska's highway system. Arterials, connectors, and local roads within Yakutat are constructed and maintained by the CBY.

### **3.9.1 Existing Conditions**

The proposed project site is located at 115 Airport Road in Yakutat, Alaska. The property is bordered by Airport Road to the north and east, and easements to the southwest and west. A power plant and equipment yard are present further to the east; thick vegetation is present further to the southeast and south; and a mostly-vegetated parcel with a few abandoned structures is present further to the west.

The existing YCHC is open Monday through Friday from 9:00 am to 12:00 pm and 1:00 pm to 5:00 pm. Traffic consists of patients arriving and departing from the facility, and visitors of the Tongass National Forest Ranger Station, located within the same building as the YCHC.

### **3.9.2 Environmental Effects**

The following sections present potential environmental effects of the proposed action and alternative action on traffic and transportation.

### **Proposed Action**

The proposed action consists of developing a new health center to better serve the needs of the surrounding community. The new facility will have an increased capacity for patient visits, which will potentially result in increased traffic flow. However, this increase in traffic flow is anticipated to be minimal.

Short-term impacts are anticipated as a result of construction activities and related traffic. However, the short-term impacts are expected to be minor.

Significant individual or cumulative impacts to traffic and/or transportation resources are not anticipated as a result of the proposed action.

### **Alternative – No Action**

This alternative does not include any action. Therefore, this alternative does not have the potential to affect local traffic or transportation.

## **3.10 HAZARDOUS MATERIALS AND WASTE MANAGEMENT**

Hazardous materials and wastes are regulated in the U.S. under a variety of Federal and state laws. Federal laws and subsequent regulations governing the assessment, transportation, and disposal of hazardous wastes and materials include the Resource Conservation and Recovery Act (RCRA); the RCRA Hazardous and Solid Waste Amendments; the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Solid Waste Act; the Toxic Substances Control Act (TSCA); and the CAA. RCRA is the Federal law that regulates hazardous waste from “cradle to grave,” that is, from the time the waste is generated through its management, storage, transport, treatment, and final disposal. USEPA is responsible for implementing this law.

RCRA also sets forth a framework for the management of non-hazardous wastes. The 1986 amendments to RCRA enable the USEPA through relevant state agencies to address the environmental problems that can result from underground tanks storing petroleum and hazardous substances. RCRA focuses only on active and proposed facilities, and does not address abandoned or historical sites.

Previous uses of a medical center site may have included activities that generated hazardous materials. Some key examples may include the presence of underground fuel or chemical storage tanks, abandoned chemicals (from laboratory/photo processing/industrial cleaning), medical waste and sharps or residuals from hazmat incidents such as mercury spills in plumbing and under flooring and casework, lamp ballast, mercury lamp disposal and potential polychlorinated biphenyl (PCB)-contaminated areas. These types of environmental site issues would require a thorough review by an assessment professional and the completion of appropriate Environmental Site Assessments. A Phase I Environmental Site Assessment that addresses these issues was completed by BGES in September of 2017, and is included in Appendix A.

### 3.10.1 Existing Conditions

Environmental issues may include contamination of soil, water, or air. The affected environments require investigation of potential indicators of such contamination, review of federal and state regulatory databases, and review of historical records to identify any potential past or present uses of real property indicative of known or suspected sources of potential adverse impacts. Such findings may result in identification of Recognized Environmental Conditions (RECs) which may have impacted the target property, or may represent the potential for adverse environmental impact to the target property.

### 3.10.2 Environmental Effects

The following sections present potential environmental effects of the proposed action and alternative action on hazardous materials and waste management.

#### **Proposed Action**

New site construction has the potential to generate solid waste through excessive building components. Reuse and recycling of solid waste will reduce the impact associated with disposal of wastes generated during construction.

A Phase I Environmental Site Assessment of the proposed project site, dated September 2017, was prepared in accordance with American Society for Testing and Materials (ASTM) 1527-13 by BGES to identify any potential sources of contamination that may exist onsite. No reports of the proposed project site were found in the federal and state databases that were searched. None of the adjacent properties were reported in these databases either, except for the Yakutat Power Plant, which was listed in the USEPA Enviromapper Database as a generator of fossil fuel power. Listings in this database do not indicate the presence or absence of contamination within the surface or subsurface at these sites. Several other sites within ½ mile of the proposed project site were identified in the searched databases as currently or historically being contaminated. The identified reports were evaluated to determine the potential for adverse environmental impacts to the proposed project site. No recognized environmental conditions stemming from the proposed project site or surrounding sites were identified during the preparation of the Phase I Environmental Site Assessment. A copy of the Phase I Environmental Site Assessment is included in Appendix A.

### **Alternative – No Action**

This alternative does not include any action. Therefore, this alternative does not have the potential to generate or disturb hazardous wastes.

### **3.11 NOISE**

Noise can be disruptive to normal activities for people and wildlife. In extreme cases, it can have adverse health effects, such as hearing loss. The location, duration, timing, and frequency of activity give rise to a pattern of noise. The loudness is measured in units called decibels (dB). The loudness of sound as heard by the human ear is measured on the A-weighted decibel (dBA) scale.

Noise is defined as undesirable sound and is federally regulated by the Noise Control Act of 1972. Certain land uses, facilities, and the people associated with them are more sensitive to a given level of noise than other uses/facilities/groups of people. Such "sensitive receptors" include schools, churches, hospitals, retirement homes, campgrounds, wilderness areas, hiking trails, and some species of threatened or endangered wildlife. In general, outdoor sound levels that do not exceed 55 dBA are protective of public health and welfare for sensitive receptors.

Noise exposures exceeding 70 dBA over a 24-hour period are not protective of hearing damage. Machinery and activities can generate noise during construction. However, elevated noise levels would likely be of short duration. Heavy equipment use tends to be the noisiest phase of construction, but typically lasts only a short time.

#### **3.11.1 Existing Conditions**

The YCHC is a medical center with no inherent significant noise-producing equipment. During construction, noise levels will increase. Machinery and equipment could raise daytime noise levels above the 55 dBA level normal for residential areas.

#### **3.11.2 Environmental Effects**

The following sections present potential environmental effects of the proposed action and alternative action on noise.

### **Proposed Action**

Impacts under the proposed action are likely to be short term and minor in duration and associated primarily with the use of heavy machinery during the construction of the new facility and associated parking area. These impacts may negatively impact nearby sensitive receptors including the existing YCHC (located more than 600 feet northwest of the proposed project site) and the local school (located more than 500 feet northeast of the proposed project site), because of the nature of the construction and because it would occur in outdoor areas. All work will need to strictly follow local noise ordinances to minimize potential impacts to local areas. A slight increase in noise levels may be anticipated during peak hours of operation due to increased traffic but this increase is not likely to significantly impact the day-night average sound level (DNL).

No long-term impacts to noise levels are anticipated from occupation and use of the new building.

### **Alternative – No Action**

This alternative does not include any action. Therefore, this alternative does not have the potential to affect noise levels.

## **3.12 LAND USE**

Land use patterns within communities aid in forming the structure of our built environment. The relationships of land uses to one another can result in community harmony or discord. Land use is governed by the Planning and Zoning Commission within the CBY. Local, state, and tribal land use plans exist in many areas of the country, guiding future land use patterns based upon the vision of the local community and leaders. Federal plans govern uses of federal lands and do not have jurisdiction over local decisions.

### **3.12.1 Existing Conditions**

The proposed project site is currently covered with dense vegetation, including spruce, cedar, and alder trees; devil's club; ferns; and various other shrubbery. No evidence of prior development has been identified on the site. The site is generally flat, with a slight slope to the south. The proposed project site is bordered by Airport Road to the north and east; dense vegetation to the southwest; and an abandoned Federal Aviation Administration (FAA) site to the west. A power plant and equipment yard are located further to the northeast and east, respectively; beyond Airport Road. Small, commercial-use buildings are located to the northwest of the site, beyond the FAA site.

### 3.12.2 Environmental Effects

The following sections present potential environmental effects of the proposed action and alternative action on land use.

#### **Proposed Action**

Construction projects should be consistent with current land use plans and with other applicable planning and zoning requirements. Any zoning changes that would be necessary for the implementation of a project must be reviewed for consistency with existing zoning and land-use regulations, and approved by the applicable agency(ies).

The CBY is currently taking steps to convey the proposed project site to the YTT for the purpose of developing the new YCHC. BGES consulted with the Planner of the Yakutat City Planning & Zoning department, regarding the zoning of the proposed project site. According to the Planner, the site is currently zoned as “Holding”, but will be zoned as “Light Industrial” prior to completion of this project, which aligns with the intended use of the property. A copy of the correspondence with the Planner is included in Appendix G.

#### **Alternative – No Action**

This alternative does not include any action. Therefore, this alternative would not impact land use.

### 3.13 OTHER RESOURCES

According to the September 2016 *Environmental Review and Determination* prepared by IHS, the Alaska Coastal Management Program was disbanded on July 1, 2011. Therefore, a review of the potential environmental impacts of the proposed action and alternative action was not completed in regards to coastal management.

## 4.0 CUMULATIVE IMPACTS

The CEQ Regulations (40 CFR 1500-1508) implementing the procedural provisions of the NEPA of 1969, as amended (42 USC 4321), defines cumulative effects as:

“the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other action (40 CFR 1508.7).

#### 4.1 Existing Conditions

Incorporating the principles of cumulative effect analysis into the environmental impact assessment of the YCHC, the effects on the Yakutat School must be considered. Approximately 84 percent of the Yakutat School student body are minority students, and 93 percent of the student body are considered to be economically-disadvantaged. The CBY is considered a medically-underserved population.

Assessing cumulative impacts of the proposed action and alternative must:

- Include past, present, and future actions;
- Include all Federal, non-Federal, and private actions;
- Focus on each affected resource, ecosystem, and human community; and
- Focus on truly meaningful effects.

#### 4.2 Environmental Effects

The following sections present potential cumulative environmental effects of the proposed action and alternative action.

##### **Proposed Action**

The proposed action would reduce the amount of organic land cover. This modification of land use may adversely impact wildlife in the vicinity of the proposed project site. The reduction in permeable land cover will also likely increase storm water runoff and decrease infiltration on site. Mitigation offsets could include timing the construction work to occur when wildlife is least likely to occupy the site; removing minimal land cover for completion of the project; and reseeding/replanting disturbed areas upon completion of the project.

##### **Alternative – No Action**

This alternative does not include any action. Therefore, there would be no cumulative effects as a result of this alternative.

### 5.0 CONCLUSION

This EA analyzes the environmental impacts of constructing a new facility versus taking no action. Based on the discussions of environmental impacts for the proposed action and alternative, the proposed action appears to be the best choice for the YCHC. The proposed action has minimal

impacts across all potential concerns, with the exception of land use. Although the proposed action will significantly alter the land use of the proposed project site, the overall land use in the CBY will not be significantly changed. The proposed action will increase the type and quality of medical services available to the community of Yakutat, and will provide additional job opportunities for medical professionals. The medical needs of the underserved Yakutat community will be best-served at the proposed project location.

Impacts resulting from the proposed action are anticipated to be minimal, with the exception of land use as discussed above. The action will generally involve minor, short-term impacts relating to site design, preparation, and construction. Implementation of State and local requirements will mitigate many of these impacts. The minimal impacts resulting from the proposed action appear to be less damaging to the community and resources than the deficiencies of the existing YCHC.

Activities examined under the proposed action and alternative are virtually identical to activities resulting from public and private actions occurring on a regular basis throughout the country. Considering these impacts, the cumulative effects of the proposed action will be minimal.

## **6.0 MITIGATION SUMMARY**

Table 2 outlines mitigation measures that may be required during the process of construction activities for the new YCHC.

## 7.0 REFERENCES

National Resource Conservation Service (NRCS). 2008. Farmland Protection Policy Act. Internet URL: <http://www.nrcs.usda.gov/programs/fppa>.

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Environmental Protection Agency (EPA) "Protective Noise Levels, Condensed Version of EPA Levels Document." November 1978.

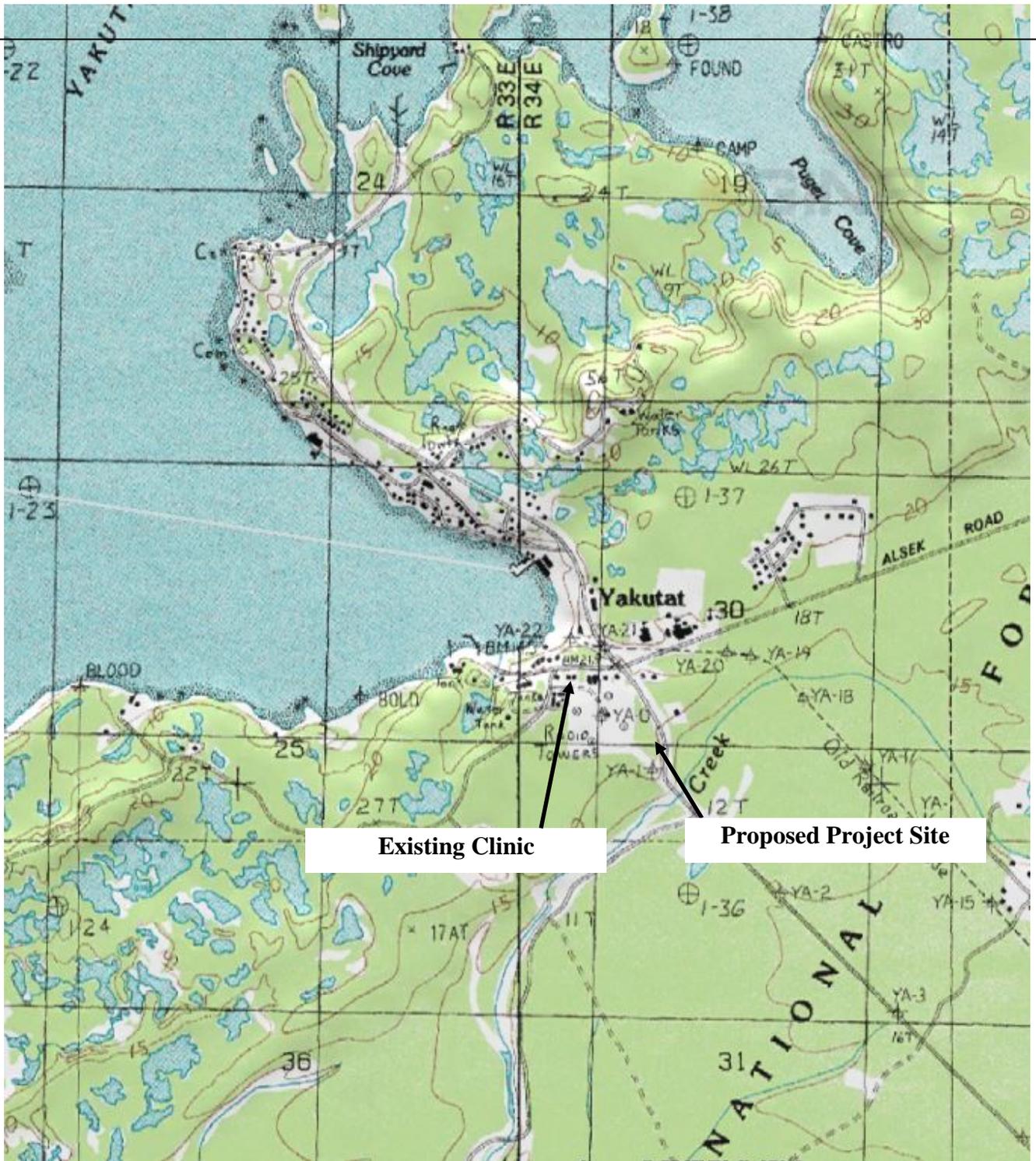
City and Borough of Yakutat Website. Internet URL: <http://www.yakutatak.govoffice2.com>.

Yakutat Community Health Center Website. Internet URL: <http://www.yakutathealth.org>.

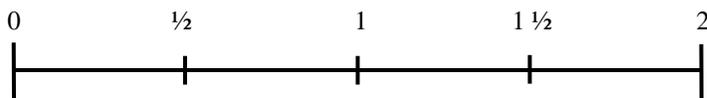
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Source: USGS Map, Yakutat, Alaska, 1963



Approximate Scale in Miles

115 Airport Road  
Yakutat, Alaska

**Property Vicinity Map**

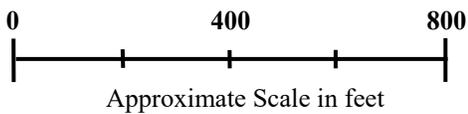
 BGES, INC.

**January 2018**

**Figure 1**



Source: Provided by Google Earth Pro ©



115 Airport Road Yakutat, Alaska <b>May 11, 2016 Aerial Photograph</b>		
 BGES, INC. <small>ENVIRONMENTAL CONSULTANTS</small>	<b>January 2018</b>	<b>Figure 2</b>

**TABLE 1**  
**SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS**  
**115 AIRPORT ROAD**  
**YAKUTAT, ALASKA**

BGES, INC.

<b>Section of Report</b>	<b>Resource</b>	<b>Proposed Action (Construction of new facility on subject property)</b>	<b>Alternative (No action)</b>
3.1	Geology and Soils	<i>Minor impacts caused by construction.</i>	No impacts.
3.2	Air Quality	<i>Minor, temporary impacts caused by construction.</i>	No impacts.
3.3	Water Quality	<i>Minor impacts caused by erosion, increased runoff, and reduced infiltration.</i>	No impacts.
3.4	Floodplains	No impacts.	No impacts.
3.5	Wetlands	No impacts.	No impacts.
3.6	Vegetation and Wildlife	<i>Minor impacts caused by deforestation.</i>	No impacts.
3.7	Cultural Resources	No impacts.	No impacts.
3.8	Socioeconomics and Environmental Justice	<i>Beneficial impacts.</i>	No impacts.
3.9	Traffic and Transportation	<i>Minor, temporary impacts caused by construction and roadwork. Minor, longterm impacts caused by increased traffic.</i>	No impacts.
3.10	Hazardous Materials and Waste Management	<i>Minor, temporary impacts.</i>	No impacts.
3.11	Noise	<i>Minor, temporary impacts caused by heavy machinery use and other construction activities.</i>	No impacts.
3.12	Land Use	<b>Major, long-term impacts caused by development.</b>	No impacts.

*Italics* = minor impacts

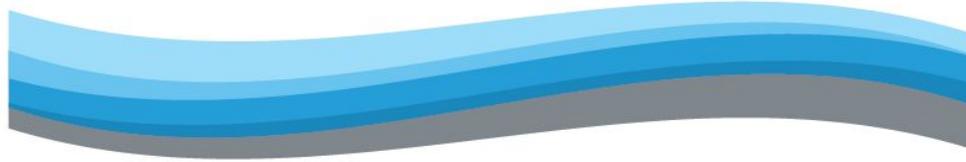
**Bold** = significant impact

**TABLE 2  
MITIGATION MEASURES  
115 AIRPORT ROAD  
YAKUTAT, ALASKA**

**BGES, INC.**

<b>Potential Impact</b>	<b>Mitigation Measures</b>
Impacts to Soil	Comply with Federal, State, and Local rules regarding storm water runoff. Utilize Storm Water Pollution Prevention Plan (SWPPP) Best Management Practices (BMPs) to minimize soil erosion and runoff.
Impacts to Air Quality	Comply with Federal, State, and Local rules regarding construction and operations emissions. Allow minimum quantity of volatile organic compounds (VOCs) materials on site necessary to accomplish the work.
Impacts to Water Quality	Comply with Federal, State, and Local regulations for storm water runoff, erosion, and construction management (BMPs). Employ low impact development design. Focus on landscape solutions. Design alternative infiltration processes.
Impacts to Floodplains	No impact anticipated under the proposed action or alternative.
Impacts to Wetlands	No impact anticipated under the proposed action or alternative.
Impacts to Vegetation and Wildlife	Minimize footprint of ground disturbance. Replant/reseed disturbed areas upon completion of proposed action.
Impacts to Cultural Resources	No impact anticipated under the proposed action or alternative.
Impacts to Socioeconomics and Environmental Justice	Impacts are anticipated to be positive.
Impacts to Traffic and Transportation	Install markers and use flaggers when work is being conducted on or near streets. Install signs to guide traffic flow upon completion of proposed action.
Impacts to Hazardous Materials and Waste Management	Limit material quantities to the minimum necessary for the proposed action.
Impacts to Noise	Perform construction work only during normal daylight hours. Any work outside of normal hours may require a special variance or permit.
Impacts to Land Use	Comply with local land use planning and zoning requirements. Obtain permits prior to construction.

**APPENDIX A**  
**BGES PHASE I ENVIRONMENTAL SITE ASSESSMENT,**  
**DATED SEPTEMBER 2017**



# BGES, INC.

ENVIRONMENTAL CONSULTANTS

**115 AIRPORT ROAD  
YAKUTAT, ALASKA**

**PHASE I ENVIRONMENTAL SITE ASSESSMENT**

**SEPTEMBER 2017**

**Submitted to:**

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## 1.0 INTRODUCTION

BGES was retained by Captain Kelly Leseman of Indian Health Services (IHS) to conduct a Phase I Environmental Site Assessment (ESA) of the property at 115 Airport Road; located in the southeastern portion of Yakutat, Alaska (hereafter referred to as the subject property). The purpose of this assessment was to evaluate the potential for environmental impacts to the subject property from potential on-site or off-site sources, and to assess related environmental conditions at the property.

This report presents the results of our findings. Aerial photographs of the subject property are included as figures at the end of the report text. Recent photographs of the property are included in Appendix A; the August 2016 *Wetland Delineation Report* prepared by Bosworth Botanical Consulting is included in Appendix B; information from Alaska Department of Environmental Conservation (ADEC) databases is included in Appendix C; an environmental questionnaire completed by a representative of the owner of the subject property is included in Appendix D; and a copy of our written proposal is included in Appendix E.

This Phase I ESA was performed during August and September of 2017, in accordance with our written proposal dated August 8, 2017. The Phase I ESA was conducted in general accordance with American Society for Testing Materials (ASTM) Standard E 1527-13 and the local standards of practice. The assumptions made while performing this Phase I ESA and the limitations of our scope of work are detailed in Section 6.0 (Exclusions, Considerations, and Qualifications) of this report. Exceptions to the ASTM-prescribed procedures include the following:

- The ASTM specifies that the Federal Resource Conservation and Recovery Act (RCRA) generators list be researched. For this assessment, we researched the U.S. EPA Enviromapper database.
- The U.S. Environmental Protection Agency EPA Federal List of Institutional Controls (IC) sites database is currently undergoing reconfiguration, as such, site reports are not currently searchable by location; however it is our opinion that sites which have Federal ICs in place are likely to be listed in the ADEC Contaminated Sites database as well, and therefore, the inability to search the Federal IC sites database does not constitute a data gap that materially affects our interpretation of the environmental condition of the subject property.
- The ASTM standard practice minimum search distance for the Federal Emergency Response Notification System (ERNS) list is just for the subject property. For this assessment, we attempted to utilize the U.S. National Response Center database, which has replaced the ERNS list; however, at the time of preparation of this report, the NRC database was unavailable in a format that was

reasonably-ascertainable for review. The Center for Effective Government, which maintains a third party database referred to as the Right to Know Network (RTKNet), compiles the NRC records in a more accessible format, which was reviewed for the subject property and adjacent properties.

- Research regarding whether or not wetlands have been identified on the subject property was performed, although the ASTM does not require this information.

Our Phase I ESA included a combination of research, interviews, and site reconnaissance. Based on the conditions observed during our site reconnaissance and our research, no recognized environmental conditions were identified with respect to the subject property.

## 2.0 SITE DESCRIPTION

The subject property consisted of an irregular-shaped parcel; located approximately 220 feet south of the intersection of Ocean Cape Road and Airport Road, in the southeastern portion of Yakutat, Alaska (Figure 1). According to the Alaska State Land Survey (ASLS) Number 2017-20, the subject property totaled approximately 2.41 acres in size.

### 2.1 Legal Description

The legal description of the subject property was listed in the Alaska State Land Survey (ASLS) Number 2017-20 as a portion of Lot 5, U.S. Survey Number 5630. The subject property is located in the Southwest Quarter of the Southwest Quarter, Section 30, Township 27 South, Range 34 East, Copper River Meridian, Alaska.

### 2.2 Geologic and Surface Description

According to the December 2016 *Geotechnical Engineering Report* prepared by Northern Geotechnical Engineering, Inc. *d.b.a.* Terra Firma Testing (NGE-TFT), the subject property is underlain by “poorly-graded to well-graded sand and gravel” to at least 15 feet below ground surface. Several inches of organic material rest on the ground surface, and mature Sitka Spruce and Hemlock trees occupy the subject property.

A review of the United States Fish & Wildlife Service’s wetlands mapping application indicated that no wetlands are located on the subject property, which was confirmed by the August 2016 *Wetland Delineation Report* by Bosworth Botanical Consultants, included in Appendix B.

### 2.3 Vicinity Description

The area surrounding the subject property was comprised of undeveloped, commercial, and industrial properties. The subject property was bordered by Airport Road to the north and east, and easements to the southwest and west. A power plant and equipment yard were present further to the east; thick vegetation was present further to the southeast and south; and a mostly-vegetated parcel with a few abandoned structures was present further to the west. Additional information pertaining to the surrounding properties is included in Section 4.2, below.

### 2.4 Past and Current Usage

According to Jon Erickson, the City and Borough of Yakutat Manager, the subject property is currently owned by the City and Borough of Yakutat; however, the property is undergoing a transfer of ownership to the Yakutat Tlingit Tribe.

According to the December 2016 *Geotechnical Engineering Report* prepared by NGE-TFT, the subject property was logged for timber in the early 1900s. No other uses or developments of/on the subject property have been identified.

### 2.5 Review of Aerial Photographs

Aerial photographs of the vicinity of the subject property taken in 1959, 1970, 1971, 1988, 1998, 2004, 2010, and 2016 were briefly reviewed; and the 2016 aerial photograph was chosen to print. This is included as Figure 2.

The August 26, 1959 aerial photograph showed the subject property as being undeveloped and covered with dense mature vegetation. An easement was present to the west of the subject property, which extended across the southern portion of the subject property in a northwest-southeast orientation. The property adjacent to, and west of the subject property, beyond the easement, was cleared of vegetation and appeared to contain a few communications antennas and residential structures. Adjacent properties to the north, east, and south of the subject property contained mature vegetation. What appeared to be a few residential structures were present to the northwest of the subject property, beyond the antenna farm and before Ocean Cape Road. A few residential structures were present along Airport Road and were located north of the subject property. A tank farm was located to the northwest of the subject property, beyond Ocean Cape Road and south of Arco Road. Two ports were located in the Yakutat inlet; one was located on the southside and one was located on the northeast side

of the inlet.

The July 27, 1970 aerial photograph showed the subject property as similar in appearance to what was observed in the previous aerial photograph. A residential structure had been developed on the property adjacent to, and north of the subject property since the previous aerial photograph was taken. A few more residential structures were located to the northwest of the Ocean Cape Road and Arco Road intersection.

The July 9, 1971 aerial photograph showed the subject property as similar in appearance to what was observed in the previous aerial photograph. A few commercial structures were developed in lots located adjacent to, and northwest of the subject property and along Airport Road. Ocean Cape Road extended eastward beyond the Airport Road intersection. A few residential structures were present to the southeast of the Airport Road and Ocean Cape Road intersection.

The October 21, 1988 aerial photograph showed the subject property as similar in appearance to what was observed in the 1959 aerial photograph. A few more commercial structures were developed on the lots located adjacent to, and northwest of the subject property. An area of dense vegetation was cleared adjacent to, and east of the subject property, beyond Airport Road. This area appeared to contain one residential structure. A large institutional structure was present on the north side of Ocean Cape Road, northeast of the subject property. The port which is located on the northeast portion of the Yakutat inlet contained numerous drums along Airport Road.

The June 24, 1998 aerial photograph showed the subject property as similar in appearance to what was observed in the 1959 aerial photograph. The property adjacent to, and east of the subject property, beyond Airport Road, contained what appeared to be a few commercial structures. The tank farm, which was observed in aerial photographs from 1959 through 1988, was changed from horizontal to vertical storage tanks. A building was constructed to the southwest of the port located on the south side of Yakutat inlet. Numerous residential structures were present on the northside of Ocean Cape Road, beyond the Institutional structure.

The September 13, 2004 aerial photograph showed the subject property as similar in appearance to what was observed in the 1959 aerial photograph. A few more commercial structures were developed on the lots located adjacent to, and northwest of the subject property. A few more structures, which appear to be associated with the institutional building, were constructed since the previous aerial photograph was taken. Airport Road and Ocean Cape Road appeared to be paved.

The October 23, 2010 aerial photograph showed the subject and surrounding properties as similar in appearance to what was observed in the previous aerial photograph. An industrial or commercial structure had been developed on the property located to the southeast of the Airport Road and Ocean Cape Road intersection since the previous aerial photograph was taken. A small area was cleared to the east of the residential structures located to the northeast of the subject property, beyond Ocean Cape Road.

The May 11, 2016 aerial photograph, included as Figure 2, showed the subject property as being undeveloped and covered with thick vegetation, similar to what was observed in the 1959 aerial photograph. A path is evident trending northwest/southeast, extending from the southeast corner of the subject property. Airport Road was present adjacent to, and east of the subject property. What appeared to be industrial or commercial properties were located further to the northeast and east of the subject property, beyond Airport Road. The area to the south of the subject property was thickly vegetated and undeveloped.

### **3.0 RECORDS REVIEW**

BGES conducted a review of numerous records and databases to research the potential for known contamination on or near the subject property. The following sections describe the results of these reviews.

#### **3.1 U.S. Environmental Protection Agency (EPA) National Priority List (NPL)**

The EPA's NPL, which is updated regularly, was reviewed on August 17, 2017. No NPL sites were located within 1 mile of the subject property.

#### **3.2 U.S. EPA Delisted NPL Sites**

The EPA's delisted NPL sites database, which is updated regularly, was reviewed on August 17, 2017. No delisted NPL sites were listed within 1 mile of the subject property.

#### **3.3 U.S. EPA Federal List of Institutional Controls (IC) Sites**

An attempt to review the EPA's Federal List of IC Sites was made on August 17, 2017. This database was not available, as the website was undergoing reconfiguration at the time of preparation of this Phase I ESA.

### **3.4 U.S. EPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) List**

The U.S. EPA CERCLIS list, which is updated on a daily basis, was reviewed on August 17, 2017. None of the sites listed in this database were identified as being located within ½ mile from the subject property.

### **3.5 U.S. EPA CERCLIS No Further Remedial Action Planned (NFRAP) List**

The U.S. EPA CERCLIS NFRAP list, which is updated on a daily basis, was reviewed on August 17, 2017. None of the sites listed within the database were located within ½ mile of the subject property.

### **3.6 U.S. EPA Resource, Conservation, and Recovery Act (RCRA) Corrective Action Detail Report (CORRACTS)**

The U.S. EPA RCRA CORRACTS for Alaska, which is updated regularly, was reviewed on August 17, 2017. None of the sites listed in this database were identified as being located within 1 mile of the subject property.

### **3.7 U.S. EPA RCRA Non-CORRACTS Treatment, Storage and Disposal (TSD) Facilities**

The U.S. EPA RCRA Non-CORRACTS TSD Facilities for Alaska, which is updated regularly, was reviewed on August 17, 2017. No sites were listed within ½ mile from the subject property.

### **3.8 Alaska Department of Environmental Conservation (ADEC) Registered Underground Storage Tank (UST) Database**

The ADEC Registered UST database, which is updated regularly, was reviewed on August 17, 2017. Eight Registered USTs were listed as being located in Yakutat; however, none of the Registered USTs were identified as being located on the subject property or adjacent properties.

### **3.9 ADEC Contaminated Sites Database**

The ADEC Contaminated Sites Database, which is updated regularly, was reviewed on August 17, 2017; and listed 3 contaminated sites as being located within ½ mile of the subject property. One of these sites has been issued a “Cleanup Complete” status by the ADEC, indicating that this site has been remediated to the satisfaction of the ADEC, and therefore does not require any further assessment or remediation activities at this time. As such, it is our opinion that there is a reduced potential for

adverse environmental impact to the subject property stemming from documented and remediated releases at this site; and it is our opinion that it does not constitute a recognized environmental condition with respect to the subject property.

One of the ADEC Contaminated Sites was listed as having “Cleanup Complete – Institutional Controls” status, indicating that further characterization and remediation of contaminated media may be required at this site prior to the removal of the institutional controls. The Delta Western - Yakutat site (Site 1 on Figure 3) was located approximately 0.2 mile northwest of the subject property. According to the ADEC Cleanup Chronology report pertaining to this site, soil contamination was initially identified in 1994 at depths of up to 15 feet below grade. Groundwater monitoring was conducted at this site until 2011, when the ADEC determined that the remaining contamination did not pose an unacceptable risk to human health of the environment. For this reason, and because of the likely downgradient position of this site with respect to the subject property, and because of the considerable distance between this site and the subject property (with respect to the potential for contaminant migration through soil, groundwater, or soil vapor); it is our opinion that there is a reduced potential for adverse environmental impact to the subject property stemming from contamination at this site, and it is not considered to be a recognized environmental condition with respect to the subject property.

One site was designated as “Active” by the ADEC, indicating that further characterization and/or remediation of contaminated media are required at this site. The Yakutat Air Force Base Army Dock and Piping site (Site 2 on Figure 3) was located approximately 0.4 mile northwest of the subject property. According to the ADEC Cleanup Chronology report pertaining to this site, residual diesel contamination remains in the groundwater. Because of the likely downgradient position of this site with respect to the subject property, and because of the considerable distance between this site and the subject property (with respect to the potential for contaminant migration through soil, groundwater, or soil vapor); it is our opinion that there is a reduced potential for adverse environmental impact to the subject property stemming from contamination at this site, and it is not considered to be a recognized environmental condition with respect to the subject property.

Additional information pertaining to these sites is included in Table 1 and Appendix C, and the locations of these sites are represented on Figure 3.

### **3.10 State of Alaska Voluntary Cleanup and Brownfields Sites**

The State of Alaska does not maintain specific databases of voluntary cleanup sites or Brownfields sites that are not also included within the ADEC Contaminated Sites database. This database was reviewed, and the results of that review are discussed in Section 3.9, above.

### **3.11 ADEC Statewide Oil and Hazardous Substance Spills Database**

The ADEC Statewide Oil and Hazardous Substance Spills Database contains records concerning spills of oils and other hazardous substances that have occurred throughout Alaska. Records of spills that have occurred since July of 1995 are included in this database. The database is updated regularly and was reviewed on August 17, 2017. Ten ADEC Spills events were documented as having occurred at four locations within ¼ mile of the subject property (Sites 1, 2, 4, and 5 on Figure 3). The Spills events were listed as being “closed cases” by the ADEC; likely indicating that these events are no longer considered to represent a material threat to human health or the environment in the opinion of the ADEC. For this reason, it is our opinion that there is a reduced potential for contamination associated with these Spills to adversely impact the subject property, and they are not considered to be recognized environmental conditions with respect to the subject property.

Additional information concerning the Spills sites is included in Table 1 and Appendix C, and the locations are shown on Figure 3.

### **3.12 National Response Center**

The Emergency Response Notification System (ERNS), which is operated through the National Response Center (NRC) and is managed as a division of the United States Coast Guard (USCG), maintains records of releases of toxic and hazardous substances in a format that is not reasonably ascertainable for review at the time of this report. However, the Center for Effective Government maintains a third party database of incidents which occurred in the State of Alaska from 1982 to 2015, which is referred to as the Right to Know Network (RTKNet), that compiles the NRC records in a more efficient format. The RTKNet database was reviewed on August 17, 2017. No incidents were reported to have occurred on the subject property or adjoining properties.

### **3.13 U.S. EPA Envirofacts/Enviromapper**

In response to the Emergency Planning and Community Right to Know Act [42 U.S.C. 11001 et seq. (1986)], also known as Title III of Superfund Amendments and Reauthorization Act (SARA), EPA

maintains a database of hazardous material transporters, storage facilities, and solid waste, air, and water pollution generators. The database, which is updated regularly, was reviewed on August 17, 2017 for the subject property and the adjoining properties. One adjoining property was listed in this database. The Yakutat Power Plant (Site 6 on Figure 3) was located approximately 50 feet northeast of the subject property, beyond Airport Road; and was identified as a generator of fossil fuel electric power. Listings in the Enviromapper database do not indicate the presence or absence of contamination within the surface or subsurface at these sites. As such, it is our opinion that the mere inclusion of this site in this database in and of itself does not constitute a recognized environmental condition with respect to the subject property. Data regarding the Enviromapper site are included in Table 1 and Appendix C, and its location is shown on Figure 3.

### **3.14 U.S. EPA Toxic Release Inventory (TRI) Sites Database**

The Toxics Release Inventory (TRI) is a publicly-available EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain industry groups as well as federal facilities. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and was expanded by the Pollution Prevention Act of 1990. The TRI sites database, which is updated on a daily basis, was reviewed on August 17, 2017. The TRI database includes information for the years 1988 to 2015, and no sites were identified as being located within ¼ mile of the subject property for the years reviewed.

### **3.15 Alaska State List of Landfills and Solid Waste Facilities**

The ADEC Division of Environmental Health, Solid Waste Management list of currently and formerly permitted facilities for Anchorage, which was last updated on February 2, 2017, was reviewed on August 17, 2017. No permitted solid waste facilities were identified as being located within 0.5 mile of the subject property.

### **3.16 Alaska Department of Natural Resources (DNR) Recorder's Office Records Database**

The Alaska DNR Recorder's Office Records Database, which is updated daily, was reviewed on August 17, 2017 for records of environmental liens against the subject property. No records of any environmental liens outstanding against the subject property were identified during our search of the database.

### **3.17 Sanborn Fire Maps**

No Sanborn Fire Maps that depicted the area of the subject property could be located during the preparation of this Phase I ESA.

## **4.0 SITE RECONNAISSANCE AND INTERVIEWS**

Reconnaissance of the subject property was conducted on September 8, 2017. Weather conditions were rainy, with an ambient temperature of approximately 52 degrees Fahrenheit. One representative from BGES was onsite to perform this reconnaissance. The following paragraphs discuss our findings and observations.

### **4.1 Subject Property**

The subject property, which was accessed from Airport Road, contained dense vegetation consisting of spruce, cedar, and alder trees; devil's club; ferns; and various other shrubbery (Photographs 1 through 5 in Appendix A). The subject property was generally flat, with a slight slope to the south.

No evidence of historic development was observed during our site reconnaissance. No features associated with utilities were identified. Survey markers and survey tape were observed along the perimeter of the subject property, from an apparent survey of the parcel (Photograph 6 in Appendix A).

### **4.2 Surrounding Properties**

The area surrounding the subject property consisted of a mixture of undeveloped, commercial, and industrial properties. The subject property was bordered by Airport Road to the north and east, and easements to the southwest and west. Power lines extended within the easements. A power plant was present further to the northeast (Photograph 7 in Appendix A) and an equipment yard was present further to the east (Photograph 8 in Appendix A), beyond Airport Road. Beyond the easements, thick vegetation was present further to the south, and the property to the west was mostly vegetated with a few abandoned structures (Photograph 9 in Appendix A). Ophir Creek was present further to the southeast.

No recognized environmental conditions with respect to the subject property were visually identified on surrounding properties at the time of our site reconnaissance.

### **4.3 Interviews**

Interviews were conducted with individuals knowledgeable about current or historic site conditions. The following sections provide pertinent information gathered from the interviews.

#### **4.3.1 Jon Erickson, Representative of Current Owner of the Subject Property**

An environmental questionnaire was completed by Jon Erickson, the City and Borough of Yakutat Manager (the current property owner), on August 28, 2017. Mr. Erickson indicated that the City and Borough of Yakutat acquired the subject property through the State of Alaska Municipal Entitlement Program in 1998. According to Mr. Erickson, the subject property is, and has always been undeveloped, and he is unaware of any spills, aboveground storage tanks, USTs, or environmental liens on the site; nor was he aware of any pits, ponds, or lagoons existing on the property. He also stated that there are no known septic systems, injection wells, water supply wells, floor drains, or hydraulic lifts on the subject property. Mr. Erickson was unaware of any oil/water separators, staining, engineering/institutional controls or other signs of contamination on the property.

A copy of the environmental questionnaire completed by Mr. Erickson is included in Appendix D.

#### **4.3.2 Mary, Tongass National Forest Ranger Station**

Mary, an employee of the Tongass National Forest Ranger Station (located approximately 0.1 mile west-northwest of the subject property), was briefly interviewed on September 8, 2017. Mary stated that she has lived in Yakutat for approximately 20 years. In that time, she has not observed any storage or releasing of hazardous waste on the subject property, and she was unaware of any other signs of previous development or environmental concerns on the subject property or surrounding area.

#### **4.3.3 City and Borough of Yakutat**

A representative of the City and Borough of Yakutat was contacted on September 6, 2017, requesting any information concerning the initial connection of the subject property to municipal water and sewer service. A representative from the City and Borough of Yakutat indicated that the subject property has not been connected to water and sewer services. Additionally, the representative indicated that no gas lines were present in Yakutat.

## 5.0 FINDINGS AND CONCLUSIONS

### 5.1 Subject Property

Research and reconnaissance was performed of the grounds of the subject property. The following paragraphs summarize our findings.

Based on our research, including a review of historical aerial photographs, the subject property does not appear to have ever been developed. According to the City and Borough of Yakutat, the subject property has not ever been connected to municipal water or sewer services; and natural gas service is not currently available in Yakutat. Because the subject property does not appear to have ever been developed, there is a reduced potential for heating oil USTs, water supply well(s), or septic system(s) to exist or have existed on the subject property.

Based on our on-site observations and our research as described above, no recognized environmental conditions with respect to the subject property stemming from onsite sources were identified.

### 5.2 Surrounding Properties

The area surrounding the subject property was comprised primarily of undeveloped, commercial, and industrial properties. No recognized environmental conditions with respect to the subject property were visually identified on any of the adjoining properties during our reconnaissance, as viewed from our vantage points on the subject property.

The ADEC Contaminated Sites database lists 3 Contaminated Sites as being located within ½ mile of the subject property. Based on the information obtained concerning these sites as described in Section 3.9 above; it is our opinion that there is a reduced potential for adverse environmental impact to the subject property stemming from documented contamination at these sites, and that contamination is not considered to constitute recognized environmental conditions with respect to the subject property.

Ten ADEC Spills events were noted to have occurred at four sites within ¼ mile of the subject property. Since the Spills events were listed as closed cases by the ADEC, it is likely that these events are no longer considered to represent a material threat to human health or the environment in the opinion of the ADEC; and as such, it is our opinion that there is a reduced potential for contamination associated with these events to adversely impact the subject property and they are not considered to be recognized environmental conditions with respect to the subject property.

No other sites were identified within any of the remaining databases that were reviewed (as discussed in Section 3.0, above), as being within the respective prescribed search distances for these resources.

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 at 115 Airport Road in Yakutat, Alaska; the subject property. Any exceptions to, or deletions from this practice are described in Sections 1.0 and 6.0 of this report. This assessment did not reveal any recognized environmental conditions with respect to the subject property.

## **6.0 EXCLUSIONS, CONSIDERATIONS AND QUALIFICATIONS**

This Phase I ESA did not include a title search or sampling to identify the potential presence of asbestos, lead, radon, or other contaminants at this property. Further, subsurface evaluation, including soil and groundwater sampling, was not part of the scope of work. No significant data gaps were encountered during the preparation of this Phase I ESA.

This report was prepared for our client, Captain Kelly Leseman of IHS. The scope of work and level of effort were based on our written proposal dated August 8, 2017. It is not intended for third parties to rely on the information provided in this report, except at their own risk. This report presents facts, observations, and inferences based on conditions observed during the period of our project activities, and only those conditions that were evaluated as part of our scope of work. Our conclusions and recommendations are based on our observations and the results of our research, and as such, rely on the accuracy of the databases that were reviewed and the information provided by the individuals that were interviewed. In addition, changes to site conditions may have occurred since we completed our initial project activities. These changes may be from the actions of man or nature. Changes in regulations may also impact the interpretation of site conditions. BGES will not disclose our findings to any parties other than our client as listed above, except as directed by our client, or as required by law.

This Phase I ESA was completed by Rose Pollock, Environmental Scientist II of BGES and was reviewed by Robert Braunstein, Certified Professional Geologist (C.P.G.) and Principal of BGES. Ms. Pollock has conducted numerous Phase I ESAs throughout South-Central Alaska. Mr. Braunstein has over 35 years of environmental consulting experience, and has conducted and managed thousands of Phase I ESAs throughout Alaska and the lower 48 states.

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professionals as defined in Section 312.10 of 40 Code of Federal Regulations (CFR)

Part 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared by:

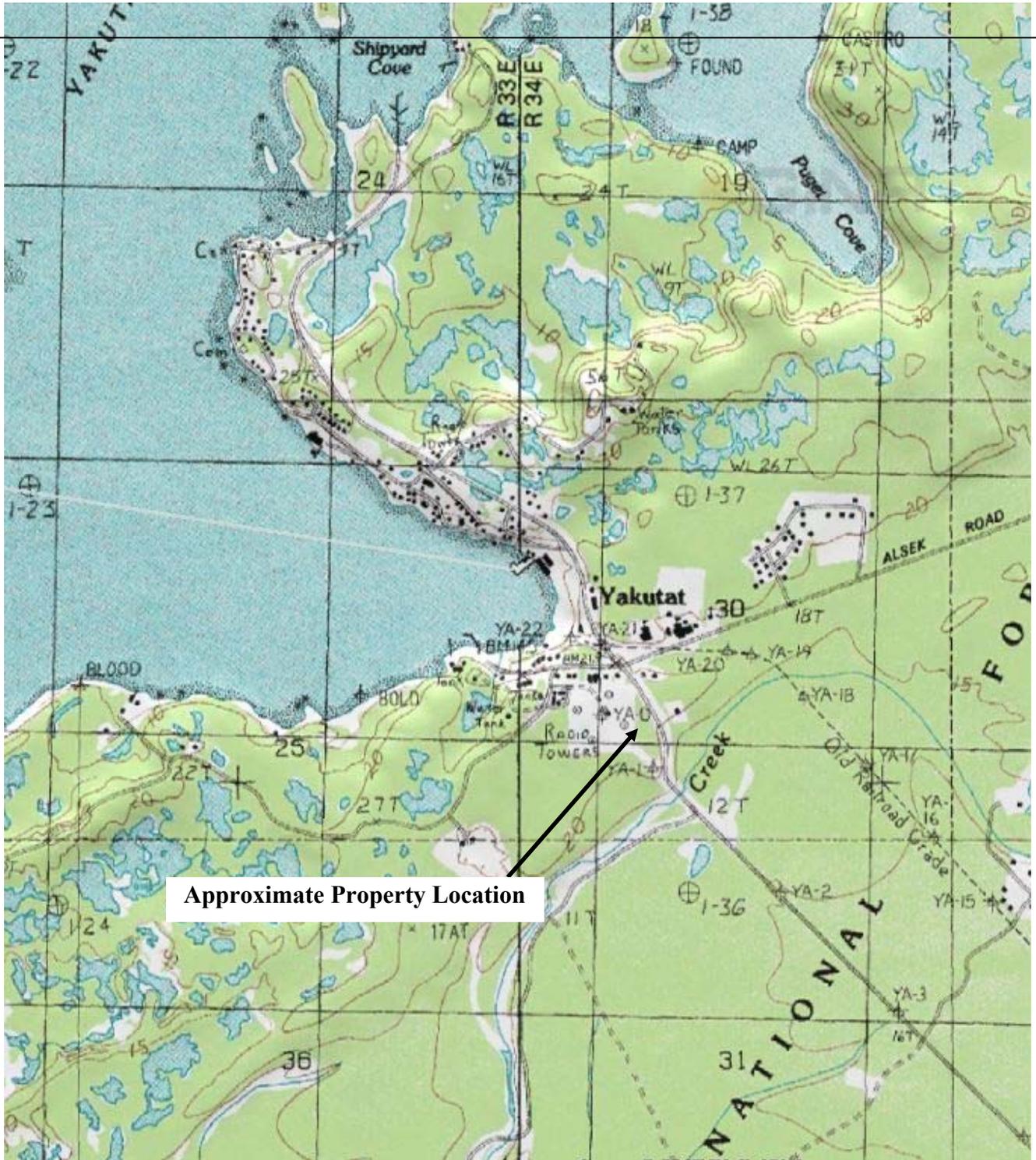


Rose Pollock  
Environmental Scientist II

Reviewed by:

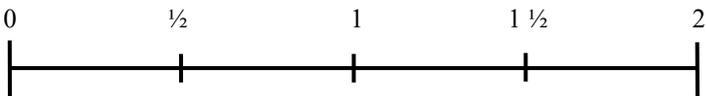


Robert N. Braunstein, C.P.G.  
Principal



Approximate Property Location

Source: USGS Map, Yakutat, Alaska, 1963



Approximate Scale in Miles

115 Airport Road  
Yakutat, Alaska  
**Property Vicinity Map**

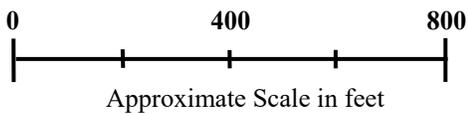


September 2017

Figure 1



Source: Provided by Google Earth Pro ©

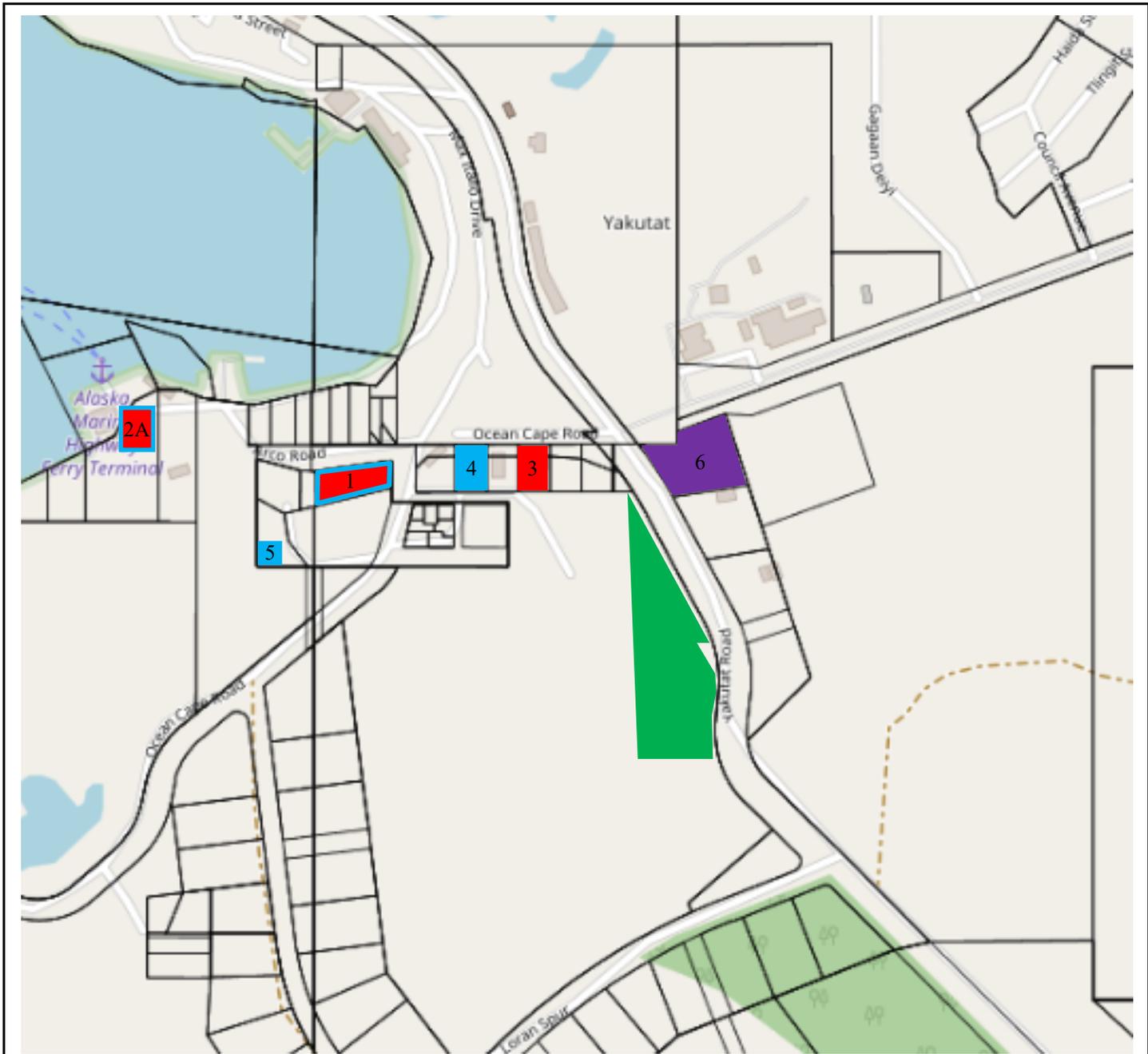


115 Airport Road  
 Yakutat, Alaska  
 May 11, 2016 Aerial Photograph

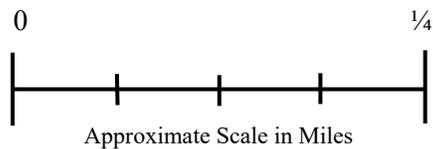


September 2017

Figure 2



Source: Alaska Department of Natural Resources Alaska Mapper Application. Base Map



**Key**

- Subject Property
  - ADEC Contaminated Site; number refers to listing in Table 1
  - ADEC Spills Site; number refers to listing in Table 1
  - US EPA Enviromapper Site; number refers to listing in Table 1
- “A” = Active ADEC Contaminated Site

115 Airport Road Yakutat, Alaska <b>ADEC Contaminated &amp; Spills; &amp; US EPA          Enviromapper Sites Location Map</b>		
 <b>BGES, INC.</b>	<b>September 2017</b>	<b>Figure 3</b>

**TABLE 2**  
**115 Airport Road**  
**Yakutat, Alaska**

BGES, INC.

**ADEC Contaminated & Spills; & US EPA EnviromapperSites Data**

Site No.	Contaminated Site Facility	Site Location	HAZARD ID No.	Contaminated Site Information	Contaminated Site Status
1	Delta Western Yakutat	Alsek & Ocean Cape Road intersection	1979	Diesel and gasoline petroleum contamination were identified in 1994 to a depth of 15 feet below grade. Contamination was assessed in 1997 and identified at a maximum depth of 14 feet. Diesel range organics (DRO) was identified during groundwater sampling in 1999 at a concentration of 14.9 milligrams per liter. Semi-annual groundwater monitoring was conducted until 2010, when the ADEC approved a reduction to annual monitoring. Several monitoring wells were decommissioned. The ADEC determined that the potential for contaminant migration was not unacceptable and issued closure with institutional controls in 2011.	Cleanup Complete - Institutional Controls
2	Yakutat AFB Army Dock & Piping	Between Malaspina Office & City Water Tank/Wells	3716	Eight aboveground storage tanks (ASTs) for diesel were connected to each other by piping and to the dock, and ranged in size from 20,000 to 80,000 gallons. All ASTs were removed by 1963. The site has been redeveloped with buildings, a fish processing plant, an office warehouse, a construction storage yard, and a water tank. A city well was sampled in 1997 and no analytes were detected at concentrations exceeding ADEC cleanup criteria. Based on gathered information, tanks 1 through 6 were recommended for closure. However, because DRO remains in the groundwater at tank sites 7 and 8, those sites were recommended for closure with institutional controls.	Active
3	Saint Elias Auto Center	710 Oil Dock Road	24561	DRO was identified in a sample of the onsite private water well. A 1,500-gallon gasoline underground storage tank (UST) was removed in 1996 and contamination was attributed to overfilling and piping problems. Contamination was left in place. Test pits were advanced in 2001 for further site characterization, in which no contamination was detected. The site was then closed by the ADEC.	Cleanup Complete

Site No.	Spill Site Name	Site Location	Incident description	Site Status
1	F/V Arctic Queen	Delta Western Fuel Facility	One event, in which 1 gallon of diesel was spilled, was reported for this site.	Case Closed
1	Delta Western	Delta Western Fuel Facility	Two events, in which a total of 54 gallons of diesel were spilled, were reported for this site.	Case Closed
1	Delta Western	Delta Western Fuel Facility	One event, in which 40 gallons of aviation fuel were spilled and recovered, was reported for this site.	Case Closed
2	Browning Timber Vessel	Delta Western Dock	One event, in which 5 gallons of diesel were spilled, was reported for this site.	Case Closed
2	Barge SCT 282	Delta Western Dock	One event, in which 1 gallon of diesel was spilled, was reported for this site.	Case Closed
2	Delta Western Facility Barge Transfer	Delta Western Dock	One event, in which 3 gallons of diesel were spilled and 1 gallon was recovered, was reported for this site.	Case Closed
2	M/V Constructor	Delta Western Dock	One event, in which 1 gallon of diesel was spilled, was reported for this site.	Case Closed
4	Alaska Commercial Co., Yakutat Store & Warehouse	716 Ocean Cape Road	One event, in which 100 gallons of diesel were spilled, was reported for this site.	Case Closed
5	NWS Housing HOTs	871 Forest Service Road	One event, in which 30 gallons of diesel were spilled, was reported for this site.	Case Closed

Site No.	Enviromapper Facility Name	Facility Location	Information System ID	Enviromapper Site Information
6	Yakutat Power Plant	1 Forest Highway	AK0000000223100010	This site was identified in the Enviromapper database as a generator of fossil fuel electric power.

**APPENDIX A**  
**PROPERTY PHOTOGRAPHS**



**Photo 1. Eastern Edge of Subject Property (facing southeast)**



**Photo 2. Subject Property (facing west)**



**Photo 3. Subject Property (facing east)**



**Photo 4. Subject Property (facing south)**



**Photo 5. Subject Property (facing west)**



**Photo 6. Survey Marker and Survey Tape on Subject Property (facing west)**

115 Airport Road  
Yakutat, Alaska  
**Property Photographs**



**September 2017**

**Figure A-1**



**Photo 7. Power Plant (facing northeast)**

**Photo 8. Equipment Yard (facing east)**



**Photo 9. Abandoned Structure, west of Subject Property (facing south)**

**APPENDIX B**  
**AUGUST 2016 *WETLAND DELINEATION REPORT***  
**PREPARED BY BOSWORTH BOTANICAL CONSULTING**

# **Wetland Delineation Report for Yakutat Tlingit Tribe/IHS Joint Project - Yakutat, AK**



**Bosworth Botanical Consulting**

August 2016

**For:**

**Gail Dabaluz**

**S'eenaakw'**

**Executive Director**

**Yakutat Tlingit Tribe**

**PO Box 418 • Yakutat, Alaska 99689**

**• T: 907.784.3238, Ext. 102 • F: 907.784.3595**

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## Introduction

This wetland delineation report and map are in support of the US Army Corps of Engineers wetland permit for planning and development of a joint project between the Yakutat Tlingit Tribe and the Indian Health Service. This report was revised after geotechnical studies were done of the project area and data was provided to Bosworth Botanical Consulting. (Appendix A)

## Location

The proposed 2.5 acre parcel is found in Yakutat, Alaska. It is on the west side of the Yakutat Airport Road just north of the Ophir Creek crossing and south of the intersection of the Airport Road and Ocean Cape Rd..

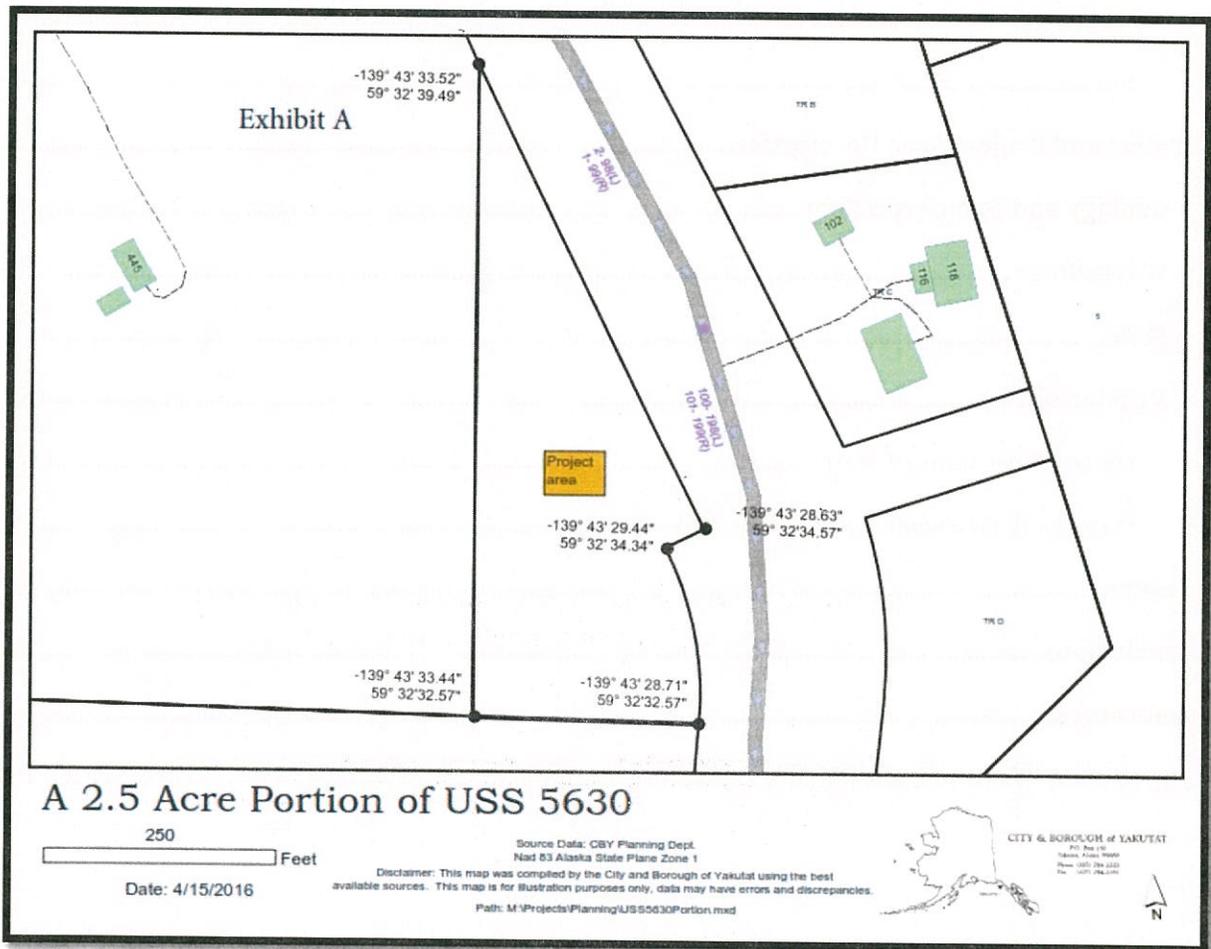


Figure 1 - Project area location map.

## Methods

### Climate

The Yakutat project area was visited for mapping and delineation on July 29, 2016. The weather at that time was overcast and warm with temperatures in the high 50's and low 60's F°. Rainfall for the 6 days before the field visit was heavy - a total of 6.7 inches. Geotechnical studies of the project area were done October 27-28, 2016. Rainfall for the week before the geotechnical studies were done was approximately 5 inches.

### Wetland Field Methods

Wetlands areas were mapped using the "triple parameter" method described in the U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987) as supplemented by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region - November 2007*. Wetlands are required to have a prevalence of wetland hydrology, hydric soils, and hydrophytic vegetation. Jurisdictional wetlands are determined when positive indicators of all of these three criteria are present. The "routine determination delineation" methodology was used. The wetland boundaries and classifications described herein represent best professional opinion.

Sample points were done at either side of any significant changes in vegetation, soils or hydrology. At each sample point, the wetland status of that point was determined by observing indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. Once representative sample points were done further wetland boundaries were marked with a GPS waypoint.

### *Vegetation*

Sample plot vegetation was divided into three strata; tree, shrub, and forb, and each layer was classified using the prevalence index (a weighted-average wetland indicator status of all plant species in the sample plot) and the dominance test (more than 50% of the dominant plant species across all strata are rated obligate, facultative wet, or facultative). The 2012 U.S. Army Corps of Engineers *National Wetland Plant List - Alaska Region* was used to classify plants.

### *Hydrology*

Hydrology was determined using two methods: (1) visually, if the water table is at or above the surface, or (2) with a soil pit. (Data from geotechnical investigations done later in the fall was also used.) The presence of standing water, depth to free water in the soil pit, and depth to saturated soils was recorded. Other primary and secondary hydrology indicators were recorded, such as presence of watermarks, sediment deposits, drift deposits, iron deposits, hydrogen sulfide odor, geomorphic position, and drainage patterns in wetlands.

### *Soil*

Soil pits were dug to a depth of 12-16 inches, or to bedrock or glaciomarine sediment refusal, to determine if indicators of hydric soils were present. Soil colors were determined from a moist sample with the Munsell Soil Color Chart. Sample site data sheets are included in Appendix A.

Table 1 - Indicators of the Three Wetland Parameters

Parameter	Indicators
<b>Wetland Vegetation</b>	<p>Dominant vegetation consists of wetland-adapted plant species, based on one or more of the following indicators:</p> <ul style="list-style-type: none"> <li>• Dominance Test: more than 50% of dominant vegetation is of facultative, facultative wetland, or obligate status as determined from the National List of Plant Species Occurring in Wetlands (Lichvar et al. 2014).</li> <li>• Prevalence Index: Prevalence index is 3.0 or less. The prevalence index is a weighted average that takes into account plant abundance and indicator status.</li> <li>• Plant morphological characteristics are evident.</li> </ul>
<b>Hydric Soils</b>	<p>A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding that persist long enough during the growing season to develop anaerobic conditions in the upper part of the soil. Hydric soils generally exhibit one or more of the following indicators:</p> <ul style="list-style-type: none"> <li>• Histosol (highly organic soil)</li> <li>• Histic epipedon (organic soil surface layer)</li> <li>• Sulfidic material (rotten-egg odor)</li> <li>• Aquic or peraquic moisture regime (saturation during the growing season);</li> <li>• Soil matrix colors that indicate a loss or movement of organic matter, iron, or manganese</li> <li>• The presence of redoximorphic features, which are locations within the soil structure of iron and manganese depositions and depletions</li> <li>• The presence of oxidized iron and manganese in specific abundance and distribution.</li> </ul>
<b>Wetland Hydrologic Conditions</b>	<p>Wetland hydrologic conditions, indicated by one or more of the following indicators:</p> <ul style="list-style-type: none"> <li>• Surface inundation visible on ground or aerial imagery;</li> <li>• Standing water or saturated soils at or above a depth of 12 inches</li> <li>• Surface water</li> <li>• High water table</li> <li>• Oxidized rhizospheres along living roots</li> <li>• Drift deposits</li> <li>• Water-stained or surface-scoured leaves</li> <li>• Wetland drainage patterns</li> <li>• Geomorphic position</li> <li>• Facultative-neutral test</li> <li>• Stunted or stressed plants.</li> </ul>

Polygon acreages were calculated in GIS. Final delineation map was done in GIS.

## **Project and Project Area Description**

### **Geology and Geomorphology**

The project area is gently sloping to the south. It is found on well-drained proximal outwash sediments of sands, gravels and cobbles formed from the Little Ice Age advance of ice into Yakutat Bay retreating less than 200 years ago. There is a five foot deep and ~60 foot wide outwash flood channel across the southern part of the project area that has a bed of alluvial sorted large cobbles and gravels.

### **Watersheds**

There are no surface streams that cross the project area but an outwash flood channel does cross the project area. The channel has no input or output streams but the channel is deep enough that for short periods after periods of heavy rain the water table reaches - and in some spots exceeds - the surface. A road berm at its lower end precludes any surface drainage out of the channel.

The project area is within the Ophir Creek watershed. Topographic maps and aerial photographs of the area indicate that the channel is large in relation to current stream flows in Ophir Creek. These oversized channels were formed by melt water streams that were much larger than the present Ophir Creek. Ed Neal at the USGS (1995) writes that Ophir Creek stream flow appears to be sustained primarily from rain and snow- melt percolating into outwash deposits, moving laterally as ground water, and then discharging into the stream channel. Ophir Creek terminates at Summit Lake where it discharges to Tawah Creek which drains into the North Pacific Ocean.

### **Soils**

The glacier pulled back from the moraine just north of the project area less than 200 years ago. The soils are young and relatively undeveloped and are generally Entisols. Over most of the project area two to four inches of peat has accumulated over sands and gravels.

In the outwash flood channel there is shallow peat over boulders with sand and gravels.



Figure 2 - Four inches of course peat over unsaturated sand with fine gravel.

## Vegetation

### *Upland Sitka Spruce Forest*

The typical upland vegetation of the project area is a second-growth Sitka spruce - FACU (*Picea sitchensis*) forest with an understory of devils club - FACU (*Oplopanax horridum*), salmonberry - FACU (*Rubus spectabilis*), early and Alaska blueberry - FAC (*Vaccinium ovalifolium* and *V. alaskaense*), trailing raspberry - FAC (*Rubus pedatus*), spiny wood fern - FACU (*Dryopteris dilatata*), oak fern - FACU (*Gymnocarpium dryopteris*), and dwarf dogwood - FACU (*Cornus canadensis*).



Figure 3 - Typical upland Sitka spruce forest in the project area.

***Outwash flood channel Sitka Spruce Forest***

The vegetation in the outwash flood channel is very similar to that on the outwash material. In areas disturbed by fallen trees there are more disturbance-adapted species such as skunk currant - FACU (*Ribes bracteosum*), red elderberry- FACU (*Sambucus racemosa*) and lady fern - FAC (*Athyrium felix-femina*).



Figure 4 - Detail of outwash flood channel understory vegetation - dwarf dogwood, lady fern, oak fern, salmonberry - primarily upland vegetation.

Table 2 - Plant Species List (Lichvar, 2014)

Scientific name	common name	Indicator status <sup>1</sup>
<i>Alnus rubra</i>	red alder	FAC
<i>Alnus sinuata</i>	Sitka alder	FAC
<i>Athyrium felix-femina</i>	lady fern	FAC
<i>Cornus canadensis</i>	dwarf dogwood	FACU
<i>Dryopteris dilatata</i>	spiny wood fern	FACU
<i>Gymnocarpium dryopteris</i>	oak fern	FACU
<i>Menzisia ferruginea</i>	false azalea	FACU
<i>Oplopanax horridus</i>	devil's club	FACU
<i>Picea sitchensis</i>	Sitka spruce	FACU
<i>Ribes bracteosum</i>	skunk current	FACU
<i>Rubus pedatus</i>	trailing raspberry	FAC
<i>Rubus spectabilis</i>	salmonberry	FACU
<i>Sambucus racemosa</i>	red elder	FACU
<i>Streptopus amplexifolius</i>	twisted stalk	FAC

<sup>1</sup> See Table 3 for abbreviation definitions

<i>Tiarella trifoliata</i>	foamflower	FAC
<i>Tsuga heterophylla</i>	western hemlock	FAC
<i>Vaccinium ovalifolium</i>	early blueberry	FAC

**Table 3 - Indicator code table (Lichvar, 2012)**

Indicator Code	Type	Comment
OBL	Obligate Wetland	Almost always occur in wetlands. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface.
FACW	Facultative Wetland	Usually occur in wetlands, but may occur in non-wetlands. These plants predominately occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.
FAC	Facultative	Occur in wetlands and non-wetlands. These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and elevation, and they have a wide tolerance of soil moisture conditions.
FACU	Facultative Upland	Usually occur in non-wetlands, but may occur in wetlands. These plants predominately occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.
UPL	Obligate Upland	Almost never occur in wetlands. These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.
NI	No indicator	Insufficient information was available to determine an indicator status.

## Results

**Table 4 - Sample point table (COE data sheet - Appendix A).**

SAMPLE POINT	HABITAT	COWARDIN CLASS	HGM CLASS	PJD <sup>2</sup>	Rational for PJD
SP-1	Young second growth Sitka spruce forest - well-drained outwash sediments	-	-	No	-
SP-2	Young second growth Sitka spruce forest - well-drained outwash sediments	-	-	No	-
SP-3	Young second growth Sitka spruce forest - well-drained outwash flood channel sediments	-	-	No	-

## Conclusions

The project area is all upland with upland vegetation, soils and hydrology. The outwash flood channel has upland vegetation (Sitka spruce/red elderberry/salmonberry/devils club/lady fern/dwarf dogwood) and a young upland soil with a shallow layer (0.5 - 0.8 feet) of peat over well-drained boulders, gravels and sand. The water table at the time of the visit, which was the day after 6 days of heavy rain, was just at the surface in the lowest parts of the outwash flood channel. Geotechnical investigations by IHS in late October 2016 showed the water table in the outwash flood channel to be at least 15 ft. below surface with no groundwater, seeps, or moisture observed.

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<sup>2</sup> Preliminary Jurisdictional Determination

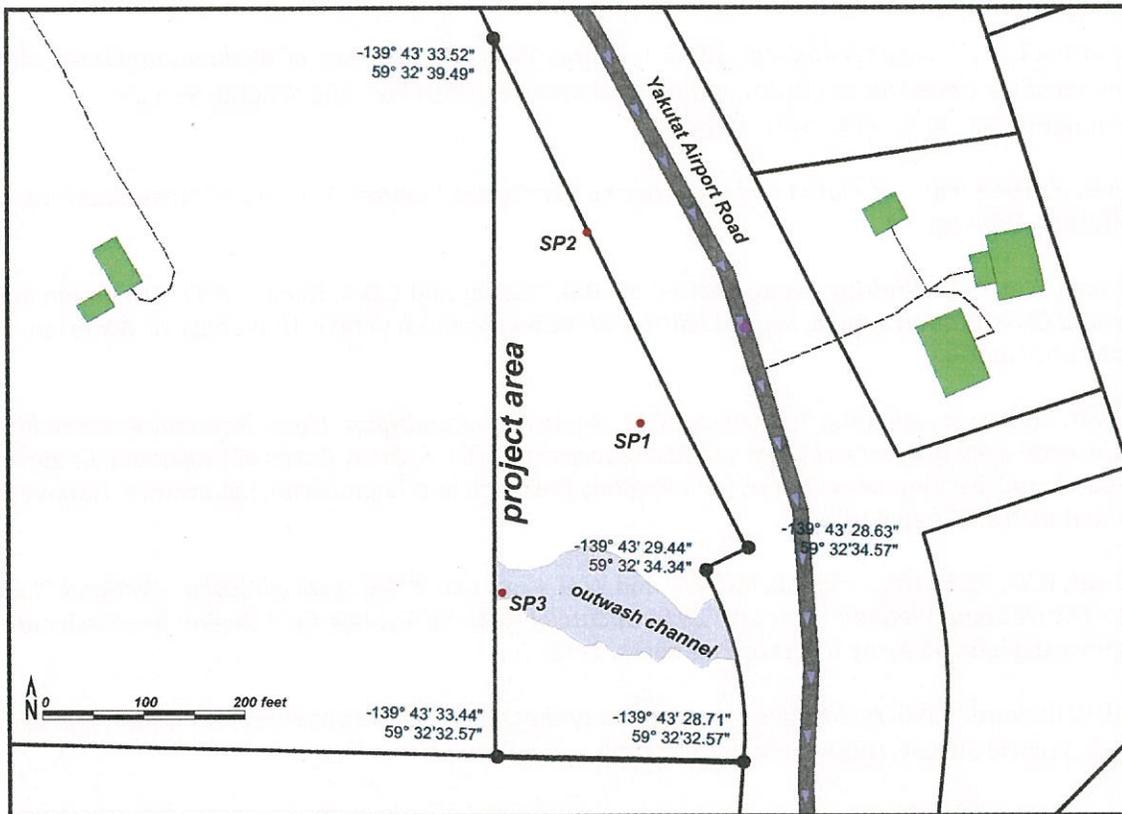


Figure 5 - Wetland delineation map - SP = Sample points and the pink area is the outwash channel.

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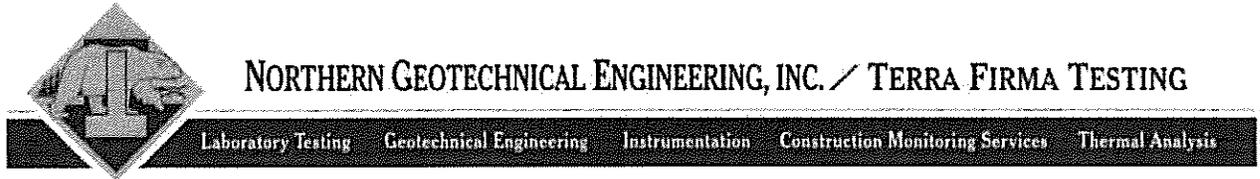
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## Appendix A – Project Area Geotechnical Report



November 7, 2016

Yakutat Tlingit Tribe 606 Forest Hwy 10 PO Box 418 Yakutat, AK  
99689

Attn: Rhoda Jensen – Health Director

NGE-TFT Project #4562-16

RE: SUMMARY OF SUBSURFACE EXPLORATION FINDINGS  
AND GENERAL GEOTECHNICAL ENGINEERING  
CONCLUSIONS FOR THE SITE OF THE PROPOSED YAKUTAT  
COMMUNITY HEALTH CLINIC, YAKUTAT, ALASKA.

Rhoda,

We, Northern Geotechnical Engineering, Inc. d.b.a. Terra Firma Testing, have prepared this letter to briefly summarize our findings from a subsurface exploration program that we recently completed at the site of the proposed Yakutat Community Health Clinic (YCHC). In this letter we also provide generalized geotechnical engineering conclusions regarding the suitability of the project site for the proposed improvements. The information that we present in this letter is intended to be used (in part) to help supplement an Indian Health Service (IHS) Site Selection Evaluation Report (SSER), and should not be used to make final design and construction decisions regarding the proposed improvements. design and construction of the proposed improvements.

Geotechnical Summary Narrative

The site of the proposed Yakutat Community Health Clinic (YCHC), hereafter referred to as “the project site”, is approximately 2.5 acres in area and is primarily vegetated with mature, second growth Sitka spruce and hemlock trees. The topography of the project site generally slopes gradually down to the southeast with a shallow, sub-linear depression located along the central and southern portions of the project site, which generally trends to the south-southeast. The project site was reportedly logged for timber around the beginning of the 20<sup>th</sup> century, but no significant ground disturbances and/or other site developments (e.g., fill placement, etc.) are known to have occurred at the project site.

Northern Geotechnical Engineering, Inc. d.b.a. Terra Firma Testing (NGE-TFT) conducted a site reconnaissance and subsurface exploration program at the project site from October 26-27, 2016 during which time they directed the excavation of six test pit explorations at select locations across the project site. NGE-TFT was accompanied during their field efforts by Captain Kelly Leseman; Indian Health Service Project Manager for the proposed YCHC project. Captain

Leseman assisted NGE-TFT in the determination of the six test pit locations, which generally correspond to the conceptual location of the proposed YCHC improvements.

NGE-TFT’s subsurface exploration efforts suggest that the project site is overlain by a relatively thin layer of organic material consisting primarily of varying amounts of mosses, decaying organic matter (leaf litter, woody debris, etc.), and root masses. The organic layer averages approximately 0.5 to 0.75 feet in thickness, with some locally thicker sections of decaying organic material where fallen tree trunks and/or tree stumps occur at the ground surface. The surficial organic layer is directly underlain by a relatively thick deposit of sand and gravel that extends to depths of at least 15 feet below the existing ground surface (bgs). The sand/gravel soils were likely deposited during the last glacial retreat and are consistent with coarse-grained glacial outwash deposits found elsewhere in the Yakutat area. NGE-TFT did not observe any indications of groundwater in any of the six test pit explorations, and

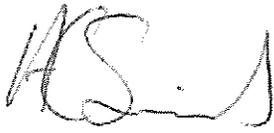
groundwater likely occurs at depths greater than 15 feet across the entire project site. NGE-TFT did not observe any frozen soils during their subsurface exploration effort and they do not expect permafrost to occur anywhere across the project site.

In general, the sand/gravel soils that NGE-TFT identified across the project site are suitable for supporting conventional shallow foundation systems, such as poured concrete footings and/or thickened edge slab foundations, as well as any underground utilities and/or structural pavement sections. There is little to no risk of seismic liquefaction and/or seismically-induced slope failure at the project site. The sand/gravel soils are suitable for re-use as structural fill across the project site, assuming proper placement and compaction techniques are applied. Based on their initial observations of the soil gradation (both visual and textural), NGE-TFT estimates the sand/gravel soils to have little to no frost susceptibility. Furthermore, they anticipate there to be very little potential for ice lens development at the project site. As such, minimal foundation burial/insulation requirements and minimal structural pavement sections will be required to reduce the potential for differential settlements as a result of ice lens formation and/or subsequent thaw-related weakening of the bearing soils. Additionally, NGE-TFT estimates the sand/gravel soils to be relatively free-draining (i.e., exhibit relatively high infiltration/percolation rates) and can likely support relatively uncomplicated stormwater/septic drain field designs.

Please feel free to contact me directly at 907-771-9507 with any questions or comments that you may have regarding the information that we present in this letter or if you need any additional information in support of the IHS SSER.

Sincerely, Northern Geotechnical Engineering, Inc. d.b.a. Terra Firma Testing,

Andrew C. Smith, CPG Senior Geologist

A handwritten signature in black ink, appearing to be 'AS' followed by a flourish.

## **Appendix B - Scanned Sample Site Data Sheets**



**APPENDIX C**  
**ADEC CONTAMINATED & SPILLS; & US EPA ENVIROMAPPER SITES REPORTS**

## Site Report: Delta Western Yakutat

**Site Name:** Delta Western Yakutat

**Address:** Asek & Ocean Cape Road Intersection, Monti Bay, Yakutat, AK 99689

**File Number:** 1530.38.005

**Hazard ID:** 1979

**Status:** Cleanup Complete - Institutional Controls

**Staff:** IC Unit, 9074655229 [dec.icunit@alaska.gov](mailto:dec.icunit@alaska.gov)

**Latitude:** 59.544716

**Longitude:** -139.733218

**Horizontal Datum:** WGS84

*We make every effort to ensure the data presented here is accurate based on the best available information currently on file with DEC. It is therefore subject to change as new information becomes available. We recommend contacting the assigned project staff prior to making decisions based on this information.*

### Problems/Comments

Substantial diesel (DRO) and gas range (GRO) hydrocarbon soil contamination is associated with the tank farm, former truck rack, and valve house. Soil was removed from the floor of the tank farm to a depth of 15 feet without reaching clean soil. The Tank Farm is located on Tract 2-D ASLS 90-213. Additional pipelines, a truck loading rack and dockside marine head for the facility are located on right of ways on Tract 2-A ASLS 90-213 and Tract B ASLS 76-115 to the Army Dock in Monti Bay. A private drinking water well is within 500 feet but is not presently used. The City of Yakutat Public Water System drinking wells are within 700 lateral feet and are screened at depths of 325 and 345 feet.

### Action Information

Action Date	Action	Description	DEC Staff
5/11/1994	Update or Other Action	(Old R:Base Action Code = SA1R - Phase I SA Review (CS/LUST)). Contamination appears confined by groundwater table. Possibility of contamination from off property. Report recommends Phase II and CAP.	No Longer Assigned
12/30/1994	Site Added to Database	Diesel and gas range hydrocarbon contamination.	No Longer Assigned
11/17/1995	Site Ranked Using the AHRM	Initial ranking.	Sally Schlichting
2/5/1996	Update or Other Action	(Old R:Base Action Code = SA2A - Phase II SA Approval / Release Investigation). Sampling, installation of remediation piping and facility upgrades to occur simultaneously. Groundwater will be investigated depending on results of sampling.	Sally Schlichting
2/7/1997	Site Characterization Report Approved	(Old R:Base Action Code = RI - Remedial Investigation). Release Investigation Report reviewed and approved.	Sally Schlichting
2/7/1997	Update or Other Action	(Old R:Base Action Code = SI - Site Investigation). Assessment of depth and areal extent of contaminated soil beneath the tank farm found contamination as	Sally Schlichting

		deep as 14 feet in some areas.	
1/29/1998	Site Characterization Report Approved	Requested additional information be gathered in regard to off-site impacts, surface and groundwater impacts, and suspected localized impacted area near valve house.	Sally Schlichting
7/8/1998	Site Characterization Workplan Approved	Soil and GW investigation.	Sally Schlichting
10/9/1998	Update or Other Action	Cost Recovery Letter Issued this date.	Sally Schlichting
8/5/1999	Site Characterization Report Approved	Soil and GW investigation report. Approval letter asks for additional investigation and a number of other items.	Sally Schlichting
4/24/2000	Report or Workplan Review - Other	ADEC received Ground Water Monitoring Report by R&M for sampling in July 1999 at site. The highest concentration of DRO detected was 14.9 mg/L in MW-1B at the former Truck Rack. The highest concentration of DRO in surface water samples was 1.0 mg/L in the sample from Seep-4, located west the dock bulkhead.	Bruce Wanstall
10/10/2000	Update or Other Action	Cost Recovery Memorandum sent to Kay R. for \$1,019.86.	Bill Janes
10/17/2001	Site Characterization Workplan Approved	Additional GW investigation approved regarding 8/5/99 requiremnts.	Mike Jaynes
6/28/2002	Update or Other Action	RRM has been on-site all week. Difficulty installing monitoring wells due to bedrock or glacial eratic refusal. Terry G. informed me they became aware that ENSR has been doing work for the Corps in the immediate area. Old military fuel storage tanks and pipeline infrastructure may be co-mingling contamination. I sent an email to Deb Caillouet in Anchorage. RRM needs the ENSR report which should be completed soon.	Bill Janes
1/1/2003	Update or Other Action	Project manager changed to Wanstall. File and site review of status and ranking.	Bruce Wanstall
1/7/2003	GIS Position Updated	Marine transfer point and Tank Farm at ridge top above Monti Bay used to pinpoint site position on topographic map. Accuracy within 1.3 acre property in Tract D estimated at 100 meters.	Bruce Wanstall
2/19/2003	Update or Other Action	Meeting with new consultants for Chevron, SECOR plans well sampling events in June.	Bruce Wanstall
7/9/2003	Long Term Monitoring Established	Discussion with consultant; June monitoring well (MW) sampling report pending. December 02 MW sampling event report requested.	Bruce Wanstall
12/11/2003	Update or Other Action	Semi-annual monitoring event and site inspection. One of four seeps and 3 of 5 wells were able to be sampled under December conditions in Yakutat. Long term monitoring plan will be modified to capture peak seasonal ground water flow periods of April and October.	Bruce Wanstall
12/15/2003	GIS Position Updated	GPS location using North American Datum 27. Ocean Cape Road is at the marine head dock .	Bruce Wanstall
4/23/2004	Update or Other Action	December 2003 ground water monitoring report recieved and reviewed.	Bruce Wanstall
9/22/2004	Update or Other Action	Groundwater Monitoring Report arrived; quick review shows sampling methods and locations are consistent with workplan. Data includes TAH, TaqH, GRO, BTEX, DRO and PAHs.	Bruce Wanstall
1/25/2005	Update or Other Action	Groundwater Monitoring Report arrived; quick review shows sampling methods and locations are consistent with workplan. Data includes TAH, TaqH, GRO, BTEX, DRO and PAHs.	Bruce Wanstall
3/9/2005	Update or Other Action	SECOR 2004 Ground water monitoring Reports reviewed; adequate procedure, accuracy and QA/QC.	Bruce Wanstall
5/3/2005	Update or Other Action	Review Army Dock Area Site Plan Map - USACE consultant Shannon & Wilson installed monitoring wells in 2004 at former AST sites 2 and 3 on the adjacent property above the existing pipeline; postpone site visit to fall sampling event.	Bruce Wanstall
9/19/2005	Update or Other Action	Telecon with David Weigner of SECOR on Delta Western Wrangell. H mentioned that SECOR is heading to Yakutat to conduct monitoring in mid-November.	Bill Janes
2/3/2006	Long Term Monitoring Established	Reviewed conclusions of the First and Second Semi-Annual 2005 Groundwater Monitoring Reports by SECOR. Letter sent to the RP instructing that future semi-annual groundwater monitoring sampling will change from a summer/ winter to spring/ fall schedlue and annual trend analysis on data is requested.	Bruce Wanstall
10/6/2006	Update or Other Action	Cost recovery check received in the amount of \$634.04	Bill Janes
11/22/2006	Update or Other Action	Received and reviewed the first 2006 semi-annual water monitoring report.	Bruce Wanstall

		Requested that Cambria re-evaluate the semi-annual groundwater sampling project laboratory data and try the CS approval checklist again. Then provide recommendation of data usability.	
1/18/2007	Update or Other Action	Review Revised First Semi-Annual 2006 Groundwater Monitoring Report by Cambria Environmental Inc dated January 2007. Laboratory data check-listed.	Bruce Wanstall
1/29/2007	Update or Other Action	Review Revised Second Semi-Annual 2006 Groundwater Monitoring Report by Cambria Environmental Inc dated January 2007. Laboratory data check-listed.	Bruce Wanstall
7/3/2007	Exposure Tracking Model Ranking	Initial and current ETM ranking completed using the 1997 Phase I & 1998 Phase II Cleanup Reports for the soil pathways and the follow-up ground water assessment and long term monitoring data for the water pathways. Controlling pathway is ground water ingestion that is assessed annually using ground water monitoring data. Emailed an inquiry about plans to sample the wells in 2007 to Chevron and Conestoga-Rovers Associates.	Bruce Wanstall
8/15/2007	Update or Other Action	ADEC received File Review Report from CRA concerning the Delta Western Facility (Former Chevron Bulk Terminal #20-6270) at Monti Bay in Yakutat. The file review covers history and operations on the former Yakutat Air Force Base (YAFB) located on the adjacent property to the south. Recent environmental assessment indicates that petroleum contamination on the YAFB may have impacted the Delta Western Facility property.	Bruce Wanstall
10/29/2007	Update or Other Action	First Semiannual 2007 Groundwater Monitoring Report by Conestoga Rovers & Associates dated October 2007 was reviewed by the ADEC for laboratory data checklist. Request for data made to CRA by email.	Bruce Wanstall
10/31/2007	Update or Other Action	Received the sample chain of custody for the First Semi Annual GMR; data meets ADEC quality assurance/control standards.	Bruce Wanstall
1/16/2008	Update or Other Action	ADEC evaluated the conceptual site model completed by CRA for Chevron (responsible party). The conceptual site model is consistent with the ETM pathway evaluation conclusions for current and future exposure with one exception. Adjustments were made to the ETM ranking to recognize the CR&A conclusion that several intertidal seep locations do complete the surface soil ingestion/dermal exposure pathway; but ADEC concluded that risk was de-minimis in part because the duration of exposure time is limited to twice per day low tide intervals.	Bruce Wanstall
3/19/2008	Update or Other Action	ADEC reviewed the Second Semiannual 2007 GMR by CRA; data do not meet ADEC quality assurance standard; requests for case narrative made in letter to the consultant. ADEC concurs with the report conclusion to continue semiannual monitoring and sampling in 2008.	Bruce Wanstall
7/7/2008	Update or Other Action	ADEC approves the proposed plan to dispose of purged groundwater in the on-site facility oil/water separator during the semiannual sampling events in 2008 at the Delta Western/Former Chevron Bulk Plant 20-6270.	Bruce Wanstall
7/8/2008	Site Characterization Workplan Approved	ADEC has reviewed and approves the proposed subsurface characterization sampling workplan for mid-July, 2008 at the Delta Western/Former Chevron Bulk Plant 20-6270 site.	Bruce Wanstall
9/15/2008	Update or Other Action	ADEC reviewed current status of adjacent properties, current land use and historical monitoring well data to consider a responsible party request to reduce the number of sampling sites based on consecutive seasonal sampling events with POL concentrations below regulatory benchmarks. Approval of the request was sent to the RP consultant by email to take effect immediately for the fall 2008 sampling event in Yakutat taking place this week.	Bruce Wanstall
6/17/2009	Report or Workplan Review - Other	ADEC has approved the data quality and the CRA 2008 ground water monitoring reports. Naphthalene results for water sample and duplicate from MW-5 for the 2nd semi-annual event are considered an estimate of the true value.	Bruce Wanstall
7/30/2009	Report or Workplan Review - Other	ADEC has reviewed and approves the data quality in the 2008 Subsurface Investigation Report by Conestoga-Rovers & Associates(CRA). CRA subsurface investigation advanced borings that correspond with previous subsurface investigation at the former truck rack and valve house sites. A historical sample collected near monitoring well MW-5 at the bulkhead at a depth of 5.5 feet had GRO concentration of 377 mg/kg and a DRO concentration of 5,590 mg/kg. The corresponding 2008 soil sample CB-5 from a depth of 6.5 feet had DRO concentration of 249 mg/kg. Soil boring CB-3, located between monitoring wells MW-2 and MW-5 was advanced to 3 feet BGS; the soil sample had a DRO concentration of 3,200 mg/kg and benzene concentration of 0.173 mg/kg. A historical soil sample collected at the former valve house at MW-2 at a depth of	Bruce Wanstall

		<p>1.5 feet had DRO concentration of 1,380 mg/kg and a second sample at 3.5 feet BGS had a DRO concentration of 6,650 mg/kg. The corresponding 2008 soil sample CB-2 collected at a depth of three feet had a DRO concentration of 599 mg/kg and a benzene concentration of 0.0422. A historical soil sample collected near monitoring wells MW-1A and MW-1B had a DRO concentration of DRO at 9,930 mg/kg; the corresponding 2008 soil sample CB-9 from a depth of 9.5 feet had concentrations of DRO at 2,280 mg/kg, representing a four-fold reduction. A historical soil sample collected near the former well house from a depth of seven feet had a DRO concentration of 1,350 mg/kg; the corresponding 2008 soil sample CB-6 from 4.5 feet BGS had a DRO concentration of 9,630 mg/kg and a GRO concentration of 196 mg/kg.</p>	
12/15/2009	Report or Workplan Review - Other	<p>ADEC reviewed and approved by letter the data quality in the First Semiannual 2009 Groundwater Monitoring Report at the Delta Western Yakutat contaminated site. The Conestoga-Rovers &amp; Associates (CRA) Report monitors petroleum ground water contamination. Laboratory Method PQLs for the requested petroleum hydrocarbon analytes and petroleum hydrocarbon analyte concentrations in each of the samples tested had results that are below applicable 18 AAC 75.345 Table C cleanup levels. TAH and TAqH results in MW-2 were non-detect and 0.617 ug/L respectively. TAH and TAqH results in MW-5 were 5.11 and 51.6 ug/L respectively. The TAH and TAqH WQ Stds are 10 and 15 ug/L respectively.</p>	Bruce Wanstall
6/22/2010	Report or Workplan Review - Other	<p>The 2nd semi-annual 2009 ground water monitoring report by Conestoga Rovers &amp; Associates meets ADEC field and laboratory quality assurance criteria and is approved. The 2010 well sampling schedule is reduced from semi-annual to annual frequency.</p>	Bruce Wanstall
8/18/2010	Long Term Monitoring Complete	<p>ADEC approves the CRA request to decommission groundwater monitoring wells MW-1A, MW-1B, MW-2, MW-4 and MW-5 at the Delta Western/former Chevron Bulk Fuel Terminal on Ocean Cape Road. Although subsurface petroleum contamination remains beneath the former tank farm, former truck rack and former valve house areas of concern, data from more than ten years of successive ground water monitoring events indicate that the potential for migration of subsurface contaminates is not unacceptable. GRO, DRO, RRO and BTEX compound concentrations have been stable or in decline below ADEC Table C Groundwater Cleanup Levels in samples collected from MW-2 and MW-5 for at least four consecutive sampling events.</p>	Bruce Wanstall
9/29/2010	Update or Other Action	<p>Monitoring well destruction and site visit scheduling was discussed with CRA by telephone; it became evident that the CRA Delta Western Yakutat Cleanup Complete with Institutional Controls Request document dated 5/25/2010 had not reached DEC. A digital copy of the CRA Request for Chevron was received today.</p>	Bruce Wanstall
1/5/2011	Update or Other Action	<p>Conestoga Rovers &amp; Associates Site Summary Report for the Delta Western Terminal-Yakutat was received electronically today.</p>	Bruce Wanstall
1/10/2011	Exposure Tracking Model Ranking	<p>A new updated ranking with ETM has been completed for source area 72957 Bulk Fuel Tank Farm - Above Ground .</p>	Bruce Wanstall
1/27/2011	Exposure Tracking Model Ranking	<p>A new updated ranking with ETM has been completed for source area 72957 Bulk Fuel Tank Farm - Above Ground .</p>	Bruce Wanstall
5/10/2011	Institutional Control Record Established	<p>Institutional Controls established and entered into the database.</p>	Bruce Wanstall
5/10/2011	Cleanup Complete Determination Issued	<p>Investigation and monitoring has shown that surface soil, surface water, and groundwater at the site all meet the designated cleanup levels that are protective of human health and ecological receptors but in a few locations subsurface soil still has diesel contamination in concentration that exceeds the human health based cleanup levels. Even though the site is issued Cleanup Complete status on the Contaminated Sites Database, Institutional Controls (ICs) are established to limit access that could lead to exposure. Via this determination, the properties are subject to regulatory restrictions that will ensure that the pockets of residual contamination will remain undisturbed indefinitely. No further remedial action will be required provided that specific ICs are established and maintained at these site locations. The CS Institutional Control (IC) Unit is will record a Notice of Environmental Contamination at the Recorder's Office in Juneau, Alaska for each of the properties at the site. If future development requires excavation of any of the contaminated areas on these properties, the property owner is required to contact the IC Unit and obtain approval before any work begins to ensure regulatory requirements are met and that human health and safety and the environment are protected.</p>	Bruce Wanstall

7/19/2011	Update or Other Action	DEC has received by certified regular mail the Institutional Control Agreement Signature Page from Chevron Environmental Management Company pertaining to the DEC Decision Closure Agreement dated May 6, 2011 for the Delta Western Yakutat property (Chevron Station No. 20-6270).	Bruce Wanstall
6/19/2014	Institutional Control Update	Certified letter received today from the Delta Western Seattle office provided DEC with notice that there have been no land use or ownership change at the bulk fuel tank farm property at Monti Bay in Yakutat. There has been construction replacing the old Army Dock and a new pipeline from the tanks to the marine head.	Bruce Wanstall
10/9/2014	Institutional Control Compliance Review	IC compliance review conducted and staff changed from Bruce Wanstall to IC Unit. Reminder system set to follow-up with the responsible party in 2017.	Kristin Brown
6/15/2016	Institutional Control Compliance Review	An IC compliance review was conducted. A letter requesting the signed ICs Agreement and Signature Page was issued to Delta Western Incorporated on this date.	Kristin Brown
6/21/2016	Institutional Control Update	ADEC received the signed ICs Agreement Page from Delta Western incorporated.	Kristin Brown

### Contaminant Information

Name	Level Description	Media	Comments
DRO	> Human Health/Ingestion/Inhalation	Soil	
GRO	Between Method 2 Migration to Groundwater and Human Health/Ingestion/Inhalation	Soil	
Benzene	Between Method 2 Migration to Groundwater and Human Health/Ingestion/Inhalation	Soil	

### Control Type

Type	Details
Notice of Environmental Contamination (Deed Notice)	DEC will record the NEC at the Records office in Juneau, Alaska; a copy of the final document will be attached to the CS database record.
Signed CS Determination	The responsible party, Chevron, and the facility owner, Delta Western are each asked to return a signed original Cleanup Complete-ICs Agreement and Signature page to the DEC project manager within 30 days of receipt of the letter.

### Requirements

Description	Details
Advance approval required to transport soil or groundwater off-site.	Any proposal to transport soil or groundwater off site requires DEC approval in accordance with 18 AAC 75.325 (j). A "site" [as defined by 18 AAC 75.990 (115)] means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership.
Groundwater Use Restrictions	Installation of groundwater wells will require approval from DEC
Excavation / Soil Movement Restrictions	Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.
When Contaminated Soil is Accessible, Remediation Should Occur	Soil contamination is located under the bulk fuel tanks liner and under the fuel terminal pipeline. When structures are removed and/or the soil becomes accessible, the soil must be evaluated and contamination addressed in accordance with a DEC approved work plan.
Other	Any future change in land use may impact the exposure assumptions cited in this document. If land use and/or ownership changes, current ICs may not be protective and DEC may require additional remediation and/or ICs. Therefore Delta Western shall report to DEC every three years beginning May 2014 to document ownership and land use or report as soon as Delta Western becomes aware of any change in land ownership and/or use, if earlier. The report can be sent to the local DEC office or electronically to DEC.ICUnit@alaska.gov.



**Spill Name:** F/V ARCTIC QUEEN

**Spill Date:** 7/21/1998 12:00:00 AM

**Spill Number:** 98119920205

**Area:** Southeast Alaska

**Subarea:** Southeast Alaska

**Region:** Land - Yakutat

**Location:** Yakutat

**Media Impacted:** —

**Facility Name:** DELTA WESTERN FUEL FACILITY,  
YAKUTAT

**Facility Address:** —  
Yakutat, 99689

[More Information on Facility](#)

**Responsible Party:** F/V ARCTIC QUEEN

**Facility Type:** Vessel

[More Information on Responsible Party](#)

Substance	Released	Contained	Recovered	Unit	Disposal Method
Diesel	1.000	—	—	Gallons	—

Action	Action Date
Data Problem	—
Case Closed, No Further Action	7/21/1998



Delta Western, Yakutat

**Spill Name:** Delta Western, Yakutat

**Spill Date:** 4/11/2002 12:00:00 PM

**Spill Number:** 02119910102

**Area:** Southeast Alaska

**Subarea:** Southeast Alaska

**Region:** Land - Yakutat

**Location:** Yakutat

**Media Impacted:** —

**Facility Name:** DELTA WESTERN FUEL FACILITY,  
YAKUTAT

**Facility Address:** —  
Yakutat, 99689

[More Information on Facility](#)

**Responsible Party:** DELTA WESTERN

**Facility Type:** Crude Oil Terminal

[More Information on Responsible Party](#)

Substance	Released	Contained	Recovered	Unit	Disposal Method
Diesel	0.000	—	—	Gallons	—

Action	Action Date
Case Closed, No Further Action	6/13/2002



Delta Western, Yakutat

**Spill Name:** Delta Western, Yakutat

**Spill Date:** 7/7/2011 11:00:00 AM

**Spill Number:** 11119918801

**Area:** Southeast Alaska

**Subarea:** Southeast Alaska

**Region:** Land - Yakutat

**Location:** Yakutat

**Media Impacted:** - Land

**Facility Name:** DELTA WESTERN FUEL FACILITY,  
YAKUTAT

**Facility Address:** —  
Yakutat, 99689

[More Information on Facility](#)

**Responsible Party:** Delta Western

**Facility Type:** Bulk Fuel Terminal

[More Information on Responsible Party](#)

Substance	Released	Contained	Recovered	Unit	Disposal Method
Diesel	54.000	—	—	Gallons	HAULED OUT OF STATE

Action	Action Date
Complaint/Report Received	7/7/2011
Communication, Other	7/11/2011
Communication, Other	10/13/2011
Communication, Other	10/20/2011
Case Closed, No Further Action	10/24/2011



Delta Western Yakutat av gas leak

**Spill Name:** Delta Western Yakutat av gas leak

**Spill Date:** 5/25/2006 6:00:00 PM

**Spill Number:** 06119914501

**Area:** Southeast Alaska

**Subarea:** Southeast Alaska

**Region:** Land - Yakutat

**Location:** Yakutat

**Media Impacted:** - Land

**Facility Name:** DELTA WESTERN FUEL FACILITY,  
YAKUTAT

**Facility Address:** —  
Yakutat, 99689

[More Information on Facility](#)

**Responsible Party:** DELTA WESTERN - YAKUTAT

**Facility Type:** Bulk Fuel Terminal

[More Information on Responsible Party](#)

Substance	Released	Contained	Recovered	Unit	Disposal Method
Aviation Fuel	40.000	40.000	40.000	Gallons	HAULED OUT OF STATE

Action	Action Date
Complaint/Report Received	5/30/2006
Case Closed, No Further Action	5/30/2006

## Site Report: Yakutat AFB Army Dock & Piping

**Site Name:** Yakutat AFB Army Dock & Piping

**Address:** between Malaspina Office, and City Water Tank/Wells, Yakutat, AK 99689

**File Number:** 1530.38.011

**Hazard ID:** 3716

**Status:** Active

**Staff:** Jessica Morris, 9072693077 [Jessica.Morris@alaska.gov](mailto:Jessica.Morris@alaska.gov)

**Latitude:** 59.545278

**Longitude:** -139.734167

**Horizontal  
Datum:**

*We make every effort to ensure the data presented here is accurate based on the best available information currently on file with DEC. It is therefore subject to change as new information becomes available. We recommend contacting the assigned project staff prior to making decisions based on this information.*

### Problems/Comments

The former tank farm located at AOC D was the primary fuel off-loading site for World War II military activities in Yakutat, between 1940 and 1946. Eight ASTs, with tank capacities that ranged from 20,000 to 80,000-gal were used to store diesel fuel. Piping connected the eight ASTs to each other and the Army's dock at Monti Bay. The eight tank locations are separated by distances ranging from about 100 to 200 ft. The ASTs were removed before August 1963. A powerhouse was also present near the dock area. According to 1943 landing field layout maps, a Cinch pipe connected diesel fuel tanks to each other and the dock, a Pinch pipeline carried truck gasoline to several small tanks and fill stands, and a 6-inch pipeline transported aviation fuel directly to the Air Corps Operations Reserve Tank Farm (AOC L). A few metal, A-shaped pipe stands, approximately 2 feet high, remain in the area, along with some piping. Some of the associated piping may have also been removed with the tanks; however, some piping remains in place. Buildings exist at the AST1 and AST8 locations. The dock area is currently the site of a fish processing plant. Part of the tank farm is currently the site of an office warehouse and construction storage yard. In addition, two public water wells and a drinking water storage tank are presently located within the former tank farm. DRO has been detected in soil. Because the City of Yakutat maintains two public drinking water wells within 200 feet of a tank foundation, additional investigation is recommended for this area and the other seven tank foundations. The city has been advised of the contamination found and tested the wells in January 2003 and did not detect any DRO.

### Action Information

Action Date	Action	Description	DEC Staff
1/1/1997	Update or Other Action	As part of the 1997 sampling program, the Yakutat city well, ARCO Well #1, was sampled after a 15-minute purge. The sample was collected from a spigot upstream of chlorination and filtration. Only metals were detected above detection limits, none of which exceeded the maximum contaminant levels (MCLs) for drinking water. Mechanical malfunctions prevented sampling of the ARCO Well #2.	John Halverson
7/12/2000	Update or Other Action	ADEC reviewed the Draft Remedial Investigation/Feasibility Study Work Plan. The ADEC commented that the proposed work addresses only the site that the	John Halverson

		USACE determined were FUDS program eligible. Additional information was requested to determine whether the proposed work is sufficient to address hazardous substances, pollutants, and contaminants resulting from past military activities in and around Yakutat. Due to the time schedules for the contracts and proposed work, these determinations were agreed to be addressed at a later time.	
9/11/2000	Update or Other Action	ADEC received the Final Remedial Investigation/Feasibility Study Work Plan.	John Halverson
4/28/2003	Site Characterization Report Approved	A remedial investigation was conducted at the Army Dock Area (AOC D) to investigate potential contamination with the pipeline system at the tank farm and with one tank foundation (AST 7). Surface soil samples were collected at exposed pipe ends and downgradient pipeline junctions. Three surface water and co-located sediment samples were collected from the eastern shore of the pond downgradient of the tank foundation for AST 7. Surface water, sediment, and surface soil concentrations were below applicable petroleum cleanup levels. However, a sheen was observed on the water surface of the pond; therefore exceeding the Alaska Water Quality Standards. Four surface soil samples, one boring sample, and one test pit samples were collected near AST 7. Groundwater monitoring wells were not installed due to difficult drilling conditions. DRO was detected above the Method 2 cleanup level in every soil sample. The highest DRO result was 4990 mg/kg in surface soil. DRO was not detected in water samples collected from the public drinking water wells in January 2003.	Debra Caillouet
4/5/2004	Update or Other Action	A draft remedial investigation/feasibility study was reviewed. Recommendations were included for a more thorough investigation of the extent of contamination. Based on the information provided, the Feasibility Study is premature. ADEC recommended that the USACE not incur further expense to finalize the document until further site characterization was done. Work should occur to identify the data gaps and resolve them before any additional actions are taken.	Debra Caillouet
6/3/2004	Update or Other Action	A draft work plan for a focused remedial investigation was reviewed. Comments were sent to the Corp.	Debra Caillouet
8/19/2004	Meeting or Teleconference Held	Staff attended the RAB meeting in Yakutat	Debra Caillouet
8/26/2004	Update or Other Action	File number issued 1530.38.011.07	Aggie Blandford
11/23/2004	Update or Other Action	Response to comments on the draft feasibility study were received and reviewed. While the responses will add clarification to the document, DEC believes there is insufficient site characterization data. The Feasibility Study is premature. Work should occur to identify the data gaps and resolve them before any additional actions are taken.	Debra Caillouet
12/30/2004	Update or Other Action	Results of the draft 2004 Focused Remedial Investigation were reviewed. ASTs 1 through 7 were investigated. Diesel contamination above Method 2 levels is present at several of the former tank locations. Groundwater was encountered at sites AST1, AST2, and AST3 and contaminant impacts were not found. The city water wells were tested and no impact detected. Additional investigation was recommended. Comments were sent to the Corps for review and use in finalizing the document.	Debra Caillouet
1/13/2005	Meeting or Teleconference Held	Staff attended the RAB meeting in Yakutat	Debra Caillouet
5/1/2005	Meeting or Teleconference Held	Staff met with the Corps and their contractor to resolve comments on the work plan for installing wells at the Army Dock Site	Debra Caillouet
6/17/2005	Update or Other Action	Staff sent a comment letter to the Corp regarding the Focused Remedial Investigation for the Army Dock site.	Debra Caillouet
7/7/2005	Update or Other Action	Staff sent a comment letter to the Corps regarding the Draft Rapid Optical Screening Tool (ROST) Laser-Induced Fluorescence (LIF) Focused Remedial Investigation, Former Yakutat Air Force Base,	Debra Caillouet
9/12/2005	Update or Other Action	Staff sent a comment letter on the second draft of the Focused Remedial Investigation.	Debra Caillouet
10/4/2005	Site Characterization Workplan Approved	Staff drafted an approval letter for the installation of monitoring wells at the Army Dock Tanks and geophysical survey of lakes on the Phipps Peninsula	Debra Caillouet
3/10/2006	Update or Other Action	Staff reviewed the Draft Report, 2005 Focused Remedial Investigation. This effort completed the installation of groundwater monitoring wells near the former aboveground storage tank locations: AST 4, AST 5, AST 6, and AST 7. In 2005 a focused remedial investigation was conducted to further assess surface and	Debra Caillouet

		<p>subsurface soil and groundwater in the vicinity of the former. DRO was present in soil above Method 2 levels at all of the sites. The inhalation and ingestion pathways were also exceeded at three of the four sites, with the maximum detection of DRO at 23,000 mg/Kg near AST 7. DRO was also detected at 4.25 mg/L in the groundwater at AST 7. The groundwater at the other three sites did not contain contaminants above levels of concern. AST 7 is located 130 feet and 200 feet from two city water wells. Groundwater elevations indicate that former AST 7 is downgradient of the city wells. Additional site characterization was recommended at AST 7 to determine the later extent of impacted soil, delineate the DRO-impacted groundwater plume, and determine the potential effects on surface water bodies and nearby drinking water wells. A hydrogeological study was recommended to confirm that the captures zone of the drinking water wells do not extend to the groundwater plume. DEC requests that the U.S. Army Corp of Engineers notify the City of Yakutat of this groundwater contamination and arrange for quarterly sampling and analysis of the city water wells for DRO and benzene, toluene, ethylbenzene and xylenes (BTEX) to assure the water supply is not impacted.</p>	
5/11/2006	Site Characterization Report Approved	<p>The Final Report, Focused Remedial Investigation, Former Yakutat AFB for the 2004 FRI was reviewed and approved. The report presents the results of soil and groundwater sampling at tank locations in the former Army Dock Tank Farm, Concern D that occurred in 2004. Soil sampling and analysis for dioxins at the Culture Camp, Concern H2 are also reported.</p>	Debra Caillouet
11/9/2006	Site Characterization Report Approved	<p>The final report for the 2005 ROST/LIF investigation was approved. A total of 77 ROST/LIF probes were pushed at this site and 8 soil samples were collected. Diesel fuel contamination was found in soils associated with each of the former tanks. However, because of various physical restrictions (e.g., rough topography, dense vegetation, existing buildings and utility lines), rig access was limited and the lateral extent of contamination at some of the tank sites was not completely defined.</p>	Debra Caillouet
11/19/2007	Exposure Tracking Model Ranking		Debra Caillouet
1/16/2008	Update or Other Action	<p>ADEC staff attended a Restoration Advisory Board meeting in Yakutat to discuss the status of various contaminated sites associated with the Yakutat AFB.</p>	Jonathan Schick
1/17/2008	Site Visit	<p>ADEC Staff participated in a site visit to various sites around the Yakutat area. Snow inhibited access to many of the sites but the purpose of the trip was to get an understanding of the distribution of sites and to attend a Restoration Advisory Board Meeting.</p>	Jonathan Schick
8/13/2008	Meeting or Teleconference Held	<p>ADEC staff attended a Restoration Advisory Board meeting in the community of Yakutat. Various topics were discussed concerning the status of the on-going environmental restoration work that is going on in the area.</p>	Jonathan Schick
8/14/2008	Site Visit	<p>ADEC Staff participated in a site visit to various sites in and around the Yakutat AFB area. The other purpose of the site visit was to attend a Restoration Advisory Board Meeting.</p>	Jonathan Schick
9/30/2009	Update or Other Action	<p>ADEC staff signed a CON/HTRW project closeout report for the Formerly Used Defense Sites associated with the Yakutat Air Base. The State of Alaska, through the Department of Environmental Conservation concurs with this USACE project closure. The decision may be reviewed or modified in the future if information becomes available that indicates the presence of military CON/HTRW that may cause unacceptable risk to human health or the environment. The remediation of these sites will continue as necessary, this report only states that no containerized wastes are known to be present at the subject sites.</p>	Jonathan Schick
3/17/2010	Update or Other Action	<p>ADEC Staff issued a letter to the USACE approving the finalization of the Feasibility Study Report as all of the State's comments have been responded to and incorporated in the document.</p>	Jonathan Schick
10/22/2010	CERCLA FS	<p>Contaminated Sites Staff submitted a letter to the US Army Corps of Engineers approving the Final Version of the Feasibility Study Report.</p>	Jonathan Schick
5/30/2014	Site Characterization Workplan Approved	<p>The ADEC Contaminated Site Program approved the 2014 Supplemental Remedial Investigation Work Plan. The objectives of the investigation at AOC D were to 1) determine risk-based alternative cleanup levels using the ADEC Method Three Calculator and the Hydrocarbon Risk Calculator; 2) determine the current groundwater condition.</p>	Jessica Morris
9/29/2014	Site Visit	<p>The ADEC contaminated Sites staff participated in a Restoration Advisory Board</p>	Jessica Morris

		(RAB) meeting, a tribal meeting, and site inspections in Yakutat with the Army Corps of Engineers to share information on the status of Formerly Used Defense Site investigation and cleanup activities around Yakutat.	
10/15/2015	Site Visit	The ADEC contaminated Sites staff participated in a Restoration Advisory Board (RAB) meeting and site inspections in Yakutat with the Army Corps of Engineers to share information on the status of Formerly Used Defense Site investigation and cleanup activities around Yakutat.	Jessica Morris
2/16/2016	Update or Other Action	The ADEC Contaminated Sites Program provided comments on the revised Property Survey Summary Sheet for the DERP-FUDS Property No. F10AK0606, Inventory Project Report (INPR), Yakutat Air Base, Yakutat Alaska. The revised INRP indicates that the D Concern - Army Dock Area Aboveground Storage Tanks (AOC D1-D8), Army Dock Area-Avgas Pipelines (AOC D9), and the ARmy Dock Area - Diesel Pipeline (AOC D10) are not planned to be addressed under FUDS because the USACE believes that the contamination was caused by non-Department of Defense (DoD) entities. The ADEC has requested additional information to substantiate this position.	Jessica Morris
7/7/2016	Site Characterization Report Approved	The ADEC Contaminated Sites Program approved the 2015 Final Supplemental Remedial Investigation Report for the Former Yakutat Air Base FUDS. Because petroleum contamination was found to be below the applicable regulatory limits and human health risk standards at Tanks 1-6 (AOCs D1 - D6), site closure was recommended for these areas of concern within the overall Army Dock Tank Farm site. Results from the investigation at Tanks 7 and 8 (AOCs D7 and D8) indicated that the petroleum contamination in the soil and groundwater at the site is below the applicable human health risk standards. However, the groundwater DRO concentrations exceed ADEC's cleanup criteria. Site closure with institutional controls documenting residual contamination was recommended for AOCs D7 and D8.	Jessica Morris
10/11/2016	Site Visit	The ADEC contaminated Sites staff participated in a Restoration Advisory Board (RAB) meeting and site inspections in Yakutat with the Army Corps of Engineers to share information on the status of Formerly Used Defense Site investigation and cleanup activities around Yakutat.	Jessica Morris

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#### Contaminant Information

Name	Level Description	Media	Comments
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#### Control Type

Type	Details
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#### Requirements

Description	Details
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**Spill Name:** BROWNING TIMBER VESSEL#586135

**Spill Date:** 3/24/2001 12:00:00 AM

**Spill Number:** 01119908302

**Area:** Southeast Alaska

**Subarea:** Southeast Alaska

**Region:** Marine - Outside Waters

**Location:** Yakutat Bay

**Media Impacted:** —

**Facility Name:** DELTA WESTERN DOCK, YAKUTAT

**Facility Address:** —  
Yakutat, 99689

[More Information on Facility](#)

**Responsible Party:** Browning Timber

**Facility Type:** Vessel

[More Information on Responsible Party](#)

Substance	Released	Contained	Recovered	Unit	Disposal Method
Diesel	5.000	—	—	Gallons	—

Action	Action Date
Data Problem	—
Case Closed, No Further Action	3/27/2001



Barge SCT 282

**Spill Name:** Barge SCT 282

**Facility Name:** DELTA WESTERN DOCK, YAKUTAT

**Spill Date:** 10/16/2001 12:00:00 AM

**Facility Address:** —  
Yakutat, 99689

**Spill Number:** 01119928901

[More Information on Facility](#)

**Area:** Southeast Alaska

**Subarea:** Southeast Alaska

**Responsible Party:** SEACOAST TOWING

**Region:** Marine - Outside Waters

**Facility Type:** Other

**Location:** Yakutat Bay

[More Information on Responsible Party](#)

**Media Impacted:** —

Substance	Released	Contained	Recovered	Unit	Disposal Method
Diesel	1.000	—	—	Gallons	—

Action	Action Date
Case Closed, No Further Action	—



Delta Western Facility Barge Transfer

**Spill Name:** Delta Western Facility Barge Transfer

**Facility Name:** DELTA WESTERN DOCK, YAKUTAT

**Spill Date:** 9/18/2002 11:40:00 AM

**Facility Address:** —  
Yakutat, 99689

**Spill Number:** 02119926101

[More Information on Facility](#)

**Area:** Southeast Alaska

**Subarea:** Southeast Alaska

**Responsible Party:** SEACOAST TOWING

**Region:** Marine - Outside Waters

**Facility Type:** Bulk Fuel Terminal

**Location:** Yakutat Bay

[More Information on Responsible Party](#)

**Media Impacted:** - Marine

Substance	Released	Contained	Recovered	Unit	Disposal Method
Diesel	3.000	1.000	1.000	Gallons	OILY WASTE DUMPSTER

Action	Action Date
Case Closed, No Further Action	9/18/2002



M/V Constructor

**Spill Name:** M/V Constructor

**Facility Name:** Delta Western Dock, Yakutat, AK

**Spill Date:** 2/8/2001 12:00:00 AM

**Facility Address:** —  
Yakutat, 99689

**Spill Number:** 01119903901

[More Information on Facility](#)

**Area:** Southeast Alaska

**Subarea:** Southeast Alaska

**Responsible Party:** Browning Timber, Inc

**Region:** Marine - Outside Waters

**Facility Type:** Vessel

**Location:** Yakutat Bay

[More Information on Responsible Party](#)

**Media Impacted:** —

Substance	Released	Contained	Recovered	Unit	Disposal Method
Diesel	1.000	—	—	Gallons	—

Action	Action Date
Data Problem	—
Case Closed, No Further Action	2/20/2001

## Site Report: Saint Elias Auto Center - Yakutat

**Site Name:** Saint Elias Auto Center - Yakutat

**Address:** 710 Oil Dock Rd.; , Yakutat, AK 99689

**File Number:** 1530.26.001

**Hazard ID:** 24561

**Status:** Cleanup Complete

**Staff:** ,

**Latitude:** 59.544899

**Longitude:** -139.727761

**Horizontal Datum:** NAD83

*We make every effort to ensure the data presented here is accurate based on the best available information currently on file with DEC. It is therefore subject to change as new information becomes available. We recommend contacting the assigned project staff prior to making decisions based on this information.*

### Problems/Comments

The major initial effort will be to discern the nature, movement, and source of the DRO found in St.Elias Auto private well sample. Efforts are being made to locate positions of the City wells, and any nearby private wells. Farnell was last staff assigned followed by Hung. Hung: note, there are 2 dbs for this site with 2 different rekeys and problems. Event Id 1232 & 1233 possibly created by Farnell?? 12/22/99 file mailed to Paul Horwath for followup. Private well at St.Elias Auto residence contaminated with DRO (410 ug/l). Source is unknown; the history of the site makes it seem unlikely that the site is a source for diesel contamination.

### Action Information

Action Date	Action	Description	DEC Staff
10/10/1996	Underground Storage Tank Site Characterization or Assessment	1,500-gallon gasoline UST removed that was installed '84. Contam due to overfilling & piping probs. Highest soil sample results @ 10 ft bgs w/GRO 1,800 ppm, Benzene 5.6 ppm & total BTEX 589 ppm. RPCON recommends on-site & neighboring wells be sampled/analyzed, possible grd water impact with potential for impact to local public water system due to proximity of system to site & conduct RI. Approx 26-100 cu yds contam soil remains. No soils were stockpiled.	* Not Assigned
11/5/1996	Leaking Underground Storage Tank Release Confirmed - Petroleum	LUST Site created in CSP for source area ID 77093 ADD; On-site private well contaminated with DRO 410 ug/l (verbally reported by consultant - Woodward-Clyde - on 11/15/96). Awaiting report from consultant.	* Not Assigned
11/5/1996	Site Added to Database		* Not Assigned
12/18/1996	Update or Other Action	DEC receives 11/96 SA rept	* Not Assigned
11/16/1997	Release Investigation	No significant contamination found @ 10 ft bgs according to 2nd RPCON.	* Not Assigned
11/20/1997	Update or Other Action	ADEC sends Notification of Intent to Cost Recover Letter to Current Owner:	* Not Assigned

MIKE EAMES

1/15/1998	Update or Other Action	DEC receives 12/30/97 RI rept	* Not Assigned
10/11/1999	Leaking Underground Storage Tank Cleanup Initiated - Petroleum	Not done contam. Soil still in the pit.	* Not Assigned
11/4/1999	Update or Other Action	DEC writes to RPCON re-unacceptable 12/30/97 RI rept entitled, "Confirmation Soil Sampling Report Saint Elias Auto Center." based on inadequate info to support conclusion that site doesn't have significant contam, especially when SA conducted 10/96 by another RPCON found significant contam above ADEC cleanup levels in GRO, Benzene & BTEX, PID was not calibrated when used on-site 11/16/97, but calibrated 11/3/97 in Juneau. Rept lacked necessary data documented when screening soils.	* Not Assigned
12/18/2001	Site Closure Approved	NFA letter issued 12/18/01 by Paul Horwath. File shipped from Kenai Office back to Juneau.	Paul Horwath

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### Contaminant Information

Name	Level Description	Media	Comments
			For more information about this site, contact DEC at (907) 465-5390.

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### Control Type

Type	Details
No ICs Required	

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### Requirements

Description	Details
Advance approval required to transport soil or groundwater off-site.	



Yakutat ACC HO Line

<b>Spill Name:</b> Yakutat ACC HO Line	<b>Facility Name:</b> Alaska Commercial Co., Yakutat Store & Warehouse
<b>Spill Date:</b> 2/14/2014 3:00:00 PM	<b>Facility Address:</b> 716 Ocean Cape Road Yakutat, 99689
<b>Spill Number:</b> 14119904502	<a href="#">More Information on Facility</a>
<b>Area:</b> Southeast Alaska	<b>Responsible Party:</b> Alaska Commercial Company
<b>Subarea:</b> Southeast Alaska	<b>Facility Type:</b> Other
<b>Region:</b> Land - Yakutat	<a href="#">More Information on Responsible Party</a>
<b>Location:</b> Yakutat	
<b>Media Impacted:</b> - Land	

Substance	Released	Contained	Recovered	Unit	Disposal Method
Diesel	100.000	—	—	Gallons	APPROVED LANDFILL

Action	Action Date
Complaint/Report Received	2/15/2014
Communication, Other	2/15/2014
Communication, Other	2/15/2014
Cost Recovery Action	2/18/2014
Communication, Other	2/24/2014
Communication, Other	3/3/2014
Communication, Other	3/4/2014
Cleanup Plan Received	3/13/2014
Communication, Other	3/14/2014
Communication, Other	3/14/2014
Communication, Other	3/18/2014
Cleanup Plan Received	3/24/2014
Other	3/26/2014
Other	4/1/2014
Communication, Other	4/4/2014
Cleanup Plan Received	4/8/2014
Cleanup Plan Approved	4/11/2014
Communication, Other	4/22/2014

Communication, Other	5/2/2014
Communication, Other	5/23/2014
Communication, Other	6/2/2014
Field Visit	6/5/2014
Field Visit	6/8/2014
Communication, Other	6/13/2014
Interim Report	6/25/2014
Communication, Other	7/8/2014
Interim Report	7/10/2014
Other	7/10/2014
Other	10/7/2014
Communication, Other	10/7/2014
Communication, Other	10/15/2014
SA Plan Received	10/15/2014
SA Plan Approved	10/21/2014
Communication, Other	10/22/2014
Communication, Other	11/7/2014
Communication, Other	12/22/2014
Communication, Other	12/23/2014
Communication, Other	1/21/2015
Communication, Other	6/2/2015
Interim Report	8/4/2015
Communication, Other	8/6/2015
Final Report	8/14/2015
Case Closed, No Further Action	9/1/2015

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Forest Service Rd, 871: NWS Housing HOTs

<b>Spill Name:</b>	Forest Service Rd, 871: NWS Housing HOTs
<b>Spill Date:</b>	6/7/2012 12:00:00 AM
<b>Spill Number:</b>	12119915902
<b>Area:</b>	Southeast Alaska
<b>Subarea:</b>	Southeast Alaska
<b>Region:</b>	Land - Yakutat
<b>Location:</b>	Yakutat
<b>Media Impacted:</b>	- Land

<b>Facility Name:</b>	Forest Service Rd, 871
<b>Facility Address:</b>	871 Forest Service Rd Yakutat, 99689
	<a href="#">More Information on Facility</a>
<b>Responsible Party:</b>	NATIONAL WEATHER SERVICE
<b>Facility Type:</b>	Residence

[More Information on Responsible Party](#)

Substance	Released	Contained	Recovered	Unit	Disposal Method
Diesel	30.000	—	—	Gallons	HAULED OUT OF STATE

Action	Action Date
Complaint/Report Received	6/14/2012
Complaint/Report Received	6/21/2012
Communication, Other	7/2/2012
Communication, Other	7/25/2012
Field Visit	8/22/2013
Cost Recovery Action	2/12/2014
Communication, Other	2/12/2014
SA Plan Requested	5/2/2014
Field Visit	6/6/2014
Communication, Other	9/29/2014
Communication, Other	10/14/2014
Communication, Other	10/15/2014
Communication, Other	10/15/2014
Cleanup Plan Received	10/15/2014
Cleanup Plan Approved	10/16/2014
Interim Report	10/23/2014
Soil Transport Letter	10/28/2014
Cleanup Plan Received	10/28/2014

Cleanup Plan Approved	10/30/2014
Communication, Other	1/6/2015
Communication, Other	2/23/2015
Communication, Other	4/9/2015
Interim Report	6/11/2015
Communication, Other	6/18/2015
Communication, Other	7/31/2015
Final Report	8/3/2015
Case Closed, No Further Action	8/4/2015

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# Envirofacts Search Results

**YAKUTAT POWER PLANT**  
**1 FOREST HWY**  
**YAKUTAT, AK 99689**



Multisystem Links

- [EF Overview](#)
- [Search](#)
- [Model](#)
- [Contact Us](#)

[Report an Error](#)

\*You can navigate within the map with your mouse.

EPA Facility Information

This query was executed on SEP-11-2017

### AFS Information

Operating Status:	O	HPV Flag:	
Operating Status Description:	OPERATING	State Registration Number:	A000105
State County Compliance Source:	0223100010	Government Facility Code Description:	OWNED/OP BY MUNICIPALITY
Region Code:	10	Class Code:	A
Primary SIC Code:	4911	Class Code Description:	ACTUAL OR POTENTIAL EMISS
Primary SIC Description:	ELECTRIC SERVICES	Compliance Status:	5
NAICS Code:	221112	Compliance Status Description:	MEETING COMPLIANCE SCHEDU
NAICS Code Description:	Fossil Fuel Electric Power Generation	Date Plant Information Last Updated:	08/15/2014

### Air Program Information

Air Program Code	Air Program Description	Air Program Status	Air Program Status Description	Air Program Subpart	Air Program Subpart Description	Class Code	Class Code Description	Compliance Status	Compliance Status Description
9	NSPS	O	OPERATING	IIII	DIESEL ENGINES COMPRESSION COMBUSTION ENGINES	A	ACTUAL OR POTENTIAL EMISS	5	MEETING COMPLIANCE SCHEDU
V	TITLE V PERMITS	O	OPERATING			A	ACTUAL OR POTENTIAL EMISS	C	IN COMPLIANCE WITH PROCED

### Pollutant Data

Air Program Code	Pollutant Code / CAS Number	Pollutant / CAS Description	Attain Indicator	Attain Indicator Description	Pollutant Compliance Status	ES Pollutant Compliance Description	Pollutant Class Code	Pollutant Class Description
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9	NOX	NITROGEN OXIDES	U	UNCLASSIFIED	5	MEETING COMPLIANCE SCHEDULE	A	ACTUAL OR POTENTIAL EMISS
V	CO	<u>CARBON MONOXIDE</u>	A	ATTAINMENT AREA FOR A GIV	C	IN COMPLIANCE WITH PROCED	B	POTENTIAL UNCONTROLLED EM
V	FACIL	<u>FACILITY-WIDE PERMIT REQUIREMENTS</u>	U	UNCLASSIFIED	C	IN COMPLIANCE WITH PROCED	A	ACTUAL OR POTENTIAL EMISS
V	NO	<u>NITRIC OXIDE</u>	A	ATTAINMENT AREA FOR A GIV	9	IN COMPLIANCE - SHUT DOWN	A	ACTUAL OR POTENTIAL EMISS
V	NO2	<u>NITROGEN DIOXIDE</u>	A	ATTAINMENT AREA FOR A GIV	C	IN COMPLIANCE WITH PROCED	A	ACTUAL OR POTENTIAL EMISS
V	NOX	NITROGEN OXIDES	U	UNCLASSIFIED	C	IN COMPLIANCE WITH PROCED	A	ACTUAL OR POTENTIAL EMISS
V	PM10	<u>PARTICULATE MATTER &lt; 10 UM</u>	U	UNCLASSIFIED	C	IN COMPLIANCE WITH PROCED	B	POTENTIAL UNCONTROLLED EM
V	SO2	<u>SULFUR DIOXIDE</u>	A	ATTAINMENT AREA FOR A GIV	C	IN COMPLIANCE WITH PROCED	B	POTENTIAL UNCONTROLLED EM
V	THAP	<u>TOTAL HAP POLLUTANT</u>	U	UNCLASSIFIED	C	IN COMPLIANCE WITH PROCED	B	POTENTIAL UNCONTROLLED EM
V	VOC	<u>VOLATILE ORGANIC COMPOUNDS</u>	U	UNCLASSIFIED	C	IN COMPLIANCE WITH PROCED	B	POTENTIAL UNCONTROLLED EM

**Compliance Monitoring System Plan**

CMS Start Date	FY2008 CMS Indicator	FY2008 CMS Indicator Description	FY2009 CMS Indicator	FY2009 CMS Indicator Description
08-NOV-04	A	TITLE V MAJOR	A	TITLE V MAJOR

**Plant Actions**

Action Number	Key Action Numbers	Air Program Codes	National Action Type	National Action Description	Action Type	Action Description	Date Achieved	Penalty Amount	Results Code	Results Code Description	Pollutant Code	Regional Data Element	Region: Data Element 16
00075		9	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	24-JUL-14		19	IN COMPLIANCE			
00075		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	24-JUL-14		19	IN COMPLIANCE			
00074		9	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	10-APR-14		19	IN COMPLIANCE			
00074		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	10-APR-14		19	IN COMPLIANCE			
00073		9	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	27-MAR-14		MC	TV-IN COMPLIANCE		N	

Action Number	Key Action Numbers	Air Program Codes	National Action Type	National Action Description	Action Type	Action Description	Date Achieved	Penalty Amount	Results Code	Results Code Description	Pollutant Code	Regional Data Element	Region: Data Element 16
00073		V	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	27-MAR-14		MC	TV-IN COMPLIANCE		N	
00072		9	FF	STATE/LOCAL CONDUCTED FCE/OFF-SITE	1A	AK-CONDUCTED FULL COMPLIANCE EVALUATION - OFFSITE	27-MAR-14		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00072		V	FF	STATE/LOCAL CONDUCTED FCE/OFF-SITE	1A	AK-CONDUCTED FULL COMPLIANCE EVALUATION - OFFSITE	27-MAR-14		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00071		9	CB	TITLE V ANNUAL COMPL CERT DUE/RCVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00071		V	CB	TITLE V ANNUAL COMPL CERT DUE/RCVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00070		9			87	STATE WARNING LETTER	19-DEC-13						
00070		V			87	STATE WARNING LETTER	19-DEC-13						
00069		9	CB	TITLE V ANNUAL COMPL CERT DUE/RCVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	27-JAN-14						
00069		V	CB	TITLE V ANNUAL COMPL CERT DUE/RCVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	27-JAN-14						
00068		9	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	06-AUG-13		19	IN COMPLIANCE			
00068		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	06-AUG-13		19	IN COMPLIANCE			
00067		9	CB	TITLE V ANNUAL COMPL CERT DUE/RCVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	15-AUG-13						
00067		V	CB	TITLE V ANNUAL COMPL CERT DUE/RCVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	15-AUG-13						
00066		9	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	20-AUG-13		MV	TV-IN VIOLATION		N	

Action Number	Key Action Numbers	Air Program Codes	National Action Type	National Action Description	Action Type	Action Description	Date Achieved	Penalty Amount	Results Code	Results Code Description	Pollutant Code	Regional Data Element	Region: Data Element 16
00066		V	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	20-AUG-13		MV	TV-IN VIOLATION		N	
00065		9	7C	STATE/LOCAL NOV ISSUED	L1	NOV ISSUED BY STATE	21-MAR-13						
00065		V	7C	STATE/LOCAL NOV ISSUED	L1	NOV ISSUED BY STATE	21-MAR-13						
00064		9	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	13-MAR-13		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00064		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	13-MAR-13		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00063		9	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	13-MAR-13		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00063		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	13-MAR-13		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00062		9	FS	STATE/LOCAL CONDUCTED FCE/ON-SITE	2C	AK-CONDUCTED FULL COMPLIANCE EVALUATION - ONSITE	20-JUN-12		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00062		V	FS	STATE/LOCAL CONDUCTED FCE/ON-SITE	2C	AK-CONDUCTED FULL COMPLIANCE EVALUATION - ONSITE	20-JUN-12		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00061		9	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	14-JUN-12		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00061		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	14-JUN-12		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00060		9	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	12-JUN-12						
00060		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	12-JUN-12						

Action Number	Key Action Numbers	Air Program Codes	National Action Type	National Action Description	Action Type	Action Description	Date Achieved	Penalty Amount	Results Code	Results Code Description	Pollutant Code	Regional Data Element	Region: Data Element 16
00059		9	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	14-JUN-12		MV	TV-IN VIOLATION		N	
00059		V	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	14-JUN-12		MV	TV-IN VIOLATION		N	
00058		V	CC	TITLE V ANNUAL COMPL CERT DUE/RECEIVED BY EPA	C1	TITLE V ANNUAL CERT DUE/RECEIVED BY EPA	03-MAY-12		MC	TV-IN COMPLIANCE		Y	
00057		V	FE	EPA FCE/ON-SITE	FE	EPA CONDUCTED FULL COMPLIANCE EVALUATION/ ON-SITE	03-MAY-12						
00056		9	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	14-JUL-11		MV	TV-IN VIOLATION		N	
00056		V	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	14-JUL-11		MV	TV-IN VIOLATION		N	
00055		9	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	22-AUG-11		19	IN COMPLIANCE			
00055		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	22-AUG-11		19	IN COMPLIANCE			
00053		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	14-JUL-11		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00052		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	08-MAR-11						
00051		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00050		V	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	29-DEC-10		MV	TV-IN VIOLATION		N	
00049		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	29-DEC-10		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			

Action Number	Key Action Numbers	Air Program Codes	National Action Type	National Action Description	Action Type	Action Description	Date Achieved	Penalty Amount	Results Code	Results Code Description	Pollutant Code	Regional Data Element	Region: Data Element 16
00048		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	29-DEC-10		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00047		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	29-DEC-10		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00046		V	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	29-DEC-10		MC	TV-IN COMPLIANCE		N	
00045		V	FF	STATE/LOCAL CONDUCTED FCE/OFF-SITE	1A	AK-CONDUCTED FULL COMPLIANCE EVALUATION - OFFSITE	14-SEP-10		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00044		V	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	23-APR-10		MC	TV-IN COMPLIANCE		N	
00043		V	CB	TITLE V ANNUAL COMPL CERT DUE/RCVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	05-APR-10						
00042		V	CB	TITLE V ANNUAL COMPL CERT DUE/RCVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00041		V	FF	STATE/LOCAL CONDUCTED FCE/OFF-SITE	1A	AK-CONDUCTED FULL COMPLIANCE EVALUATION - OFFSITE	28-OCT-08		VB	IN VIOLATION W/REGARD TO BOTH EMISSION & PROCEDURAL COMPLIANCE			
00040		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	14-APR-09						
00039		V			OG	EPA REG 10 - IDENTIFIED IN OIL & GAS SECTOR	13-MAY-09					N	
00038		V	CB	TITLE V ANNUAL COMPL CERT DUE/RCVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00037		V	CB	TITLE V ANNUAL COMPL CERT DUE/RCVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	02-FEB-09						
00036		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	03-OCT-08		19	IN COMPLIANCE			

Action Number	Key Action Numbers	Air Program Codes	National Action Type	National Action Description	Action Type	Action Description	Date Achieved	Penalty Amount	Results Code	Results Code Description	Pollutant Code	Regional Data Element	Region: Data Element 16
00035		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00034		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00033		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00032		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	28-JAN-08						
00031		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	29-JAN-08		19	IN COMPLIANCE			
00030		V	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	29-JAN-08		MC	TV-IN COMPLIANCE		N	
00029		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	24-OCT-07		VB	IN VIOLATION W/REGARD TO BOTH EMISSION & PROCEDURAL COMPLIANCE			
00028		V	FS	STATE/LOCAL CONDUCTED FCE/ON-SITE	2C	AK-CONDUCTED FULL COMPLIANCE EVALUATION - ONSITE	28-FEB-07		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			
00027		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	05-MAR-07						
00026		V	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	19-MAR-07		MC	TV-IN COMPLIANCE		N	
00025		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00024		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	19-MAR-07		VW	IN VIOLATION W/REGARD TO PROCEDURAL COMPLIANCE			

Action Number	Key Action Numbers	Air Program Codes	National Action Type	National Action Description	Action Type	Action Description	Date Achieved	Penalty Amount	Results Code	Results Code Description	Pollutant Code	Regional Data Element	Region: Data Element 16
00023		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	24-AUG-06		19	IN COMPLIANCE			
00022		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	30-JAN-06						
00021		V	SR	TV COMPLIANCE CERTIFICATION REVIEW BY STATE/LOCAL	SR	TV ANNUAL COMPL. CERT REVIEW BY PERMIT AUTHORITY	20-MAR-06		MC	TV-IN COMPLIANCE		N	
00020		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	21-MAR-06		VB	IN VIOLATION W/REGARD TO BOTH EMISSION & PROCEDURAL COMPLIANCE			
00019		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00018		V	PX	STATE/LOCAL PCE/OFF-SITE	83	AK-SEMI-ANN. OPRPT/GENERAL PERMIT/PCE/OFFSITE	05-AUG-05		19	IN COMPLIANCE			
00017		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	05-APR-05		18	OUT OF COMPLIANCE		N	
00015		V			87	STATE WARNING LETTER	27-OCT-04						
00014		V	FF	STATE/LOCAL CONDUCTED FCE/OFF-SITE	FF	STATE/LOCAL CONDUCTED FCE / OFF-SITE	31-OCT-04		18	OUT OF COMPLIANCE			
00013		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	09-MAR-04		18	OUT OF COMPLIANCE		N	
00012		V	FF	STATE/LOCAL CONDUCTED FCE/OFF-SITE	FF	STATE/LOCAL CONDUCTED FCE / OFF-SITE	01-JUN-03		19	IN COMPLIANCE			
00011		V	FF	STATE/LOCAL CONDUCTED FCE/OFF-SITE	FF	STATE/LOCAL CONDUCTED FCE / OFF-SITE	01-JUN-03		19	IN COMPLIANCE			
00010		V	FF	STATE/LOCAL CONDUCTED FCE/OFF-SITE	FF	STATE/LOCAL CONDUCTED FCE / OFF-SITE	01-JUN-03		19	IN COMPLIANCE			
00009		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	29-JAN-03					Y	

Action Number	Key Action Numbers	Air Program Codes	National Action Type	National Action Description	Action Type	Action Description	Date Achieved	Penalty Amount	Results Code	Results Code Description	Pollutant Code	Regional Data Element	Region: Data Element 16
00008		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	30-JAN-03		19	IN COMPLIANCE		Y	
00007		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00006		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00005		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00004		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00003		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY							
00002		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	10-MAY-02					N	
00001		V	CB	TITLE V ANNUAL COMPL CERT DUE/RECVD BY STATE/LOCAL	DA	TV ANN COMPL CERT DUE/RCVD BY PERMIT AUTHORITY	14-MAY-02		MC	TV-IN COMPLIANCE		N	

Additional Information can be obtained from Air Facility System [AFS](#) Search.

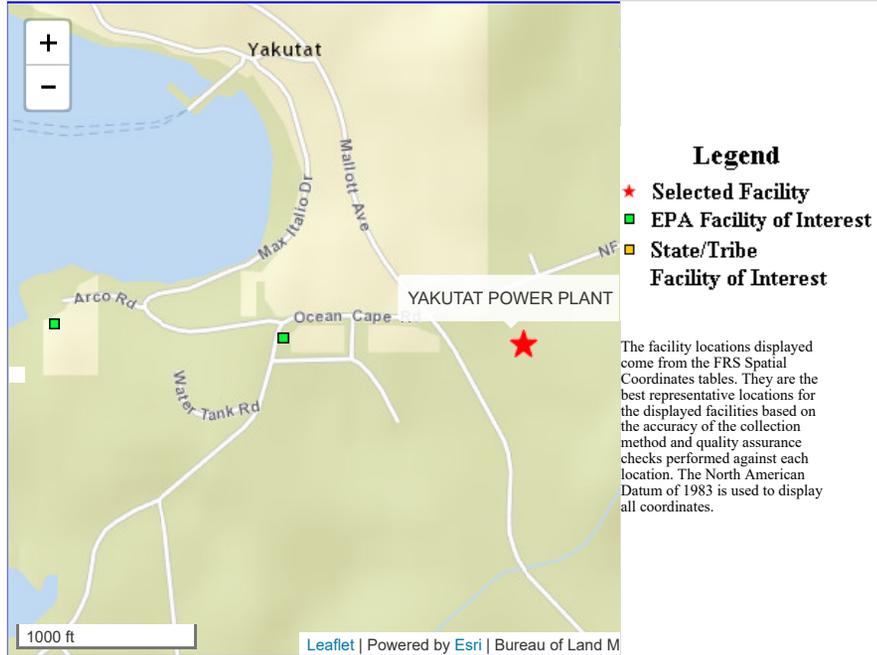
Related Topics: Envirofacts

FRS

# FRS Facility Detail Report

## YAKUTAT POWER PLANT

EPA Registry Id: 110007236516  
 1 FOREST HWY  
 YAKUTAT, AK 99689



### Facility Registry Service Links:

- Facility Registry Service (FRS) Overview
- FRS Facility Query
- FRS Organization Query
- EZ Query
- FRS Physical Data Model
- FRS Geospatial Model

[Report an Error](#)

### Environmental Interests

Information System	System Facility Name	Information System Id/Report Link	Environmental Interest Type	Data Source	Last Updated Date	Supplemental Environmental Interests:
ICIS-AIR (AIR)	ALASKA VILLAGE ELECTRIC COOPERATIVE / YAKUTAT POWER PLANT (YAKUTAT POWER, INC)	AK0000000223100010	AIR MAJOR	ICIS	04/09/2015	
ENERGY INFORMATION ADMINISTRATION-860 (EIA-860) DATABASE	YAKUTAT	6637	ELECTRIC GENERATOR	EIA-860	12/31/2012	
EMISSIONS & GENERATION RESOURCE INTEGRATED DATABASE	YAKUTAT	6637	ELECTRIC POWER GENERATOR (OIL BASED)	EGRID	02/24/2014	
AIR FACILITY SYSTEM	CITY & BOROUGH OF Y/YAKUTAT POWER PLANT	0223100010	AIR MAJOR (OPERATING)	AIRS/AFS	08/15/2014	ICIS-ENFORCEMENT/COMPLIANCE ACTIVITY
EMISSION INVENTORY SYSTEM (EIS)	YAKUTAT POWER PLANT (YAKUTAT POWER, INC.)	1026311	AIR EMISSIONS CLASSIFICATION UNKNOWN	EIS	01/14/0017	
INTEGRATED COMPLIANCE INFORMATION SYSTEM	YAKUTAT POWER	7732643	ENFORCEMENT/COMPLIANCE ACTIVITY	ICIS	10/12/2005	
<b>Additional EPA Reports:</b>	MyEnvironment Enforcement and Compliance Site Demographics Facility Coordinates Viewer Environmental Justice Map Viewer Watershed Report					

Standard Industrial Classification Codes (SIC)				
Data Source	SIC Code	Description	Primary	
AIR	OWNE			
AIR	4931	ELECTRIC AND OTHER SERVICES COMBINED		
AIRS/AFS	OWNE			
AIR	4911	ELECTRIC SERVICES		
AIRS/AFS	4911	ELECTRIC SERVICES		
AIRS/AFS	4931	ELECTRIC AND OTHER SERVICES COMBINED		
Facility Codes and Flags				
<b>EPA Region:</b>		10		
<b>Duns Number:</b>				
<b>Congressional District Number:</b>		01		
<b>Legislative District Number:</b>				
<b>HUC Code/Watershed:</b>		19010401 / YAKUTAT BAY		
<b>US Mexico Border Indicator:</b>				
<b>Federal Facility:</b>		NO		
<b>Tribal Land:</b>				
Alternative Names				
Alternative Name				Source of Data
CITY & BOROUGH OF Y/YAKUTAT POWER PLANT				AIRS/AFS
YAKUTAT POWER INC				AIR
YAKUTAT POWER PLANT (YAKUTAT POWER, INC.)				EIS
CITY & BOROUGH OF YAKUTAT-YAKUTAT POWER				AIRS/AFS
CITY & BOROUGH OF YAKUTAT / YAKUTAT POWER PLANT (YAKUTAT POWER, INC				AIR
YAKUTAT				EGRID
Organizations				
Affiliation Type	Name	DUNS Number	Information System	Mailing Address
MAILING ADDRESS	CITY & BOROUGH OF YAKUTAT		AIR	
OWNER/OPERATOR	YAKUTAT POWER INC		EGRID	
OWNER/OPERATOR MAILING ADDRESS	YAKUTAT POWER INC		EIA-860	
PARENT COMPANY	CITY & BOROUGH OF YAKUTAT		EIS	
OWNER/OPERATOR	YAKUTAT POWER INC		EIA-860	
PARENT COMPANY	CBY DBA YAKUTAT POWER		EIA-860	

National Industry Classification System Codes (NAICS)					
Data Source	NAICS Code	Description	Primary		
AIR	221112	FOSSIL FUEL ELECTRIC POWER GENERATION.			
EIS	221112	FOSSIL FUEL ELECTRIC POWER GENERATION.			
AIRS/AFS	221112	FOSSIL FUEL ELECTRIC POWER GENERATION.			
EIA-860	22				
Facility Mailing Addresses					
Affiliation Type	Delivery Point	City Name	State	Postal Code	Information System
FACILITY MAILING ADDRESS	PO BOX 129	YAKUTAT	AK	99689	AIRS/AFS
MAILING ADDRESS	PO BOX 160	YAKUTAT	AK	99689	AIR
FACILITY MAILING ADDRESS	PO BOX 129	YAKUTAT	AK	99689	AIR
Contacts					
Affiliation Type	Full Name	Office Phone	Information System	Mailing Address	
UNKNOWN CONTACT	JAMES MORTON	9077843323	AIR		
UNKNOWN CONTACT	JAMES MORTON	9077843323	AIRS/AFS		
COMPLIANCE CONTACT	JAMES MORTON	9077843323	AIR		
COMPLIANCE CONTACT	JAMES MORTON	9077843323	AIRS/AFS		

Query executed on: SEP-11-2017

**APPENDIX D**  
**COMPLETED ENVIRONMENTAL QUESTIONNAIRE**

# Phase I ESA Property Owner Questionnaire

1. **What is the address/location of the subject property?**

115 Airport Road, Yakutat, Alaska: Tract A, USS 5630

2. **How long have you owned the subject property?**

Property is being transferred from the City-Borough of Yakutat (CBY) who acquired it in 1998 through the State of Alaska Municipal Entitlement Program in 1998.

3. **From whom was the property purchased?**

City-Borough of Yakutat

4. **Please list any previous property owners that you are aware of, and include contact information if available.**

CBY Manager, Jon Erikson (907) 784-3323

5. **What are the main uses of the subject property?**

The property has not been previously developed

6. **Do you know of any previous uses for the subject property?**

No

7. **Are you aware of any spills or hazardous materials having occurred or existing on the subject property or surrounding properties?**

No

8. **Are you aware of any underground or aboveground storage tanks that are currently or were formerly located on the subject property?**

No

9. **Are you aware of any environmental liens against the subject property?**

No

10. **Are you aware of any fill having been brought onto the property from an offsite source? What was the source?**

No

**11. Are there any pits, ponds, or lagoons on the property?**

No

**12. Are you aware of any underground injection wells or dry wells on the property?**

No

**13. Are you aware of any current or former septic systems on the property?**

No

**14. Are you aware of any current or former water supply wells on the property?**

No

**15. Is the property currently connected to municipal water and sewer service? If so, do you know when it was connected?**

No

**16. Is the property currently connected to natural gas? If so, do you know when it was connected?**

No

**17. Are there any subfloor hydraulic lifts on the property?**

No

**18. Are there any current or previous floor drains in the building(s)? Are they connected to the sanitary sewer system?**

There are no buildings

**19. Are there any oil/water separators on the property? If so, what are they connected to? How, and how often are they cleaned?**

No

20. Have you ever observed any staining on the grounds of the subject property? Do you know the source of the staining?

No

21. Are you aware of any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the subject property or that have been filed or recorded in a registry under federal, tribal, state or local law?

Not sure what an AUL is, but there is nothing on the property and no know previous use.

22. Are there any other signs that contamination may be present at the subject property?

No

23. Does the purchase price being paid for this property reasonably reflect the fair market value of the property?

The property was conveyed at no fee to the YTT for the purpose on building a new health care facility.

24. Do you know of others who may have knowledge of the subject property?

CBY Manager listed above

I certify that the information provided above is accurate to the best of my knowledge.

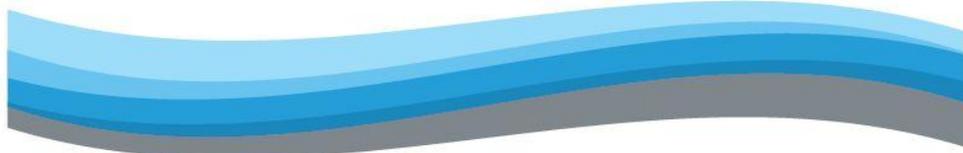
City & Borough of Yakutat  
Name of Property Owner/User of Report

Jim Wells Manager  
Signature of Property Owner/User of Report

8-28-17  
Date

owner  
Relationship to this property transaction (example: owner, past owner, buyer, realtor, renter, knowledgeable person, etc.)

**APPENDIX E**  
**BGES PROPOSAL DATED AUGUST 8, 2017**



# BGES, INC.

ENVIRONMENTAL CONSULTANTS

**PROPOSAL FOR  
NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)  
ENVIRONMENTAL ASSESSMENT  
AND A PHASE I ENVIRONMENTAL SITE ASSESSMENT**

**115 AIRPORT ROAD  
YAKUTAT, ALASKA**

**AUGUST 8, 2017**

**Submitted to:**                   **CAPT. Kelly Leseman, P.E., PMP  
4141 Ambassador Drive, Suite 300  
Anchorage, Alaska 99508**

**Submitted by:**                   **BGES, INC.  
1042 East 6<sup>th</sup> Avenue  
Anchorage, Alaska 99501  
Phone: (907) 644-2900  
Fax: (907) 644-2901  
  
Eagle River Office  
(907) 696-BGES (2437)  
  
*WWW.BGESINC.COM***

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**ATTACHMENT (LOCATED AT END OF PROPOSAL)**

Attachment A

BGES Personnel Resumes

## **1.0 INTRODUCTION**

BGES, Inc. (BGES) is pleased to present our proposal for providing a National Environmental Policy Act (NEPA) Environmental Assessment (EA) and a Phase I Environmental Site Assessment (ESA) for a property located at 115 Airport Road in Yakutat, Alaska. All EA work will be performed in general accordance with 40 Code of Federal Regulations (CFR) Parts 1500 – 1508 and all ESA work will be performed in general accordance with American Society for Testing Materials (ASTM) E1527-13.

BGES is ideally suited for the performance of project work on this contract, because BGES has specific experience conducting NEPA EAs for various entities as well as Phase I ESAs. BGES has conducted or managed numerous NEPA EAs and similar environmental reviews and has conducted a total of 718 Phase I ESAs to date throughout Alaska. We have also worked with many Tribal entities throughout Alaska, including the Anvik Tribal Council, the Cook Inlet Tribal Council, the Yukon River Intertribal Watershed Council, the Holy Cross Tribal Council, the Nulato Tribal Council, the Native Village of Gakona, and many other Native Alaskan organizations; we are thus very aware of the cultural attributes of the Native Peoples of Alaska.

BGES also has extensive experience conducting site assessments under both the EPA and the Alaska Department of Environmental Conservation (ADEC) Brownfields programs and in villages throughout Alaska. For example, we completed a Phase I ESA and a limited Phase II ESA at a former Bureau of Indian Affairs (BIA) school site in Copper Center, several Phase I ESAs and Phase II ESAs for the Brownfields program at the ADEC for the Native Villages of Kwigillingok, Kotlik, and Anvik under our term contract with the ADEC, and three Phase I ESAs for the Anvik Tribal Council (two in Anvik and one in Shageluk) under the EPA Brownfields Tribal Response Program. As such, we have considerable experience and knowledge that will allow us to provide professional environmental consulting services at the subject property. BGES also has considerable experience in Yakutat having provided professional environmental consulting services to the City and Borough of Yakutat in association with a leaking pipeline. In addition, BGES has been providing assistance for nine years to the local Yakutat community members in the Restoration Advisory Board as part of our Technical Assistance for Public Participation contract with the U.S. Army Corps of Engineers.

We have included provisions for completing all items required for this Request for Proposals (RFP) and have taken into consideration the documents that have been prepared as part of the planning process by others for this Joint Venture Construction Project. As indicated in the RFP, the following

information has been completed and will be utilized during the preparation of the NEPA EA and Phase I ESA for this project: preliminary design information related to use of the project site; a Section 106 review; a Wetland Delineation report; a Geotechnical Investigation report; an Environmental Determination report with a Categorical Exclusion (CATEX); a Site Selection and Evaluation Report (SSER); and Health Resources and Services Administration (HRSA) Environmental Information and Documentation (EID) report.

With this in mind, we have developed this proposal to complete the objectives described by the Yakutat Tlingit Tribe (YTT) in the RFP, in conformance with the Environmental Review Manual for Indian Health Service (IHS) Programs, the American Society for Testing Materials (ASTM) E1527 (latest version) guidelines, and the federal and local standards of practice. All of the work on this project will be conducted by, or under the direct supervision of BGES personnel who meet the definition of Qualified Environmental Professionals, as defined by the ADEC. We do not have any conflicts of interest that we are aware of that would prevent us from performing the work required for this contract.

## 2.0 HISTORY AND DESCRIPTION OF BGES

BGES is a full-service environmental consulting firm located at 1042 East 6<sup>th</sup> Avenue in Anchorage, Alaska, 99501; and we qualify as a small business. Our firm was established in 2002 by its President, Robert Braunstein, with the goal of providing high quality, responsive, and cost-effective consulting services to our clients. Mr. Braunstein is a Certified Professional Geologist, both nationally and in Alaska, with more than 35 years of geological and environmental consulting experience. In addition to Mr. Braunstein, the remainder of BGES staff members have varying backgrounds including geology, biology, and environmental science. Currently, BGES employs eight full-time staff members. BGES has considerable experience with providing a wide range of environmental services including the following activities:

- Phase I and Phase II ESAs;
- NEPA EAs;
- Soil and groundwater remedial design and implementation;
- Vapor Intrusion Assessments;
- Preparation of planning documents (storm water pollution prevention plans (SWPPPs); spill prevention, control, and countermeasure (SPCC) plans; sampling and analysis plans; health and safety plans; environmental protection plans; quality assurance project plans; hazardous materials control plans; etc.);
- Long-term groundwater monitoring programs;
- Underground and aboveground storage tank assessments, and decommissioning activities;

- Lead-based paint and asbestos inspections;
- Hazardous building materials inventories;
- Historical building assessments;
- Environmental data research and statistical analysis;
- Emergency response services;
- Project management and planning; and
- Other ancillary environmental services.

### **3.0 BGES QUALIFICATIONS AND EXPERIENCE**

#### **3.1 BGES NEPA EA Experience**

BGES has experience with managing and conducting NEPA EAs. Most of these projects were conducted in rural Alaskan communities as discussed further in Section 6.0 below. The typical NEPA EA project activities are virtually identical to those required for this program and are discussed further below.

##### **3.1.1 Rural Alaska Community Action Program (RurAL CAP)**

BGES prepared an EA document under the NEPA, and a SWPPP for RurAL Cap for six properties located in a subdivision off of Funny River Road in Soldotna. During the course of the EA research, BGES identified an aboveground storage tank that was located within an unacceptable separation distance from one of the properties. Thus, a different property was selected as a replacement and BGES was able to incorporate this new property into the document in a seamless manner. BGES also prepared a SWPPP for the planned construction phase of the project.

*As evidence of BGES' exemplary performance on this contract, we offer the following reference: Ms. Mitzy Barker, Director, Planning and Construction Division, RurAl CAP, 731 East 8<sup>th</sup> Avenue, Anchorage, AK 99501 Ph: (907) 279-2511.*

##### **3.1.2 Alaska Army National Guard, Barrow Barracks, NEPA EA and Site Characterization, Utqiagvik (formerly Barrow), Alaska**

As a subcontractor to Alutiiq, LLC (Alutiiq), and on behalf of the Alaska Army National Guard (AKARNG), BGES coordinated an environmental assessment under the NEPA, coordinated environmental permitting, prepared a health and safety plan, and prepared and implemented a work plan to excavate test pits and to collect soil samples at the proposed building site of new barracks in Utqiagvik. Additional work that BGES coordinated included a comprehensive survey of building and sampling locations. The EA was performed as a CATEX type and was completed in partnership with the AKARNG, utilizing some information previously obtained by them (a process similar to what is planned for this YTT project).

The test pit excavation and sampling activities were performed during harsh winter conditions in February of 2016. All project activities were performed on an aggressive schedule such that the barracks construction could proceed during 2016. The work was completed under budget and ahead of schedule. BGES' report was submitted to Alutiiq and then to the AKARNG, and was approved by AKARNG with no comments or requested modifications. Jennifer Nutt, AKARNG's Environmental Project Manager expressed her gratitude for BGES' work product by stating "there were a lot of challenges and BGES did a great job."

*As evidence of BGES' exemplary performance on this project, we would like to offer the following references: Ms. Jennifer Nutt, Construction Facilities Management Office, Alaska Army National Guard, P.O. Box 5-549, Fort Richardson, AK 99505. Ph: (907) 428-6769. Mr. Virgil Hughes, Alutiiq, LLC, 3909 Arctic Boulevard, Suite 300, Anchorage, AK 99503. Ph: (907) 762-9433.*

### **3.1.3 Nulato Tribal Council EAs, Nulato, Alaska**

BGES completed EAs under the NEPA for eight lots (some with occupied homes) in the village of Nulato. A site visit was required to complete this document. During the course of research for the EAs, the eighth lot was added to the original seven properties that were the subject of the project. BGES was able to address this lot with a minimal amount of additional cost.

*As evidence of BGES' exemplary performance on this project, we would like to offer the following reference: Ms. Myra Shryock, Native American Housing Assistance and Self Determining Act (NAHASDA)/Transportation Manager; Nulato Tribal Council, P.O. Box 65049, Nulato, AK 99765. Ph: (907) 898-2339.*

## **3.2 BGES Phase I ESA Experience**

When the State of Alaska, Department of Law required three Phase I ESAs in Anchorage, they selected BGES for this important project. In fact, BGES has conducted a total of 718 Phase I ESAs to date in general conformance with the ASTM E1527 (current version) guidelines and the local standard of practice. These projects illustrate not only our similar project experience associated with assessing properties, but also our experience working in remote Alaska villages, with multi-cultural sensitivity, keeping multiple local stakeholders informed about project activities and gaining their support. We provide example projects to highlight this experience below.

### **3.2.1 Phase I ESAs, Various Housing-Related Sites in the Cook Inlet Region of Alaska**

During 2004 through 2017, BGES completed a total of 172 Phase I ESAs, 21 Phase II ESAs, and 174 Hazardous Building Material Inventories (HBMIs), and many other services for Cook Inlet Housing Authority (CIHA), mostly in support of neighborhood revitalization programs. The Phase I ESAs were conducted in accordance with ASTM standards and the HBMIs were conducted in accordance with U.S. Department of Housing and Urban Development (HUD), Environmental Protection Agency (EPA), and Asbestos Hazard and Emergency Response Act (AHERA) standards at occupied and unoccupied apartment complexes, single-family homes, duplexes, triplexes, four-plexes, larger multiplexes, mobile homes, commercial properties, and vacant lots. As is required for this YTT project, BGES conducted research of numerous local, state, and federal environmental and property databases. Photographs of pertinent building and exterior features were provided in the reports.

For 2005 through 2017, BGES has provided electronic reports estimated to total more than 20,000 pages, thus saving time, money, and natural resources. BGES has also provided support to CIHA during selection of demolition subcontractors. We have conducted Phase II ESA activities at sites where additional assessment work beyond the Phase I ESA was requested. We have assisted CIHA with closure of 13 underground storage tanks (USTs). We have conducted nine lead clearances at various properties under our term contracts with CIHA. BGES has also performed radon testing at numerous apartment buildings, 31 aboveground storage tank surveys, 6 noise studies, TCLP-lead sampling at 56 locations, and 1 air emission study, among other services. As a result of our Phase I ESAs, more than five wells, more than 10 USTs, several aboveground storage tanks, an oil changing pit, and two dwellings with significant mold (respirators were required during the interior reconnaissance), were noted at the various properties. By providing this information in a separate summary format, and as soon as we became aware of these features, CIHA was protected from future change orders by the demolition contractors.

*As evidence of our exemplary performance on this term contract, we would like to offer the following references: Jeff Judd and Tyler Robinson; Cook Inlet Housing Authority, 3510 Spenard Road, Suite 100, Anchorage, Alaska, 99503; Ph: (907) 793-3000.*

### **3.2.2 Phase I ESAs, Various Villages Throughout Alaska**

As described above, BGES has conducted Phase I ESAs at many remote and semi-remote locations throughout Alaska. In addition to hundreds of sites in Anchorage and on the road system, BGES has conducted Phase I ESAs in Kodiak (8), Bethel (2), Egegik, Kotlik (2), Anvik (3), Dillingham (2),

Koyukuk, Hughes, Hooper Bay (2), Dutch Harbor (4), Deadhorse (2), Iliamna, Nome (2), Naknek, Shageluk, King Salmon (3), Tuluksak, Prudhoe Bay, Chenega Bay, Afognak Island (2), Port Alsworth, and Utqiagvik.

#### **4.0 PERSONNEL QUALIFICATIONS AND EXPERIENCE**

BGES personnel are highly qualified to complete the stated objectives of the required work. Our proposed Project Manager is Robert N. Braunstein, C.P.G. Mr. Braunstein has more than 35 years of geological and environmental consulting experience. Mr. Braunstein is a Certified Professional Geologist, both in Alaska and nationally. He has conducted or managed more than 1,000 Phase I and Phase II ESAs throughout Alaska and the lower 48 states. Mr. Braunstein personally conducted a Phase I ESA at Icicle Seafoods in Egegik, and he has managed, or served as the Principal in Charge of all of the projects described within this proposal. He also managed the NEPA EAs in Soldotna, Uqtiagvik, and Nulato as described above. He has conducted or managed ESAs and EAs at dozens of other villages of varying sizes throughout Alaska. He is very familiar with multicultural concerns of local persons in remote areas of Alaska, and he has received formal multi-cultural training from the U.S. Army Corps of Engineers.

Acting as an Assistant Project Manager and Quality Control Officer for the Phase I ESA will be Brian Braunstein, Senior Environmental Specialist. Brian Braunstein has a B.A. degree in psychology and more than 10 years of environmental consulting experience. He has performed or managed more than 400 Phase I ESAs throughout Alaska. Brian Braunstein currently manages all of BGES' Phase I ESAs projects. Brian Braunstein has also assisted with all of the NEPA EAs described above.

The Phase I ESA site reconnaissance activities will be conducted by Rose Pollock. Ms. Pollock resides in Anchorage and has a B.A. degree in environmental science with a biology minor and has more than three years of experience conducting Phase I ESAs and she has conducted numerous NEPA EAs. Thus, she is an ideal candidate for completing both the Phase I ESA activities and preparing the NEPA EA.

All of BGES personnel described above are excellent writers. All of our reports are reviewed by senior-level personnel before they are issued. BGES prepares reports that are complete, and easy to understand. We have facilitated stakeholder and community meetings, and we are experienced at interpreting and presenting information in a manner that is easily understood by persons with varying backgrounds. We understand the importance of keeping our clients informed as projects progress,

and conducting our work seamlessly in the villages, and gaining the support of the local community.

BGES personnel understand the dynamics of multi-cultural features of tribal organizations and villages. As described above, our Project Manager, Robert Braunstein, has received multi-cultural diversity training presented by the U. S. Army Corps of Engineers. He is also currently serving in an advisory capacity to the Restoration Advisory Board (RAB), composed of local community members, environmental personnel, and Tribal officials in Yakutat, Alaska. At the request of the RAB members, BGES' contract has been renewed four times to date. BGES personnel have conducted work in villages throughout Alaska and have experience with various Tribal entities and institutions.

Resumes for key BGES project personnel are included in Attachment A.

## **5.0 KEY STAFF AVAILABILITY**

At the present time, and for the last several months, BGES' workload has been moderate and very manageable. Although we expect our workload to increase somewhat as we approach the end of summer and the fall season, we anticipate it to continue to be very manageable; given the types of projects that we most often undertake and the experience level of our staff. All BGES' staff members, (except for Evan Tyler who has been with us for over one year), have been with us for more than two years.

The majority of our projects are short-term in nature (Phase I and Phase II ESAs). Because of these short-term commitments (we typically complete our Phase I ESAs in one to two weeks, and our Phase II ESAs in about 3 to 4 weeks), BGES can reassign personnel quickly during times of peak project demands, or should delays in this YTT project be experienced.

During 2016 and early 2017, BGES had several major projects either come to an end, or significantly wind down. Our soil vapor extraction project in Peters Creek is currently in the design stage, with implementation scheduled for this fall. This is the only large-scale project that we currently have authorization to work on in 2017.

In summary, for BGES, the timing is perfect and we are in an excellent position to acquire additional project work through this agreement, and we look forward to impressing the YTT with our responsiveness.

## 6.0 BGES EXPERIENCE WORKING IN REMOTE ALASKAN VILLAGES

As described above, BGES has considerable experience working in remote Alaskan villages. In addition to many projects in the Anchorage area, and the Phase I ESA and NEPA EA project locations throughout Alaska as identified above, we have completed or are currently working on projects in the following localities:

- Sand Point (orphaned drum site characterization and strategic project implementation plan)
- Kipnuk (transformer sampling)
- Point Hope (lead testing and soil sampling)
- Whittier harbor (sediment sampling, stockpiled soil sampling)
- Chickaloon (Phase II ESA and soil remediation)
- St. Paul (sediment sampling – three projects)
- Ekuk (asbestos and lead-based paint abatement, soil remediation, characterization and disposal of orphaned drums)
- Circle (SWPPP)
- Bethel (three Phase II ESAs; soil sampling; SWPPP; biocell sampling, water quality management plan; and soil remediation)
- Fort Yukon (soil excavation and sampling)
- Kodiak (Phase II ESA; emergency response and soil remediation; radon testing)
- Akutan (second opinion review)
- Skagway harbor (sediment sampling)
- Ketchikan (two UST closures)
- Holy Cross (site history and use report; soil sampling)
- Tanacross (SWPPP review)
- Fort Greely (monitoring well installation)
- Egegik (Phase II ESA and site remediation)
- Dillingham (Plane crash spill assessment)
- Shageluk (soil sampling)
- Flat Lake (soil sampling)
- Juneau (monitoring well installation and sampling, HBMI)
- Yakutat (emergency response, soil sampling)
- Nome (Phase II ESA)
- Ninilchik (UST closure)
- Dutch Harbor (two emergency response projects)
- Native Village of Gakona (soil sampling)
- Kaktovik (aboveground storage tank sampling)
- Valdez (dredge sampling, Class V Injection Well closure, UST closure sampling)
- Nikiski (sampling, repair and replacement of monitoring wells; prepare SWPPP; sample land-farmed soils)
- Salcha (three asbestos inspections)
- Talkeetna (two emergency responses – assessment and remediation; transaction screen; Phase II ESA)
- Nichin Cove, Prince of Wales Island (soil, surface water, and sediment sampling)
- Moose Pass (Phase II ESA and site remediation)
- Honolulu Creek (Spill Prevention, Control, and Countermeasure Plan)

- Shell Mountain (SPCC Plan)
- Bald Mountain (SPCC Plan)
- Seldovia (asbestos analysis)
- Aleknagik (Phase II ESAs)
- Yakutat (RAB assistance)
- Hooper Bay (Phase II ESA)
- Sitka (Lead-based paint inspections; assess landfill cap)
- Utqiagvik (NEPA EA; Phase II ESAs; and mold assessment)

Another example of a project in which BGES has demonstrated its expertise in providing professional environmental consulting services, as well as coordinating with, and providing information to members of communities in which environmental issues are of particular importance, as well as our experience in Yakutat, the subject area of this YTT project, is our ongoing project described below.

Since 2008, BGES has provided assistance to the RAB in Yakutat, associated with the work being conducted by the U.S. Army Corps of Engineers under the Formerly Used Defense Sites (FUDS) assessment and remediation program. Specifically, BGES' contract with the USACOE is for Technical Assistance for Public Participation, with the goal of advising the RAB members about technical subjects and making the technical information easy to understand. As such, BGES has reviewed many large technical documents; a pipeline removal report, an extremely large feasibility study covering dozens of sites, and most recently, a work plan for a supplemental remedial investigation; portions of which were generated in order to address data gaps that were identified by BGES during our review of the feasibility study.

BGES attended several RAB meetings in Yakutat during the time of our contract and viewed the sites of the subject feasibility study on two occasions. During the meetings (and the days before and after), BGES met with community members including City officials, Tribal personnel, members of the local Native American Lands Environmental Mitigation Program (NALEMP), and other concerned citizens to discuss the environmental status of the many FUDS sites in Yakutat.

## **7.0 BACKGROUND**

It is our understanding that the site that is the subject of this project will be developed as a new 11,000 square-foot Ambulatory Health Center, which will include the following services; primary care, dental, behavior health, preventative care, emergency medical services, administrative and support functions, and a wellness center. The YTT has been selected to participate in the IHS Joint Venture Construction Program (JVCP) for the construction of this new facility, which will be located on 2.5 acres of land that is currently undeveloped and located at 115 Airport Road in Yakutat, Alaska.

The RFP indicated that construction of the new Yakutat Community Health Center (YCHC) will involve multiple federal agencies including the IHS, the United States Department of Agriculture (USDA), and the HRSA. Additionally, the IHS and USDA have already completed their Environmental Determination and have concluded that the site qualifies for a CATEX. The HRSA has determined that they will require preparation of an EA under the NEPA and a Phase I ESA for the project site. As mentioned above, the IHS has completed a Site Selection and Evaluation Report, which contains the following information for the project site: preliminary design information; a Section 2016 review; a Wetland Delineation report; a Geotechnical Investigation report; and an Environmental Determination report. With this information in mind, we have prepared the following scope of work for this project, which includes provisions for utilizing this available information/documentation, avoiding unnecessary duplication of efforts.

## **8.0 PROPOSED SCOPE OF WORK**

An Environmental Assessment under the NEPA and a Phase I ESA will be prepared for the project site and the details of these documents are presented below. The following paragraphs outline the tasks that will be accomplished for preparing the EA and to meet the objectives of the Phase I ESA - determining if there are any recognized environmental conditions associated with the subject property.

### **8.1 NEPA Environmental Assessment**

BGES will conduct the research necessary to address all of the items listed within 40 Code of Federal Regulations (CFR) Part 1500 to 1508 to complete the IHS checklist. Specifically, we will research the potential impacts to/from (as applicable) the following items related to the proposed project:

- Historic Properties (Section 106 review)\*;
- Endangered Species Act;
- Water Resources (Ground Water, Surface Water);
- Wetlands\*;
- Safe Drinking Water Act – Impact on an EPA-Designated Sole Source Aquifer;
- Sedimentation and Erosion Control Measures;
- Storm Water and NPDES Permitting;
- Floodplain Management (Including the Flood Disaster Protection Act);
- Real Property;
- Clean Air Act;
- Petroleum;
- Solid Waste Disposal;

- Hazardous Substances;
- Environmental Justice;
- Socioeconomic Issues;
- Noise;
- Visual Resources;
- Wilderness Areas;
- Significant Farmland and Soils; Farmland Protection Policy Act;
- Coastal Resources;
- Wild and Scenic Rivers Act;
- Other Identified Factors\*

Note: \*As mentioned above, a Section 106 review, a Wetland Delineation report, a Site Selection and Evaluation Report, an Environmental Determination report with a CATEX, preliminary design information, a Geotechnical Investigation Report, and the HRSA Environmental Information and Documentation report have been prepared for this project and will be used for development of the EA for this project.

It is noted that the items of the list above that have been completed for the subject property for this project will be reviewed and evaluated in order to prepare this EA. The documents prepared by others will also be referenced in this EA. The majority of the items above can be researched without a visit to the site. However, the factors of toxic/hazardous/radioactive materials, contamination, chemicals/gases, etc., will require a site/area reconnaissance. We will conduct a brief reconnaissance of the project site at which time we will evaluate any evidence of potential contamination such as stained soils or stressed vegetation. The site visit will take place after a significant amount of research is performed, such that any data gaps can be researched at local sources of information, if applicable.

After completion of the research and site visit, we will prepare the EA document which will include supporting documentation obtained during our research in appendices. The document will include a Finding of No Significant Impact (FONSI), if appropriate.

### **NEPA ENVIRONMENTAL ASSESSMENT EXCLUSIONS**

The EA does not include provisions for providing detailed mitigation or alternatives analyses. It does not include provisions for conducting geotechnical, archaeological, or other invasive studies. These activities may be recommended, depending upon site-specific characteristics and the availability of required information. Our EA also does not include provisions for any third party costs such as application fees, reporting fees, copying fees, etc. that may be charged by any entity that is approached with a request for information or a declaration.

## 8.2 Phase I ESA Scope of Work

Our scope of work for the Phase I ESA includes research, an onsite reconnaissance, and preparation of a report summarizing our findings. The Phase I ESA will be performed in general conformance with the ASTM E1527-13 (current version) guidelines and the local standard of practice. During the research phase of our assessment, we will contact numerous entities that may have knowledge of current and/or former site conditions. This information is typically obtained from a subset of the following sources: The Alaska Department of Natural Resources Recorder's office; the tax assessor's office; the ADEC's Contaminated Sites, Spills, and Registered UST databases; the U. S. EPA's, National Priorities List (NPL); the USEPA Enviromapper database; the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database; the USEPA Corrective Action Detail Reports; the U.S. EPA Region 10 Treatment, Storage, and Disposal facilities list; the U.S. EPA Toxic Release Inventory System, Sanborn Fire Maps; the National Response Center; Polk City Directories; planning and zoning maps; water well surveys; the local electric companies; the local water and wastewater utility; the local natural gas utility; current and former site owners; neighboring property owners or occupants; and other persons knowledgeable about the property.

We will purchase and/or review from one to four historical aerial photographs depicting property conditions prior to, during, and/or after development; and showing any other pertinent property details. The photographs will be described in a narrative format in the text, and will be included as figures in the report. After this preliminary research is completed, we will mobilize to the property and conduct our onsite reconnaissance.

During this reconnaissance, our field personnel will look for evidence of USTs, aboveground storage tanks, drums and other containers, stained soils, stressed vegetation, site drainage patterns, and any other evidence of potential contamination. Photographs will be taken to document the property's condition observed at the time of our site reconnaissance, and will be included in the report.

Upon completion of the above-described activities, we will prepare a written report of our findings. We will include an opinion of the potential for contamination on the subject property, both from potential on-site and off-site sources; and identify recognized environmental conditions with respect to the subject property, if any are evident.

## PHASE I ESA EXCLUSIONS

The scope of this Phase I ESA does not include testing for radon, asbestos, or lead. Collection and analysis of soil samples is also not included. These services can be performed concurrently or as follow-up activities to the Phase I ESA, as requested.

### 9.0 PRELIMINARY PROJECT SCHEDULE

BGES can complete the ER and the Phase I ESA and provide our written report within 60 days of notice to proceed. If a quicker completion is desired, we would be pleased to discuss this option with you. We will provide verbal results to you prior to completion of our report, should any concerns become known. We have developed the following preliminary schedule, which illustrates our expected progress on this project.

Submittal of Proposal/Cost Estimate	August 8, 2017
Receive Notice to Proceed	Day 1
Submit Draft Phase I ESA Report	Day 28
Receive Comments on Draft Phase I ESA Report	Day 30
Submit Draft EA Report	Day 40
Receive Comments on Draft EA Report	Day 50
Submit Final Phase I ESA Report and EA Report	Day 60

### 10.0 COSTS

BGES proposes to complete the NEPA EA for a total firm fixed price of \$ \_\_\_\_\_ and the Phase I ESA for a total firm fixed price of \$ \_\_\_\_\_. Our fee for the EA and the Phase I ESA includes all activities as described above, through submittal of our final reports. It is assumed that separate reports for the EA and a Phase I ESA will be acceptable.

If you have any questions concerning this proposal, please do not hesitate to contact us. We appreciate this opportunity to be of service, and we look forward to providing professional environmental consulting services to you.

**APPENDIX B**  
**YAKUTAT TLINGIT TRIBE *SITE SELECTION AND EVALUATION REPORT*,**  
**DATED JUNE 2017**



**SITE SELECTION AND EVALUATION REPORT  
Yakutat Community Health  
Center Yakutat, Alaska**

**June 2017  
Project Number 428**



**ALASKA AREA NATIVE HEALTH SERVICE  
INDIAN HEALTH SERVICE  
DEPARTMENT OF HEALTH AND HUMAN SERVICES**





**SITE SELECTION AND EVALUATION REPORT**  
**Yakutat Community Health**  
**Center Yakutat, Alaska**

June 2017  
Project Number 428

RECOMMEND APPROVAL:

Victoria Demmert, President  
Yakutat Tlingit Tribe

6-18-2017

Date

Kelly B. Leseman, P.E., PMP  
Alaska Area Native Health Service

6/26/2017

Date

APPROVAL:

Denman Ondelacy, P.E., Director  
Office of Environmental Health and Engineering  
Alaska Area Native Health Service

6-27-17

Date





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## LIST OF ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
A/E	Architectural/Engineering
AANHS	Alaska Area Native Health Service
CATEX	Categorical Exclusion
CBY	City-Borough of Yakutat
DOT	Department of Transportation
ED	Environmental Determination
EMS	Emergency Medical Services
FAA	Federal Aviation Administration
HSPD	Homeland Security Presidential Directive
IHS	Indian Health Service
GCI	General Communication Incorporated
GSA	General Services Administration
gsf	gross square-foot
KTY	Kwaan Tribe of Yakutat
LEED	Leadership in Energy and Environmental Design
LHS	Large Health Station
PJD	Project Justification Document
POR	Program of Requirements
PCPV	Primary Care Provider Visits
SACF	Small Ambulatory Care Facilities
SEARHC	South East Alaska Regional Health Corporation
SSER	Site Selection and Evaluation Report
TDY	Temporary Duty
USDA	United States Department of Agriculture
YCHC	Yakutat Community Health Clinic
YTT	Yakutat Tlingit Tribe





## I. EXECUTIVE SUMMARY:

### a. Project Summary

A combined phase I and Phase II Site Selection Evaluation Report (SSER) was completed for the Yakutat Tlingit Tribe (YTT) as part of the Indian Health Service (IHS) project documents for the Joint Venture Construction Program (JVCP). The YTT JVCP is approved for 10,609-gross square-foot (gsf) facility which meets the requirements of the IHS Small Ambulatory Care Facilities (SACF) for a Large Health Station (LHS). The total space includes 8925-gsf of SACF-LHS plus qualifying derivatives and 1,981-gsf of approved deviations. The overall size includes a circulation factor of 15% and major mechanical of 10%.

The project is located on the Tribal property located at 115 Airport Road, Yakutat, AK 99689. It consists of 2.6 acres of developable land which the tribe received from the City-Borough of Yakutat (CBY). Location and Plat Maps are located in **Tab A**. The property is conveniently located near the center of Yakutat and close to the existing clinic, senior center, school, fire/police department, and the Power Company. All utilities except wastewater run immediately in front of the property along Airport Road with the exception of wastewater. The wastewater main is located approximately 500-foot north of the property.

The site selection process is described in the Phase I section of this report. Several sections of the Phase I roll over into the Phase II elements of this report and are noted where applicable.

### b. Review Team

The SSER was completed by the YTT in conjunction with the Alaska Area Native Health Service (AANHS), CBY with special investigations/Reports conducted by Northern Geotechnical (Geotechnical Report), Bosworth Botanicals (Wetland Delineation Report), and Smithpong-Rosamond Architecture (Project Justification and Program of Requirements).

### c. Conclusions and Recommendations

This SSER was completed in accordance to the IHS SSER guideline and satisfies all requirements set forth to meet the criteria for a 10,600-gsf primary care facility. The site location is suitable for building purposes. Subsurface characteristics are clean sandy-gravel which is typical of the Area. All site utilities are either directly adjacent to the site or within reasonable distance for service. The site is readily accessible and centrally located in the Yakutat community. This site is recommended for the proposed JVCP facility.



## II. PHASE I: SITE SELECTION EVALUATION PROCESS

A site evaluation was conducted by the YTT to select the most appropriate site for the JVCP project. The selection process served multiple purposes including requirements for U.S. Department of Agriculture (USDA).

The process was a collaborate effort between YTT, the CBY, and the community members of Yakutat. The AANHS provided consultation throughout the evaluation-selection process. Five different sites were evaluated for consideration.

The basis for land requirements are found in the IHS Technical Handbook for Environmental Health & Engineering Volume II Health Care Facilities Planning, Part 13 Site Selection and Evaluation process.

The IHS's SSER guideline recommends a 9 to 1 ratio of space to facility footprint. Worst case scenario of a full single story building estimates a 2.25- acre site. The conceptual facility layout estimates a two story facility with an estimated 8,700 square foot print estimating 1.8 acres.

The following perimeters were considered and evaluated for each site:

- a. Site Access: The location of the site was an important consideration. Factors that were considered include access during winter conditions (e.g. minimal grade during icing events), distance from public frontage road, proximity to power plant for possible waste heat use, access to airport for medivac patients, future expansion, location to existing utilities, and physical site conditions (topography, streams, flood potential, wetlands, etc...).
- b. Site Ownership: The YTT is blessed to have willing community partners and in addition to YTT property, the CBY and Kwaan Tribe of Yakutat (KTY) offered property for consideration. Of the five sites considered, one was owned by the YTT, three by the CBY, and one by KTY.

The selected site is 2.6 acres owned by the CBY. The property was approved by the CBY and ownership conveyed to YTT via quitclaim deed and has passed all ordnances needed to convey the property. A site-survey and plat map has been completed for Recording at the State Registers Office.

- c. Physical Description: The Yakutat area has similar physical characteristics throughout the region. The area is common of hummocky terrain resulting in the advance and retreat of glaciers as resent as 200 years ago. Soil are free of



permafrost and typical of outwash sediments of sand, gravel, and cobbles. The area is heavily forested by large White Sitka Spruce.

- d. Water and Wastewater: All required utilities are located along frontage road or within close proximity the property and, are adequate for the development of the new clinic. Details for service connects will be provided during the design phase.
- e. Storm-water Management: Yakutat is a small rural community governed by the CBY. Yakutat receives an annual average 155 inches of rain. Although, the CBY does not have a formal storm-water management plan, it is proficient with dealing with storm-water management. The soil in Yakutat is welled drained glacial moraine deposits. Some ponding and accumulation of water may occur in low lining areas or drainage swells after large precipitation events. Drainage swales, channeling, and large ditches are throughout the community diverting storm-water runoff.

The parcel where the clinic is located is well drained soil and drainage ditches parallel the length of the lot along airport road. A gravel pad will be developed during the design phase for the building location, graded for drainage, and will include space for parking and snow removal storage.

- f. Solid Waste: Yakutat has a Class III Solid Waste Landfill certified by the Alaska Department of Environmental Conservation (ADEC). Waste disposal is through pickup service from the CBY. Medical Waste is red-bagged and shipped to a licensed facility. All other waste is disposed in the local landfill.
- g. Power, Communication, and Data Systems: All required utilities are located along frontage road and are adequate for the development of the new clinic including power, communication and data systems. The JVCP location is also located near Yakutat's power plant which is evaluating the use of waste heat.

Power is supplied via diesel generators power plant as is typically throughout rural Alaska. Communication and data are available from two providers; General Communication Inc. and Alaskacom.

- h. Emergency Response System (EMS): Yakutat currently has a combined police, fire station, and EMS facility located approximately two blocks from the new JVCP location. The police force are paid positions employed by the CBY. All EMS and fire responders are volunteer positions. There is a lack of coordination for the EMS



and fire responders. YCHC staff are often called upon in EMS situations. An EMS coordinator is being requested as part of staffing package request.

- i. An Environmental Determination was conducted to satisfy the requirements for multiple agencies involved with this project. It has been determined that this project qualifies under the Categorical Exclusion (CATEX) category. The complete Environmental Checklist and Environmental Determination are included as Tab D.
- j. Available Services: The selected site is in proximity to the main central area of Yakutat with convenient access to all available services. Location is depicted in on the maps and site plans located in Tab A.
- k. Sustainability: All applicable sustainability listed in the Phase I requirements have either been addressed in the Environmental Determination or are not applicable.
- l. Energy Considerations: Several alternative energy sources will be considered including: solar, wind, bio-mass, waste-heat, and ground-heat. However, bio-mass and waste-heat are the only viable alternatives and will be considered during the design phase of the project.
- m. Security: All applicable security requirements will be incorporated into the design as well as compliance with local zoning and ordinances. System shall be in full compliance with HSPD-12 requirements.

### III. PHASE II

#### a. Basic Project Data

The Yakutat Tlingit Tribe is a small independent P.L. 93-638 Title V within the IHS's Alaska Area and operates limited services at the Yakutat Community Health Center (YCHC) located in the community of Yakutat, Alaska. Yakutat is located within the Mt. Edgecombe Service Unit and currently receives much of their medical services through interim providers from the South East Alaska Regional Health Corporation (SEARHC) who travel to Yakutat on an interim basis. Travel limitations, adverse weather conditions, and remote isolation contribute to unreliable services available through interim and Temporary Duty (TDY) providers. Travel from Yakutat to the IHS Mt. Edgecombe hospital in Sitka is even more difficult, involves multiple flights, and often involves expensive overnight stays.



The YCHC qualifies under the IHS Small Ambulatory Care Facility criteria for a Large Health Station (LHS). The new SACF-LHS will allow the YCHC to provide a more reliable, consistent, and higher level of care to the Yakutat Service Area. The Project Justification Documents (PJD) and Program of Requirements (POR) authorize a 10,906 square-foot Primary Care Facility with a staffing of 20.5 FTEs.

The new facility will provide space for primary care providers, dental services, behavior and mental health, social services, public health nursing, a wellness center, emergency medical services, and space for visiting specialty providers. It will also include additional space for itinerant quarters.

There are no Staff Quarters required with this project. There is adequate local housing for all permanent staff as described in Section III.I Housing of the PJD report. The SACF does allow itinerant quarters due to the high reliance of itinerant staff to meet the health care needs of the tribe. These are not leased facilities or used for long term occupancies. Itinerant quarters will be used on an as-needed basis when required. If the need for additional housing is required, it will be the responsibility of the YTT and not the IHS.

The facility will accommodate the projected workload of 2465 Primary Care Provider Visits (PCPV)s. The SACF-LHS criteria was used to determine the number of dental service minutes which is estimated less than 85,500 minutes. A full time dentist and dental assistant is included in the staffing package.

They will be no government vehicles or need for government vehicle parking. A small transport bus may be used for elderly patient travel but is normally parked at the Senior Center.

#### b. Site Size

The JVCP is located on a 2.6 acre parcel located in the central area of Yakutat. The building size is expected to have an 8,700-ft<sup>2</sup> foot print for a two story 10,900-ft<sup>2</sup> facility. The IHS guideline (as listed in Phase I) uses 9:1 ratio of land-size to building foot-print. This would require a minimum of 78,350-ft<sup>2</sup> (1.8 acres). The maps in Tab A shows the location of the property in relation to the community and the site map shows the proposed building layout on the lot.

The only special factor considered is additional area needed for snow storage. There are no need for other special consideration such as retention ponds, on-site wastewater treatment. However, should any additional issues arise, the lot is adequate to accommodate any additional requirements.

The site is an undeveloped lot but will be cleared and landscape to meet the requirements for a Level II General Services Administration (GSA) security rating.



c. Site Location:

The site is a 2.6 acre portion of USS 5630 and is located just southwest of the Ocean Cape/Forest Hwy 10 and Yakutat Airport Road intersection. It is conveniently located near the existing clinic, senior center, school, and Police, Fire & EMS Building. The adjacent lot is owned by the Federal Aviation Administration (FAA) and houses a defunct instrument tower. The YTT is pursuing ownership of the property. The property is located 115 Airport Road, Yakutat, AK 99689.



Figure 1 - Project area location map.

d. Site Access:

Site access will be from the main frontage road (Yakutat Airport Road). The only easements are on the roadway easement which includes corridors for utilities, drainage ditch, and State of Alaska-Department of Transportation (DOT) Right-of-Way.

e. Site Ownership:

The property has been conveyed to the YTT by the CBY via Quit Claim Deed.



f. Physical Description:

The project is 2.6 acres in an area primarily vegetated with mature, second growth Sitka spruce and hemlock trees. The project site has a slightly hummocky surface which generally slopes gradually down to the southeast. A shallow, sub-linear depression is located along the central and southern portions of the project site, which generally trends to the south-southeast. The Lot is located on a glacial moraine and consists of unsorted materials that ranges in size from boulders to silt-size particles. There is no known previous development. The material is very well drained. There is a small surface drainage towards the south end of the site.

g. Water & Wastewater.

Usage rates are based on the IHS design criteria of 30 gallons per patient visit and 20 gallons per employee. Wastewater is estimated at 80% water usage.

1. Water Usage:

- |   |                  |
|---|------------------|
| a. $(2,465 \text{ PCPVs/yr}) / (250 \text{ days/yr}) \times 30 \text{ gal per visit}$ | = 296 gpd        |
| b. $(20.5 \text{ FTE}) \times (20 \text{ gal/FTE})$                                   | = <u>410 gpd</u> |
| c. Projected Water Demand   | 706 gpd          |

2. Wastewater

- |                                    |           |
|------------------------------------|-----------|
| a. $(706 \text{ gpd}) \times 80\%$ | = 565 gpd |
|------------------------------------|-----------|

h. Storm-water Management:

Storm-water considerations are described in Phase I of this report. The CBY does not have a formal storm-water management plan. However, with an annual precipitation of 155 inches/year, storm-water management is a common and important practice in the Yakutat area. Groundwater infiltration is extremely high as a result of the clean gravely and sandy soil conditions of the area. In addition, natural and man-made drainage swales direct any excess water into large channels for retentions or drainage to permanent streams.

Project specific storm-water management includes topographic sloping from the facility towards the oversized drainage ditch which parallels the frontage road. It is unlikely that an on-site retention pond will be needed but, will be assessed during the design phase of the project.

i. Solid Waste Disposal:

Yakutat has a Class III Solid Waste Landfill certified by the Alaska Department of Environmental Conservation (ADEC). Waste disposal is through pickup service from the



CBY. Medical Waste is red-bagged and shipped to a licensed facility. All other waste is disposed in the local landfill.

City wide snow plowing and removal are provided through a combination and CBY and State of Alaska services. On-site snow removal will be the responsibility of the YCHC

j. Power, Communication and Data Systems:

The Yakutat Community Health Center is located within the center of the community near the schools, fire department, and power generators. Power is provided through the CBY. Power demand is estimated as shown below:

$$\begin{array}{ll} 10,900 \text{ ft}^2 \times (\text{m}^2/10.7639 \text{ ft}^2) \times 47 \text{ kwh/m}^2/\text{yr} & = 47,594 \text{ kwh/yr} \\ 10,900 \text{ ft}^2 \times (\text{m}^2/10.7639 \text{ ft}^2) \times 0.11 \text{ kVA/m}^2 & = 111 \text{ KVA demand} \end{array}$$

The YCHC will require high speed internet, television, and telephone systems which are currently available through General Communication Inc. (GCI) and Alaskacom. Prior to the installation of telecommunication services, an engineer will inspect the site and determine the appropriate location for connection.

k. Emergency Response Services:

The community of Yakutat has a dedicated facility to house police, and fire vehicles. The facility doubles as the community police station and is located less than ¼ mile from the health facility site.

Yakutat is served by an all-volunteer fire department which is sponsored by the CBY but not organized.

Yakutat has an EMS vehicle but does not have an EMS staff or paramedics. Any emergency services are provided through the YCHC. The EMS vehicles are also used to transport patients during medivacs to the local airport.

The HSP supports an EMS program for the SACF which is recommended for Yakutat due to its remote isolation and lack of alternative EMS services.

l. Environmental Determination:

Several agencies including the IHS have been involved in this project. A comprehensive environmental determination has been completed to satisfy these requirements. The agencies including IHS have determined that this project and site qualifies as a CATEX status. The complete environmental determination is included under **Tab D**.



m. Demographics:

Alaska has an estimated 2016 population of 741,894, which shows an increase of 31,645 since the 2010 census or 4.5%. The Alaska Natives/Alaska Indians are expected to increase 33%.

The estimated Yakutat City and Borough 2010 census population is 662. Approximately 50% are AI/AN. The racial makeup of the service area population is predominantly Alaska Native and Caucasian and the median age is 39 with an equal split between male and female. The community is immersed in the local tribal (Tlingit) culture. The fishing season brings in tourists and fishery workers from around the world.

The age demographics are as follows:

- Under 5 years of age: 6.4%
- 5 to 19 years of age: 19.6%
- 19 to 65 years of age: 60.6%
- Over 65 years of age: 13.4%

The Yakutat annual unemployment rate fluctuates due to the seasonal nature of work in the area; predominately from the commercial and sport fishing industries. Unemployment rates typically range from 6% during fishing season to 15% during the winter months.

n. Leadership in Energy and Environmental Design (LEED) Considerations:

The YCHC will follow the policies as published in the 2016 IHS Architectural/Engineering Guideline. The construction estimate is less than the \$10M threshold requiring LEED certification. However, the YTT intends to consider any energy saving and sustainability that may benefit the operation of the facility. The facility will also comply with all required Guiding Principles as listed in the guideline.

o. Sustainability Considerations:

This project will consider all applicable requirements for achieving sustainable design in accordance with guiding principles found in the *Federal Leadership on High Performance and Sustainable Buildings Memorandum of Understanding* and Guiding Principles as listed in the 2016 IHS Architect/Engineer Design Guide.

The YCHC project intends as part of meeting these requirements is seeking to utilize waste heat from the nearby power plant. Another example is to utilize lumber/timbers from the existing site into the design and construction of the facility.



p. Technical Evaluation:

The following technical evaluation confirms that the subject area is valid for this project.

Land size requirements meet the IHS guidelines and described in Site Selection Evaluation section of the Phase I analysis. The project site is approximately 2.6 acres which exceeds the estimated required size for the worst case scenario of a full single story building. The YTT is currently pursuing the property just to the west of the site for future development.

The existing utilities are adequate and have the capacity to provide the estimated clinic loads. All utilities are conveniently located and within reasonable access to the clinic site. A geotechnical investigation and wetland delineation study was conducted on the project site. The geotechnical investigation revealed favorable site conditions with no expected adverse conditions or special consideration such as clays, high-ground water, or permafrost. The geotechnical report is summarized in section q of this report and the full investigation is included in **Tab C**. The wetland delineation report revealed no wetland considerations for this site.

All applicable sustainability requirements as listed in the 2016 IHS A/E design guide will be implemented into the design and construction of the project and discussed in section o of this report.

The Environmental Determination (ED) was completed by the Alaska Area IHS Office which resulted in a Categorical Exclusion. The ED is included as **Tab D** of this report.

q. Geotechnical Investigation:

A geotechnical investigation was conducted in October 2016. The following is summary of the report. The complete report is included as **Tab C**.

In general, the sand/gravel soil identified across the project site are suitable for supporting conventional shallow foundation systems, such as poured concrete footings and/or thickened edge slab foundations, as well as any underground utilities and/or structural pavement sections. There is little to no risk of seismic liquefaction and/or seismically-induced slope failure at the project site. The sand/gravel soils are suitable for re-use as structural fill across the project site, assuming proper placement and compaction techniques are applied. Based on their initial observations of the soil gradation (both visual and textural), NGE-TFT estimates the sand/gravel soils to have little to no frost susceptibility. Furthermore, they anticipate there to be very little potential for ice lens development at the project site. As such, minimal foundation burial/insulation requirements and minimal structural pavement sections will be required to reduce the potential for differential settlements as a result of ice lens formation and/or subsequent thaw-related weakening of the bearing soils. Additionally, NGE-TFT estimates the sand/gravel soils to be relatively free-draining (i.e., exhibit relatively high



infiltration/percolation rates) and can likely support relatively uncomplicated storm-water/septic drain field designs. Please refer to NGE-TFT's comprehensive geotechnical report for the project site for details regarding the findings of their subsurface exploration and laboratory testing programs, along with their engineering conclusions and recommendations for the proposed YCHC.

r. Conclusion and Recommendations:

Through the Phase I Site Selection Process and Phase II Site Evaluation process, YTT has determined that the selected site is suitable and meets the IHS criteria for the proposed sized facility. There are no identified special considerations that need to be factored into the design or construction of this facility which, should be able to employ convention design methods to meet the 2016 IHS A/E Guideline criteria.



# TAB A MAPS



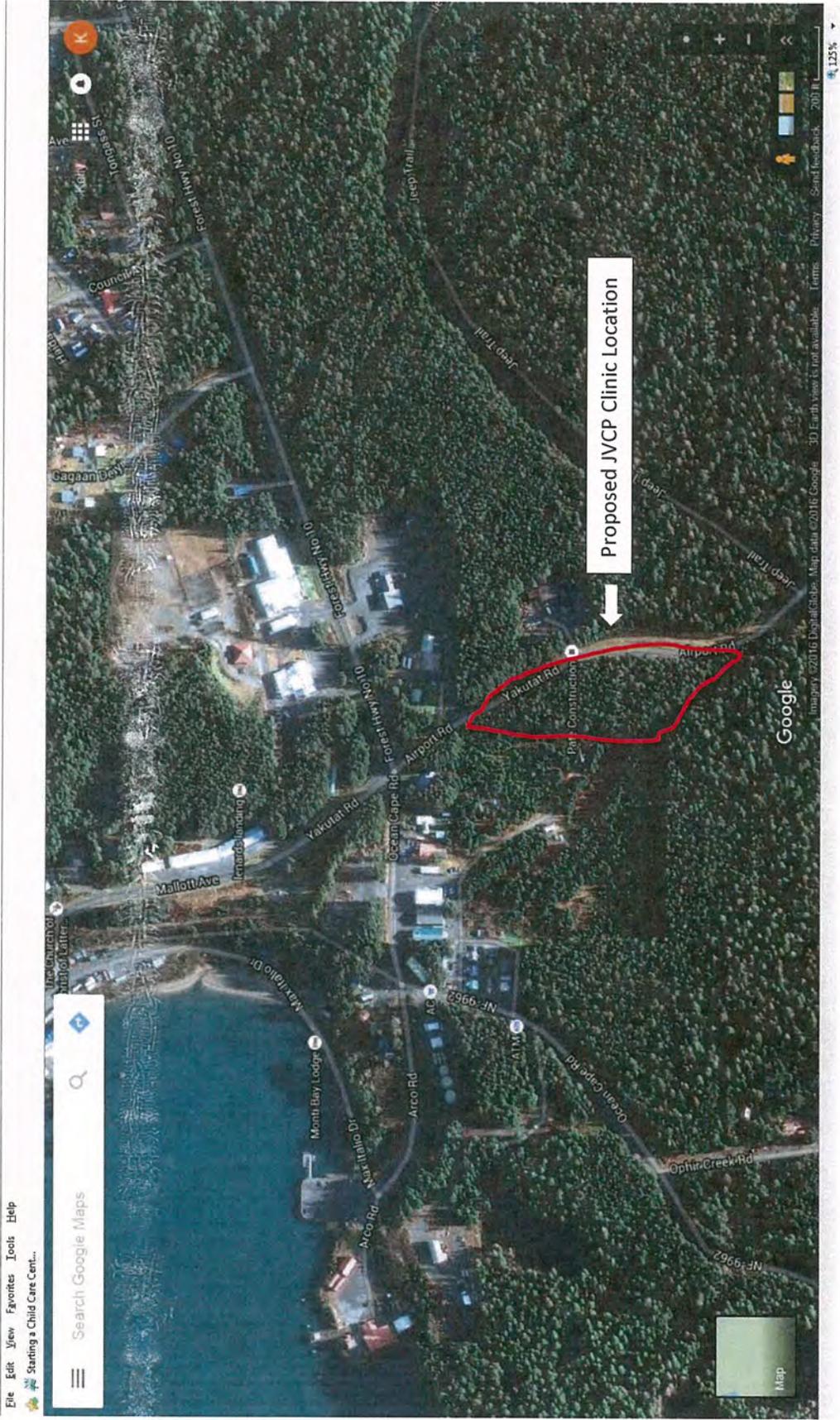
Yakutat-State of Alaska







# PROPOSED YAKUTAT JOINT VENTURE CONSTRUCTION PROGRAM HEALTH CLINIC CITY-BOROUGH OF YAKUTAT LOT







# TAB B

## SITE SURVEY/PLAT MAP









# TAB C GEOTECHNICAL REPORT





**GEOTECHNICAL ENGINEERING REPORT**  
for the proposed  
**YAKUTAT COMMUNITY HEALTH CLINIC**  
**YAKUTAT, ALASKA**

**Prepared for:**  
Yakutat Tlingit Tribe  
606 Forest Hwy 10  
PO Box 418  
Yakutat, AK 99689

**Prepared by:**  
Northern Geotechnical Engineering, Inc. *d.b.a.* Terra Firma Testing

---

**DECEMBER 2016**



# NORTHERN GEOTECHNICAL ENGINEERING, INC. / TERRA FIRMA TESTING

Laboratory Testing   Geotechnical Engineering   Instrumentation   Construction Monitoring Services   Thermal Analysis

December 13, 2016

NGE-TFT Project #4562-16

Yakutat Tlingit Tribe  
606 Forest Hwy 10  
PO Box 418  
Yakutat, AK 99689

Attn: Rhoda Jensen – Health Director

**RE: GEOTECHNICAL ENGINEERING ASSESSMENT OF THE SITE OF THE  
PROPOSED YAKUTAT COMMUNITY HEALTH CLINIC, YAKUTAT, ALASKA**

Rhoda,

We, Northern Geotechnical Engineering, Inc. *d.b.a.* Terra Firma Testing, have completed a geotechnical engineering assessment of the site of the proposed Yakutat Community Health Clinic in Yakutat, Alaska. Our assessment suggests that the project site is suitable for the proposed improvements assuming that the conclusions and recommendations that we present in the following report are considered during the design and construction processes.

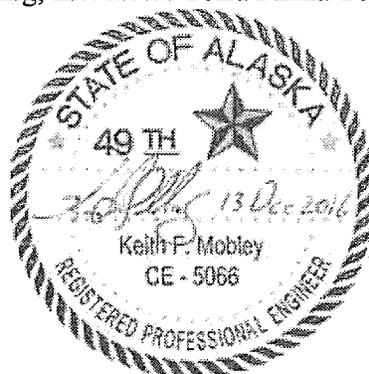
The project site is underlain by shallow sand and gravel deposits which will adequately support the proposed improvements with minimal risk of differential movement. We did not identify any geotechnical or geological conditions within the shallow subsurface at the project site that could jeopardize and/or excessively complicate the proposed development, and from a geotechnical viewpoint, the project site has many favorable engineering characteristics that can lead to simplified design approaches and conventional construction practices. In the following report we provide a summary of our subsurface exploration and laboratory testing programs as well as detail our engineering conclusions and recommendations for the proposed health clinic.

We greatly appreciate the opportunity to provide you with our professional service. Please contact us directly with any questions or comments you may have regarding the information that we present in this report, or if you have any other questions, comments, and/or requests.

Sincerely,

Northern Geotechnical Engineering, Inc. *d.b.a.* Terra Firma Testing,

Andrew C. Smith, CPG  
Senior Geologist



Keith F. Mobley, P.E.  
President

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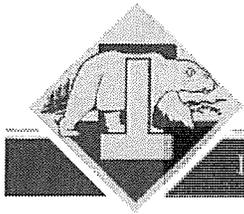
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## 1.0 INTRODUCTION

In this report, we (Northern Geotechnical Engineering, Inc. *d.b.a.* Terra Firma Testing) present the results of a geotechnical engineering assessment that we conducted at the site of the proposed Yakutat Community Health Clinic (YCHC) located in Yakutat, Alaska; hereafter referred to solely as “the project site”. We provided our professional service in accordance with the scope of service that we detail in our response to the YCHC Geotechnical Investigation Request for Proposal (RFP) that the Yakutat Tlingit Tribe (YTT) issued on October 25, 2016. We submitted our RFP response to the YTT on September 1, 2016 and the YTT contracted us to provide our proposed scope of service (by signed contract) on October 13, 2016. YTT subsequently issued us a written Notice to Proceed for our proposed scope of service on October 14, 2016.

YTT contracted us to conduct a geotechnical engineering assessment of the project in an effort to evaluate the suitability of the project site to support the proposed YCHC and to aid in the design and construction of the proposed site improvements.

In this report, we provide a summary of our subsurface exploration and laboratory testing programs as well as provide our geotechnical engineering conclusions and recommendations regarding the suitability of the project site to support the proposed YCHC. We also provide design and construction criteria for the proposed site improvements.

## 2.0 PROJECT OVERVIEW

The project site is located along the west side of the Yakutat Highway (a.k.a. Airport Road), just south of its intersection with Forest Highway 10 in Yakutat, Alaska (Figure 1). The legal description of the project site is Tract A of the United States Survey (USS) 5630 Subdivision, Yakutat, Alaska.

The project is approximately 2.5 acres in area and is primarily vegetated with mature, second growth Sitka spruce and hemlock trees. The project site has a slightly hummocky surface which generally slopes gradually down to the southeast. A shallow, sub-linear depression is located along the central and southern portions of the project site, which generally trends to the south-southeast. To the best of our knowledge, no current topographic surveys have been completed at the project site (as of our issuance of this report). R&M Engineers, Inc. (R&M), however, completed a boundary survey of the project site in July 2016 during which time R&M set boundary monuments (driven rebar with end caps) at the corners, and along the perimeter, of the project site.

The project site was reportedly logged for timber around the beginning of the 20<sup>th</sup> century, but no significant ground disturbances and/or other site developments (e.g., fill placement, borrow activities, etc.) are known to have occurred at the project site.

Proposed improvements to the project site include construction of an approximately 14,000 ft<sup>2</sup> two-story, steel-framed medical clinic building and associated paved vehicle parking areas, driveways, and utilities. We have included a conceptual drawing of the proposed YCHC in Figure 2 of this report. From information we gathered from the RFP, and from conversations we have had with persons familiar with the project, it is our understanding that:

- the exact location/configuration/layout of the proposed YCHC detailed in Figure 2 is subject to revision, however, the proposed YCHC improvements will generally be located along the central portion of the project site;
- approximately 1.2 acres of the project site will be cleared of vegetation in preparation for the construction of the proposed improvements;
- varying amounts of cut/fill will be necessary to level the project site and achieve the final site grade;
- the remaining (undeveloped) portions of the project site will remain relatively undisturbed;
- the proposed clinic will be serviced by the local Yakutat public drinking water utility; and
- the proposed clinic will either be serviced by the local Yakutat sanitary sewer utility or an on-site septic system (location and configuration yet to be determined).

### **3.0 REGIONAL GEOGRAPHY, CLIMATE, AND GEOLOGY**

#### **3.1 Geography**

The city and community of Yakutat, Alaska is situated primarily along the shores of Monti Bay, (at the mouth of the larger Yakutat Bay) along the northern coast of The Gulf of Alaska (Figure 1). The regional geography surrounding Yakutat is characterized by the Saint Elias Mountains to the north and northeast, which rise above large glaciers and extensive icefields, by Yakutat Bay and its connecting waterways to the north, and the Gulf of Alaska to the south. The area immediately surrounding (and including) Yakutat can be separated into two major geographic features:

1. the low hills and small lakes of the end moraines that rim the southeast shore of Yakutat Bay; and
2. the nearly flat plain of outwash deposits and shallow-water marine deposits, part of the Yakutat Foreland, extending from Yakutat to the Gulf of Alaska (Yehle, 1979).

#### **3.2 Climate**

The Yakutat area experiences a subarctic to subpolar oceanic climate, with monthly daily average temperatures ranging from approximately 22 °F in January to 54 °F in July. The Yakutat area receives an annual water equivalent average of approximately 155 inches of precipitation,

150 inches of which generally falls in the form of snow. Permafrost soils do not generally occur in the Yakutat area, except near the margins of existing glaciers/icefield/moraines.

### 3.3 Geology

Glacial geology dominates the surficial deposits of the Yakutat area, and radiocarbon dating of organic material contained within recent glacial moraine deposits along the southeastern perimeter of Yakutat Bay suggest that the Yakutat area was covered by glacial ice as recently as 500 to 600 years ago (Yehle, 1979). As we previously mention, the area surrounding Yakutat is dominated by two primary geographic/geologic features:

1. End moraines deposits which form the rolling hills surrounding Monti Bay and along the southeast shore of Yakutat Bay (including the island archipelago just north of Monti Bay); and
2. Glacial outwash deposits which form the relatively flat plain stretching southeast from Yakutat out to the Yakutat Airport.

The end moraine deposits (1) consist generally of unstratified glacial till, which is a mixture of gravel and pebble-laden silt or sand, in varying proportions, and, subordinately, of cobbles, clay, some boulders, and rarely, organic material (Yehle, 1979).

The glacial outwash deposits (2) can be subdivided into two primary subunits: A) coarse-grained; and B) fined-grained deposits. We only provide a description of the coarse-grained outwash deposits as they are directly relevant to the project site. The coarse-grained subunit of the glacial outwash deposits consist primarily of sandy pebble gravel. Close to the end moraines deposits, cobble-rich gravel is a major constituent of the glacial outwash deposits, and some silty, sandy gravel is present, derived from direct melting of the glacier ice to form kame and other types of ice-contact deposits. Outwash deposits are bedded and moderately well sorted within individual beds. The overall thickness of the coarse-grained outwash may average 7m and range from 1 to 17m. The coarse outwash is thought to overlie delta-estuarine sediments and probably some buried morainal deposits. In many places organic deposits cover the coarse outwash deposits (Yehle, 1979).

## 4.0 PROJECT SITE ACTIVITIES

We conducted an initial reconnaissance of the project site on October 26, 2016 in an effort to locate the proposed test pit explorations, determine excavation equipment access, and gain a general sense of the conceptual layout of the proposed YCHC improvements. We were accompanied on our site reconnaissance by Captain Kelly Leseman; Indian Health Service Project Manager for the proposed YCHC project. Captain Leseman assisted us in determining the location of the six test pit explorations, which generally correspond to the conceptual location of the proposed YCHC improvements (Figure 2). We established the test pit exploration locations by making swing-tie measurements from the existing project site boundary survey

monuments using a 300-ft cloth surveyor's tape and the conceptual site drawing detailed in Figure 2 of this report.

#### **4.1 Subsurface Exploration**

We coordinated and directed a subsurface exploration program at the project site on October 27, 2016 in an effort to help characterize the subsurface conditions within, and adjacent to, the proposed YCHC improvements. We contracted Pate Construction (PC) of Yakutat, AK who in turn mobilized a Hitachi EX150 tracked excavator and operator to the project site to excavate the six proposed test pit explorations. Under our direction, PC excavated the six test pit explorations to depths ranging from approximately 12 to 15 feet below the existing ground surface. We have detailed the approximate location of each test pit exploration in Figure 2 of this report. A geologist from our firm was present on-site during the entire subsurface exploration program to direct the subsurface exploration activities, log and photograph the geology of each test pit exploration, and collect representative soil samples for laboratory analysis. We sealed each soil sample that we collected during the subsurface exploration program inside of sealed plastic bags (to help preserve the moisture content of each soil sample) and submitted each soil sample to our Anchorage laboratory for further identification and analysis. Once exploration activities were complete, we directed PC to backfill each exploration with its respective spoils. No compactive effort was applied to the backfill. We have provided graphical exploration logs and photographs of each test pit exploration in Appendix A of this report. We also provide the results of our laboratory testing program in Appendix B of this report.

### **5.0 LABORATORY TESTING**

We collected a total of 13 soil samples from the six test pit explorations that PC advanced at the project site and submitted all of the soil samples to our laboratory for further identification and geotechnical analysis. We tested select soil samples in accordance with the respective ASTM standard test methods including:

- moisture content analysis (ASTM D-2216);
- determination of fines content (a.k.a. P200 – ASTM D-1140); and
- grain size sieve and hydrometer analysis (ASTM D-6913 & D-422).

The laboratory test results, along with the observations we made during our subsurface exploration program, aid in our evaluation of the subsurface conditions at the project site and help us to assess the suitability of the subsurface materials located at the project site to support the proposed YCHC improvements. We have provided the results of our geotechnical laboratory analyses on the graphical exploration logs contained in Appendix A of this report and on the laboratory data sheets contained in Appendix B of this report.

## **6.0 DESCRIPTION OF SUBSURFACE CONDITIONS**

We compiled our field observations with the results from our laboratory analyses to produce graphical logs of each subsurface exploration (Appendix A). These graphical exploration logs depict the subsurface conditions that we identified at each exploration location and help us to interpret/extrapolate the subsurface conditions for areas adjacent to, and immediately surrounding, each exploration location across the project site.

### **6.1 General Subsurface Profile**

In general, the project site is overlain by a relatively thin layer of organic material consisting primarily of varying amounts of mosses, fungi, decaying organic matter (leaf litter, woody debris, etc.), and root masses. The organic layer averages approximately 0.50 to 0.75 feet in thickness, with some locally thicker sections of decaying organic material where fallen tree trunks and/or tree stumps occur at the ground surface.

The surficial organic layer is directly underlain by a relatively thick deposit of poorly-graded to well-graded sand and gravel that extends to depths of at least 15 feet below the existing ground surface (bgs), and which likely extends much deeper. The sand/gravel deposits contain few cobble-sized particles ranging from 6 to 12 inches in diameter, and trace boulder-sized particles up to approximately 1 to 3 feet in diameter. The sand/gravel material has very low silt content (generally less than five percent by mass) and classifies as non-frost susceptible (NFS) to potentially frost susceptible (PFS) on the US Army Corps of Engineers Frost Design Soil Classification. Larger soil particles exhibit sub-rounded to rounded angularity and the deposit is massive, with some thinner interbeds of coarse sand (ranging from thinly to thickly bedded) and trace interbeds of silt (generally less than 2 to 3 inches in thickness). The consistency of the sand/gravel material appears to be relatively compact/dense, however, we did observe slight to moderate sloughing of excavation walls cut into the more sand-rich portions of the deposit. The sand/gravel soils were likely deposited during the most recent glacial retreat and are consistent with coarse-grained glacial outwash deposits found elsewhere in the Yakutat area (see Section 3.0 of this report for a more detailed geologic description of the coarse-grained glacial outwash deposits common to the Yakutat area).

### **6.2 Groundwater**

We did not observe any indications of groundwater during our subsurface exploration program and we do not expect groundwater to occur (in any significant volumes) above a depth of 15 feet bgs anywhere across the project site.

### **6.3 Frozen Soils**

We did not observe any indications of frozen soils (seasonal ground frost or permafrost) during our exploration program and we do not expect permafrost conditions to occur anywhere across the project site.

## **7.0 ENGINEERING CONCLUSIONS**

### **7.1 General Project Site Conclusions**

Based on the findings of our subsurface exploration and laboratory testing programs, it is our conclusion that the sand/gravel soils (i.e., coarse-grained glacial outwash deposits – see Section 6.1 of this report for a more detailed description) which we observed across the project site are generally suitable to support the proposed improvements; provided that our concerns and recommendations that we present in this report are addressed by the design and construction processes.

In general, the project site has many desirable geotechnical/geological characteristics which can accommodate relatively uncomplicated designs and standard construction practices. Minimal excavation (i.e., surface grubbing) will be needed to expose the foundation bearing soils (i.e., sand/gravel soils), and the sand/gravel soils extend far below the bottom of any planned improvements. Varying amounts of mass grading, however, will be required to level the project site and bring it to the planned finished grade.

The sand/gravel soils that we identified across the project site are relatively dense and laboratory testing indicates that they have little to no frost susceptibility. Additionally, there is no readily available groundwater to be drawn towards the freeze front and build soil ice. Therefore, there is very little potential for ice lens development (and associated frost heaving forces and/or thaw-related settlements) at the project site. As a result, shallow foundations and pavement sections can both be constructed directly above the existing sand/gravel soils (or NFS structural fill) with minimal design and/or construction considerations to account for potential ice lens development.

Groundwater should generally not be encountered during the construction efforts. Furthermore, the project site is relatively well-drained, and should lend itself to relatively uncomplicated drainfield design. We detail our conclusions regarding the different geotechnical aspects of the design and construction of the proposed YCHC at the project site in the following subsections of this report.

### **7.2 Earthworks**

As we detail in Section 6.1 of this report, the project site is overlain by a relatively thin layer of surficial organic material which is generally less than 0.50 to 0.75 feet in thickness. This organic material is unsuitable for supporting any of the proposed YCHC improvements and will need to be completely removed from the footprint of any improvements prior to construction. The organic material/soils are immediately underlain by sand/gravel deposits which are suitable for direct support of the proposed YCHC improvements; either in their native (i.e., undisturbed) state or placed as structural fill.

As we briefly discuss in Section 2.0 of this report, the project site has a slightly uneven, sloping surface, and as such, varying amounts of mass grading will be required to level the project site

and bring it to the planned finished grade. The existing sand/gravel soils which occur across the project site are suitable for use as structural fill at the project site assuming that they are placed using proper placement and compaction techniques. Depending upon the planned finished grade for the project site, the site grading activities may consist entirely of cut/fill of on-site materials and/or structural fill may need to be imported to the project site from other sources.

The recommendations that we detail in this report assume that any structural fill (re-worked native soils or imported fill) used to bring the project site to grade will be NFS. NFS structural fill (similar to the native sand/gravel soils which occur on-site) should be readily available in the Yakutat area, and at a reasonable cost. However, we should be given sufficient notice if silt-rich (i.e., frost-susceptible) fill is to be used at the project site for any reason, as its usage will affect the recommendations that we present in this report.

### **7.3 Foundations**

Conventional shallow foundations, such as poured-concrete footings, etc., can be constructed directly onto the existing (i.e., undisturbed) sand/gravel soils or properly placed structural fill located directly above the undisturbed sand/gravel soils. As we previously mention in Section 7.1 of this report, the sand/gravel soils that we identified at the project site have a very low potential for ice lens development. Therefore, foundations constructed directly onto the existing (i.e., undisturbed) sand/gravel soils or properly placed NFS structural fill (located directly above the undisturbed sand/gravel soils) will require relatively minimal burial and/or insulation to help protect them from frost damage.

### **7.4 Underground Utilities**

Underground utilities can be founded directly onto the undisturbed sand/gravel soils (or properly placed structural fill) with little risk of differential settlement. While there is little risk of ice lens development at the project site, there is the potential for seasonal frost penetration (i.e., freezing ground temperatures) at the project site, especially in areas where there is a lack of insulating snow cover (e.g., plowed parking lots, exterior porticos, etc.). Utilities which are susceptible to freezing temperatures (i.e., water/sewer) should be buried sufficiently deep to protect them from freezing temperatures. Otherwise, they should be protected from freezing temperatures by incorporating appropriate amounts of artificial insulation into the utility trench backfill and/or by using some form of active freeze protection (i.e., thaw wires, active fluid circulation, etc.).

As we briefly mention in Section 7.1 of this report, we estimate that the sand/gravel soils which we identified across the project site will have relatively high permeability/infiltration rates. As such, the sand/gravel soils can likely dissipate large volumes of sewer discharge in relatively short time intervals and can likely support relatively simple septic and/or stormwater drain field designs. Percolation/infiltration testing will need to be conducted in the area of any proposed drain fields prior to any design efforts to characterize the hydraulic properties of the sand/gravel soils and properly size any drain fields, etc.

## 7.5 Pavement

Pavement sections can be constructed directly onto the existing sand/gravel soils (either in their native state or placed as structural fill), or imported NFS structural fill, with minimal risk of differential movements due to ice lens development and/or thaw-related weakening of subgrade soils.

## 7.6 Settlements

Settlements for shallow foundations should be within tolerable limits, provided that they are placed directly onto the undisturbed sand/gravel soils (or properly placed structural fill located directly above the undisturbed sand/gravel soils). We anticipate a total settlement for shallow concrete foundations placed onto the undisturbed sand/gravel soils (or properly placed structural fill located above the undisturbed sand/gravel soils - as we discuss in Section 8.2 of this report) to be less than three-quarters (3/4) of an inch, with differential settlements comprising about one-half (1/2) of the total anticipated settlement. Settlement amounts could increase substantially if the structural fill material used to bring any foundation pads to grade is not properly compacted. Most of the settlements should occur as the building loads are applied, such that additional long-term settlements should be relatively small and within tolerable limits.

Settlements under driveways, parking areas, and street sections are expected to be vary more than under any buildings, especially where utility trenches are located. Proper earthwork is necessary to help reduce the settlement potential. The settlement potential can be reduced by performing all utility excavation and backfill efforts as early in the construction schedule as possible and placing any pavement as last in the construction schedule as possible.

## 7.7 Seismic Design Parameters

We have assumed that the International Building Code (IBC) 2012 will be used for the design of the proposed structure. The seismic site classification for the project site is D based on the relatively dense sand/gravel soil that we observed at the project site. We utilized the United States Geological Survey (USGS) Seismic Design Maps tool (<http://earthquake.usgs.gov/designmaps/us/application.php>) to calculate the seismic design parameters for the project site, which are  $F_a = 1.000$  ( $S_s = 1.630$ ) and  $F_v = 1.5000$  ( $S_l = 0.760$ ). A copy of the USGS Design Maps report for the project site is contained in Appendix C of this report.

Based on our findings, we expect there to be no potential for soil liquefaction at the project site given the relatively coarse-grained nature of the sand/gravel deposits which occur across the project site and a relatively deep groundwater table.

## **8.0 DESIGN RECOMMENDATIONS**

We have presented our design recommendations in the general order that the project site will most likely be developed. Our design recommendations can be used in parts (as needed) for the final design of the proposed YCHC.

### **8.1 Earthworks**

Our recommendations assume that any shallow foundations (i.e., poured-concrete footings) will be founded either directly onto the undisturbed sand/gravel soils or compacted NFS structural fill pads constructed directly above the undisturbed sand/gravel soils. Any structural fill materials used on-site should be compacted to a minimum of 95 percent of the modified Proctor density.

Any NFS sand/gravel material removed during the initial site grading and excavation activities, which does not contain any organic/deleterious material, can be re-used anywhere on-site as structural fill. Proper placement and compaction techniques need to be applied during the backfill process (see Section 9.1 of this report for more details). Additional laboratory testing may be required to verify the silt content and frost susceptibility of any excavated (i.e., on-site) soil for use in structural fill applications. Furthermore, the frost susceptibility of any imported structural fill material should be determined prior to import to the project site. As we mention in Section 7.1 of this report, our recommendations assume that any structural fill (re-worked native soils or imported fill) used to bring the project site to grade will be NFS. Use of silt-rich (i.e., frost susceptible) structural fill will require a re-evaluation of the recommendations that we present in this report.

All earthworks should be completed with quality control inspection, including: bottom-of-hole inspections; fill gradation classification; and in-situ compacting testing. A bottom-of-hole inspection should be conducted by a qualified geotechnical engineer, geologist, or special inspector following site excavation activities (and before any foundation construction begins) in order to visually confirm the findings of this report and provide recommendations for any non-conforming conditions encountered during the excavation activities.

### **8.2 Shallow Foundations**

For the purposes of this report, a shallow foundation can be considered any foundation which will require over-excavation of the existing surficial organic materials prior to structural fill placement and/or foundation construction.

#### **8.2.1 Soil Bearing Capacity**

Concrete foundations placed on either the undisturbed sand/gravel soils or on structural fill pads (constructed directly above the undisturbed sand/gravel soils) may be designed for an allowable soil bearing capacity of 3,000 pounds per square foot (psf). The soil bearing capacity may be increased by one-third (1/3) to accommodate short-term wind and/or seismic loads. Larger

footings (smallest dimension greater than two feet in plan dimension) may be designed for greater bearing capacities at a rate of 300 psf for every additional horizontal linear foot of footing up to a maximum value of 5,300 psf.

### 8.2.2 Continuous Strip Footings and Spread Footings

Continuous strip footings and/or spread footings can be founded directly onto either: 1) the undisturbed sand/gravel soils, or 2) properly placed structural fill (located directly above the undisturbed sand/gravel soils). The minimum horizontal dimension for continuous strip footings should be 16 inches. The minimum horizontal dimension for spread footings should be 24 inches. Interior footings should extend a minimum of 12 inches below the finished floor grade (assuming a continuously heated building is maintained during winter months) to achieve the recommended allowable soil bearing capacity and help resist any lateral forces. Shallow foundation footings should extend laterally a minimum of one-eighth (1/8) of the footing width beyond any foundation walls to help resist any anticipated uplift/overturning forces (Figure 3). We discuss the effects of various uplift and lateral forces on foundations in more detail in Sections 8.2.4 and 8.2.5 of this report.

### 8.2.3 Thickened Edge Slab Foundations and Floor Slabs

Thickened edge slab foundations and/or floor slabs can also be founded directly onto the undisturbed sand/gravel soils or properly placed structural fill located directly above the undisturbed sand/gravel soils. The thickened edge (i.e., perimeter footing) of any thickened edge slab foundation should extend a minimum of 16 inches below the exterior finished grade to achieve the recommended allowable soil bearing capacity and help resist any lateral forces.

The top four to six inches of the structural pad located beneath the slabs should be free draining, with less than 3% passing the #200 sieve. This “blanket” will serve as a capillary break to help maintain a dry slab. Concrete floor slabs constructed directly on the undisturbed sand/gravel soils or on properly constructed granular fill pads (located directly above the undisturbed sand/gravel soils), as we described above, may be designed using a modulus of subgrade reaction of  $k_1=60$  pci ( $k_1$  is the value for a 1-ft  $\times$  1-ft rigid plate). For this project, the following equations can be used (with standard English units) to calculate the appropriate modulus of subgrade reaction for slabs bearing on the undisturbed sand/gravel soils or on properly placed granular structural fill located directly above the undisturbed sand/gravel soils:

$$k_{(B \times B)} = k_1 \left( \frac{B+1}{2B} \right)^2 \quad (1)$$

Where:

$B$  = the slab width of a square slab in feet

$k_1$  = the modulus of subgrade reaction for a 1-ft  $\times$  1-ft rigid plate in pci

$k_{(B \times B)}$  = the modulus of subgrade reaction for a square slab of width  $B$  in pci

The following equation (2) can be used for a rectangular slab having the dimensions  $B \times L$  (in feet) with similar bearing soils as the slab loading equation above (1).

$$k_{(B \times L)} = \frac{k_{(B \times B)} \left(1 + 0.5 \frac{B}{L}\right)}{1.5} \quad (2)$$

Where:

$k_{(B \times B)}$  = the modulus of subgrade reaction for a  $B \times B$  square slab

$k_{(B \times L)}$  = the modulus of subgrade reaction for  $B \times L$  rectangular slab

$B$  = the least horizontal dimension of a rectangular slab

$L$  = the larger horizontal dimension of a rectangular slab

### 8.2.4 Footing Uplift

Shallow foundations should be buried sufficiently deep so as to resist any anticipated uplift/overturning forces (e.g. wind, seismic, frost jacking, etc.). The uplift capacity of a foundation is a function of its weight, configuration, and depth. The ultimate uplift capacity can be calculated by using 80 percent of the weight of the foundation plus 80 percent of the weight of the effective soil mass located above the footing. Figure 3 of this report illustrates the impact that effective soil mass has on the uplift capacity of a shallow foundation footing. An effective unit weight of 130 pcf can be used for granular structural backfill material. The ultimate uplift load includes any short-term load factors, so no increase in uplift capacity should be added for short-term loading.

#### 8.2.4.1 Frost Heaving and Frost Protection

Frost heaving forces can generate significant footing uplift loads and it is difficult to predict the depth of frost penetration and extent of ice lens formation at any given site. As such, footings need to be buried sufficiently deep so as to resist any anticipated frost heaving uplift forces. As we previously mentioned in Section 7.1 of this report, there is little to no potential for ice lens formation at the project site (assuming that any structural fill used is NFS). As such, uplift forces resulting from frost heave will be negligible.

For the project site, the minimum burial depth for any uninsulated shallow foundation footings (heated or unheated) constructed directly onto the NFS sand/gravel soil (or NFS structural fill) should be 24 inches. Foundation burial requirements will increase if frost susceptible fill is used to bring any foundation pads to grade.

Insulation may be placed directly beneath of any floor slabs. However, no insulation should be placed directly beneath of any perimeter footings, as this can promote freezing of the foundation soils by preventing adequate heat transfer from the interior of a heated building to the foundation bearing soils. Alternatively, insulation can be placed along the exterior of any perimeter footings/stem walls and/or thickened edge slab foundations to help reduce the minimum burial

depths required to help protect the foundation bearing soils from freezing. For this project, however, no foundation should be buried less than 16 inches below finished grade, even with the application of insulation (unless it is contained entirely within the footprint of a continuously heated structure – see Section 8.2.2. of this report for more details). We have provided our recommended insulation configurations for conventional strip/spread footings in Figure 4 of this report (configurations B and C). We have also provided our recommended insulation configurations for heated thickened edge slab foundations in Figure 4 of this report (configurations E and F).

### 8.2.5 Lateral Loads for Foundations and Retaining Walls

Retaining walls (such as perimeter foundation stem walls for buildings with basements or crawl spaces) must be designed to resist lateral earth pressures. The magnitude of the pressure exerted on a retaining wall is dependent upon several factors, including:

- 1) whether the wall is allowed to deflect after placement of backfill;
- 2) the type of backfill used;
- 3) compaction effort; and
- 4) wall drainage provisions.

Any foundation stem walls that are not designed to carry lateral loads should be backfilled on both sides simultaneously to prevent differential lateral loading of the foundation stem wall. We developed the unit weights provided in Table 1 of this report assuming that structural fill (containing less than ten percent fines) is used as backfill, and that the fill is compacted to at least 90 percent of the modified Proctor density.

An active-earth pressure condition will prevail (under static loading) if a retaining wall is allowed to deflect or rotate a minimum of 0.001 times by the wall height. An at-rest pressure condition will prevail if a retaining wall is restrained at the top and cannot move at least 0.001 times the wall height. Lateral forces exerted by wind or seismic activity may be resisted by passive-earth pressures against the sides of the foundation footings, exterior walls (below grade), and grade beams. Therefore, interior footings should extend a minimum of 12 inches below the finished floor grade (assuming a continuously heated building is maintained during winter months) to help resist any lateral forces.

In order to prevent water accumulation against the outside of any foundation or retaining wall, the wall must have a perimeter drainage system connected to an outlet that will not freeze closed at any time of the year. The top of the drainage piping must be located below the top of the footing for the foundation and/or retaining wall. Backfill used against the wall (and extending a minimum of one foot beyond the wall) must be free-draining with less than three percent fines. The top one-foot of backfill against the outside of a foundation and/or retaining wall should consist of relatively impermeable (fine-grained) material and be tightly compacted such that

surface water is directed away from the foundation and/or retaining wall. A permeable geotextile fabric may be useful to prevent mixing of the impermeable (fine-grained) overburden and underlying free-draining (coarse-grained) backfill. Furthermore, the finished surface should slope away from any foundation and/or retaining wall with a grade between 1 to 2 percent, such that surface water is directed away from the foundation and/or retaining wall.

Seismic loading on foundation and/or retaining walls generally increases the lateral pressures on the wall and decreases the passive resistance. For foundation systems where the building foundation is continuous, the differential lateral movement between the soil and foundation is very small, and as such, essentially no excess lateral loading on the foundation wall is experienced. Foundation walls with a differential in backfill heights of over six feet (basements, crawl spaces, etc.) will experience seismic lateral loading from the inertial effects of seismic waves passing through the foundation.

The lateral soil pressures can be represented by equivalent fluid pressures. The pressure distribution is a function of wall restraint, seismic loading, and drainage conditions. Figure 5 presents the distribution diagrams for various loading conditions. Table 1 presents the unit weights to be used with Figure 5 for this project.

**Table 1: Equivalent Fluid Specific Weight for Lateral Loading Design**

LOADING CONDITION	DRAINED EQUIVALENT FLUID SPECIFIC WEIGHT		UN-DRAINED EQUIVALENT FLUID SPECIFIC WEIGHT	
	SPECIFIC WEIGHT (pcf)	SYMBOL	SPECIFIC WEIGHT (pcf)	SYMBOL
ACTIVE	35	$t_1$	24	$t_2$
AT-REST	55	$t_3$	38	$t_4$
PASSIVE	400	$t_5$	280	$t_6$
SEISMIC	16	$t_7$	9	$t_8$

Lateral forces may also be resisted by friction between the concrete foundations and the underlying soil. The frictional resistance may be calculated using a coefficient of friction of 0.4 between the concrete and soil.

### 8.3 Underground Utilities

In general, the soils in which deep utility trenches (6 to 10 feet bgs) are to be constructed are composed of relatively dense/compact sand and gravel. Any gravity-fed utility trenches extending into the sand/gravel soils should be a minimum of three feet wide at the bottom of the trench with the utility piping located in the center of any trenches. Properly placed structural fill should be used to bring the gravity-fed utilities to the proper installation grade.

Underground utilities which are susceptible to damage from freezing need to be frost-protected by sufficient amounts of backfill, insulation, and/or active freeze protection systems (e.g., heat tape, thaw wire, etc.); or some combination of the above. Any utilities which are susceptible to damage from freezing that are planned to be constructed less than eight feet below the planned finished grade should contain some level of additional frost-protection (e.g., insulation, active freeze protection systems, or a combination of both).

Any insulation used should conform to the specifications that we detail in Section 9.4 of this report and should extend a minimum of two feet (and a maximum of four feet) perpendicular to either side of the proposed utility alignment. The thickness of the insulation used will be a function of the burial depth. In general one inch of insulation is equal to approximately 12 inches of compacted NFS backfill. Underground utilities which are susceptible to damage from freezing should not be constructed within four feet of the planned finished grade (regardless of insulation measures or active freeze-protection systems).

#### 8.4 Pavement Section

Pavement section thickness will be a function of the amount of cut/fill needed to achieve final grade. In general, the existing sand/gravel soils which occur across the project site have little to no frost susceptibility and there is little to no potential for ice lens development at the project site. As such, minimal engineered pavement sections will be required and the pavement sections can be constructed directly onto the existing NFS sand/gravels soils (in their native state or placed as structural fill) or NFS fill structural fill. We have provided a suitable pavement section for the project site in Table 2 of this report.

**Table 2: Suitable Pavement Section Construction above the Existing NFS Material**

SECTION THICKNESS	MATERIAL
2 INCHES MIN.	ASPHALT (CONC. PAVEMENT THICKNESS A FUNCTION OF REINFORCEMENT)
2 INCHES MAX.	NFS LEVELING COURSE (A.K.A. "D-1")
N/A	EXISTING NON-FROST SUSCEPTIBLE SOILS OR NFS STRUCTURAL FILL

Any leveling course used should be NFS in order to maintain a low potential for ice lens development within the leveling course. It is our experience that the "D1" leveling course material currently available in many portions of coastal Alaska (where highly fractured meta-sedimentary flysh-style deposits occur) may not be NFS following compaction, because the compaction with a vibratory compactor further increases the frost susceptibility of the leveling course by increasing the percentage of fine-grained material (due to degradation of the soil particles from the impact of the compaction equipment). As such, the leveling course thickness should be kept to two inches or less to reduce the potential for ice lens formation in the leveling

course. All of these materials should be placed in thin lifts and each lift should be compacted to a minimum of 95 % of the modified Proctor density. As an alternative to “D1”, recycled asphalt pavement (RAP) can be used. The residual oil in the RAP greatly reduces the frost susceptibility.

A geotextile fabric may be useful for the placement of fill material above any fine-grained subgrade soils, but it is not necessary for use within our recommended pavement section. Any geotextile fabric used for this project should conform to the specifications which we present in Table 3 of this report.

**Table 3: Type B, Class 2 Geotextile Fabric Strengths**

FABRIC PROPERTY	ASTM STANDARD USED TO DETERMINE STRENGTH	WOVEN FABRIC STRENGTH	NON-WOVEN FABRIC STRENGTH
GRAB STRENGTH	D4632	250	160
SEWN SEAM STRENGTH	D4632	225	140
TEAR STRENGTH	D4533	90	56
PUNCTURE STRENGTH	D6241	495	310

Note: Units in lbs per foot.

### 8.5 Surface Drainage

After the property is brought to grade it should be relatively flat, such that storm water will tend to accumulate and flow off the project site slowly. Water accumulation will have a detrimental effect on foundations, retaining structures, and pavement sections. Provisions should be included in the design to collect runoff and divert it away from any foundations, retaining structures, and pavement sections. The ground surface surrounding the proposed developments should be graded such that surface runoff is channeled away from foundations, retaining walls, and pavement sections. The soils on the surface should be tightly compacted to help reduce surface runoff infiltration. Roof, parking lot, and driveway drainage should be directed away from foundations. If storm sewer is available, tight-line connections from roof drain collectors should be made.

### 8.6 Insulation

Any subsurface insulation should consist of extruded polystyrene such as DOW Styrofoam™ Highload or UC Industries Foamular. Any subsurface insulation used under pavement sections or structural slabs should be closed cell, board stock with a minimum compressive strength of 60 psi at five percent deflection. Subsurface insulation around foundations should have a minimum compressive strength of 25 psi at five percent deflection. The insulation should not absorb more than two percent water per ASTM Test Method C-272. The thermal conductivity (*k*) of the insulation should not exceed 0.25 BTU-in/hr-ft<sup>2</sup>-°F when tested at 75°F.

## 9.0 CONSTRUCTION RECOMMENDATIONS

We have presented our construction recommendations in the general order that the project site will most likely be developed. Our construction recommendations are intended to aid the construction contractor(s) during the construction process.

### 9.1 Earthworks

Any and all fill material used should be placed at 95 percent of the modified Proctor density as determined by ASTM D-1557, unless we specifically state otherwise in other sections of this report. The thickness of individual lifts will be determined based on the equipment used, the soil type, and existing soil moisture content. Typically, fill material will need to be placed in lifts of less than one-foot in thickness. All earthworks should be completed with quality control inspection.

Any excavated native sand/gravel soils (which are free of organic material and have relatively low silt contents) which are stockpiled on-site (for later use as structural backfill) should be protected from additional moisture inputs (precipitation, etc.) through the use of plastic tarps, etc. Additional moisture inputs can have detrimental effects on the effort needed to achieve proper compaction rates.

### 9.2 Shallow Foundations

Care should be taken during foundation excavation activities to limit the disturbance of the bottom of any foundation excavations. The bottom of any foundation excavation should be moisture conditioned and proof-rolled as necessary to return the exposed soils to their original in-situ density.

In general, the soils in which the proposed foundation pads are to be constructed consist primarily of relatively permeable sand and gravel material. As such, any surface water (*e.g.*, from precipitation, snowmelt, etc.) that enters into foundation excavations will tend to dissipate relatively quickly. Excess water can, however, have a negative impact on any backfill and compaction efforts. Therefore, if surface water does accumulate in any open foundation excavations it can be controlled by excavating a shallow drainage trench around the perimeter of the excavation. The drainage trench will collect surface water and direct it to a sump area, which should be located outside of the foundation footprint. The excess water can then be pumped from the sump area and be discharged at an appropriate location away from the excavation and any other existing foundations.

It is imperative that shallow building foundations for heated structures remain in a thawed state for the entire construction period; even when dealing with soils that have little to no frost susceptibility. Foundation soils that are allowed to freeze during the initial construction (before the building is enclosed and heated) may be compromised by the development of ice lenses. Upon thawing, which may take several weeks or months, potential differential settlements could

distort the structure resulting in damaged foundations, cracked sheetrock, skewed door frames, and broken windows. If construction extends into the winter months, temporary enclosures should be constructed which completely enclose warm foundations and heat should be applied to the enclosure to prevent freezing of the soils located beneath any warm foundation and/or floor slab.

### **9.3 Underground Utilities**

We expect that utility trench wall stability in the moderately compact/dense sand/gravel to be moderate to poor, especially if utility trenches extend below the groundwater table. The contractor should be responsible for trench safety and regulation compliance. If groundwater is encountered during utility trench excavation then dewatering efforts may be required to facilitate proper utility installation and trench backfill.

All piping should be bedded per the manufacturer's recommendations, with the bedding material compacted to provide pipe support. Above the bedding materials, the backfill should be similar to, and compacted to the approximate density of, the surrounding soils.

### **9.4 Pavement**

All of the earthwork within any areas to be paved should be completed as early in the construction schedule as possible, and the pavement placed as late in the construction schedule as possible. This will give the subgrade soils time to settle, compress, and stabilize prior to placement of the pavement. Any structural fill used should be placed in thin lifts (less than one foot in thickness) and each lift should be compacted to a minimum of 95 percent of the modified Proctor density. Prior to paving, any surface fill material should be re-leveled and re-compacted. All backfill and paving materials should be inspected and tested for material specification compliance and compaction.

Underground utility piping should be installed prior to construction of any pavement sections such that trenching is done through the subgrade soils only. This will help ensure that a uniform pavement section is maintained, which will reduce the potential for differential settlements along underground utility trench alignments.

The minimum thickness for any asphalt pavement surfaces is two inches. The minimum thickness of any concrete pavement surfaces will be a function of the reinforcement required. All applicable ACI and IBC standards should be followed.

### **9.5 Insulation**

The satisfactory performance of any subsurface insulation is in part controlled by the details of construction including: 1) the care taken to ensure that the board stock lies flat on a smooth, level surface; and 2) the adjoining ends of the insulation are closely butted together. Any vertical joints should be staggered where more than one layer of insulation is used.

## 9.6 Winter Construction

Proper placement and compaction of structural fill is not possible when fill material is frozen, and as such, frozen fill material should never be used for structural support unless it has been subsequently thawed and compacted to 95 percent of the modified Proctor density (throughout its vertical extent). Furthermore, subgrade soils (fill or native) need to be completely thawed prior to the placement and compaction of additional lifts of thawed fill material. In our professional experience, ambient soil temperatures need to be above 37 °F in order to achieve efficient compaction. It is extremely difficult to achieve compaction levels equal to 95 percent of the modified Proctor density in fill material that is between 32 °F to 37 °F. We discuss the risks associated with winter foundation construction in more detail in Sections 9.2 of this report

## 10.0 THE OBSERVATIONAL METHOD

A comprehensive geoprofessional service (e.g., geotechnical, geological, civil, and/or environmental engineering, etc.) should consist of an interdependent, two-part process comprised of:

Part I - pre-construction site assessment, engineering, and design; and

Part II - continuous construction oversight and design support.

This process, commonly referred to in the geoprofessional industry as “The Observational Method”, was developed to reduce the costs required to complete a construction project, while simultaneously reducing the overall risk associated with the design and construction of the project.

In geotechnical engineering, Part I of the Observational Method (OM) begins with a geotechnical assessment of the site, which typically consists of some combination of literature research, site reconnaissance, subsurface exploration, laboratory testing, and geotechnical engineering. These efforts are usually documented in a formal report (e.g., such as this report) that summarizes the findings of the geotechnical assessment, and presents provisional geotechnical engineering recommendations for design and construction. Geotechnical assessment reports (and the findings and recommendations contained within) are considered provisional due to the fact that their contents are typically based primarily on limited subsurface information for a site. Most conventional geotechnical exploration programs only physically characterize a very small percentage of a given site, as it is typically cost prohibitive to conduct extensive (i.e. high density/frequency) exploration programs. As an alternative, geoprofessionals use the subsurface information available for a site to extrapolate subsurface conditions between exploration locations and develop appropriate provisional recommendations based on the inferred site conditions. As a result, the geoprofessional of record cannot be certain that the provisional recommendations will be wholly applicable to the site, as subsurface conditions other than those

identified during the geotechnical assessment may exist at the site which could present obstacles and/or increased risk to the proposed design and construction.

Part II of the OM is employed by geoprosessionals to help reduce the risk associated with unidentified and/or unexpected subsurface conditions. Geoprosessionals accomplish Part II of the OM by providing construction oversight (e.g., construction observation, inspection, and testing). Part II of the OM is a valuable service, as the geoprosessional of record is available if unexpected conditions are encountered during the construction process (e.g., during excavation, fill placement, etc.) to make timely assessments of the unexpected conditions and modify their design and construction recommendations accordingly; thus reducing considerable cost resulting from potential construction delays and reducing the risk of future problems resulting from inappropriate design and construction practices.

Oftentimes, a client may be persuaded to use an alternative geoprosessional firm to conduct Part II of the OM for a given project; as some geoprosessional firms offer the same services at discounted prices in order to help them obtain the overall construction materials engineering and testing (CoMET) commission. The geoprosessional industry as a whole recommends against this practice. An alternative geoprosessional firm cannot provide the same level of service as the geoprosessional of record. The geoprosessional of record has (amongst other things) a unique familiarity with the project including; an intimate understanding of the subsurface conditions, the proposed design, and the client's unique concerns and needs, as well as other factors that could impact the successful completion of a construction project. An alternative geoprosessional firm is not aware of the inferences made and the judgment applied by the geoprosessional of record in developing the provisional recommendations, and may overlook opportunities to provide extra value during Part II of the geoprosessional service.

Clients that prevent the geoprosessional of record from performing a complete service can be held solely liable for any complications stemming from engineering omissions as a result of unidentified conditions. The geoprosessional of record may not be liable for any resulting complications that occur, as the geoprosessional of record was not able to complete their services. Furthermore, the replacement geoprosessional firm may also be found to have no liability for the same reasons.

We are available at any time to discuss the OM in more detail, or to provide you with an estimate for any additional construction observation and testing services required.

## **11.0 CLOSURE**

We (Northern Geotechnical Engineering, Inc. d.b.a. Terra Firma Testing) prepared this report exclusively for the use of the Yakutat Tlingit Tribe and their consultants/contractors/etc. for use in the design and construction of the proposed YCHC improvements. We should be notified if significant changes are to occur in the nature, design, or location of the proposed improvements

in order that we may review our conclusions and recommendations that we present in this report and, if necessary, modify them to satisfy the proposed changes.

This report should always be read and/or distributed in its entirety (including all figures, exploration logs, appendices, etc.) to ensure that all of the pertinent information has been adequately disseminated. Otherwise, an incomplete or misinterpreted understanding of the site conditions and/or our engineering recommendations may occur. Our recommended best practice is to make this report accessible, in its entirety, to any design professional and/or contractor working on the project. Any part of this report (e.g., exploration logs, calculations, material values, etc.) which is presented in the design/construction plans and/or specifications for the project should have an adequate reference which clearly identifies where the report can be obtained for further review.

Due to the natural variability of earth materials, variations in the subsurface conditions across the project site may exist other than those we identified during the course of our geotechnical assessment. Therefore, a qualified geotechnical engineer, geologist, and/or special inspector be on-site during construction activities to provide corrective recommendations for any unexpected conditions revealed during construction (see our discussion of the Observational Method in Section 10.0 of this report for more detail). Furthermore, the construction budget should allow for any unanticipated conditions that may be encountered during construction activities.

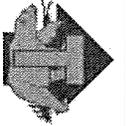
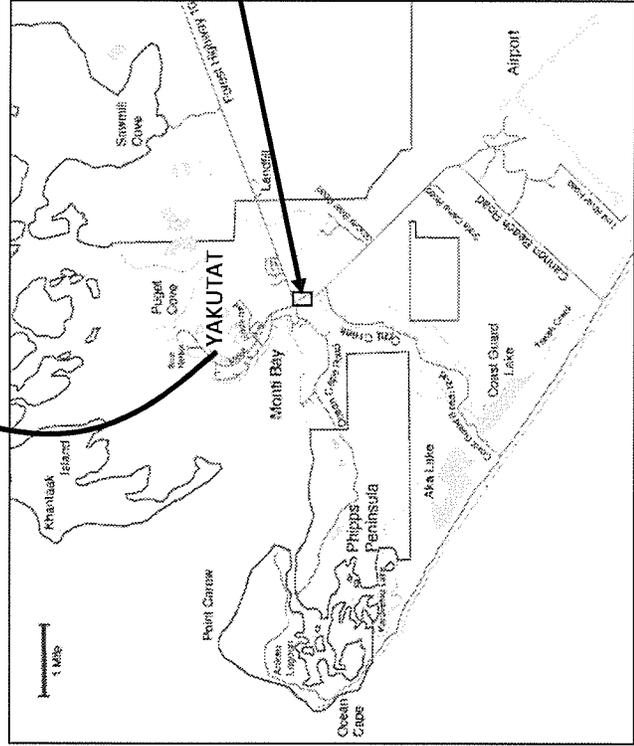
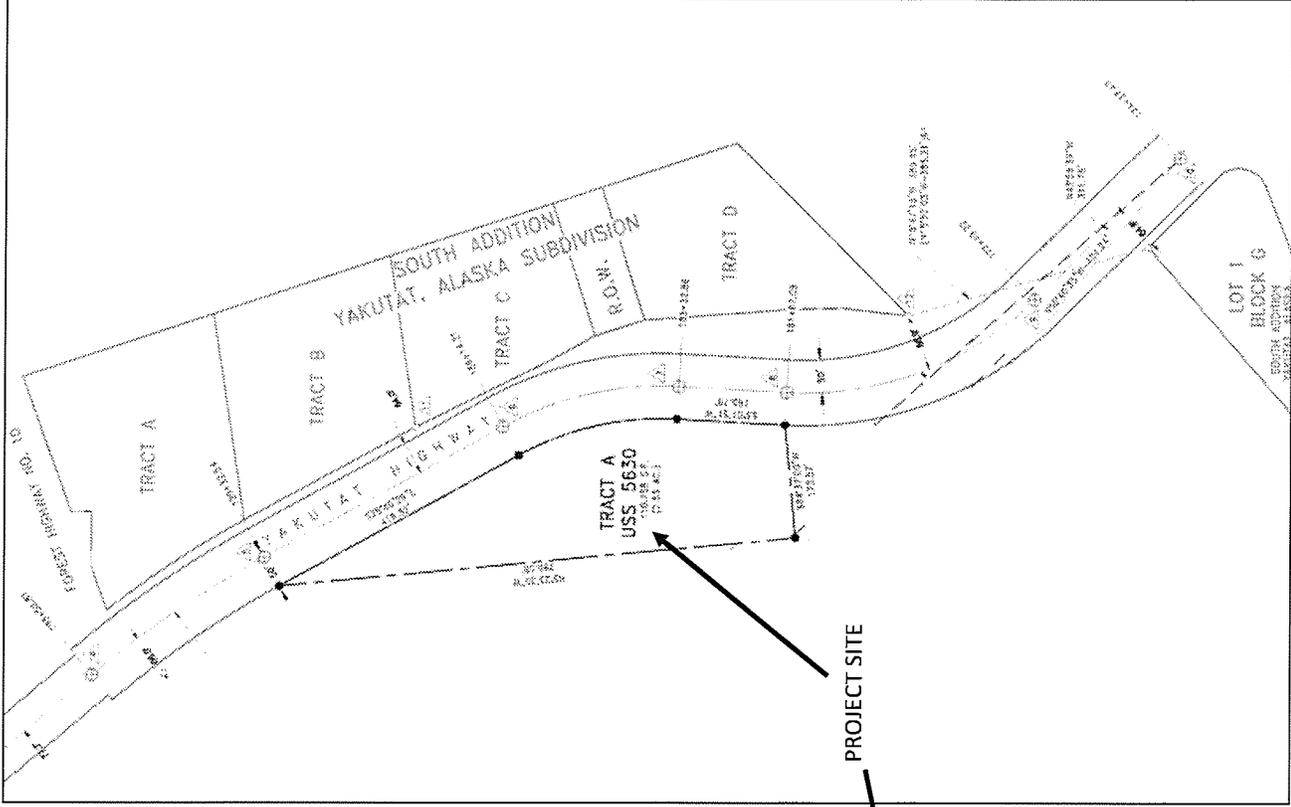
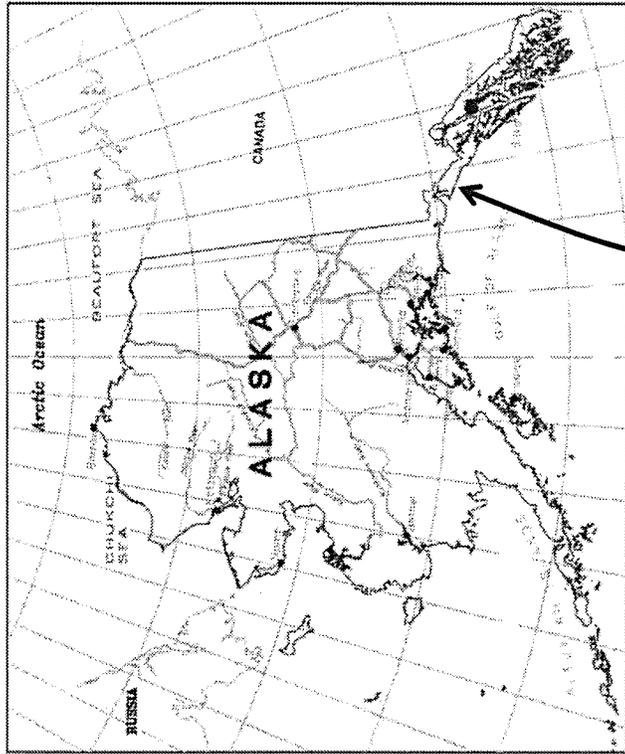
We conducted this evaluation following the standard of care expected of professionals undertaking similar work in the State of Alaska under similar conditions. No warranty, expressed or implied, is made.

## **12.0 REFERENCES CITED**

Yehle, L. A., 1979, Reconnaissance Engineering Geology of the Yakutat Area, Alaska, with Emphasis on Evaluation of Earthquake and Other Geologic Hazards: United States Geological Survey Professional Paper 1074, 51 p.



## **REPORT FIGURES**



**NORTHERN GEOTECHNICAL ENGINEERING, INC.**  
**TERRA FIRMA TESTING**

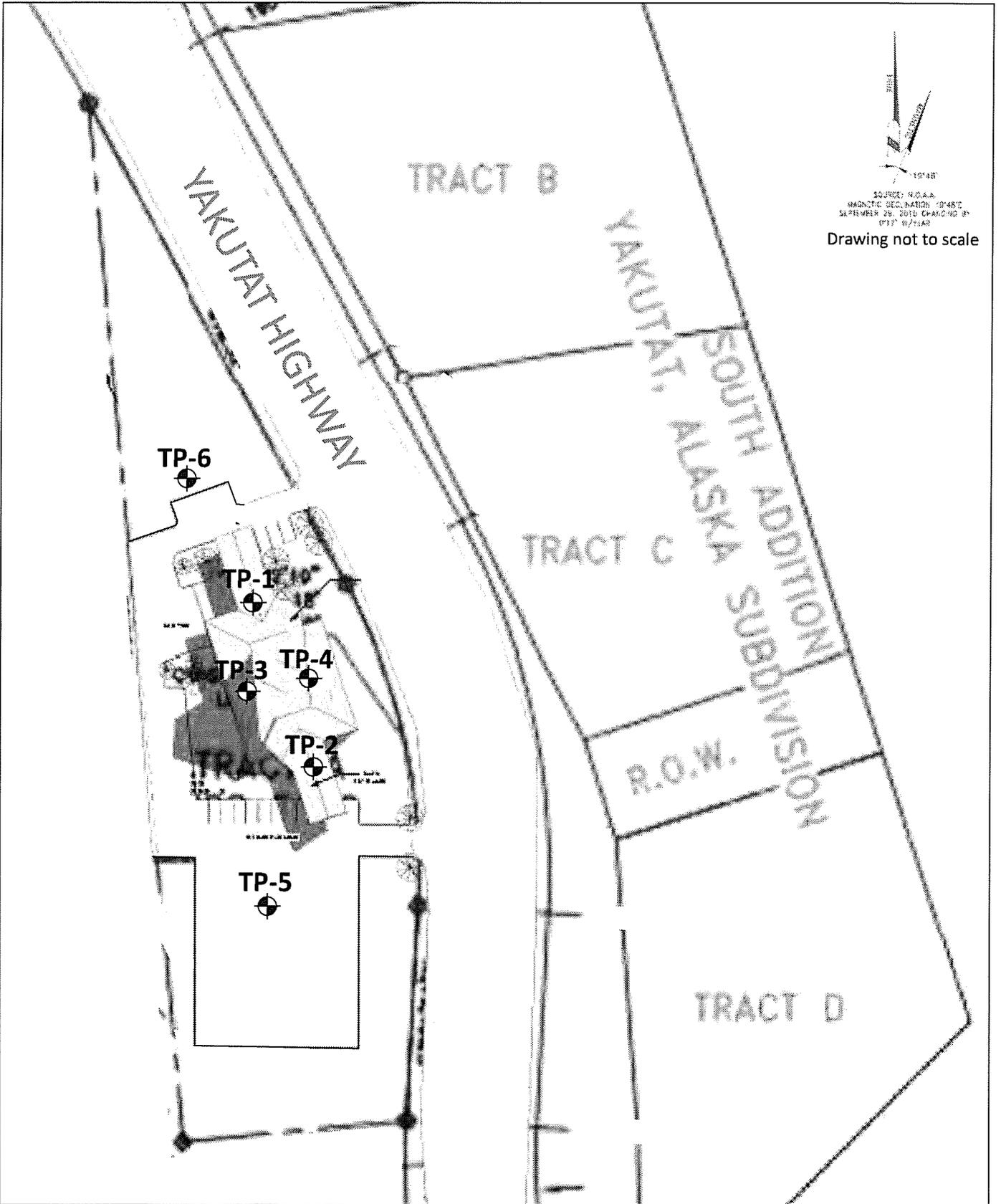
FIGURE TITLE:  
**PROJECT SITE LOCATION**

PROJECT NAME:  
**YAKUTAT COMMUNITY HEALTH CLINIC**

PROJECT LOCATION:  
**YAKUTAT, ALASKA**

PROJECT ID:  
**4562-16**

FIGURE NUMBER:  
**1**



SOURCE: NOAA  
 MAGNETIC DECLINATION 10°48' E  
 SEPTEMBER 29, 2010 CHANGING BY  
 0°07' W/YEAR  
 Drawing not to scale

Drawing modified from conceptual layout provided by YTT

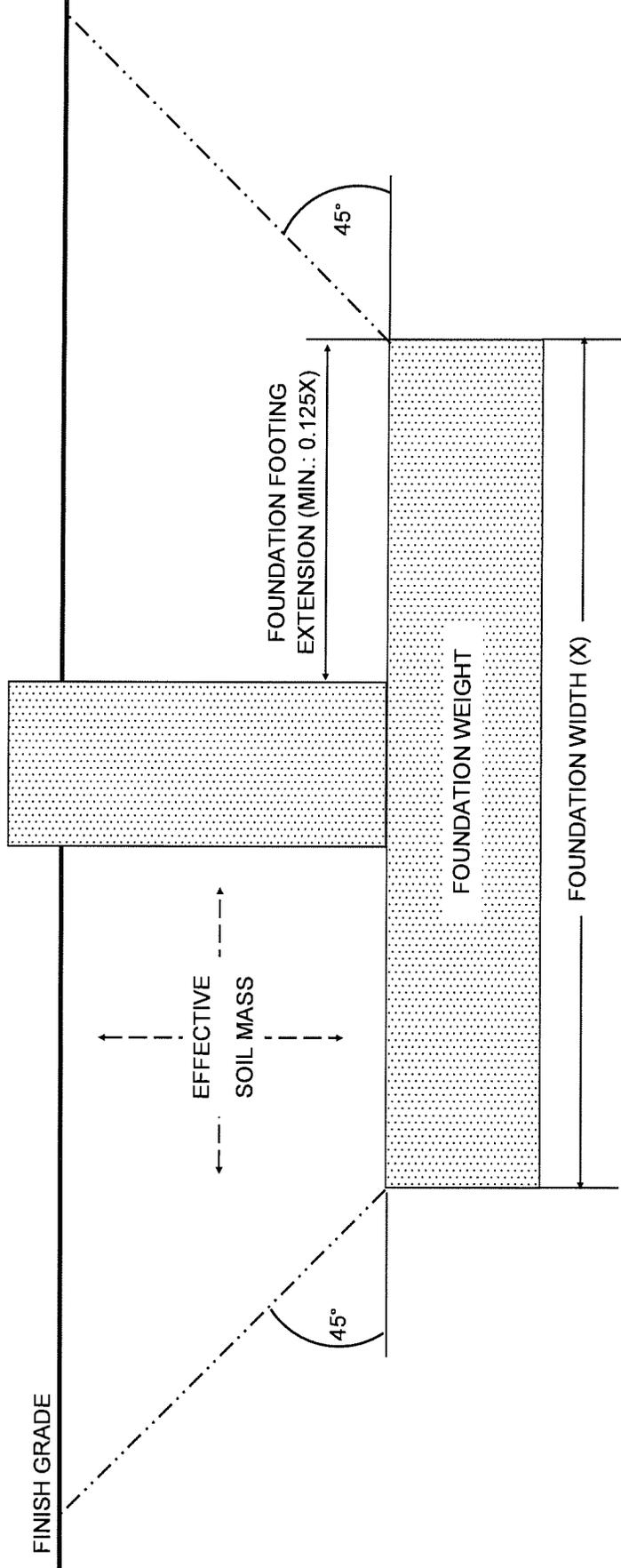
⊕ = Approx. location of test pit exploration



**NORTHERN GEOTECHNICAL ENGINEERING, INC.**  
**TERRA FIRMA TESTING**

FIGURE TITLE: <b>CONCEPT SITE LAYOUT AND EXPLORATION LOCATIONS</b>	
PROJECT NAME: <b>YAKUTAT COMMUNITY HEALTH CLINIC</b>	PROJECT ID: <b>4562-16</b>
PROJECT LOCATION: <b>YAKUTAT, ALASKA</b>	FIGURE NUMBER: <b>2</b>

UPLIFT CAPACITY = 0.8 x (EFFECTIVE SOIL WEIGHT + WEIGHT OF FOUNDATION)



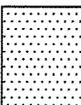
 = FOOTING / STEM WALL

DIAGRAM NOT TO SCALE

 <p><b>NORTHERN GEOTECHNICAL ENGINEERING, INC.</b> TERRA FIRMA TESTING</p>	<p>FIGURE TITLE: <b>UPLIFT CAPACITY DIAGRAM</b></p>
	<p>PROJECT NAME: <b>YAKUTAT COMMUNITY HEALTH CLINIC</b></p>
	<p>PROJECT LOCATION: <b>YAKUTAT, ALASKA</b></p>
<p>PROJECT ID: <b>4562-16</b></p>	
<p>FIGURE NUMBER: <b>3</b></p>	

COLD SLAB	ENCLOSED (HEATED) SPACE SLAB	HEATED (RADIANT) SLAB
<p>STRIP FOOTING</p> <p>NOTE: MUST BE PLACED ON NFS MATERIAL. INSULATION OPTIONAL TO REDUCE DEPTH OF NFS</p> <p><b>CONFIGURATION A</b></p>	<p>ENCLOSED SPACE SLAB</p> <p>SOILS PREPARED AS DESCRIBED IN TEXT</p> <p>NOTE: IF INSULATION IS PLACED UNDER SLAB USE <b>CONFIGURATION C</b></p> <p><b>CONFIGURATION B</b></p>	<p>HEATED SLAB</p> <p>SOILS PREPARED AS DESCRIBED IN TEXT</p> <p><b>CONFIGURATION C</b></p>
<p>SLAB ON GRADE</p> <p>NOTE: MUST BE PLACED ON NFS MATERIAL. INSULATION OPTIONAL TO REDUCE DEPTH OF NFS</p> <p><b>CONFIGURATION D</b></p>	<p>ENCLOSED SPACE SLAB</p> <p>SOILS PREPARED AS DESCRIBED IN TEXT</p> <p><b>CONFIGURATION E</b></p>	<p>HEATED SLAB</p> <p>SOILS PREPARED AS DESCRIBED IN TEXT</p> <p>NOTE: DO NOT INSULATE FOOTING SURFACES BELOW SLAB. THE THICKNESS OF INSULATION "H" CAN BE CHANGED TO OBTAIN DESIRED INSULATION BENEATH SLAB</p> <p><b>CONFIGURATION F</b></p>

= FOOTING / STEM WALL / SLAB    = INSULATION

**CONFIGURATIONS NOT TO SCALE**

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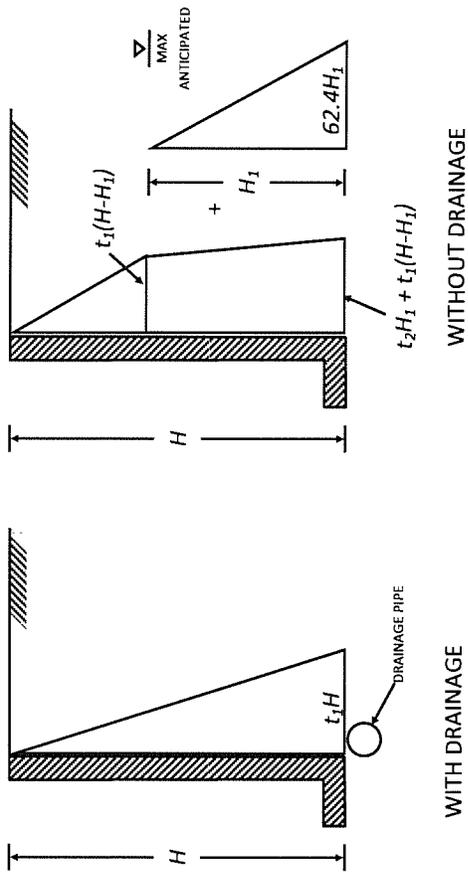
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FIGURE TITLE: FOUNDATION INSULATION CONFIGURATIONS  
 PROJECT NAME: PROPOSED YAKUTAT COMMUNITY HEALTH CLINIC  
 PROJECT LOCATION: YAKUTAT, ALASKA

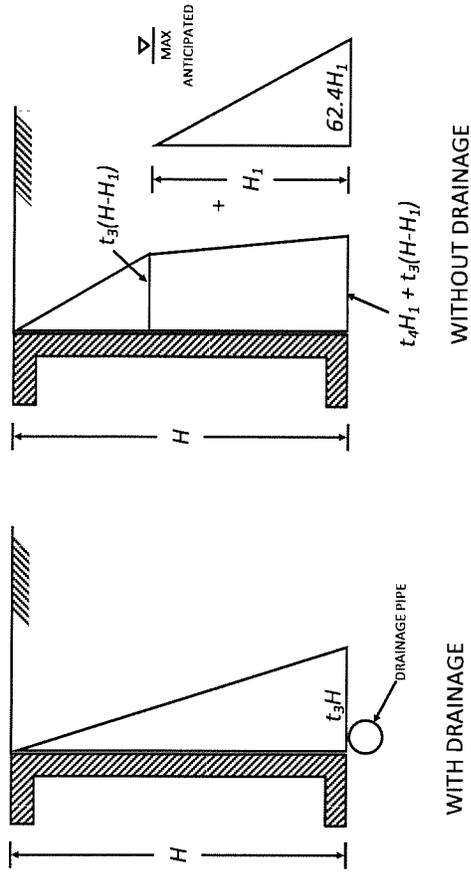
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PROJECT ID: 4562-16  
 FIGURE NUMBER: 4

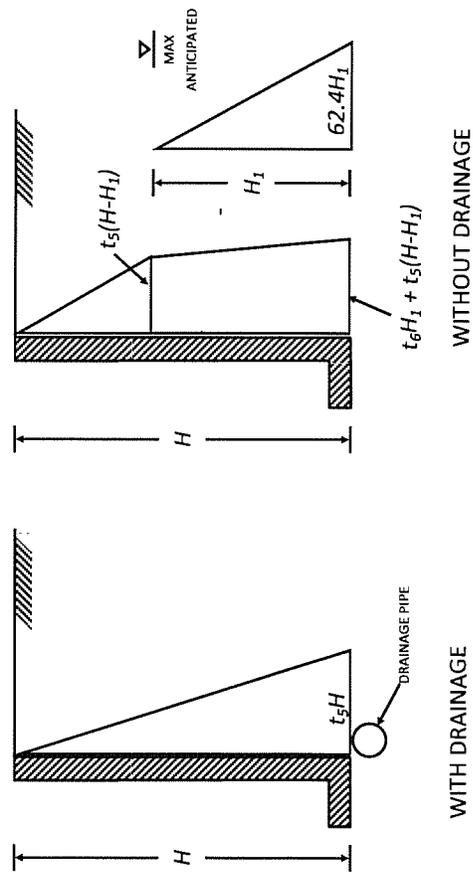
ACTIVE PRESSURE CONDITION



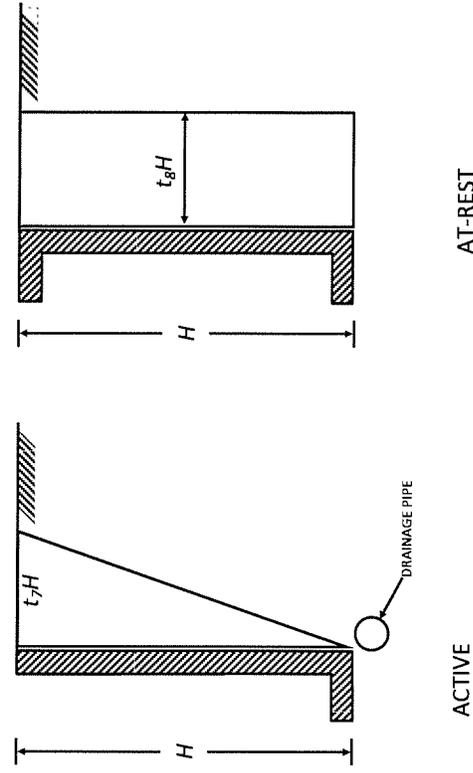
AT-REST PRESSURE CONDITION



PASSIVE PRESSURE CONDITION



SEISMIC



NOTE: WALLS CAN BE EITHER FREE OR RESTRAINED AT THE TOP FOR THE PASSIVE PRESSURE CONDITION. EQUATIONS ARE ONLY VALID FOR UNITS OF  $t_{1-8}$  (PCF) AND  $H-H_1$  (FT).

NOTE: SEISMIC LOADS ARE VALID FOR WALLS RETAINING LESS THAN 8 FEET VERTICAL OF EARTH. THE SEISMIC LOAD IS ADDED TO ACTIVE & AT-REST CONDITIONS AND IS SUBTRACTED FROM PASSIVE CONDITIONS.

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FIGURE TITLE:  
**LATERAL RETAINING WALL PRESSURES**  
 PROJECT NAME:  
**YAKUTAT COMMUNITY HEALTH CLINIC**  
 PROJECT LOCATION:  
**YAKUTAT, ALASKA**

PROJECT ID:  
**4562-16**  
 FIGURE NUMBER:  
**5**



## **APPENDIX A**

# **GRAPHICAL SUBSURFACE EXPLORATION LOGS AND PHOTOGRAPHS**



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 Fax: 907-344-5993

# EXPLORATION TP-1

NGE-TFT PROJECT NAME: Yakutat Community Health Clinic      NGE-TFT PROJECT NUMBER: 4562-16

PROJECT LOCATION: Yakutat, AK      EXPLORATION CONTRACTOR: Pate Co.

EXPLORATION EQUIPMENT: Hitachi EX 150      EXPLORATION METHOD: Test Pit Excavation

SAMPLING METHOD: Grab Sample      LOGGED BY: A. Smith

DATE/TIME STARTED: 10/27/2016 @ 10:05:00 AM      DATE/TIME COMPLETED: 10/27/2016 @ 10:30:00 AM

EXPLORATION LOCATION: See report Figure 2      GROUND ELEVATION: Not Known

▽ GROUNDWATER (ATD): N/E      ▼ GROUNDWATER (I): N/A

EXPLORATION COMPLETION: Backfilled with spoils.      WEATHER CONDITIONS: Overcast, calm, 36°F

DEPTH (ft)	GRAPHIC LOG	FROZEN SOILS	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	LAB RESULTS
0.0			Surface organics and root masses			
2.5			<b>WELL GRADED GRAVEL WITH SAND (GW)</b> , olive brown to olive gray, damp, subrounded to rounded gravel, gravel up to 3" in diameter, few cobbles and trace boulders 1-2 ft in diameter, coarse sand, massive, GLACIAL OUTWASH			
5.0					S1	S1 MC = 4.4% 57.0% gravel, 38.8% sand, 4.2% silt P0.02 = 2.1% FC = PFS
7.5						
10.0						
Bottom of test pit at 12.0 ft bgs.						
					S2	S2 MC = 2.7% P200 = 1.5%



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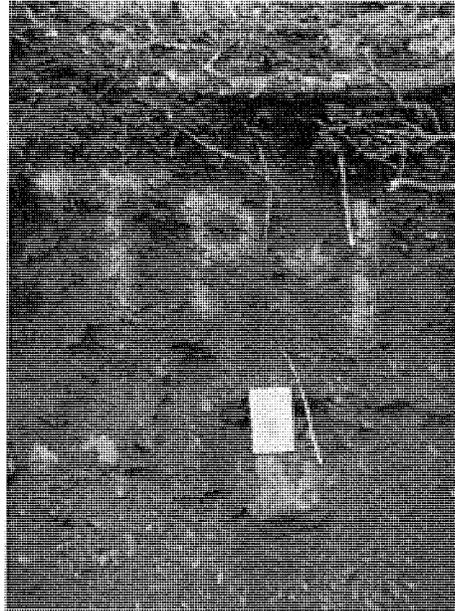
# PHOTO APPENDIX

CLIENT Yakutat Tlingit Tribe

PROJECT NAME Yakutat Community Health Clinic

PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK



Exploration TP-1  
Soil Profile



Exploration TP-1  
Bottom of Hole



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# PHOTO APPENDIX

CLIENT Yakutat Tlingit Tribe

PROJECT NAME Yakutat Community Health Clinic

PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK



Exploration TP-1  
Spoils

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 Fax: 907-344-5993

# EXPLORATION TP-2

<b>NGE-TFT PROJECT NAME:</b> <u>Yakutat Community Health Clinic</u>	<b>NGE-TFT PROJECT NUMBER:</b> <u>4562-16</u>
<b>PROJECT LOCATION:</b> <u>Yakutat, AK</u>	<b>EXPLORATION CONTRACTOR:</b> <u>Pate Co.</u>
<b>EXPLORATION EQUIPMENT:</b> <u>Hitachi EX 150</u>	<b>EXPLORATION METHOD:</b> <u>Test Pit Excavation</u>
<b>SAMPLING METHOD:</b> <u>Grab Sample</u>	<b>LOGGED BY:</b> <u>A. Smith</u>
<b>DATE/TIME STARTED:</b> <u>10/27/2016 @ 2:15:00 PM</u>	<b>DATE/TIME COMPLETED:</b> <u>10/27/2016 @ 2:40:00 PM</u>
<b>EXPLORATION LOCATION:</b> <u>See report Figure 2</u>	<b>GROUND ELEVATION:</b> <u>Not Known</u>
<b>▽ GROUNDWATER (ATD):</b> <u>N/E</u>	<b>▽ GROUNDWATER (I):</b> <u>N/A</u>
<b>EXPLORATION COMPLETION:</b> <u>Backfilled with spoils.</u>	<b>WEATHER CONDITIONS:</b> <u>Overcast, calm, 36°F</u>

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	LAB RESULTS
0.0		Surface organics and root masses			
2.5		<b>POORLY GRADED GRAVEL WITH SAND (GP)</b> , olive brown to olive gray, damp, subrounded to rounded gravel, gravel up to 3" in diameter, few cobbles and trace boulders 1-2 ft in diameter, interbedded with sand layers 1-4" thick, coarse sand, massive, GLACIAL OUTWASH	Hand	S1	S1 MC = 4.5% 51.0% gravel, 45.4% sand, 3.5% silt P0.02 = 1.5% FC = NFS
5.0					
7.5					
10.0					
12.5			Hand	S2	S2 MC = 6.5% P200 = 1.9%

Bottom of test pit at 14.0 ft bgs.



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# PHOTO APPENDIX

CLIENT Yakutat Tlingit Tribe

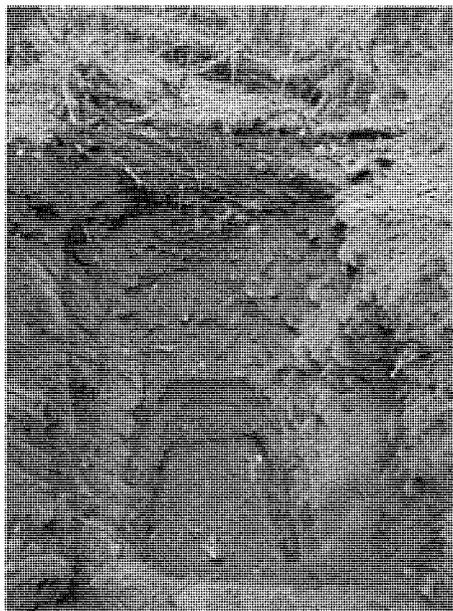
PROJECT NAME Yakutat Community Health Clinic

PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK



Exploration TP-2  
Soil Profile



Exploration TP-2  
Bottom of Hole



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# PHOTO APPENDIX

CLIENT Yakutat Tlingit Tribe

PROJECT NAME Yakutat Community Health Clinic

PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK



Exploration TP-2  
Spoils

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# EXPLORATION TP-3

**NGE-TFT PROJECT NAME:** Yakutat Community Health Clinic      **NGE-TFT PROJECT NUMBER:** 4562-16  
**PROJECT LOCATION:** Yakutat, AK      **EXPLORATION CONTRACTOR:** Pate Co.  
**EXPLORATION EQUIPMENT:** Hitachi EX 150      **EXPLORATION METHOD:** Test Pit Excavation  
**SAMPLING METHOD:** Grab Sample      **LOGGED BY:** A. Smith  
**DATE/TIME STARTED:** 10/27/2016 @ 1:30:00 PM      **DATE/TIME COMPLETED:** 10/27/2016 @ 2:05:00 PM  
**EXPLORATION LOCATION:** See report Figure 2      **GROUND ELEVATION:** Not Known  
**▽ GROUNDWATER (ATD):** N/E      **▽ GROUNDWATER (I):** N/A  
**EXPLORATION COMPLETION:** Backfilled with spoils.      **WEATHER CONDITIONS:** Overcast, calm, 36°F

DEPTH (ft)	GRAPHIC LOG	FROZEN SOILS	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	LAB RESULTS
0.0			Surface organics and root masses			
2.5			<b>POORLY GRADED SAND WITH GRAVEL (SP)</b> , olive brown to olive gray, damp, subrounded to rounded gravel, gravel up to 3" in diameter, few cobbles and trace boulders 1-3 ft in diameter, coarse sand, massive, GLACIAL OUTWASH	Hand	S1	S1 MC = 4.5% 47.7% gravel, 50.8% sand, 1.5% silt
5.0						
7.5						
10.0						
12.5				Hand	S2	S2 MC = 4.1% P200 = 1.3%
Bottom of test pit at 14.0 ft bgs.						

Always refer to our complete geotechnical report for this project for a more detailed explanation of the subsurface conditions at the project site and how they may affect any existing and/or prospective project site development.

(Continued Next Page)



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Fax: 907-344-5993

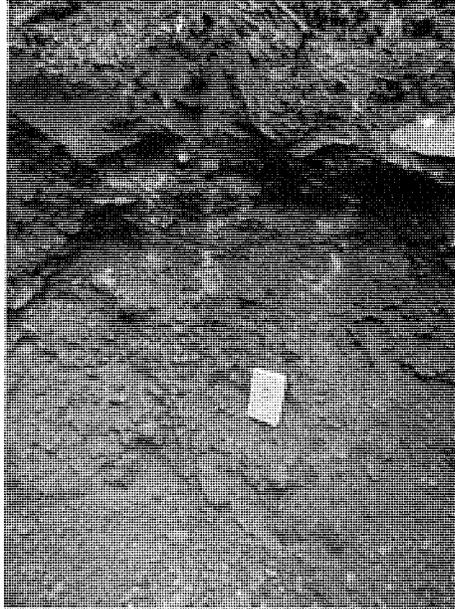
# PHOTO APPENDIX

CLIENT Yakutat Tlingit Tribe

PROJECT NAME Yakutat Community Health Clinic

PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK



Exploration TP-3  
Soil Profile



Exploration TP-3  
Bottom of Hole



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# PHOTO APPENDIX

CLIENT Yakutat Tlingit Tribe

PROJECT NAME Yakutat Community Health Clinic

PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK



Exploration TP-3  
Spoils

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# EXPLORATION TP-4

NGE-TFT PROJECT NAME: Yakutat Community Health Clinic      NGE-TFT PROJECT NUMBER: 4562-16

PROJECT LOCATION: Yakutat, AK      EXPLORATION CONTRACTOR: Pate Co.

EXPLORATION EQUIPMENT: Hitachi EX 150      EXPLORATION METHOD: Test Pit Excavation

SAMPLING METHOD: Grab Sample      LOGGED BY: A. Smith

DATE/TIME STARTED: 10/27/2016 @ 11:45:00 AM      DATE/TIME COMPLETED: 10/27/2016 @ 12:15:00 PM

EXPLORATION LOCATION: See report Figure 2      GROUND ELEVATION: Not Known

▽ GROUNDWATER (ATD): N/E      ▼ GROUNDWATER (I): N/A

EXPLORATION COMPLETION: Backfilled with spoils.      WEATHER CONDITIONS: Overcast, calm, 36°F

DEPTH (ft)	GRAPHIC LOG	FROZEN SOILS	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	LAB RESULTS
0.0			Surface organics and root masses			
2.5			<b>POORLY GRADED SAND WITH GRAVEL (SP)</b> , loose, olive brown olive gray, damp, subrounded to rounded gravel, gravel up to 3" in diameter, few cobbles and trace boulders 1-2 ft in diameter, coarse sand, massive, GLACIAL OUTWASH	Hand	S1	S1 MC = 13.2% P200 = 2.0%
5.0				Hand	S2	S2 MC = 5.3% 47.5% gravel, 48.2% sand, 4.3% silt
7.5						
10.0						
12.5				Hand	S3	S3 MC = 3.6% P200 = 3.9%

Bottom of test pit at 13.0 ft bgs.



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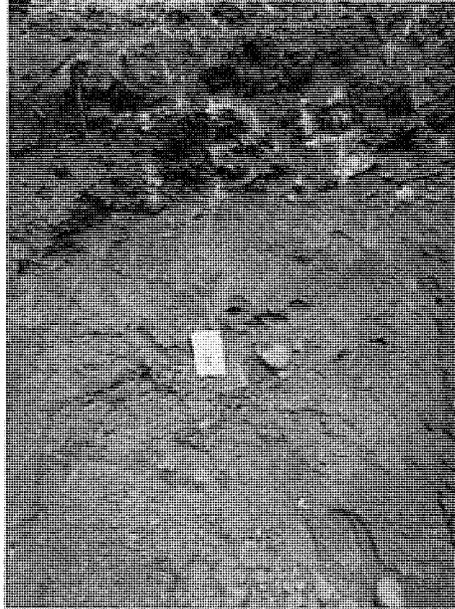
# PHOTO APPENDIX

CLIENT Yakutat Tlingit Tribe

PROJECT NAME Yakutat Community Health Clinic

PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK



Exploration TP-4  
Soil Profile



Exploration TP-4  
Bottom of Hole



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# PHOTO APPENDIX

**CLIENT** Yakutat Tlingit Tribe

**PROJECT NAME** Yakutat Community Health Clinic

**PROJECT NUMBER** 4562-16

**PROJECT LOCATION** Yakutat, AK



Exploration TP-4  
Spoils

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# EXPLORATION TP-5

**NGE-TFT PROJECT NAME:** Yakutat Community Health Clinic      **NGE-TFT PROJECT NUMBER:** 4562-16  
**PROJECT LOCATION:** Yakutat, AK      **EXPLORATION CONTRACTOR:** Pate Co.  
**EXPLORATION EQUIPMENT:** Hitachi EX 150      **EXPLORATION METHOD:** Test Pit Excavation  
**SAMPLING METHOD:** Grab Sample      **LOGGED BY:** A. Smith  
**DATE/TIME STARTED:** 10/27/2016 @ 3:20:00 PM      **DATE/TIME COMPLETED:** 10/27/2016 @ 4:08:00 PM  
**EXPLORATION LOCATION:** See report Figure 2      **GROUND ELEVATION:** Not Known  
**▽ GROUNDWATER (ATD):** N/E      **▽ GROUNDWATER ():** N/A  
**EXPLORATION COMPLETION:** Backfilled with spoils.      **WEATHER CONDITIONS:** Overcast, calm, 36°F

DEPTH (ft)	GRAPHIC LOG	FROZEN SOILS	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	LAB RESULTS
0			Surface organics and root masses			
5			<b>POORLY GRADED GRAVEL WITH SAND (GP)</b> , olive brown to olive gray, damp, subrounded to rounded gravel, gravel up to 3" in diameter, few cobbles and trace boulders 1-3 ft in diameter, coarse sand, massive, GLACIAL OUTWASH	Hand	S1	S1 MC = 4.0% 50.6% gravel, 46.7% sand, 2.7% silt P0.02 = 1.5% FC = NFS
10						
15				Hand	S2	S2 MC = 3.8% P0.02 = 2.1%

Bottom of test pit at 15.0 ft bgs.



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# PHOTO APPENDIX

CLIENT Yakutat Tlingit Tribe

PROJECT NAME Yakutat Community Health Clinic

PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK



Exploration TP-5  
Soil Profile



Exploration TP-5  
Bottom of Hole



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# PHOTO APPENDIX

CLIENT Yakutat Tlingit Tribe

PROJECT NAME Yakutat Community Health Clinic

PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK



Exploration TP-5  
Spoils

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# EXPLORATION TP-6

NGE-TFT PROJECT NAME: <u>Yakutat Community Health Clinic</u>	NGE-TFT PROJECT NUMBER: <u>4562-16</u>
PROJECT LOCATION: <u>Yakutat, AK</u>	EXPLORATION CONTRACTOR: <u>Pate Co.</u>
EXPLORATION EQUIPMENT: <u>Hitachi EX 150</u>	EXPLORATION METHOD: <u>Test Pit Excavation</u>
SAMPLING METHOD: <u>Grab Sample</u>	LOGGED BY: <u>A. Smith</u>
DATE/TIME STARTED: <u>10/27/2016 @ 10:50:00 AM</u>	DATE/TIME COMPLETED: <u>10/27/2016 @ 11:15:00 AM</u>
EXPLORATION LOCATION: <u>See report Figure 2</u>	GROUND ELEVATION: <u>Not Known</u>
▽ GROUNDWATER (ATD): <u>N/E</u>	▽ GROUNDWATER (I): <u>N/A</u>
EXPLORATION COMPLETION: <u>Backfilled with spoils.</u>	WEATHER CONDITIONS: <u>Overcast, calm, 36°F</u>

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	LAB RESULTS
0.0		Surface organics and root masses			
2.5		<b>SANDY GRAVEL (GP)</b> , olive brown to olive gray, damp, subrounded to rounded gravel, gravel up to 3" in diameter, few cobbles with trace boulders up to 1-2 ft in diameter, coarse sand, massive, GLACIAL OUTWASH	Hand	S1	S1 MC = 8.1% P200 = 0.9%
5.0		Approx. 2 in thick silt layer			
7.5					
10.0					
12.5			Hand	S2	S2 MC = 3.2% 58.8% gravel, 39.6% sand, 1.6% silt
Bottom of test pit at 13.0 ft bgs.					



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# PHOTO APPENDIX

CLIENT Yakutat Tlingit Tribe

PROJECT NAME Yakutat Community Health Clinic

PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK



Exploration TP-6  
Soil Profile



Exploration TP-6  
Bottom of Hole



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# PHOTO APPENDIX

CLIENT Yakutat Tlingit Tribe

PROJECT NAME Yakutat Community Health Clinic

PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK



Exploration TP-6  
Spoils

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## EXPLORATION LEGEND

CLIENT Yakutat Tlingit Tribe

NGE-TFT PROJECT NAME Yakutat Community Health Center

NGE-TFT PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK

### LITHOLOGIC SYMBOLS (Unified Soil Classification System)



GPS: Sandy Gravel



GW: USCS Well-graded Gravel



ML: USCS Silt



SPG: Gravelly Sand



TOPSOIL: Topsoil

### SAMPLER SYMBOLS



Grab Sample

### WELL CONSTRUCTION SYMBOLS

### ABBREVIATIONS

LL - LIQUID LIMIT (%)  
 PI - PLASTIC INDEX (%)  
 MC - MOISTURE CONTENT (%)  
 DD - DRY DENSITY (PCF)  
 NP - NON PLASTIC  
 P200 - PERCENT PASSING NO. 200 SIEVE  
 P0.02 - PERCENT PASSING 0.02mm SIEVE  
 PP - POCKET PENETROMETER (TSF)  
 S/U - CASING STICK-UP

TV - TORVANE  
 PID - PHOTOIONIZATION DETECTOR  
 UC - UNCONFINED COMPRESSION  
 ppm - PARTS PER MILLION  
 ∇ Water Level at Time  
 Drilling, or as Shown  
 ▼ Water Level After 24  
 Hours, or as Shown



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# SOIL CLASSIFICATION CHART

CLIENT Yakutat Tlingit Tribe

PROJECT NAME Yakutat Community Health Center

NGE-TFT PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS		
			GRAPH	LETTER			
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		<b>GW</b>	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES		
		(LITTLE OR NO FINES)		<b>GP</b>	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES		
		GRAVELS WITH FINES		<b>GM</b>	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES		
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	(APPRECIABLE AMOUNT OF FINES)	CLEAN SANDS		<b>SW</b>	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	
			(LITTLE OR NO FINES)		<b>SP</b>	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES	
			SANDS WITH FINES		<b>SM</b>	SILTY SANDS, SAND - SILT MIXTURES	
		MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	(APPRECIABLE AMOUNT OF FINES)			<b>SC</b>	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		<b>ML</b>	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY		
				<b>CL</b>	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS		
				<b>OL</b>	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY		
	MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		<b>MH</b>	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS	
					<b>CH</b>	INORGANIC CLAYS OF HIGH PLASTICITY	
					<b>OH</b>	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
					<b>PT</b>	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	
HIGHLY ORGANIC SOILS							

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.  
 DIAGONAL LINES INDICATE UNKNOWN DEPTH OF SOIL TRANSITION.



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## EXPLORATION LOG KEY

CLIENT Yakutat Tlingit Tribe

PROJECT NAME Yakutat Community Health Center

NGE-TFT PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK

### SAMPLER SYMBOLS



SPT w/ 140# Hammer  
 30" Drop and 2.0" O.D. Sampler



Modified SPT w/ 340# Hammer  
 30" Drop and 3.0 O.D. Sampler



Grab Sample



Shelby Tube Sample



Rock Core Sample



Direct Push Sample



No Recovery

N/E

Not Encountered

### COMPONENT DEFINITIONS

COMPONENT	SIZE RANGE
Boulders	Larger than 12 in
Cobbles	3 in to 12 in
Gravel	3 in to No. 4 (4.5mm)
Coarse gravel	3 in to 3/4 in
Fine gravel	3/4 in to No. 4 (4.5 mm)
Sand	No. 4 (4.5 mm) to No. 200
Coarse sand	No. 4 (4.5 mm) to No. 10 (2.0 mm)
Medium sand	No. 10 (2.0 mm) to No. 40 (0.42 mm)
Fine sand	No. 40 (0.42 mm) to No. 200 (0.074 mm)
Silt and Clay	Smaller than No. 200 (0.074 mm)

### COMPONENT PROPORTIONS

DESCRIPTIVE TERMS	RANGE OF PROPORTION
Trace	1-5%
Few	5-10%
Little	10-20%
Some	20-35%
And	35-50%

### WELL SYMBOLS



1" Slotted Pipe  
 Backfilled with Silica Sand



1" PVC Pipe  
 Backfilled with Auger Cuttings



1" PVC Pipe  
 with Bentonite Seal



Capped Riser

### MOISTURE CONTENT

DRY	Absence of moisture, dusty, dry to the touch
DAMP	Some perceptible moisture; below optimum
MOIST	No visible water; near optimum moisture content
WET	Visible free water, usually soil is below water table

### RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N-VALUE

COHESIONLESS SOILS			COHESIVE SOILS		
DENSITY	N (BLOWS/FT)	APPROXIMATE RELATIVE DENSITY (%)	CONSISTENCY	N (BLOWS/FT)	APPROXIMATE UNDRAINED SHEAR STRENGTH (PSF)
VERY LOOSE	0-4	0-15	VERY SOFT	0-1	< 250
LOOSE	5-10	15-35	SOFT	2-4	250-500
MEDIUM DENSE	11-25	35-65	MEDIUM STIFF	5-8	500-1000
DENSE	26-50	65-85	STIFF	9-15	1000-2000
VERY DENSE	> 50	85-100	VERY STIFF	16-30	2000-4000
			HARD	> 30	> 4000



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# EXPLORATION LOG KEY

CLIENT Yakutat Tlingit Tribe

PROJECT NAME Yakutat Community Health Center

NGE-TFT PROJECT NUMBER 4562-16

PROJECT LOCATION Yakutat, AK

## FROST DESIGN SOIL CLASSIFICATION

FROST GROUP (USACOE)	FROST GROUP (M.O.A.)	SOIL TYPE	% FINER THAN 0.02mm BY MASS	TYPICAL SOIL TYPES UNDER UNIFIED SOIL CLASSIFICATION SYSTEM
NFS*	NFS*	(A) GRAVELS CRUSHED STONE CRUSHED ROCK	0 - 1.5	GW, GP
		(B) SANDS	0 - 3	SW, SP
PFS*	NFS*	(A) GRAVELS CRUSHED STONE CRUSHED ROCK	1.5 - 3	GW, GP
		(B) SANDS	3 - 10	SW, SP
S1	F1	GRAVELLY SOILS	3 - 6	GW, GP, GW-GM, GP-GM
S2	F2	SANDY SOILS	3 - 6	SW, SP, SW-SM, SP-SM
F1	F1	GRAVELLY SOILS	6 - 10	GM, GW-GM, GP-GM
F2	F2	(A) GRAVELLY SOILS	10 - 20	GM, GW-GM, GP-GM
		(B) SANDS	6 - 15	SM, SW-SM, SP-SM
F3	F3	(A) GRAVELLY SOILS	Over 20	GM, GC
		(B) SANDS, EXCEPT VERY FINE SILTY SANDS	Over 15	SM, SC
		(C) CLAYS, $P_i > 12$	-----	CL, CH
F4	F4	(A) ALL SILTS	-----	ML, MH
		(B) VERY FINE SILTY SANDS	Over 15	SM
		(C) CLAYS, $P_i < 12$	-----	CL, CL-ML
		(D) VARVED CLAYS AND OTHER FINE GRAINED, BANDED SEDIMENTS	-----	CL & ML; CL, ML, & SM; CL, CH, & ML; CL, CH, ML, & SM

\*Non-frost susceptible  
 \*Possibly frost susceptible, but requires lab testing to determine frost design soils classification.

## ICE CLASSIFICATION SYSTEM

GROUP	ICE VISIBILITY	DESCRIPTION	SYMBOL
N	SEGREGATED ICE NOT VISIBLE BY EYE	POORLY BONDED OR FRIABLE	Nf
		WELL BONDED	Nb
		NO EXCESS ICE	
V	SEGREGATED ICE IS VISIBLE BY EYE AND IS ONE INCH OR LESS IN THICKNESS	EXCESS MICROSCOPIC ICE	Nbe
		INDIVIDUAL ICE CRYSTALS OR INCLUSIONS	Vx
		ICE COATINGS ON PARTICLES	Vc
		RANDOM OR IRREGULARLY ORIENTED ICE	Vr
		STRATIFIED OR DISTINCTLY ORIENTED ICE	Vs
ICE	ICE IS GREATER THAN ONE INCH IN THICKNESS	UNIFORMLY DISTRIBUTED ICE	Vu
		ICE WITH SOILS INCLUSIONS	ICE + Soil Type
		ICE WITHOUT SOILS INCLUSIONS	ICE



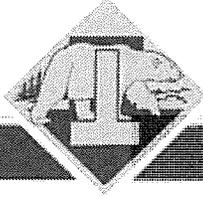
**APPENDIX B**

**LABORATORY TEST RESULTS**

# Summary of Laboratory Test Results

Yakutat Community Health Clinic  
Yakutat, AK  
NGE-TFT Project #: 4562-16

Exploration ID	Sample Number	Depth Interval		Moisture Content ASTM D2216 (% By Dry Mass)	Particle Size Analysis ASTM C136/D422/D6913 (% By Mass)			Passing #200 ASTM D1140 (% By Mass)	Passing 0.075mm ASTM D422 (% By Mass)	Frost Class.	Unified Soil Classification ASTM D2487
		(ft) Top	(ft) Bottom		Gravel	Sand	Silt/Clay				
TP1	S1	3.00	4.00	4.4	57	38.8	4.2		2.1	PFS	(GW) Well-graded gravel w/ sand
TP1	S2	11.00	12.00	2.7				1.5			
TP2	S1	1.00	2.00	4.5	51.1	45.4	3.5		1.5	NFS	(GP) Poorly-graded gravel w/ sand
TP2	S2	13.00	14.00	6.5				1.9			
TP3	S1	3.00	4.00	4.5	47.7	50.8	1.5		N/A	N/A	(SP) Poorly-graded sand w/ gravel
TP3	S2	13.00	14.00	4.1				1.3			
TP4	S1	0.50	0.75	13.2				2.0			
TP4	S2	4.00	5.00	5.3	47.5	48.2	4.3		N/A	N/A	(SP) Poorly-graded sand w/ gravel
TP4	S3	12.00	13.00	3.6				3.9			
TP5	S1	3.00	4.00	4.0	50.6	46.7	2.7		1.5	NFS	(GP) Poorly-graded gravel w/ sand
TP5	S2	14.00	15.00	3.8				2.1			
TP6	S1	2.00	3.00	8.1				0.9			
TP6	S2	12.00	13.00	3.2	58.8	39.6	1.6		N/A	N/A	(GP) Poorly-graded gravel w/ sand



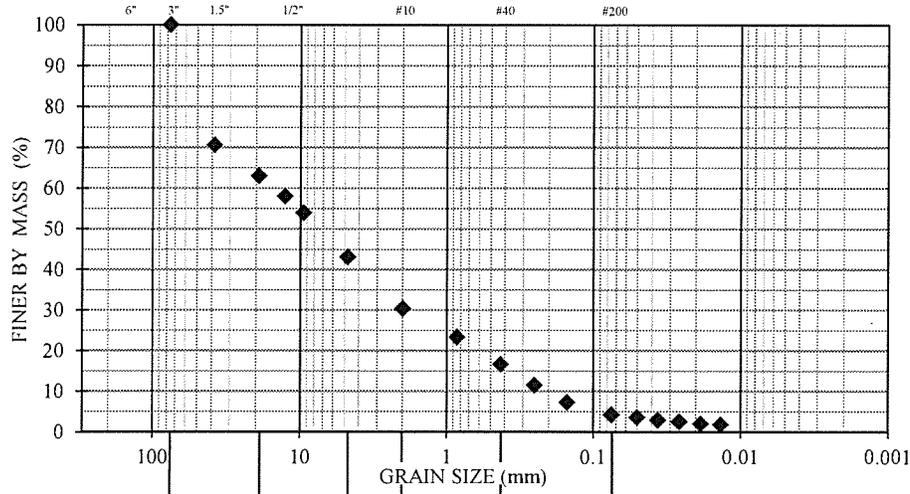
# NORTHERN GEOTECHNICAL ENGINEERING, INC. / TERRA FIRMA TESTING

Laboratory Testing   Geotechnical Engineering   Instrumentation   Construction Monitoring Services   Thermal Analysis

PROJECT CLIENT:	<b>YTT</b>
PROJECT NAME:	<b>Yakutat CHC</b>
PROJECT NO.:	<b>4562-16</b>
SAMPLE LOC.:	<b>TPI</b>
NUMBER/ DEPTH:	<b>S1 / 3' - 4'</b>
DESCRIPTION:	<b>Well-graded gravel w/ sand</b>
DATE RECEIVED:	<b>10/31/2016</b>
TESTED BY:	<b>JA</b>
REVIEWED BY:	<b>ACS</b>

% GRAVEL	<b>57.0</b>	USCS	<b>GW</b>
% SAND	<b>38.8</b>	USACOE FC	<b>PFS</b>
% SILT/CLAY	<b>4.2</b>	% PASS. 0.02 mm	<b>2.1</b>
% MOIST. CONTENT	<b>4.4</b>	% PASS. 0.002 mm	<b>N/A</b>
UNIFORMITY COEFFICIENT (C <sub>u</sub> )		<b>70.8</b>	
COEFFICIENT OF GRADATION (C <sub>c</sub> )		<b>1.2</b>	
ASTM D1557 (uncorrected)		<b>N/A</b>	
ASTM D4718 (corrected)		<b>N/A</b>	
OPTIMUM MOIST. CONTENT. (corrected)		<b>N/A</b>	

## PARTICLE SIZE ANALYSIS ASTM D422 / C136



COBBLES	GRAVEL		SAND			SILT or CLAY
	Coarse	Fine	Coarse	Medium	Fine	

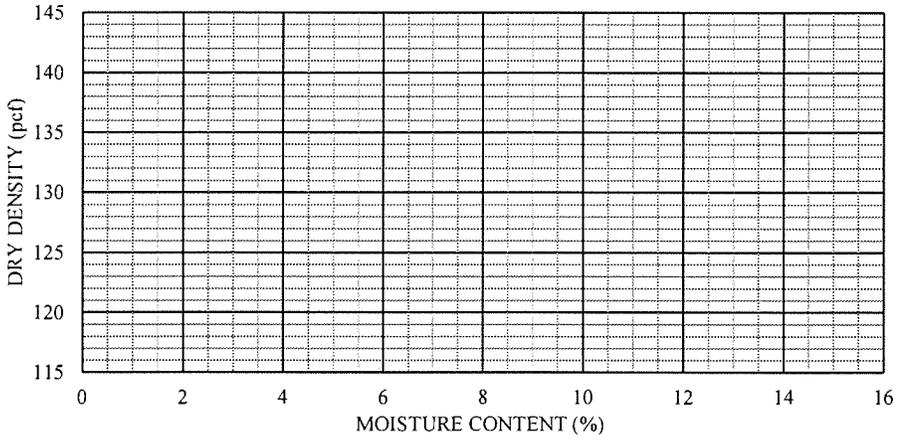
## SIEVE ANALYSIS RESULT

SIEVE SIZE (mm)	SIEVE SIZE (U.S.)	TOTAL % PASSING	SPECIFICATION (% PASSING)
76.20	3"	100	
38.10	1.5"	71	
19.00	3/4"	63	
12.70	1/2"	58	
9.50	3/8"	54	
4.75	#4	43	
2.00	#10	30	
0.85	#20	23	
0.43	#40	17	
0.25	#60	11	
0.15	#100	7	
0.075	#200	4.2	

## HYDROMETER RESULT

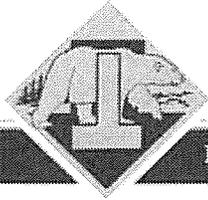
ELAPSED TIME (MIN)	DIAMETER (mm)	TOTAL % PASSING
0		
0.5		
1	0.0503	3.7
2	0.0363	2.9
4	0.0259	2.5
8	0.0187	2.0
15	0.0136	1.8
30		
60		
250		
1440		

## MOISTURE-DENSITY RELATIONSHIP ASTM D1557



HYDRAULIC COND. (ASTM D2434)	<b>N/A</b>
DEGRADATION (ATM T-313)	<b>N/A</b>
PLASTICITY INDEX ASTM 4318	<b>N/A</b>

The testing services reported herein have been performed to recognized industry standards, unless otherwise noted. No other warranty is made. Should engineering interpretation or opinion be required, NGE-TFT will provide upon written request.



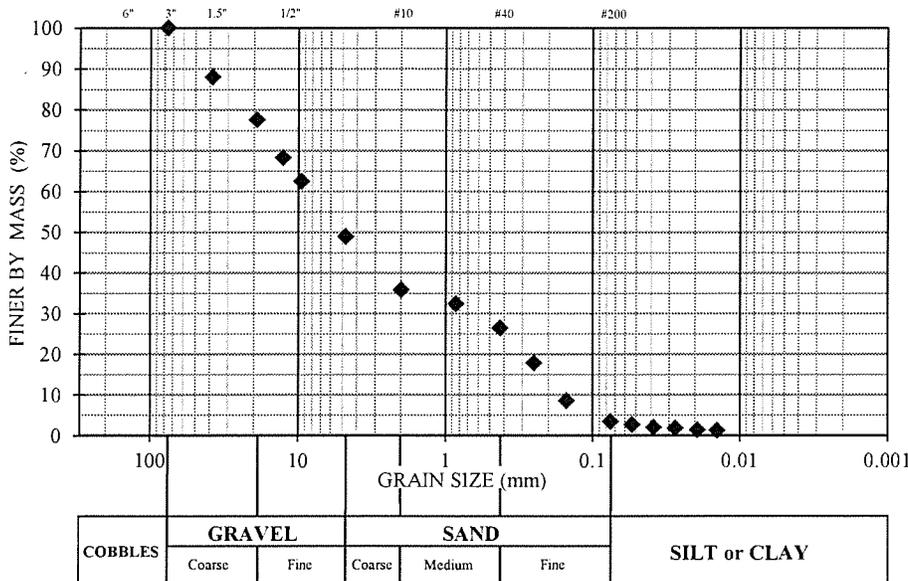
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Laboratory Testing   Geotechnical Engineering   Instrumentation   Construction Monitoring Services   Thermal Analysis

PROJECT CLIENT:	<b>YTT</b>
PROJECT NAME:	<b>Yakutat CHC</b>
PROJECT NO.:	<b>4562-16</b>
SAMPLE LOC.:	<b>TP2</b>
NUMBER/ DEPTH:	<b>S1 / 1' - 2'</b>
DESCRIPTION:	<b>Poorly-graded gravel w/ sand</b>
DATE RECEIVED:	<b>10/31/2016</b>
TESTED BY:	<b>JA</b>
REVIEWED BY:	<b>ACS</b>

% GRAVEL	<b>51.1</b>	USCS	<b>GP</b>
% SAND	<b>45.4</b>	USACOE FC	<b>NFS</b>
% SILT/CLAY	<b>3.5</b>	% PASS. 0.02 mm	<b>1.5</b>
% MOIST. CONTENT	<b>4.5</b>	% PASS. 0.002 mm	<b>N/A</b>
UNIFORMITY COEFFICIENT (C <sub>u</sub> )		<b>52.2</b>	
COEFFICIENT OF GRADATION (C <sub>c</sub> )		<b>0.3</b>	
ASTM D1557 (uncorrected)		<b>N/A</b>	
ASTM D4718 (corrected)		<b>N/A</b>	
OPTIMUM MOIST. CONTENT. (corrected)		<b>N/A</b>	

## PARTICLE SIZE ANALYSIS ASTM D422 / C136



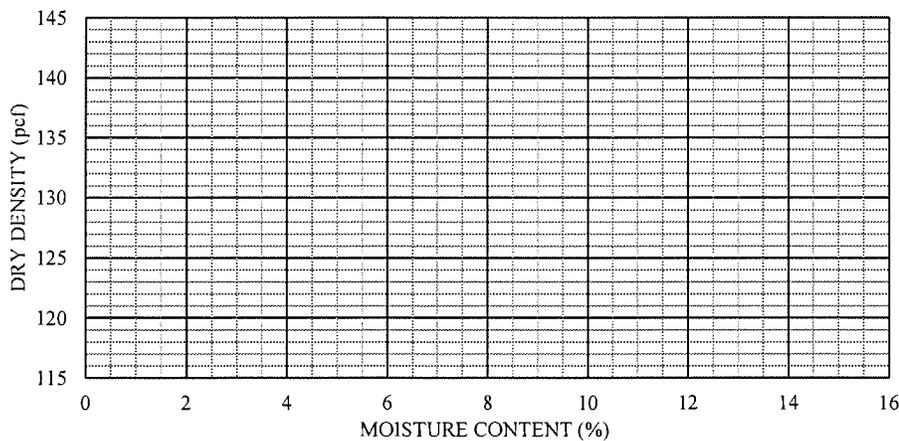
## SIEVE ANALYSIS RESULT

SIEVE SIZE (mm)	SIEVE SIZE (U.S.)	TOTAL % PASSING	SPECIFICATION (% PASSING)
76.20	3"	100	
38.10	1.5"	88	
19.00	3/4"	78	
12.70	1/2"	68	
9.50	3/8"	62	
4.75	#4	49	
2.00	#10	36	
0.85	#20	32	
0.43	#40	26	
0.25	#60	18	
0.15	#100	9	
0.075	#200	3.5	

## HYDROMETER RESULT

ELAPSED TIME (MIN)	DIAMETER (mm)	TOTAL % PASSING
0		
0.5		
1	0.0535	2.7
2	0.0382	2.0
4	0.0272	1.9
8	0.0193	1.4
15	0.0142	1.3
30		
60		
250		
1440		

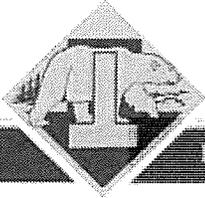
## MOISTURE-DENSITY RELATIONSHIP ASTM D1557



<b>HYDRAULIC COND.</b> (ASTM D2434)	<b>N/A</b>
<b>DEGRADATION</b> (ATM T-313)	<b>N/A</b>
<b>PLASTICITY INDEX</b> ASTM 4318	<b>N/A</b>

The testing services reported herein have been performed to recognized industry standards, unless otherwise noted. No other warranty is made. Should engineering interpretation or opinion be required, NGE-TFT will provide upon written request.

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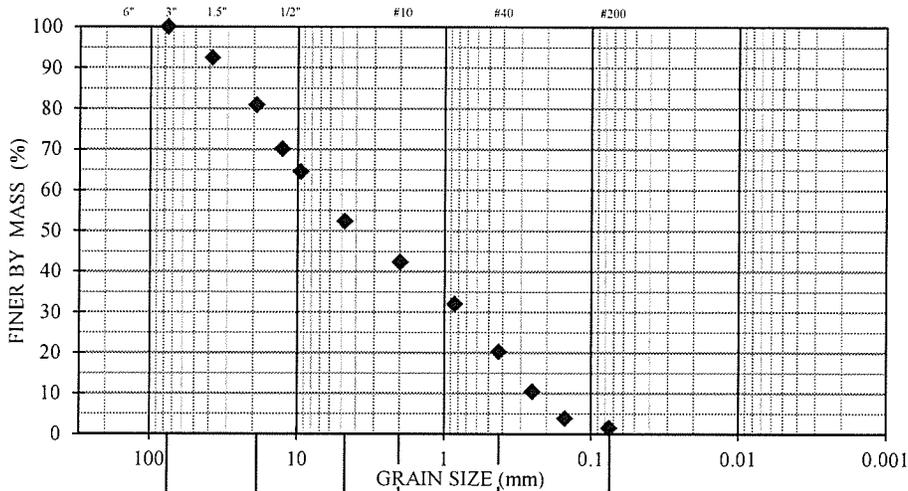
# NORTHERN GEOTECHNICAL ENGINEERING, INC. / TERRA FIRMA TESTING

Laboratory Testing   Geotechnical Engineering   Instrumentation   Construction Monitoring Services   Thermal Analysis

PROJECT CLIENT:	YTT
PROJECT NAME:	Yakutat CHC
PROJECT NO.:	4562-16
SAMPLE LOC.:	TP3
NUMBER/ DEPTH:	S1 / 3' - 4'
DESCRIPTION:	Poorly-graded sand w/ gravel
DATE RECEIVED:	10/31/2016
TESTED BY:	JA
REVIEWED BY:	ACS

% GRAVEL	47.7	USCS	SP
% SAND	50.8	USACOE FC	N/A
% SILT/CLAY	1.5	% PASS. 0.02 mm	N/A
% MOIST. CONTENT	4.5	% PASS. 0.002 mm	N/A
UNIFORMITY COEFFICIENT ( $C_u$ )		32.0	
COEFFICIENT OF GRADATION ( $C_g$ )		0.3	
ASTM D1557 (uncorrected)		N/A	
ASTM D4718 (corrected)		N/A	
OPTIMUM MOIST. CONTENT. (corrected)		N/A	

## PARTICLE SIZE ANALYSIS ASTM D422 / C136



COBBLES	GRAVEL		SAND			SILT or CLAY
	Coarse	Fine	Coarse	Medium	Fine	

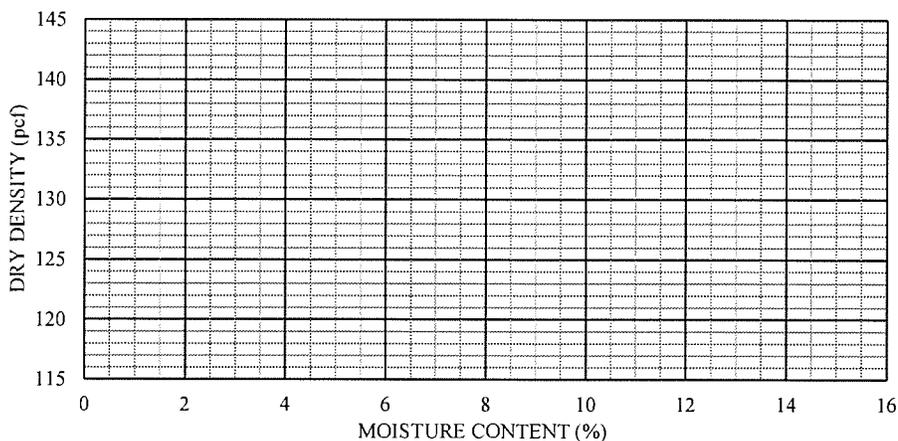
## SIEVE ANALYSIS RESULT

SIEVE SIZE (mm)	SIEVE SIZE (U.S.)	TOTAL % PASSING	SPECIFICATION (% PASSING)
76.20	3"	100	
38.10	1.5"	92	
19.00	3/4"	81	
12.70	1/2"	70	
9.50	3/8"	64	
4.75	#4	52	
2.00	#10	42	
0.85	#20	32	
0.43	#40	20	
0.25	#60	10	
0.15	#100	4	
0.075	#200	1.5	

## HYDROMETER RESULT

ELAPSED TIME (MIN)	DIAMETER (mm)	TOTAL % PASSING
0		
0.5		
1		
2		
4		
8		
15		
30		
60		
250		
1440		

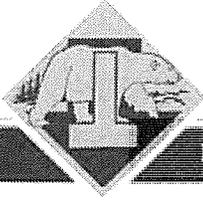
## MOISTURE-DENSITY RELATIONSHIP ASTM D1557



HYDRAULIC COND. (ASTM D2434)	N/A
DEGRADATION (ATM T-313)	N/A
PLASTICITY INDEX ASTM 4318	N/A

The testing services reported herein have been performed to recognized industry standards, unless otherwise noted. No other warranty is made. Should engineering interpretation or opinion be required, NGE-TFT will provide upon written request.

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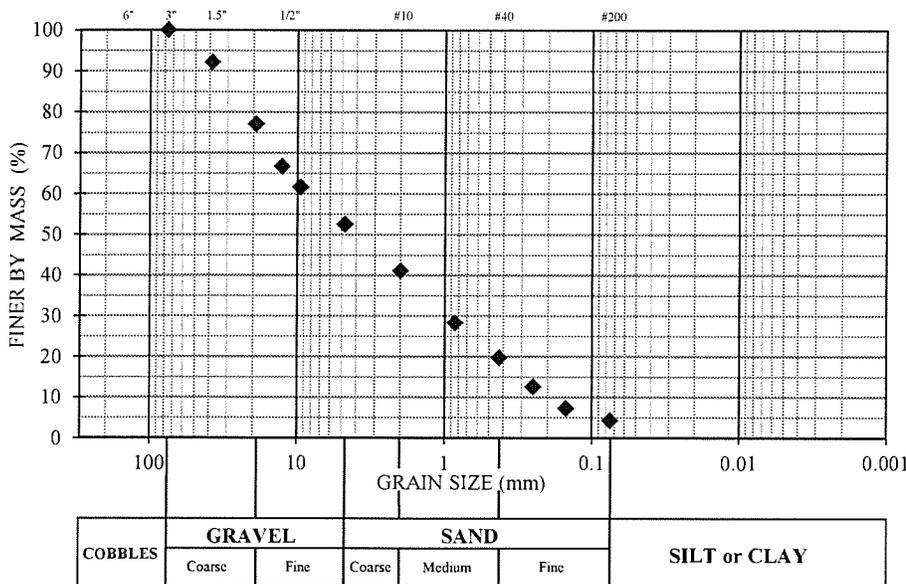
# NORTHERN GEOTECHNICAL ENGINEERING, INC. / TERRA FIRMA TESTING

Laboratory Testing   Geotechnical Engineering   Instrumentation   Construction Monitoring Services   Thermal Analysis

PROJECT CLIENT:	<b>YTT</b>
PROJECT NAME:	<b>Yakutat CHC</b>
PROJECT NO.:	<b>4562-16</b>
SAMPLE LOC.:	<b>TP4</b>
NUMBER/ DEPTH:	<b>S2 / 4' - 5'</b>
DESCRIPTION:	<b>Poorly-graded sand w/ gravel</b>
DATE RECEIVED:	<b>10/31/2016</b>
TESTED BY:	<b>JA</b>
REVIEWED BY:	<b>ACS</b>

% GRAVEL	<b>47.5</b>	USCS	<b>SP</b>
% SAND	<b>48.2</b>	USACOE FC	<b>N/A</b>
% SILT/CLAY	<b>4.3</b>	% PASS. 0.02 mm	<b>N/A</b>
% MOIST. CONTENT	<b>5.3</b>	% PASS. 0.002 mm	<b>N/A</b>
UNIFORMITY COEFFICIENT (C <sub>u</sub> )		<b>43.0</b>	
COEFFICIENT OF GRADATION (C <sub>c</sub> )		<b>0.6</b>	
ASTM D1557 (uncorrected)		<b>N/A</b>	
ASTM D4718 (corrected)		<b>N/A</b>	
OPTIMUM MOIST. CONTENT. (corrected)		<b>N/A</b>	

## PARTICLE SIZE ANALYSIS ASTM D422 / C136



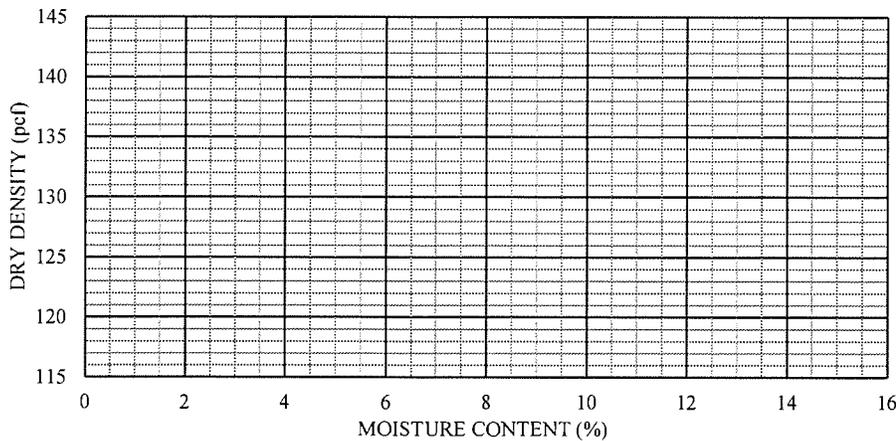
## SIEVE ANALYSIS RESULT

SIEVE SIZE (mm)	SIEVE SIZE (U.S.)	TOTAL % PASSING	SPECIFICATION (% PASSING)
76.20	3"	100	
38.10	1.5"	92	
19.00	3/4"	77	
12.70	1/2"	67	
9.50	3/8"	62	
4.75	#4	53	
2.00	#10	41	
0.85	#20	28	
0.43	#40	20	
0.25	#60	13	
0.15	#100	7	
0.075	#200	4.3	

## HYDROMETER RESULT

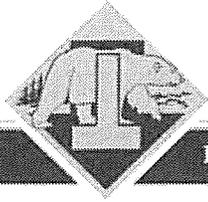
ELAPSED TIME (MIN)	DIAMETER (mm)	TOTAL % PASSING
0		
0.5		
1		
2		
4		
8		
15		
30		
60		
250		
1440		

## MOISTURE-DENSITY RELATIONSHIP ASTM D1557



<b>HYDRAULIC COND.</b> (ASTM D2434)	<b>N/A</b>
<b>DEGRADATION</b> (ATM T-313)	<b>N/A</b>
<b>PLASTICITY INDEX</b> ASTM 4318	<b>N/A</b>

The testing services reported herein have been performed to recognized industry standards, unless otherwise noted. No other warranty is made. Should engineering interpretation or opinion be required, NGE-TFT will provide upon written request.  
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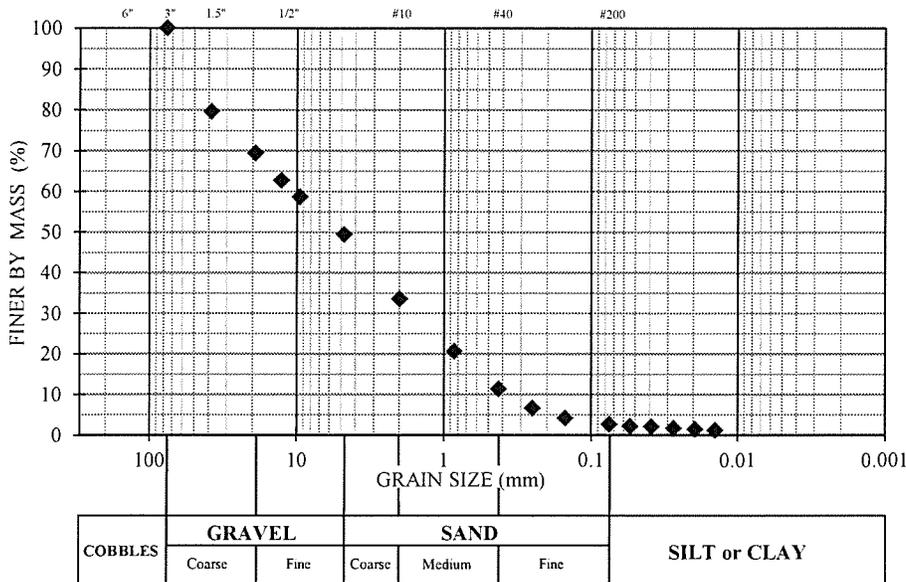
# NORTHERN GEOTECHNICAL ENGINEERING, INC. / TERRA FIRMA TESTING

Laboratory Testing   Geotechnical Engineering   Instrumentation   Construction Monitoring Services   Thermal Analysis

PROJECT CLIENT:	<b>YTT</b>
PROJECT NAME:	<b>Yakutat CHC</b>
PROJECT NO.:	<b>4562-16</b>
SAMPLE LOC.:	<b>TP5</b>
NUMBER/ DEPTH:	<b>S1 / 3' - 4'</b>
DESCRIPTION:	<b>Poorly-graded gravel w/ sand</b>
DATE RECEIVED:	<b>10/31/2016</b>
TESTED BY:	<b>JA</b>
REVIEWED BY:	<b>ACS</b>

% GRAVEL	<b>50.6</b>	USCS	<b>GP</b>
% SAND	<b>46.7</b>	USACOE FC	<b>NFS</b>
% SILT/CLAY	<b>2.7</b>	% PASS. 0.02 mm	<b>1.5</b>
% MOIST. CONTENT	<b>4.0</b>	% PASS. 0.002 mm	<b>N/A</b>
UNIFORMITY COEFFICIENT ( $C_u$ )		<b>28.3</b>	
COEFFICIENT OF GRADATION ( $C_c$ )		<b>0.7</b>	
ASTM D1557 (uncorrected)		<b>N/A</b>	
ASTM D4718 (corrected)		<b>N/A</b>	
OPTIMUM MOIST. CONTENT. (corrected)		<b>N/A</b>	

## PARTICLE SIZE ANALYSIS ASTM D422 / C136



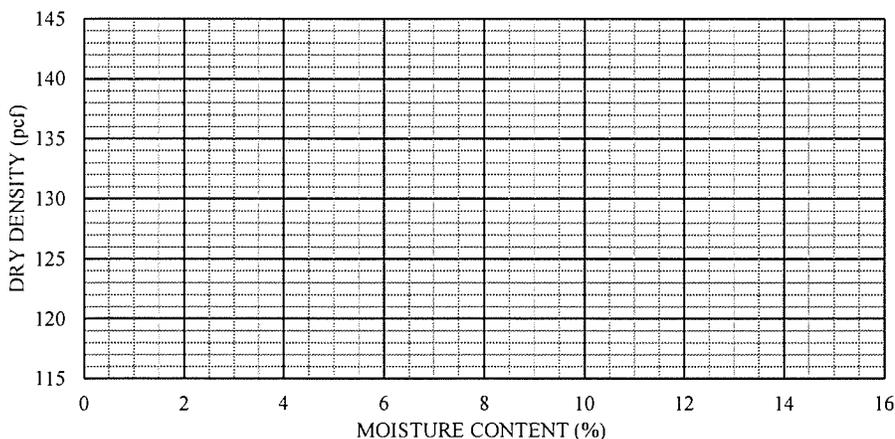
## SIEVE ANALYSIS RESULT

SIEVE SIZE (mm)	SIEVE SIZE (U.S.)	TOTAL % PASSING	SPECIFICATION (% PASSING)
76.20	3"	100	
38.10	1.5"	80	
19.00	3/4"	69	
12.70	1/2"	63	
9.50	3/8"	59	
4.75	#4	49	
2.00	#10	33	
0.85	#20	21	
0.43	#40	11	
0.25	#60	7	
0.15	#100	4	
0.075	#200	2.7	

## HYDROMETER RESULT

ELAPSED TIME (MIN)	DIAMETER (mm)	TOTAL % PASSING
0		
0.5		
1	0.0542	2.2
2	0.0387	2.1
4	0.0274	1.7
8	0.0195	1.4
15	0.0142	1.2
30		
60		
250		
1440		

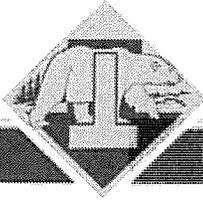
## MOISTURE-DENSITY RELATIONSHIP ASTM D1557



<b>HYDRAULIC COND.</b> (ASTM D2434)	<b>N/A</b>
<b>DEGRADATION</b> (ATM T-313)	<b>N/A</b>
<b>PLASTICITY INDEX</b> ASTM 4318	<b>N/A</b>

The testing services reported herein have been performed to recognized industry standards, unless otherwise noted. No other warranty is made. Should engineering interpretation or opinion be required, NGE-TFT will provide upon written request.

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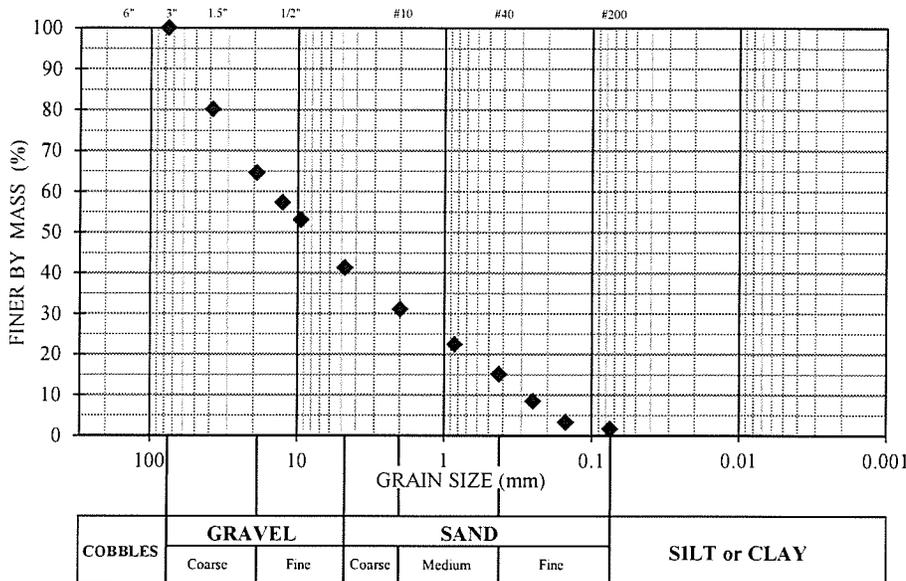
# NORTHERN GEOTECHNICAL ENGINEERING, INC. / TERRA FIRMA TESTING

Laboratory Testing   Geotechnical Engineering   Instrumentation   Construction Monitoring Services   Thermal Analysis

PROJECT CLIENT:	<b>YTT</b>
PROJECT NAME:	<b>Yakutat CHC</b>
PROJECT NO.:	<b>4562-16</b>
SAMPLE LOC.:	<b>TP6</b>
NUMBER/ DEPTH:	<b>S2 / 12' - 13'</b>
DESCRIPTION:	<b>Poorly-graded gravel w/ sand</b>
DATE RECEIVED:	<b>10/31/2016</b>
TESTED BY:	<b>JA</b>
REVIEWED BY:	<b>ACS</b>

% GRAVEL	<b>58.8</b>	USCS	<b>GP</b>
% SAND	<b>39.6</b>	USACOE FC	<b>N/A</b>
% SILT/CLAY	<b>1.6</b>	% PASS. 0.02 mm	<b>N/A</b>
% MOIST. CONTENT	<b>3.2</b>	% PASS. 0.002 mm	<b>N/A</b>
UNIFORMITY COEFFICIENT (C <sub>u</sub> )		<b>51.8</b>	
COEFFICIENT OF GRADATION (C <sub>c</sub> )		<b>0.8</b>	
ASTM D1557 (uncorrected)		<b>N/A</b>	
ASTM D4718 (corrected)		<b>N/A</b>	
OPTIMUM MOIST. CONTENT. (corrected)		<b>N/A</b>	

## PARTICLE SIZE ANALYSIS ASTM D422 / C136



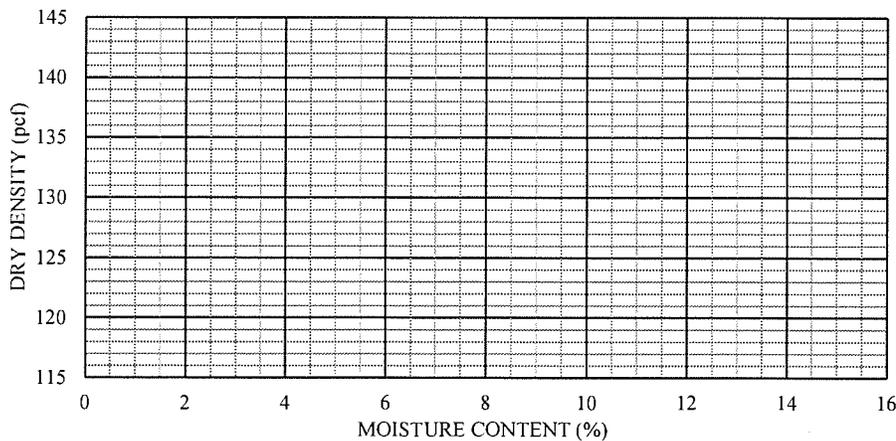
## SIEVE ANALYSIS RESULT

SIEVE SIZE (mm)	SIEVE SIZE (U.S.)	TOTAL % PASSING	SPECIFICATION (% PASSING)
76.20	3"	100	
38.10	1.5"	80	
19.00	3/4"	65	
12.70	1/2"	57	
9.50	3/8"	53	
4.75	#4	41	
2.00	#10	31	
0.85	#20	22	
0.43	#40	15	
0.25	#60	8	
0.15	#100	3	
0.075	#200	1.6	

## HYDROMETER RESULT

ELAPSED TIME (MIN)	DIAMETER (mm)	TOTAL % PASSING
0		
0.5		
1		
2		
4		
8		
15		
30		
60		
250		
1440		

## MOISTURE-DENSITY RELATIONSHIP ASTM D1557



<b>HYDRAULIC COND.</b> (ASTM D2434)	<b>N/A</b>
<b>DEGRADATION</b> (ATM T-313)	<b>N/A</b>
<b>PLASTICITY INDEX</b> ASTM 4318	<b>N/A</b>

The testing services reported herein have been performed to recognized industry standards, unless otherwise noted. No other warranty is made. Should engineering interpretation or opinion be required, NGE-TFT will provide upon written request.  
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## **APPENDIX C**

# **USGS SEISMIC SITE CLASSIFICATION REPORTS**

# Design Maps Summary Report

## User-Specified Input

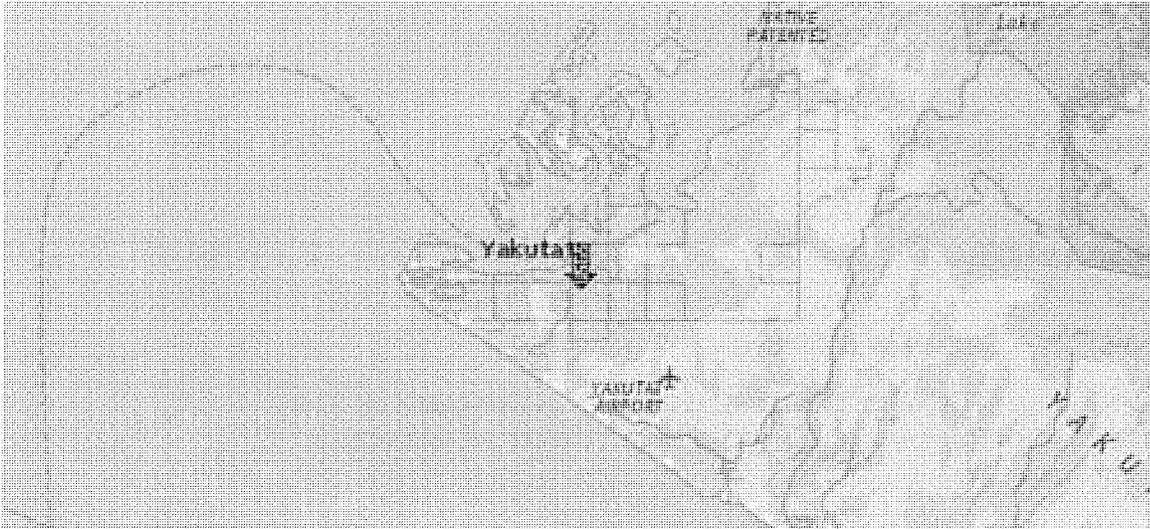
**Report Title** Yakutat Community Health Clinic  
Tue November 22, 2016 17:07:50 UTC

**Building Code Reference Document** 2012/2015 International Building Code  
(which utilizes USGS hazard data available in 2008)

**Site Coordinates** 59.54535°N, 139.72716°W

**Site Soil Classification** Site Class D – “Stiff Soil”

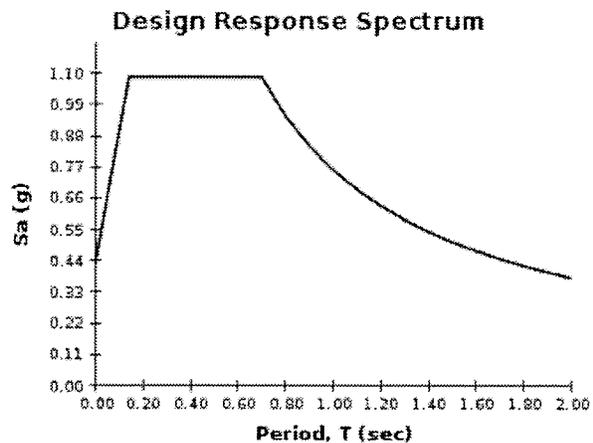
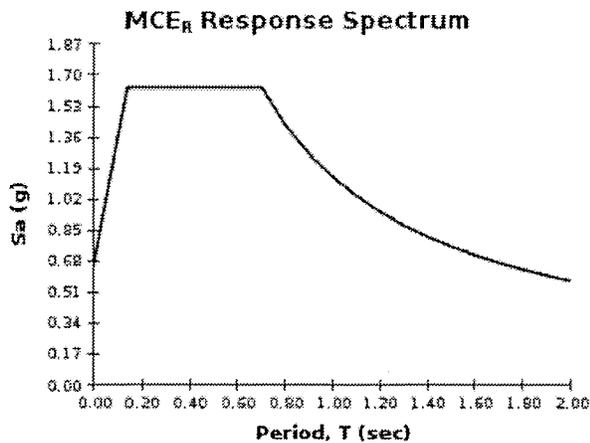
**Risk Category** I/II/III



## USGS-Provided Output

$S_s = 1.630 \text{ g}$	$S_{MS} = 1.630 \text{ g}$	$S_{DS} = 1.086 \text{ g}$
$S_1 = 0.760 \text{ g}$	$S_{M1} = 1.139 \text{ g}$	$S_{D1} = 0.760 \text{ g}$

For information on how the  $S_s$  and  $S_1$  values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the “2009 NEHRP” building code reference document.




**Design Maps Detailed Report**

2012/2015 International Building Code (59.54535°N, 139.72716°W)

Site Class D – “Stiff Soil”, Risk Category I/II/III

**Section 1613.3.1 — Mapped acceleration parameters**

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain  $S_s$ ) and 1.3 (to obtain  $S_i$ ). Maps in the 2012/2015 International Building Code are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 1613.3.3.

**From Figure 1613.3.1(4)**<sup>[1]</sup>

$S_s = 1.630 \text{ g}$

**From Figure 1613.3.1(5)**<sup>[2]</sup>

$S_i = 0.760 \text{ g}$

**Section 1613.3.2 — Site class definitions**

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class D, based on the site soil properties in accordance with Section 1613.

2010 ASCE-7 Standard – Table 20.3-1  
SITE CLASS DEFINITIONS

Site Class	$\bar{v}_s$	$\bar{N}$ or $\bar{N}_{ch}$	$\bar{s}_u$
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf
Any profile with more than 10 ft of soil having the characteristics: <ul style="list-style-type: none"> <li>• Plasticity index <math>PI &gt; 20</math>,</li> <li>• Moisture content <math>w \geq 40\%</math>, and</li> <li>• Undrained shear strength <math>\bar{s}_u &lt; 500</math> psf</li> </ul>			
F. Soils requiring site response analysis in accordance with Section 21.1	See Section 20.3.1		

For SI: 1ft/s = 0.3048 m/s 1lb/ft<sup>2</sup> = 0.0479 kN/m<sup>2</sup>

Section 1613.3.3 — Site coefficients and adjusted maximum considered earthquake spectral response acceleration parameters

TABLE 1613.3.3(1)  
VALUES OF SITE COEFFICIENT  $F_s$

Site Class	Mapped Spectral Response Acceleration at Short Period				
	$S_s \leq 0.25$	$S_s = 0.50$	$S_s = 0.75$	$S_s = 1.00$	$S_s \geq 1.25$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight-line interpolation for intermediate values of  $S_s$

**For Site Class = D and  $S_s = 1.630$  g,  $F_s = 1.000$**

TABLE 1613.3.3(2)  
VALUES OF SITE COEFFICIENT  $F_v$

Site Class	Mapped Spectral Response Acceleration at 1-s Period				
	$S_1 \leq 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 \geq 0.50$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	See Section 11.4.7 of ASCE 7				

Note: Use straight-line interpolation for intermediate values of  $S_1$

**For Site Class = D and  $S_1 = 0.760$  g,  $F_v = 1.500$**

**Equation (16-37):**  $S_{NS} = F_a S_s = 1.000 \times 1.630 = 1.630 \text{ g}$

---

**Equation (16-38):**  $S_{M1} = F_v S_1 = 1.500 \times 0.760 = 1.139 \text{ g}$

---

Section 1613.3.4 — Design spectral response acceleration parameters

**Equation (16-39):**  $S_{DS} = \frac{2}{3} S_{NS} = \frac{2}{3} \times 1.630 = 1.086 \text{ g}$

---

**Equation (16-40):**  $S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3} \times 1.139 = 0.760 \text{ g}$

---

Section 1613.3.5 — Determination of seismic design category

TABLE 1613.3.5(1)  
SEISMIC DESIGN CATEGORY BASED ON SHORT-PERIOD (0.2 second) RESPONSE ACCELERATION

VALUE OF $S_{DS}$	RISK CATEGORY		
	I or II	III	IV
$S_{DS} < 0.167g$	A	A	A
$0.167g \leq S_{DS} < 0.33g$	B	B	C
$0.33g \leq S_{DS} < 0.50g$	C	C	D
$0.50g \leq S_{DS}$	D	D	D

For Risk Category = I and  $S_{bs} = 1.086 g$ , Seismic Design Category = D

TABLE 1613.3.5(2)  
SEISMIC DESIGN CATEGORY BASED ON 1-SECOND PERIOD RESPONSE ACCELERATION

VALUE OF $S_{D1}$	RISK CATEGORY		
	I or II	III	IV
$S_{D1} < 0.067g$	A	A	A
$0.067g \leq S_{D1} < 0.133g$	B	B	C
$0.133g \leq S_{D1} < 0.20g$	C	C	D
$0.20g \leq S_{D1}$	D	D	D

For Risk Category = I and  $S_{D1} = 0.760 g$ , Seismic Design Category = D

Note: When  $S_i$  is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category  $\equiv$  "the more severe design category in accordance with Table 1613.3.5(1) or 1613.3.5(2)" = E

Note: See Section 1613.3.5.1 for alternative approaches to calculating Seismic Design Category.

References

1. Figure 1613.3.1(4): [http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1\(4\).pdf](http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(4).pdf)
2. Figure 1613.3.1(5): [http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1\(5\).pdf](http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(5).pdf)





TAB D  
ENVIRONMENTAL DETERMINATION  
SHPO



**INDIAN HEALTH SERVICE  
ALASKA AREA NATIVE HEALTH SERVICE**

**ENVIRONMENTAL REVIEW AND DETERMINATION**

*Yakutat Tlingit Tribe, Joint Venture Health Clinic  
Yakutat, Alaska*

*September 2016*

**Background**

The Yakutat Tlingit Tribe (YTT) proposes to construct a new community health clinic under the Indian Health Service (IHS) Joint Venture Construction Program. The YTT will obtain construction funding from the U.S. Department of Agriculture (USDA), Health Resources and Services Administration (HRSA), and other funding sources. The IHS will provide staffing funds once the clinic is constructed. The Yakutat Community Clinic will be an approximately 10,000 square-foot health clinic on a new 2.5-acre site. Land will be conveyed from the Yakutat City Borough to YTT for the purpose of developing the new clinic.

**Environmental Issues**

Environmental concerns were addressed in consultation with local, State, and Federal authorities and agencies. The environmental review indicates that the following stipulations and mitigations apply to this project.

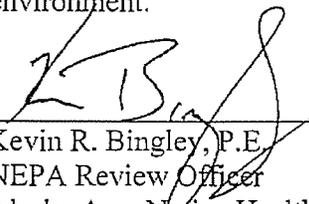
1. As the project is anticipated to disturb more than one acre of land, a Notice of Intent for permit coverage under the National Pollutant Discharge Elimination System (NPDES) Stormwater Program must be submitted to the Alaska Department of Environmental Conservation (ADEC) and the corresponding Storm Water Pollution Prevention Plan (SWPPP) followed during construction.
2. Project activities that may result in runoff entering waters of the U.S. or wetlands will require a jurisdictional determination and Section 404 Permit from the U.S. Army Corps of Engineers.
3. Dispose of construction waste at the Yakutat Landfill or other ADEC permitted solid waste facility. Coordinate use of the landfill with the landfill operator.
4. If the project will require excavation dewatering, an ADEC Excavation Dewatering General Permit will be required.
5. Follow U.S. Fish and Wildlife Service's (USFWS) Construction Advisory for Protecting Migratory Birds, and if an eagle's nest is observed within 660 feet of the project area during construction, notify the IHS.
6. Construction activities that include vegetation clearing must comply with the Migratory Bird Treaty Act (MBTA) by adhering to the USFWS's land clearing timing guidance for Alaska located at <http://www.fws.gov/alaska/mbp/mbm/index.htm> ("Construction Advisory for Protecting Migratory Birds PDF").
7. Land exposed during construction must be revegetated or covered with coarse fill to prevent erosion of soil and sedimentation of down-gradient water bodies, and other control measures for preventing storm water pollution, such as installing straw wattles and silt fencing around storm water conveyances, must be implemented as needed.

8. If hazardous wastes or petroleum products are discovered or spilled during construction, construction must stop and the contamination must be reported to ADEC's Spill Prevention and Response (SPAR) and the IHS.

**Finding**

The record was reviewed to identify potential extraordinary or exceptional circumstances, which would invalidate the categorical exclusion. Based on the review, no extraordinary or exceptional circumstances exist which would require an Environmental Assessment. In accordance with the Department of Health and Human Services policies and procedures in General Administration Manual, Part 30, the Council on Environmental Quality regulations at 40 CFR 1500-1508, and procedures the IHS published in the Federal Register for Categorical Exclusion (I) (58 Fed. Reg. 569-01, 571 (January 6, 1993)), the proposed project belongs to a category of actions which normally do not significantly impact the human environment and is excluded from further environmental review. Stipulations and mitigations noted under 'Environmental Issues' must be completed.

In the event of an unforeseen discovery, the YTT has agreed to stop construction activity in the area of the discovery and to notify the appropriate authority and the IHS. In addition, the YTT must notify the appropriate authority and the IHS if a change in the project or project scope occurs which could change this environmental determination or could adversely impact the environment.

  
\_\_\_\_\_  
Kevin R. Bingley, P.E.  
NEPA Review Officer  
Alaska Area Native Health Service

9/11/16  
\_\_\_\_\_  
Date

<b>Yakutat Community Health Clinic</b>	
<b>Scope of Review</b>	The Yakutat Tlingit Tribe (YTT) will vacate the leased space used to operate the Yakutat Community Clinic and construct a new ~10,000 square-foot health clinic at a new site in Yakutat, Alaska, through the Indian Health Service (IHS) Joint Venture Construction Program.
Considerations	
	Basis for Determination with Documentation
1. Will the proposed action result in a known violation or continuance of a violation of applicable (Federal, Tribal, State or local) laws or requirements for protection of environment or public health and safety?	NO. The proposed project will be in compliance with all applicable laws and requirements and will have the appropriate regulatory approvals. All actions will be in accordance with the Indian Health Service design and sustainability guidelines, the State of Alaska DEC, and subject to the State of Alaska Fire Marshal as the Authority having Jurisdiction.
2. Will the proposed action result in a conflict with existing or proposed federal, Tribal, state, and local land use plans?	NO. The Joint Venture Clinic is a nationally competitive federal program. Approval for the Tribe to apply to participate was authorized by Tribal Resolution 2014-16. Formal invitation and notice to proceed from the federal government was authorized in a September 18, 2015 letter from IHS to YTT. The site selected for the clinic is owned by The Yakutat City-Borough. Approximately 3.5 acres is being conveyed to the Tribe specifically for this project and was selected because of the location, access to utilities, and suitable soil for building. The proposed project aligns with the long range land use plans for the community of Yakutat and YTT.
3. Is there a controversy with respect to environmental effects of the proposed action based on reasonable and substantial issues?	NO. Two public hearings were conducted to gather input from the community. Five sites were initially identified and two were selected for consideration based on the community's input. There were no objections to the top two sites selected.
4. Is the proposed action significantly greater in scope than normal for the area or does it have significant unusual characteristics?	NO. The proposed builds and staffs a Joint Venture Clinic. This project is typical in scope for the IHS Facilities program. The clinic will be built according to the IHS design and sustainability standards including LEED (Leadership in Energy and Environmental Design) certification.
5. Does the proposed action establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?	NO. The proposed project will not result in any cumulative impacts that will result in degradation of environmental concerns as outlined in NEPA.
6. Does the proposed action have significant adverse direct or indirect effects on park land, other public lands, or areas of recognized scenic or recreational value?	NO. The Borough of Yakutat is located near numerous protected areas of Chugach National Forest, Glacier Bay National Park, Glacier Bay Wilderness, Tongass National Forest, Wrangell-St. Elias National Park and Preserve, Wrangell-Saint Elias Wilderness, and the Russell Fjord Wilderness. The proposed project is within the established boundaries of the community and will not adversely affect any of the protected lands.  -National Wildlife Refuge ( <a href="http://alaska.fws.gov/nwr/map.htm">http://alaska.fws.gov/nwr/map.htm</a> ) -USDOI NPS ( <a href="http://www.nps.gov/state/ak/">http://www.nps.gov/state/ak/</a> ) -Alaska Department of Natural Resource Division of Parks and Outdoor Recreation, Individual State Parks ( <a href="http://www.dnr.state.ak.us/parks/units/index.htm">http://www.dnr.state.ak.us/parks/units/index.htm</a> )

7. Does the proposed action include construction of a new municipal solid waste landfill at a new solid waste disposal site?	NO. This project does not address the need for constructing a new municipal solid waste landfill.
8. Will the proposed action create a need for additional capacity at solid waste disposal facilities?	NO. Yakutat has a Class III Solid Waste Landfill permitted by the State of Alaska. Recycling of construction debris will be used in order to meet the requirements of the LEED certification. Operation of the clinic is not expected to create or increase any significant additional solid waste disposal.
9. Does the proposed action include construction of a new wastewater treatment facility that will discharge treated sewage effluent to the waters of the U.S.	NO. The project does not include the construction of a new wastewater treatment facility.
10. Will the proposed action create a need for additional capacity at wastewater treatment facilities?	NO. The new clinic will replace the existing community clinic. Increased capacity for wastewater treatment is not needed.
11. Will the proposed action create a need for additional capacity in the drinking water supply?	NO. The new clinic will replace the existing community clinic. Increased capacity for drinking water is not needed.
12. Are there other considerations about the proposed action that could adversely affect the environment and/or public health and safety?	NO. The proposed project will not adversely affect the environment and/or public health and safety. Building materials will be consistent with those that are standard for rural Alaska health care clinics. This project will result in a positive impact to public health by improving the quality of health care available to the residents of Yakutat.
13. Will the proposed action create a need for additional capacity in health care facilities and for health care services?	NO. The project will provide additional capacity for Yakutat's health care program by constructing a new health care facility. The new clinic is designed to meet the health care needs of the residents of Yakutat.
14. Will the proposed action create a need for additional energy supply or generation?	NO. The construction and operation of the proposed clinic will not create a need for additional energy supply or generation as adequate energy generation exist in the existing electrical grid. The proposed clinic is expected to use less energy than the existing clinic as IHS sustainability and LEED standards will be employed in the design and construction of the facility. Additionally, the project will be looking at possible renewable energies to meet federal and LEED guidelines.
15. Will the proposed action create a need for additional capacity in educational facilities?	NO. This project is not anticipated to increase the need for educational facilities as the population of Yakutat is not anticipated to change as a result of this project.
16. Will the proposed action create a need for additional capacity in transportation systems?	NO. Yakutat is a small community with a very limited closed road system. The proposed project will not create a need for any additional transportation or transportation systems. The project will use existing roads during construction and clinic operation.

<p>17. Historic Preservation: a. Does the proposed action involve the purchase, construction, alteration, renovation, or lease of a building or portion of a building that is more than 50 years old?</p>	<p>No. Consultation with the Alaska SHPO concluded on 8/23/16. The consultation found that the project will have no effect on historic structures.</p>
<p>b. Will the proposed action adversely affect properties listed, or eligible for listing, on the National Register of Historic Places?</p>	<p>No: Consultation with the Alaska SHPO concluded on 8/23/16. The project's effects on the following historic properties were reviewed: Yakutat and Southern Railroad Historic District (YAK-00041), Yakutat Landing Field (YAK-00072), 28<sup>th</sup> Engineer Road (YAK-00117), and Infantry Road (YAK-00118). The review found that No Adverse Effect is anticipated. The locations reviewed for effect include the site of the proposed clinic, as well as the borrow sites located at the 1) eastern side of Orca Avenue, 2) north side of Airport Road, and 3) east of Dangerous Ridge Road.</p>
<p>18. Endangered Species Act: Is the proposed action likely to adversely affect a plant or animal species listed on the Federal or applicable state list of endangered or threatened species or a specific critical habitat of an endangered or threatened species?</p>	<p>No. The community of Yakutat is located near the coast and not in the vicinity of any known endangered species or critical habitats. However, the USFWS' Information for Planning and Conservation (IPaC) tool (accessed 2/24/2016) indicates birds protected under the Migratory Bird Treaty Act (MBTA) may occur in the vicinity of the project area, which include Arctic Tern, Bald Eagle, Black Oystercatcher, Fox Sparrow, Kittlitz's Murrelet, Lesser Yellowlegs, Marbled Godwit, Olive-sided Flycatcher, Pink-footed Shearwater, Fufous Hummingbird, Short-billed Dowitcher, and Short-eared Owl. If construction activities should require vegetation clearing, to ensure compliance with the MBTA, construction will follow the USFWS' s land clearing timing guidance for Alaska located at <a href="http://www.fws.gov/alaska/mbsp/mbm/index.htm">http://www.fws.gov/alaska/mbsp/mbm/index.htm</a> ("Construction Advisory for Protecting Migratory Birds PDF").</p>
<p>19. Will the proposed action require major sedimentation and erosion control measures?</p>	<p>(<a href="http://alaska.fws.gov/fisheries/endangered/listing.htm">http://alaska.fws.gov/fisheries/endangered/listing.htm</a>) – Alaska Region Endangered Species Listing. NO. Soil exposed during construction will be revegetated or covered with coarse fill to prevent soil erosion and sedimentation of receiving water bodies. Other erosion control measures, such as installing straw wattles around storm drains, will be implemented as needed in accordance with LEED certification requirements and IHS A/E Design Guidelines.</p>
<p>20. Will the proposed action violate a storm water permit or a wastewater discharge permit either for construction or on-going operations?</p>	<p>No. The proposed project will disturb approximately 2 acres of land and will require submittal of a notice of intent (NOI) for coverage under ADEC's 2016 storm water permit for construction activities permit and prepare a Storm Water Pollution Prevention Plan (SWPPP).  Construction activities are not located close to any drinking water wells, water treatment systems, or wastewater treatment systems.</p>
<p>21. Safe Drinking Water Act: Will the proposed action impact an EPA designated sole source aquifer?</p>	<p>No. Currently there are no designated sole source aquifers in Alaska. (<a href="http://cfpub.epa.gov/safewater/sourcewater/sourcewater.cfm">http://cfpub.epa.gov/safewater/sourcewater/sourcewater.cfm</a>)</p>

<p>22. Wetlands and Water Resources (lakes, rivers, ponds, streams, etc.): Will the proposed action violate a Section 404 (Clean Water Act) permit for actions in a wetland and/or Section 10 (Rivers and Harbors Act) permit for actions in a stream or river?</p>	<p>No. A review of the USFWS Wetland Online Mapper (accessed 05/05/16) indicates that no estuarine, marine and freshwater wetlands exist at the proposed project location. A wetland delineation was completed in August 2016, which found that the site consists of upland vegetation and hydric soils. A small lower portion, 0.36 acres, of the site contained standing water after several days of rain, but the soil and vegetation profile matched the upland section and did not match a wetland profile.</p>
<p>23. Floodplains: a. Is the proposed action located in either a 100-year or, for critical actions, a 500-year floodplain? (If Flood Insurance Rate Maps do not exist for the project site, a floodplain survey or consultation may be required. Also may need to consider if the facility will require flood insurance).</p>	<p>If wetlands are found to exist and will be impacted by the project (directly or through runoff), then a jurisdictional determination and Section 404 Permit from the U.S. Army Corps of Engineers (USACE) are required. NO. Based on the USACE Floodplain Data, no known flooding has occurred in Yakutat and at the site for the new clinic. The USACE also identifies potential erosion areas in the Yakutat region; none which occurs in the vicinity of the proposed site (map from report attached).  (<a href="http://www.poa.usace.army.mil/About/Offices/Engineering/FloodplainManagement.aspx">http://www.poa.usace.army.mil/About/Offices/Engineering/FloodplainManagement.aspx</a>)</p>
<p>b. Will the proposed action adversely impact flood flows in a floodplain or support development in a floodplain?</p>	<p>NO. The project will not occur within a floodplain.</p>
<p>24. Existing site: Would the proposed action involve the purchase, construction or lease of new facilities (including portable facilities and trailers), substantially increase the capacity of an existing health care facility?</p>	<p>The existing health clinic leases approximately 4,100sf of building space in an existing 8,200sf building which they will vacate and turn back to the owner. The new clinic will provide a needed increase capacity in the health care available to the residents to Yakutat in order to meet present and projected future demand through 2025.</p>
<p>25. New site: Does the proposed action involve purchase, construction, or lease of new facilities (including portable facilities and trailers) where such action is for buildings equal to or more than 12,000 square feet (1080 square meters) of useable space when more than 5 acres (2 hectares) of surface land area are involved at a new site?</p>	<p>NO. The proposed facility will be approximately 10,000 square-feet with a proposed lot of less than 2 acres at a different site near the existing health clinic.</p>
<p>26. New site: Does the proposed action involve purchase, construction, or lease of health care facilities (other than buildings) for projects equal to or more than 5 acres (2 hectares) of surface land area at a new site?</p>	<p>NO. The proposed facility will be constructed at an existing clinic site and be approximately 10,000 square-feet with a proposed lot of less than 2 acres.</p>

<p>27. Does the proposed action involve the sale or transfer of real property, on which any hazardous substance was stored for one year or more, known to have been released, or disposed of? (Provide relevant documentation for any hazardous substance releases. See 40 CFR 373.2(b), 302.4, and 261.30 for reportable quantities.)</p>	<p>NO. There are no known hazardous materials either stored or released on the proposed site. The site has not been previously used for commercial or private development.</p>
<p>28. Does the proposed action involve the sale or transfer of real property, on which underground or above ground storage tanks are located?</p>	<p>NO. The proposed project does not involve the sale or transfer of real property on which storage tanks are located. The site has not been previously used for any commercial or private development. The ADEC UGST Database Facility Search does not reveal any UST at the proposed location.</p>
<p>29. Will the proposed action violate Tribal, local, state, or federal law on the use and storage of hazardous substances or the transportation, storage, and disposal of hazardous wastes or medical wastes? (Activities that may generate reportable quantities include air conditioning repair and service, pesticide application, motor pools, automobile repair, welding, landscaping, agricultural activities, print shops, hospitals, clinics, &amp; medical centers. Repair, renovation, or demolition activities can generate waste that has asbestos-containing materials, asbestos, lead-based paint, PCBs, CFCs, etc.)</p>	<p>No. The proposed project will not violate local, state, or federal law on the use and storage of hazardous substances or transportation, storage, and disposal of hazardous wastes or medical wastes. All medical wastes from the operation of the clinic will be disposed of in accordance with local, state, and federal laws. The space currently utilized for existing health clinic will be vacated for the owner to repurpose.</p>
<p>30. Will the proposed action adversely affect community air pollution for a long period of time?</p>	<p>No. 18AAC50, Air Quality Control, Alaska Department of Environmental Conservation. This project is not located in an area subject to the conformity rule per the State of Alaska Implementation Plan.</p>
<p>31. If the proposed action is implemented, will it have a disproportionately high and adverse human health or environmental impact on the Tribe, low-income populations, or minority populations?</p>	<p>No. This project will benefit the health and environment for the tribe and the community as a whole by increasing access of health care services.</p>
<p>32. Will the proposed action adversely affect community noise levels?</p>	<p>No. The Project Manager will ensure community noise levels are not adversely affected with no blasting and limiting heavy equipment usage to daytime (10) hours.</p>

33. Wilderness Act: Will the proposed action adversely impact a Wilderness Area?	No. This site is not located in a wilderness area in Alaska. Database accessed 2/24/16.  ( <a href="http://www.wilderness.net/index.cfm?fuse=NWPS">http://www.wilderness.net/index.cfm?fuse=NWPS</a> )
34. Farmland Protection Policy Act: Will the proposed action convert significant agricultural lands to non-agricultural uses and exceed 160-point score on the farmland impact rating?	No. There are no Prime or Unique farmlands in the State of Alaska. Further, there are no Farmlands of Statewide Importance.  ( <a href="http://www.ak.nrcs.usda.gov/technical/soils/soilslocal.html">http://www.ak.nrcs.usda.gov/technical/soils/soilslocal.html</a> )
35. Coastal Zone Management Act: Will the proposed action directly affect a Coastal Zone in a manner inconsistent with the State Coastal Zone Management Plan?	No. The Alaska Coastal Management Program no longer exists as of July 1, 2011.  Alaska Coastal Zone and Coastal District boundaries, National Oceanic and Atmospheric Administration, June 2005. ( <a href="http://www.alaskacoast.state.ak.us">www.alaskacoast.state.ak.us</a> )
36. Wild and Scenic Rivers Act: Will the proposed action affect a wild, scenic, or recreational river area or create conditions inconsistent with the character of the river? (A consideration for activities that are in or near any wild and scenic waterway including construction of stream/river crossings, intake structures, outfalls, etc.)	No. This project is not a "Water Resource Project" that will impact a wild, scenic, or recreational river, hence will not create conditions that are inconsistent with the character of the river.  ( <a href="http://www.rivers.gov/index.php">http://www.rivers.gov/index.php</a> )



THE STATE  
of **ALASKA**  
GOVERNOR BILL WALKER

**Department of Natural Resources**

DIVISION OF PARKS & OUTDOOR RECREATION  
Office of History & Archaeology

550 West 7<sup>th</sup> Ave., Suite 1310  
Anchorage, Alaska 99501-3565  
Main 907.269.8721  
<http://dnr.alaska.gov/parks/oha>

June 28th, 2016

File No.: 3130-1R IHS  
2016-00927

Kevin Bingley  
Alaska Area Native Health Service  
4141 Ambassador Dr., Suite 300  
Anchorage, AK 99508-5928

SUBJECT: Joint Venture Construction Program (JVCP), Construction of New Health Clinic, Yakutat Tlingit Tribe, Yakutat

Dear Mr. Bingley:

The Alaska State Historic Preservation Office (AKSHPO) received your correspondence on June 17<sup>th</sup>, 2016. Upon review, we are unable to concur at this time. We offer the following comments:

1. The finding of effect provided (no historic properties affected) does not take into consideration the potential effects to the Historic District as a whole (YAK-00072). Generally, if a project is encompassed by the boundaries of a historic property we recommend that the agency address whether the disturbance, alteration, or addition proposed would or would not have an 'adverse effect' on the historic property.
2. The project involves construction of a 10,000 square foot clinic. It is unclear based on the scope of work provided whether this will involve any of the following:
  - a. Demolition of existing buildings.
  - b. Ground-disturbing activities in previously undeveloped areas.
  - c. Utility connections.
  - d. Use of a material source.
3. The potential to affect previously unidentified archaeological resources was not addressed in the provided documentation.

Please provide further information pertaining to the above mentioned considerations. We look forward to reviewing it once available. Thank you for the opportunity to comment and review. Please contact McKenzie Johnson at 269-8726 or [mckenzie.johnson@alaska.gov](mailto:mckenzie.johnson@alaska.gov) if you have any questions or if we can be of further assistance.

Sincerely,

A handwritten signature in blue ink, appearing to read "Judith E. Bittner".

Judith E. Bittner  
State Historic Preservation Officer

JEB: msj





Alaska Area Native Health Services  
4141 Ambassador Drive  
Anchorage, Alaska 99508-5928

FINDINGS OF SECTION 306108 REVIEW

TO: Judith Bittner, SHPO  
DNR/Division of Parks and Outdoor Recreation  
Office of History and Archaeology  
550 West 7<sup>th</sup> Avenue, Suite 1310  
Anchorage, Alaska 99501

June 17, 2016

The Indian Health Service (IHS) is proposing a Joint Venture Construction Program (JVCP) project for Yakutat, Alaska. For this project, the IHS is the Lead Federal Agency and the U.S. Department of Agriculture is a cooperating agency. Additionally, the Health Resources and Services Administration (HRSA) is funding a portion of the clinic's construction. The authorized IHS Official is Kevin Bingley (907.729.3610; Kevin.Bingley@ihs.gov).

SCOPE OF UNDERTAKING: The Yakutat Tlingit Tribe (YTT) will vacate the leased space used to operate the Yakutat Community Clinic and construct an approximately 10,000 square-foot health clinic on a new 2.5-acre site. Land will be conveyed from the Yakutat City Borough to the Yakutat tribe for the purpose of developing the new clinic. The USDA will provide funds for construction and the IHS is providing funding for the staffing of the new clinic.

AREA OF POTENTIAL EFFECT (APE): A map of the APE is attached for review.

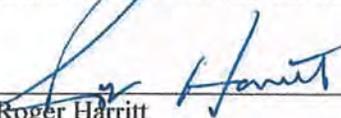
APE SITE REVIEW: The following sites are located in the APE and reviewed for effect.

Site No.	AHRS ID	Site Name	Age	Description
1	YAK-00041	Yakutat and Southern Railroad Historic District	1940-1971	Associated with the cannery operation in Yakutat. The district includes a cannery building, the original Lima engine and the tender, ballast dump cars, flat bed/stake cars, fish loading facilities, a maintenance complex, rail alignments, several engines, cars and bridges, a pile driver, the Situk trestle, wheel sets, 3 turntables and a storage shed. The district area is an eleven-mile-long corridor, that extends from the Yakutat town site to Johnson's Slough at the mouth of the Situk River, and a mile-long spur at Lost River. The district has been determined to be eligible for the NRHP (DOE-K).
2	YAK-00072	Yakutak Landing Field	1940-1946	This site is a polygon delineating an auxiliary airfield and staging area, including two 7400' runways for pursuit and bombardment planes traveling between Alaska and the lower 48 states. Significance of the site complex is its association with the Aleutian Campaign of WWII. Facilities included in the site complex are a dock and wharfage including a warehouse, and a minor naval air facility with a <u>seaplane ramp at Monti Bay</u> . Also included are living quarters, barracks, a mess hall, operations building, storage, radio communications facilities, hangars. Contributing sites include YAK-00091, and YAK-00092. Determined to be eligible for the NRHP (DOE-S).
3	YAK-00117	28 <sup>th</sup> Engineer Road	WWII?	Associated with the Yakutat Landing Field, YAK-00072.
4	YAK-00118	Infantry Road	WWII?	Associated with the Yakutat Landing Field, YAK-00072

Roger Harritt, Cultural Resources Manager, ANTHC, reviewed relevant literature and other material as a basis for making a determination of the effects of this project on the cultural resources in the vicinity of the project APE.

**AGENCY FINDINGS: No Historic Properties Affected.** The project APE is an undeveloped area that abuts the west side of the Yakutat/Airport Road, YAK-00117, south of the core area of the community. No adverse effects are anticipated to the YAK-00117 road alignment as a result of the proposed project. Although it is within the YAK-00072 site polygon, the location was not developed in conjunction with the installations of the WWII facilities in the vicinity, and therefore no effects to the Yakutat Landing Field site is anticipated as a result of the proposed project. The proposed clinic location is approximately 50m south of the YAK-00041 site polygon, and 100m north of YAK-00118.

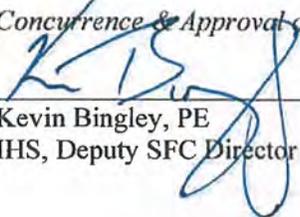
In compliance with Section 306108 of the National Historic Preservation Act (54 U.S.C. 306108; 16 USC 470f) and 36CFR§800, the IHS, has completed a Historical Property review for this undertaking. The finding applies only to the undertaking as defined under this notification and any changes to the undertaking will require further Section 306108 Review in accordance with 36CFR§800.4. SHPO has 30 days after receipt of this letter to complete a review and provide comments. If no comments are received, then the IHS will assume concurrence and proceed with project planning and implementation without further SHPO consultation. In the event of a discovery, all construction activities will cease in the immediate area of the finds pending further consultations between the IHS, Alaska SHPO, and the Tribe.

  
\_\_\_\_\_  
Roger Harritt  
Cultural Resources Manager, ANTHC

6/17/2016  
\_\_\_\_\_  
Date

SHPO Concurrence:

Concurrence & Approval of Finding:

  
\_\_\_\_\_  
Kevin Bingley, PE  
IHS, Deputy SFC Director

6/17/16  
\_\_\_\_\_  
Date



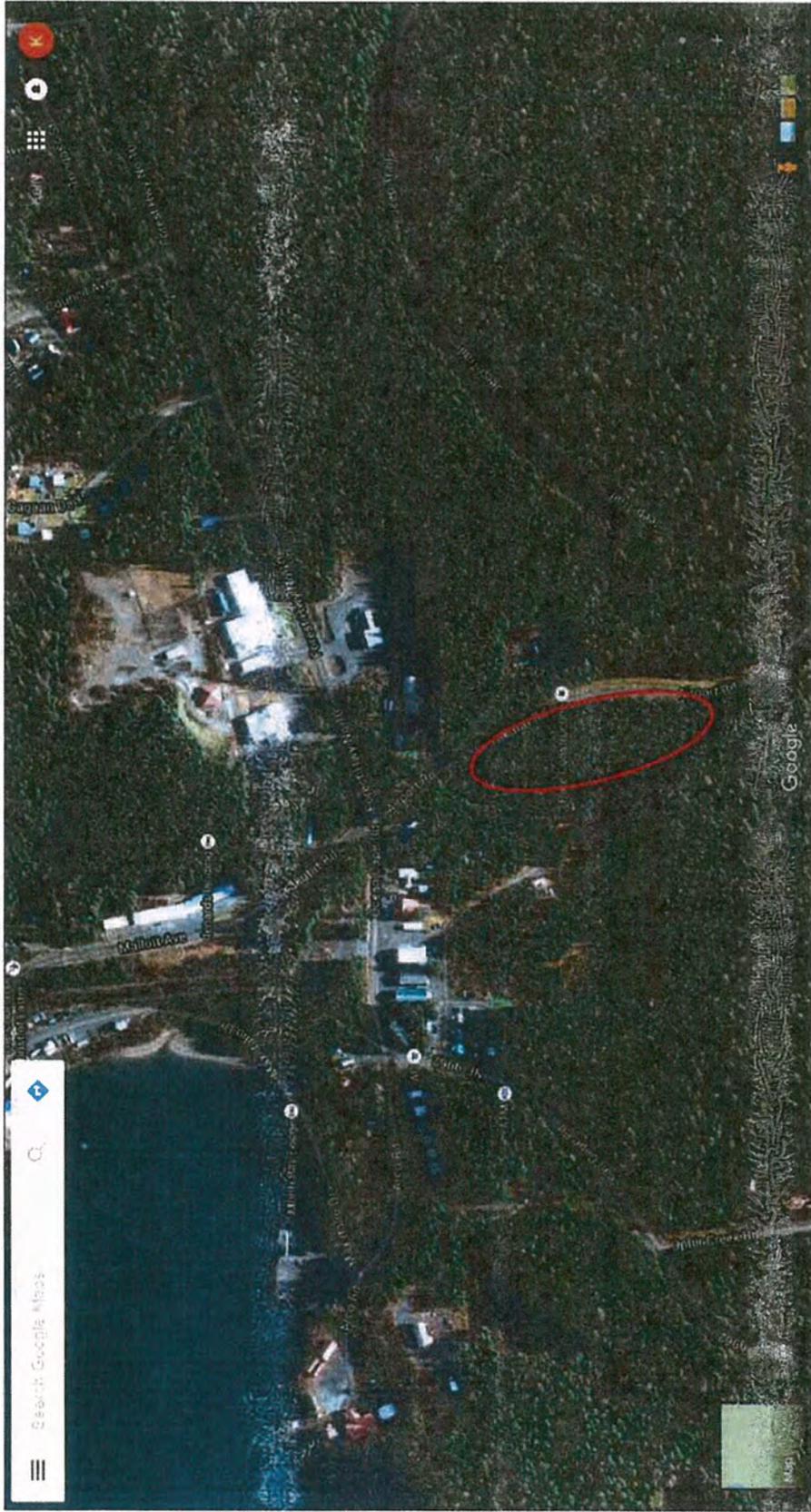


Figure 2. Yakutat, proposed location of the new health clinic, in a 3.5-acre area south of the community core area.

**SECTION 306108 REVIEW  
WITH THE YAKUTAT TLINGIT TRIBE (YTT)  
AND  
INDIAN HEALTH SERVICE (IHS)**

The IHS is proposing the following project in Yakutat, Alaska for the new clinic development project.

**SCOPE OF UNDERTAKING:** The Yakutat Tlingit Tribe (YTT) will vacate the leased space used to operate the Yakutat Community Clinic and construct a new approximately 10,000 square-foot health clinic on a new 2.5-acre site. Land will be conveyed from the Yakutat City Borough to YTT for the purpose of developing the new clinic. The U.S. Department of Agriculture (USDA) will provide funds for construction and the IHS is providing funding for the staffing of the new clinic.

**AREA OF POTENTIAL EFFECT (APE):** The Preliminary APE, as created through tribal cooperation, is detailed below. A Preliminary APE map is attached for review

**APE SITE REVIEW:** The following sites have been identified in the Preliminary APE.

Site No.	AHRS ID	Site Name	Age	Description
1	YAK-00041	Yakutat and Southern Railroad Historic District	1940-1971	Associated with the cannery operation in Yakutat. The district includes a cannery building, the original Lima engine and the tender, ballast dump cars, flat bed/stake cars, fish loading facilities, a maintenance complex, rail alignments, several engines, cars and bridges, a pile driver, the Situk trestle, wheel sets, 3 turntables and a storage shed. The district area is an eleven-mile-long corridor that extends from the Yakutat town site to Johnson's Slough at the mouth of the Situk River, and a mile-long spur at Lost River. The district has been determined to be eligible for the NRHP (DOE-K).
2	YAK-00072	Yakutat Landing Field	1940-1946	This site is a polygon delineating an auxiliary airfield and staging area, including two 7400' runways for pursuit and bombardment planes traveling between Alaska and the lower 48 states. Significance of the site complex is its association with the Aleutian Campaign of WWII. Facilities included in the site complex are a dock and wharfage including a warehouse, and a minor naval air facility with a <u>seaplane ramp at Monti Bay</u> . Also included are living quarters, barracks, a mess hall, operations building, storage, radio communications facilities, hangars. Contributing sites include YAK-00091, and YAK-00092. Determined to be eligible for the NRHP (DOE-S).
3	YAK-00117	28 <sup>th</sup> Engineer Road	WWII?	Associated with the Yakutat Landing Field, YAK-00072.
4	YAK-00118	Infantry Road	WWII?	Associated with the Yakutat Landing Field, YAK-00072

**PRELIMINARY FINDING:**

*NO impact is anticipated to historic or cultural resources*

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In compliance with Section 306108 of the National Historic Preservation Act (54 USC 306108) and 36CFR§800, the IHS has initiated a Historical Property review for this project. The effect on cultural, spiritual, and historical properties as anticipated by the IHS representative and the tribe is outlined above. The IHS is documenting the above finding as preliminary consultation with the tribe. These findings apply only to the project as defined under the Scope of Undertaking, and any changes to the project will require further Section 306108 Review in accordance with 36 CFR 800.4. In the event of a discovery, all construction activities will cease in the immediate area of the finds pending further consultations between the IHS, Alaska SHPO, and the Tribe.

IHS Representative:

Name: [Signature]  
Title: SA Deputy Director - AANHS  
Date: 6/17/16

Tribal Representative:

Name: [Signature]  
Title: President  
Date: 6-15-2016

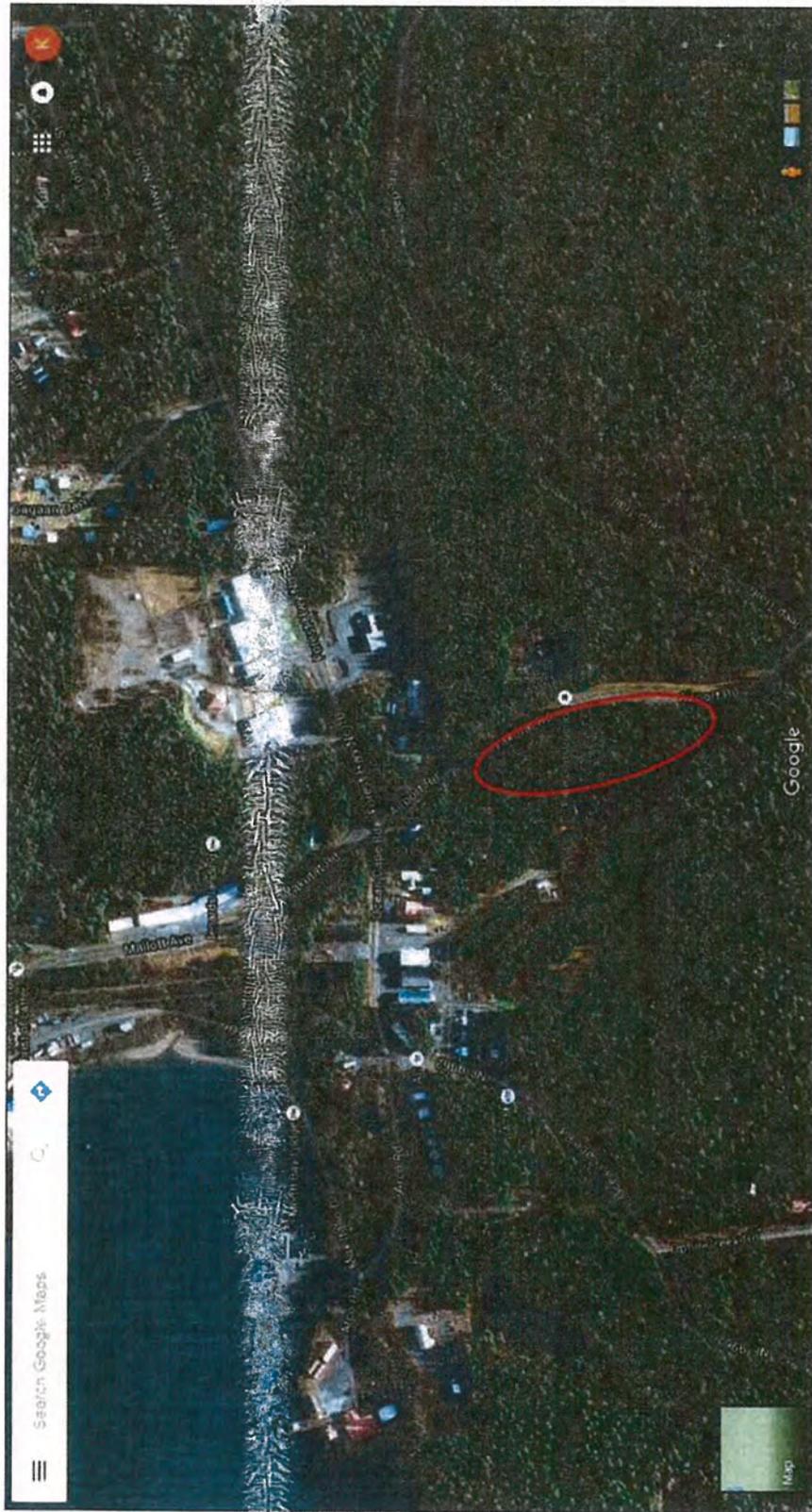


Figure 1. Yakutat, proposed location of the new health clinic, in a 3.5-acre area south of the community core area.





# TAB E

## WETLAND DELINEATION REPORT



# **Wetland Delineation Report for Yakutat Tlingit Tribe/IHS Joint Project - Yakutat, AK**



**Bosworth Botanical Consulting**

August 2016

**For:**

**Gail Dabaluz**

**S'eenakw'**

**Executive Director**

**Yakutat Tlingit Tribe**

**PO Box 418 • Yakutat, Alaska 99689**

**• T: 907.784.3238, Ext. 102 • F: 907.784.3595**

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## Methods

### Climate

The Yakutat project area was visited for mapping and delineation on July 29, 2016. The weather at that time was overcast and warm with temperatures in the high 50's and low 60's F°. Rainfall for the 6 days before the field visit was heavy - a total of 6.7 inches. Geotechnical studies of the project area were done October 27-28, 2016. Rainfall for the week before the geotechnical studies were done was approximately 5 inches.

### Wetland Field Methods

Wetlands areas were mapped using the "triple parameter" method described in the U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987) as supplemented by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region - November 2007*. Wetlands are required to have a prevalence of wetland hydrology, hydric soils, and hydrophytic vegetation. Jurisdictional wetlands are determined when positive indicators of all of these three criteria are present. The "routine determination delineation" methodology was used. The wetland boundaries and classifications described herein represent best professional opinion.

Sample points were done at either side of any significant changes in vegetation, soils or hydrology. At each sample point, the wetland status of that point was determined by observing indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. Once representative sample points were done further wetland boundaries were marked with a GPS waypoint.

### *Vegetation*

Sample plot vegetation was divided into three strata; tree, shrub, and forb, and each layer was classified using the prevalence index (a weighted-average wetland indicator status of all plant species in the sample plot) and the dominance test (more than 50% of the dominant plant species across all strata are rated obligate, facultative wet, or facultative). The 2012 U.S. Army Corps of Engineers *National Wetland Plant List - Alaska Region* was used to classify plants.

### *Hydrology*

Hydrology was determined using two methods: (1) visually, if the water table is at or above the surface, or (2) with a soil pit. (Data from geotechnical investigations done later in the fall was also used.) The presence of standing water, depth to free water in the soil pit, and depth to saturated soils was recorded. Other primary and secondary hydrology indicators were recorded, such as presence of watermarks, sediment deposits, drift deposits, iron deposits, hydrogen sulfide odor, geomorphic position, and drainage patterns in wetlands.

### *Soil*

Soil pits were dug to a depth of 12-16 inches, or to bedrock or glaciomarine sediment refusal, to determine if indicators of hydric soils were present. Soil colors were determined from a moist sample with the Munsell Soil Color Chart. Sample site data sheets are included in Appendix A.

Table 1 - Indicators of the Three Wetland Parameters

Parameter	Indicators
<b>Wetland Vegetation</b>	<p>Dominant vegetation consists of wetland-adapted plant species, based on one or more of the following indicators:</p> <ul style="list-style-type: none"> <li>• Dominance Test: more than 50% of dominant vegetation is of facultative, facultative wetland, or obligate status as determined from the National List of Plant Species Occurring in Wetlands (Lichvar et al. 2014).</li> <li>• Prevalence Index: Prevalence index is 3.0 or less. The prevalence index is a weighted average that takes into account plant abundance and indicator status.</li> <li>• Plant morphological characteristics are evident.</li> </ul>
<b>Hydric Soils</b>	<p>A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding that persist long enough during the growing season to develop anaerobic conditions in the upper part of the soil. Hydric soils generally exhibit one or more of the following indicators:</p> <ul style="list-style-type: none"> <li>• Histosol (highly organic soil)</li> <li>• Histic epipedon (organic soil surface layer)</li> <li>• Sulfidic material (rotten-egg odor)</li> <li>• Aquic or peraquic moisture regime (saturation during the growing season);</li> <li>• Soil matrix colors that indicate a loss or movement of organic matter, iron, or manganese</li> <li>• The presence of redoximorphic features, which are locations within the soil structure of iron and manganese depositions and depletions</li> <li>• The presence of oxidized iron and manganese in specific abundance and distribution.</li> </ul>
<b>Wetland Hydrologic Conditions</b>	<p>Wetland hydrologic conditions, indicated by one or more of the following indicators:</p> <ul style="list-style-type: none"> <li>• Surface inundation visible on ground or aerial imagery;</li> <li>• Standing water or saturated soils at or above a depth of 12 inches</li> <li>• Surface water</li> <li>• High water table</li> <li>• Oxidized rhizospheres along living roots</li> <li>• Drift deposits</li> <li>• Water-stained or surface-scoured leaves</li> <li>• Wetland drainage patterns</li> <li>• Geomorphic position</li> <li>• Facultative-neutral test</li> <li>• Stunted or stressed plants.</li> </ul>

Polygon acreages were calculated in GIS. Final delineation map was done in GIS.

## **Project and Project Area Description**

### **Geology and Geomorphology**

The project area is gently sloping to the south. It is found on well-drained proximal outwash sediments of sands, gravels and cobbles formed from the Little Ice Age advance of ice into Yakutat Bay retreating less than 200 years ago. There is a five foot deep and ~60 foot wide outwash flood channel across the southern part of the project area that has a bed of alluvial sorted large cobbles and gravels.

### **Watersheds**

There are no surface streams that cross the project area but an outwash flood channel does cross the project area. The channel has no input or output streams but the channel is deep enough that for short periods after periods of heavy rain the water table reaches - and in some spots exceeds - the surface. A road berm at its lower end precludes any surface drainage out of the channel.

The project area is within the Ophir Creek watershed. Topographic maps and aerial photographs of the area indicate that the channel is large in relation to current stream flows in Ophir Creek. These oversized channels were formed by melt water streams that were much larger than the present Ophir Creek. Ed Neal at the USGS (1995) writes that Ophir Creek stream flow appears to be sustained primarily from rain and snow- melt percolating into outwash deposits, moving laterally as ground water, and then discharging into the stream channel. Ophir Creek terminates at Summit Lake where it discharges to Tawah Creek which drains into the North Pacific Ocean.

### **Soils**

The glacier pulled back from the moraine just north of the project area less than 200 years ago. The soils are young and relatively undeveloped and are generally Entisols. Over most of the project area two to four inches of peat has accumulated over sands and gravels.

In the outwash flood channel there is shallow peat over boulders with sand and gravels.



Figure 2 - Four inches of course peat over unsaturated sand with fine gravel.

## Vegetation

### *Upland Sitka Spruce Forest*

The typical upland vegetation of the project area is a second-growth Sitka spruce - FACU (*Picea sitchensis*) forest with an understory of devils club - FACU (*Oplopanax horridum*), salmonberry -FACU (*Rubus spectabilis*), early and Alaska blueberry - FAC (*Vaccinium ovalifolium* and *V. alaskaense*), trailing raspberry - FAC (*Rubus pedatus*), spiny wood fern - FACU (*Dryopteris dilatata*), oak fern - FACU (*Gymnocarpium dryopteris*), and dwarf dogwood -FACU (*Cornus canadensis*).



Figure 3 - Typical upland Sitka spruce forest in the project area.

*Outwash flood channel Sitka Spruce Forest*

The vegetation in the outwash flood channel is very similar to that on the outwash material. In areas disturbed by fallen trees there are more disturbance-adapted species such as skunk currant - FACU (*Ribes bracteosum*), red elderberry- FACU (*Sambucus racemosa*) and lady fern - FAC (*Athyrium felix-femina*).



Figure 4 - Detail of outwash flood channel understory vegetation - dwarf dogwood, lady fern, oak fern, salmonberry - primarily upland vegetation.

Table 2 - Plant Species List (Lichvar, 2014)

Scientific name	common name	Indicator status <sup>1</sup>
<i>Alnus rubra</i>	red alder	FAC
<i>Alnus sinuata</i>	Sitka alder	FAC
<i>Athyrium felix-femina</i>	lady fern	FAC
<i>Cornus canadensis</i>	dwarf dogwood	FACU
<i>Dryopteris dilatata</i>	spiny wood fern	FACU
<i>Gymnocarpium dryopteris</i>	oak fern	FACU
<i>Menzisia ferruginea</i>	false azalea	FACU
<i>Oplopanax horridus</i>	devil's club	FACU
<i>Picea sitchensis</i>	Sitka spruce	FACU
<i>Ribes bracteosum</i>	skunk current	FACU
<i>Rubus pedatus</i>	trailing raspberry	FAC
<i>Rubus spectabilis</i>	salmonberry	FACU
<i>Sambucus racemosa</i>	red elder	FACU
<i>Streptopus amplexifolius</i>	twisted stalk	FAC

<sup>1</sup> See Table 3 for abbreviation definitions

<i>Tiarella trifoliata</i>	foamflower	FAC
<i>Tsuga heterophylla</i>	western hemlock	FAC
<i>Vaccinium ovalifolium</i>	early blueberry	FAC

**Table 3 - Indicator code table (Lichvar, 2012)**

Indicator Code	Type	Comment
OBL	Obligate Wetland	Almost always occur in wetlands. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface.
FACW	Facultative Wetland	Usually occur in wetlands, but may occur in non-wetlands. These plants predominately occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.
FAC	Facultative	Occur in wetlands and non-wetlands. These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and elevation, and they have a wide tolerance of soil moisture conditions.
FACU	Facultative Upland	Usually occur in non-wetlands, but may occur in wetlands. These plants predominately occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.
UPL	Obligate Upland	Almost never occur in wetlands. These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.
NI	No indicator	Insufficient information was available to determine an indicator status.

## Results

**Table 4 - Sample point table (COE data sheet - Appendix A).**

SAMPLE POINT	HABITAT	COWARDIN CLASS	HGM CLASS	PJD <sup>2</sup>	Rational for PJD
SP-1	Young second growth Sitka spruce forest - well-drained outwash sediments	-	-	No	-
SP-2	Young second growth Sitka spruce forest - well-drained outwash sediments	-	-	No	-
SP-3	Young second growth Sitka spruce forest - well-drained outwash flood channel sediments	-	-	No	-

## Conclusions

The project area is all upland with upland vegetation, soils and hydrology. The outwash flood channel has upland vegetation (Sitka spruce/red elderberry/salmonberry/devils club/lady fern/dwarf dogwood) and a young upland soil with a shallow layer (0.5 - 0.8 feet) of peat over well-drained boulders, gravels and sand. The water table at the time of the visit, which was the day after 6 days of heavy rain, was just at the surface in the lowest parts of the outwash flood channel. Geotechnical investigations by IHS in late October 2016 showed the water table in the outwash flood channel to be at least 15 ft. below surface with no groundwater, seeps, or moisture observed.

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<sup>2</sup> Preliminary Jurisdictional Determination

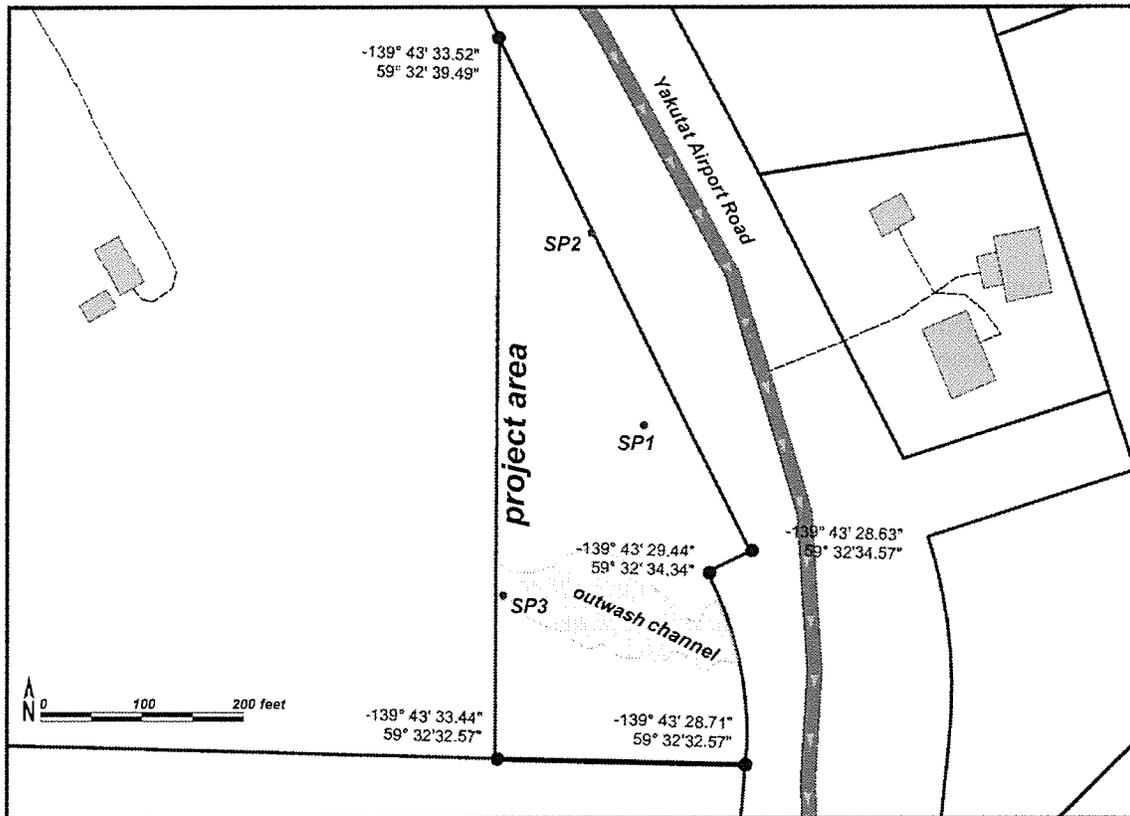


Figure 5 - Wetland delineation map - SP = Sample points and the pink area is the outwash channel.

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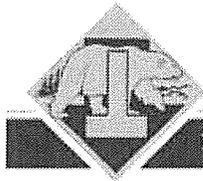
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## Appendix A – Project Area Geotechnical Report



NORTHERN GEOTECHNICAL ENGINEERING, INC. / TERRA FIRMA TESTING

Laboratory Testing   Geotechnical Engineering   Instrumentation   Construction Monitoring Services   Thermal Analysis

November 7, 2016

Yakutat Tlingit Tribe 606 Forest Hwy 10 PO Box 418 Yakutat, AK  
99689

Attn: Rhoda Jensen – Health Director

NGE-TFT Project #4562-16

RE: SUMMARY OF SUBSURFACE EXPLORATION FINDINGS  
AND GENERAL GEOTECHNICAL ENGINEERING  
CONCLUSIONS FOR THE SITE OF THE PROPOSED YAKUTAT  
COMMUNITY HEALTH CLINIC, YAKUTAT, ALASKA.

Rhoda,

We, Northern Geotechnical Engineering, Inc. d.b.a. Terra Firma Testing, have prepared this letter to briefly summarize our findings from a subsurface exploration program that we recently completed at the site of the proposed Yakutat Community Health Clinic (YCHC). In this letter we also provide generalized geotechnical engineering conclusions regarding the suitability of the project site for the proposed improvements. The information that we present in this letter is intended to be used (in part) to help supplement an Indian Health Service (IHS) Site Selection Evaluation Report (SSER), and should not be used to make final design and construction decisions regarding the proposed improvements. design and construction of the proposed improvements.

Geotechnical Summary Narrative

The site of the proposed Yakutat Community Health Clinic (YCHC), hereafter referred to as “the project site”, is approximately 2.5 acres in area and is primarily vegetated with mature, second growth Sitka spruce and hemlock trees. The topography of the project site generally slopes gradually down to the southeast with a shallow, sub-linear depression located along the central and southern portions of the project site, which generally trends to the south-southeast. The project site was reportedly logged for timber around the beginning of the 20<sup>th</sup> century, but no significant ground disturbances and/or other site developments (e.g., fill placement, etc.) are known to have occurred at the project site.

Northern Geotechnical Engineering, Inc. d.b.a. Terra Firma Testing (NGE-TFT) conducted a site reconnaissance and subsurface exploration program at the project site from October 26-27, 2016 during which time they directed the excavation of six test pit explorations at select locations across the project site. NGE-TFT was accompanied during their field efforts by Captain Kelly Leseman; Indian Health Service Project Manager for the proposed YCHC project. Captain

Leseman assisted NGE-TFT in the determination of the six test pit locations, which generally correspond to the conceptual location of the proposed YCHC improvements.

NGE-TFT’s subsurface exploration efforts suggest that the project site is overlain by a relatively thin layer of organic material consisting primarily of varying amounts of mosses, decaying organic matter (leaf litter, woody debris, etc.), and root masses. The organic layer averages approximately 0.5 to 0.75 feet in thickness, with some locally thicker sections of decaying organic material where fallen tree trunks and/or tree stumps occur at the ground surface. The surficial organic layer is directly underlain by a relatively thick deposit of sand and gravel that extends to depths of at least 15 feet below the existing ground surface (bgs). The sand/gravel soils were likely deposited during the last glacial retreat and are consistent with coarse-grained glacial outwash deposits found elsewhere in the Yakutat area. NGE-TFT did not observe any indications of groundwater in any of the six test pit explorations, and

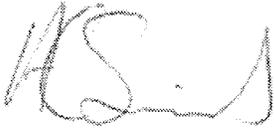
groundwater likely occurs at depths greater than 15 feet across the entire project site. NGE-TFT did not observe any frozen soils during their subsurface exploration effort and they do not expect permafrost to occur anywhere across the project site.

In general, the sand/gravel soils that NGE-TFT identified across the project site are suitable for supporting conventional shallow foundation systems, such as poured concrete footings and/or thickened edge slab foundations, as well as any underground utilities and/or structural pavement sections. There is little to no risk of seismic liquefaction and/or seismically-induced slope failure at the project site. The sand/gravel soils are suitable for re-use as structural fill across the project site, assuming proper placement and compaction techniques are applied. Based on their initial observations of the soil gradation (both visual and textural), NGE-TFT estimates the sand/gravel soils to have little to no frost susceptibility. Furthermore, they anticipate there to be very little potential for ice lens development at the project site. As such, minimal foundation burial/insulation requirements and minimal structural pavement sections will be required to reduce the potential for differential settlements as a result of ice lens formation and/or subsequent thaw-related weakening of the bearing soils. Additionally, NGE-TFT estimates the sand/gravel soils to be relatively free-draining (i.e., exhibit relatively high infiltration/percolation rates) and can likely support relatively uncomplicated stormwater/septic drain field designs.

Please feel free to contact me directly at 907-771-9507 with any questions or comments that you may have regarding the information that we present in this letter or if you need any additional information in support of the IHS SSER.

Sincerely, Northern Geotechnical Engineering, Inc. d.b.a. Terra Firma Testing,

Andrew C. Smith, CPG Senior Geologist

A handwritten signature in black ink, appearing to be the initials 'AS' followed by a stylized flourish.

## **Appendix B - Scanned Sample Site Data Sheets**



**APPENDIX C**  
**INDIAN HEALTH SERVICES *ENVIRONMENTAL REVIEW AND DETERMINATION*,**  
**DATED SEPTEMBER 2016**

**INDIAN HEALTH SERVICE  
ALASKA AREA NATIVE HEALTH SERVICE**

**ENVIRONMENTAL REVIEW AND DETERMINATION**

*Yakutat Tlingit Tribe, Joint Venture Health Clinic  
Yakutat, Alaska*

*September 2016*

**Background**

The Yakutat Tlingit Tribe (YTT) proposes to construct a new community health clinic under the Indian Health Service (IHS) Joint Venture Construction Program. The YTT will obtain construction funding from the U.S. Department of Agriculture (USDA), Health Resources and Services Administration (HRSA), and other funding sources. The IHS will provide staffing funds once the clinic is constructed. The Yakutat Community Clinic will be an approximately 10,000 square-foot health clinic on a new 2.5-acre site. Land will be conveyed from the Yakutat City Borough to YTT for the purpose of developing the new clinic.

**Environmental Issues**

Environmental concerns were addressed in consultation with local, State, and Federal authorities and agencies. The environmental review indicates that the following stipulations and mitigations apply to this project.

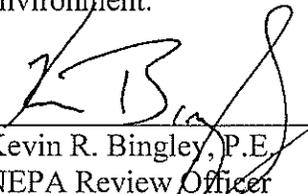
1. As the project is anticipated to disturb more than one acre of land, a Notice of Intent for permit coverage under the National Pollutant Discharge Elimination System (NPDES) Stormwater Program must be submitted to the Alaska Department of Environmental Conservation (ADEC) and the corresponding Storm Water Pollution Prevention Plan (SWPPP) followed during construction.
2. Project activities that may result in runoff entering waters of the U.S. or wetlands will require a jurisdictional determination and Section 404 Permit from the U.S. Army Corps of Engineers.
3. Dispose of construction waste at the Yakutat Landfill or other ADEC permitted solid waste facility. Coordinate use of the landfill with the landfill operator.
4. If the project will require excavation dewatering, an ADEC Excavation Dewatering General Permit will be required.
5. Follow U.S. Fish and Wildlife Service's (USFWS) Construction Advisory for Protecting Migratory Birds, and if an eagle's nest is observed within 660 feet of the project area during construction, notify the IHS.
6. Construction activities that include vegetation clearing must comply with the Migratory Bird Treaty Act (MBTA) by adhering to the USFWS's land clearing timing guidance for Alaska located at <http://www.fws.gov/alaska/mbp/mbm/index.htm> ("Construction Advisory for Protecting Migratory Birds PDF").
7. Land exposed during construction must be revegetated or covered with coarse fill to prevent erosion of soil and sedimentation of down-gradient water bodies, and other control measures for preventing storm water pollution, such as installing straw wattles and silt fencing around storm water conveyances, must be implemented as needed.

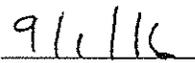
8. If hazardous wastes or petroleum products are discovered or spilled during construction, construction must stop and the contamination must be reported to ADEC's Spill Prevention and Response (SPAR) and the IHS.

**Finding**

The record was reviewed to identify potential extraordinary or exceptional circumstances, which would invalidate the categorical exclusion. Based on the review, no extraordinary or exceptional circumstances exist which would require an Environmental Assessment. In accordance with the Department of Health and Human Services policies and procedures in General Administration Manual, Part 30, the Council on Environmental Quality regulations at 40 CFR 1500-1508, and procedures the IHS published in the Federal Register for Categorical Exclusion (I) (58 Fed. Reg. 569-01, 571 (January 6, 1993)), the proposed project belongs to a category of actions which normally do not significantly impact the human environment and is excluded from further environmental review. Stipulations and mitigations noted under 'Environmental Issues' must be completed.

In the event of an unforeseen discovery, the YTT has agreed to stop construction activity in the area of the discovery and to notify the appropriate authority and the IHS. In addition, the YTT must notify the appropriate authority and the IHS if a change in the project or project scope occurs which could change this environmental determination or could adversely impact the environment.

  
\_\_\_\_\_  
Kevin R. Bingley, P.E.  
NEPA Review Officer  
Alaska Area Native Health Service

  
\_\_\_\_\_  
Date

**Yakutat Community Health Clinic**

**Scope of Review**

The Yakutat Tlingit Tribe (YTT) will vacate the leased space used to operate the Yakutat Community Clinic and construct a new ~10,000 square-foot health clinic at a new site in Yakutat, Alaska, through the Indian Health Service (IHS) Joint Venture Construction Program.

Considerations

Basis for Determination with Documentation

<p>1. Will the proposed action result in a known violation or continuance of a violation of applicable (Federal, Tribal, State or local) laws or requirements for protection of environment or public health and safety?</p>	<p>NO. The proposed project will be in compliance with all applicable laws and requirements and will have the appropriate regulatory approvals. All actions will be in accordance with the Indian Health Service design and sustainability guidelines, the State of Alaska DEC, and subject to the State of Alaska Fire Marshal as the Authority having Jurisdiction.</p>
<p>2. Will the proposed action result in a conflict with existing or proposed federal, Tribal, state, and local land use plans?</p>	<p>NO. The Joint Venture Clinic is a nationally competitive federal program. Approval for the Tribe to apply to participate was authorized by Tribal Resolution 2014-16. Formal invitation and notice to proceed from the federal government was authorized in a September 18, 2015 letter from IHS to YTT. The site selected for the clinic is owned by The Yakutat City-Borough. Approximately 3.5 acres is being conveyed to the Tribe specifically for this project and was selected because of the location, access to utilities, and suitable soil for building. The proposed project aligns with the long range land use plans for the community of Yakutat and YTT.</p>
<p>3. Is there a controversy with respect to environmental effects of the proposed action based on reasonable and substantial issues?</p>	<p>NO. Two public hearings were conducted to gather input from the community. Five sites were initially identified and two were selected for consideration based on the community’s input. There were no objections to the top two sites selected.</p>
<p>4. Is the proposed action significantly greater in scope than normal for the area or does it have significant unusual characteristics?</p>	<p>NO. The proposed builds and staffs a Joint Venture Clinic. This project is typical in scope for the IHS Facilities program. The clinic will be built according to the IHS design and sustainability standards including LEED (Leadership in Energy and Environmental Design) certification.</p>
<p>5. Does the proposed action establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?</p>	<p>NO. The proposed project will not result in any cumulative impacts that will result in degradation of environmental concerns as outlined in NEPA.</p>
<p>6. Does the proposed action have significant adverse direct or indirect effects on park land, other public lands, or areas of recognized scenic or recreational value?</p>	<p>NO. The Borough of Yakutat is located near numerous protected areas of Chugach National Forest, Glacier Bay National Park, Glacier Bay Wilderness, Tongass National Forest, Wrangell-St. Elias National Park and Preserve, Wrangell-Saint Elias Wilderness, and the Russell Fjord Wilderness. The proposed project is within the established boundaries of the community and will not adversely affect any of the protected lands.</p> <p>-National Wildlife Refuge (<a href="http://alaska.fws.gov/nwr/map.htm">http://alaska.fws.gov/nwr/map.htm</a>)                  -USDOJ NPS (<a href="http://www.nps.gov/state/ak/">http://www.nps.gov/state/ak/</a>)                  -Alaska Department of Natural Resource Division of Parks and Outdoor Recreation, Individual State Parks (<a href="http://www.dnr.state.ak.us/parks/units/index.htm">http://www.dnr.state.ak.us/parks/units/index.htm</a>)</p>

7. Does the proposed action include construction of a new municipal solid waste landfill at a new solid waste disposal site?	NO. This project does not address the need for constructing a new municipal solid waste landfill.
8. Will the proposed action create a need for additional capacity at solid waste disposal facilities?	NO. Yakutat has a Class III Solid Waste Landfill permitted by the State of Alaska. Recycling of construction debris will be used in order to meet the requirements of the LEED certification. Operation of the clinic is not expected to create or increase any significant additional solid waste disposal.
9. Does the proposed action include construction of a new wastewater treatment facility that will discharge treated sewage effluent to the waters of the U.S.	NO. The project does not include the construction of a new wastewater treatment facility.
10. Will the proposed action create a need for additional capacity at wastewater treatment facilities?	NO. The new clinic will replace the existing community clinic. Increased capacity for wastewater treatment is not needed.
11. Will the proposed action create a need for additional capacity in the drinking water supply?	NO. The new clinic will replace the existing community clinic. Increased capacity for drinking water is not needed.
12. Are there other considerations about the proposed action that could adversely affect the environment and/or public health and safety?	NO. The proposed project will not adversely affect the environment and/or public health and safety. Building materials will be consistent with those that are standard for rural Alaska health care clinics. This project will result in a positive impact to public health by improving the quality of health care available to the residents of Yakutat.
13. Will the proposed action create a need for additional capacity in health care facilities and for health care services?	NO. The project will provide additional capacity for Yakutat's health care program by constructing a new health care facility. The new clinic is designed to meet the health care needs of the residents of Yakutat.
14. Will the proposed action create a need for additional energy supply or generation?	NO. The construction and operation of the proposed clinic will not create a need for additional energy supply or generation as adequate energy generation exist in the existing electrical grid. The proposed clinic is expected to use less energy than the existing clinic as IHS sustainability and LEED standards will be employed in the design and construction of the facility. Additionally, the project will be looking at possible renewable energies to meet federal and LEED guidelines.
15. Will the proposed action create a need for additional capacity in educational facilities?	NO. This project is not anticipated to increase the need for educational facilities as the population of Yakutat is not anticipated to change as a result of this project.
16. Will the proposed action create a need for additional capacity in transportation systems?	NO. Yakutat is a small community with a very limited closed road system. The proposed project will not create a need for any additional transportation or transportation systems. The project will use existing roads during construction and clinic operation.

<p>17. Historic Preservation:</p> <p>a. Does the proposed action involve the purchase, construction, alteration, renovation, or lease of a building or portion of a building that is more than 50 years old?</p>	<p>No. Consultation with the Alaska SHPO concluded on 8/23/16. The consultation found that the project will have no effect on historic structures.</p>
<p>b. Will the proposed action adversely affect properties listed, or eligible for listing, on the National Register of Historic Places?</p>	<p>No: Consultation with the Alaska SHPO concluded on 8/23/16. The project's effects on the following historic properties were reviewed: Yakutat and Southern Railroad Historic District (YAK-00041), Yakutat Landing Field (YAK-00072), 28<sup>th</sup> Engineer Road (YAK-00117), and Infantry Road (YAK-00118). The review found that No Adverse Effect is anticipated. The locations reviewed for effect include the site of the proposed clinic, as well as the borrow sites located at the 1) eastern side of Orca Avenue, 2) north side of Airport Road, and 3) east of Dangerous Ridge Road.</p>
<p>18. Endangered Species Act: Is the proposed action likely to adversely affect a plant or animal species listed on the Federal or applicable state list of endangered or threatened species or a specific critical habitat of an endangered or threatened species?</p>	<p>No. The community of Yakutat is located near the coast and not in the vicinity of any known endangered species or critical habitats. However, the USFWS' Information for Planning and Conservation (IPaC) tool (accessed 2/24/2016) indicates birds protected under the Migratory Bird Treaty Act (MBTA) may occur in the vicinity of the project area, which include Arctic Tern, Bald Eagle, Black Oystercatcher, Fox Sparrow, Kittlitz's Murrelet, Lesser Yellowlegs, Marbled Godwit, Marbled Murrelet, Olive-sided Flycatcher, Pink-footed Shearwater, Rufous Hummingbird, Short-billed Dowitcher, and Short-eared Owl. If construction activities should require vegetation clearing, to ensure compliance with the MBTA, construction will follow the USFWS's land clearing timing guidance for Alaska located at <a href="http://www.fws.gov/alaska/mbsp/mbm/index.htm">http://www.fws.gov/alaska/mbsp/mbm/index.htm</a> ("Construction Advisory for Protecting Migratory Birds PDF").</p> <p><a href="http://alaska.fws.gov/fisheries/endangered/listing.htm">http://alaska.fws.gov/fisheries/endangered/listing.htm</a> – Alaska Region Endangered Species Listing.</p>
<p>19. Will the proposed action require major sedimentation and erosion control measures?</p>	<p>NO. Soil exposed during construction will be revegetated or covered with coarse fill to prevent soil erosion and sedimentation of receiving water bodies. Other erosion control measures, such as installing straw wattles around storm drains, will be implemented as needed in accordance with LEED certification requirements and IHS A/E Design Guidelines.</p>
<p>20. Will the proposed action violate a storm water permit or a wastewater discharge permit either for construction or on-going operations?</p>	<p>No. The proposed project will disturb approximately 2 acres of land and will require submittal of a notice of intent (NOI) for coverage under ADEC's 2016 storm water permit for construction activities permit and prepare a Storm Water Pollution Prevention Plan (SWPPP).</p> <p>Construction activities are not located close to any drinking water wells, water treatment systems, or wastewater treatment systems.</p>
<p>21. Safe Drinking Water Act: Will the proposed action impact an EPA designated sole source aquifer?</p>	<p>No. Currently there are no designated sole source aquifers in Alaska.</p> <p><a href="http://cfpub.epa.gov/safewater/sourcewater/sourcewater.cfm">http://cfpub.epa.gov/safewater/sourcewater/sourcewater.cfm</a></p>

<p>22. Wetlands and Water Resources (lakes, rivers, ponds, streams, etc.): Will the proposed action violate a Section 404 (Clean Water Act) permit for actions in a wetland and/or Section 10 (Rivers and Harbors Act) permit for actions in a stream or river?</p>	<p>No. A review of the USFWS Wetland Online Mapper (accessed 05/05/16) indicates that no estuarine, marine and freshwater wetlands exist at the proposed project location. A wetland delineation was completed in August 2016, which found that the site consists of upland vegetation and hydric soils. A small lower portion, 0.36 acres, of the site contained standing water after several days of rain, but the soil and vegetation profile matched the upland section and did not match a wetland profile.</p> <p>If wetlands are found to exist and will be impacted by the project (directly or through runoff), then a jurisdictional determination and Section 404 Permit from the U.S. Army Corps of Engineers (USACE) are required.</p>
<p>23. Floodplains: a. Is the proposed action located in either a 100-year or, for critical actions, a 500-year floodplain? (If Flood Insurance Rate Maps do not exist for the project site, a floodplain survey or consultation may be required. Also may need to consider if the facility will require flood insurance).</p>	<p>NO. Based on the USACE Floodplain Data, no known flooding has occurred in Yakutat and at the site for the new clinic. The USACE also identifies potential erosion areas in the Yakutat region; none which occurs in the vicinity of the proposed site (map from report attached).</p> <p>(<a href="http://www.poa.usace.army.mil/About/Offices/Engineering/FloodplainManagement.aspx">http://www.poa.usace.army.mil/About/Offices/Engineering/FloodplainManagement.aspx</a>)</p>
<p>b. Will the proposed action adversely impact flood flows in a floodplain or support development in a floodplain?</p>	<p>NO. The project will not occur within a floodplain.</p>
<p>24. Existing site: Would the proposed action involve the purchase, construction or lease of new facilities (including portable facilities and trailers), substantially increase the capacity of an existing health care facility?</p>	<p>The existing health clinic leases approximately 4,100sf of building space in an existing 8,200sf building which they will vacate and turn back to the owner. The new clinic will provide a needed increase capacity in the health care available to the residents to Yakutat in order to meet present and projected future demand through 2025.</p>
<p>25. New site: Does the proposed action involve purchase, construction, or lease of new facilities (including portable facilities and trailers) where such action is for buildings equal to or more than 12,000 square feet (1080 square meters) of useable space when more than 5 acres (2 hectares) of surface land area are involved at a new site?</p>	<p>NO. The proposed facility will be approximately 10,000 square-feet with a proposed lot of less than 2 acres at a different site near the existing health clinic.</p>
<p>26. New site: Does the proposed action involve purchase, construction, or lease of health care facilities (other than buildings) for projects equal to or more than 5 acres (2 hectares) of surface land area at a new site?</p>	<p>NO. The proposed facility will be constructed at an existing clinic site and be approximately 10,000 square-feet with a proposed lot of less than 2 acres.</p>

<p>27. Does the proposed action involve the sale or transfer of real property, on which any hazardous substance was stored for one year or more, known to have been released, or disposed of? (Provide relevant documentation for any hazardous substance releases. See 40 CFR 373.2(b), 302.4, and 261.30 for reportable quantities.)</p>	<p>NO. There are no known hazardous materials either stored or released on the proposed site. The site has not been previously used for commercial or private development.</p>
<p>28. Does the proposed action involve the sale or transfer of real property, on which underground or above ground storage tanks are located?</p>	<p>NO. The proposed project does not involve the sale or transfer of real property on which storage tanks are located. The site has not been previously used for any commercial or private development. The ADEC UGST Database Facility Search does not reveal any UST at the proposed location.</p>
<p>29. Will the proposed action violate Tribal, local, state, or federal law on the use and storage of hazardous substances or the transportation, storage, and disposal of hazardous wastes or medical wastes? (Activities that may generate reportable quantities include air conditioning repair and service, pesticide application, motor pools, automobile repair, welding, landscaping, agricultural activities, print shops, hospitals, clinics, &amp; medical centers. Repair, renovation, or demolition activities can generate waste that has asbestos-containing materials, asbestos, lead-based paint, PCBs, CFCs, etc.)</p>	<p>No. The proposed project will not violate local, state, or federal law on the use and storage of hazardous substances or transportation, storage, and disposal of hazardous wastes or medical wastes. All medical wastes from the operation of the clinic will be disposed of in accordance with local, state, and federal laws. The space currently utilized for existing health clinic will be vacated for the owner to repurpose.</p>
<p>30. Will the proposed action adversely affect community air pollution for a long period of time?</p>	<p>No. 18AAC50, Air Quality Control, Alaska Department of Environmental Conservation. This project is not located in an area subject to the conformity rule per the State of Alaska Implementation Plan.</p>
<p>31. If the proposed action is implemented, will it have a disproportionately high and adverse human health or environmental impact on the Tribe, low-income populations, or minority populations?</p>	<p>No. This project will benefit the health and environment for the tribe and the community as a whole by increasing access of health care services.</p>
<p>32. Will the proposed action adversely affect community noise levels?</p>	<p>No. The Project Manager will ensure community noise levels are not adversely affected with no blasting and limiting heavy equipment usage to daytime (10) hours.</p>

33. Wilderness Act: Will the proposed action adversely impact a Wilderness Area?	No. This site is not located in a wilderness area in Alaska. Database accessed 2/24/16. <a href="http://www.wilderness.net/index.cfm?fuse=NWPS">http://www.wilderness.net/index.cfm?fuse=NWPS</a>
34. Farmland Protection Policy Act: Will the proposed action convert significant agricultural lands to non-agricultural uses and exceed 160-point score on the farmland impact rating?	No. There are no Prime or Unique farmlands in the State of Alaska. Further, there are no Farmlands of Statewide Importance. <a href="http://www.ak.nrcs.usda.gov/technical/soils/soilslocal.html">http://www.ak.nrcs.usda.gov/technical/soils/soilslocal.html</a>
35. Coastal Zone Management Act: Will the proposed action directly affect a Coastal Zone in a manner inconsistent with the State Coastal Zone Management Plan?	No. The Alaska Coastal Management Program no longer exists as of July 1, 2011.  Alaska Coastal Zone and Coastal District boundaries, National Oceanic and Atmospheric Administration, June 2005. ( <a href="http://www.alaskacoast.state.ak.us">www.alaskacoast.state.ak.us</a> )
36. Wild and Scenic Rivers Act: Will the proposed action affect a wild, scenic, or recreational river area or create conditions inconsistent with the character of the river? (A consideration for activities that are in or near any wild and scenic waterway including construction of stream/river crossings, intake structures, outfalls, etc.)	No. This project is not a "Water Resource Project" that will impact a wild, scenic, or recreational river, hence will not create conditions that are inconsistent with the character of the river.  ( <a href="http://www.rivers.gov/index.php">http://www.rivers.gov/index.php</a> )

**APPENDIX D**

**UNITED STATES FISH AND WILDLIFE SERVICE INFORMATION FOR PLANNING AND  
CONSULTATION OFFICIAL SPECIES LIST**



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Anchorage Fish And Wildlife Field Office  
4700 Blm Road  
Anchorage, AK 99507  
Phone: (907) 271-2888 Fax: (907) 271-2786

In Reply Refer To:

August 30, 2017

Consultation Code: 07CAAN00-2017-SLI-0349

Event Code: 07CAAN00-2017-E-01244

Project Name: Yakutat Community Health Center

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and some candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that candidate species are not included on this list. We encourage you to visit the following website to learn more about candidate species in your area:

[http://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/endangered/candidate\\_conservation.ht](http://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/endangered/candidate_conservation.ht)

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Anchorage Fish And Wildlife Field Office**

4700 Blm Road

Anchorage, AK 99507

(907) 271-2888

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## Project Summary

Consultation Code: 07CAAN00-2017-SLI-0349

Event Code: 07CAAN00-2017-E-01244

Project Name: Yakutat Community Health Center

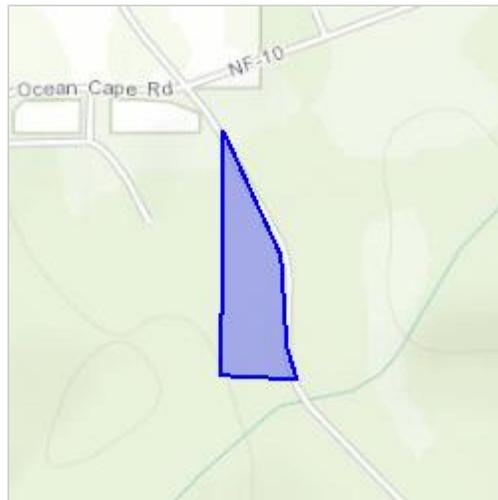
Project Type: DEVELOPMENT

Project Description: The project will take place at 115 Airport Road in Yakutat, Alaska. The site is currently densely vegetated with Sitka Spruce and Hemlock trees. A portion of the site will be cleared for development of a new health clinic, which will be approximately 11,000 square feet. Approximately 1 acre will be disturbed, centrally-located on Tract A of USS 5630, which is approximately 2.5 acres.

### Project Location:

Approximate location of the project can be viewed in Google Maps:

<https://www.google.com/maps/place/59.5432352707694N139.72552526548708W>



Counties: Yakutat, AK

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## **Endangered Species Act Species**

There is a total of 0 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

## **Critical habitats**

There are no critical habitats within your project area under this office's jurisdiction.

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**APPENDIX E**  
**CORRESPONDENCE WITH THE ALASKA DEPARTMENT OF FISH AND GAME**  
**WILDLIFE BIOLOGIST**

**From:** [Ingle, Moira A \(DFG\)](#)  
**To:** [Rose Pollock;](#)  
**cc:** [Ingle, Moira A \(DFG\);](#)  
[Timothy, Jackie L \(DFG\);](#)  
**Subject:** RE: State-listed Species, Yakutat  
**Date:** Monday, October 09, 2017 10:19:29 AM

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Hello Rose:

I can state with confidence that none of the species on the State of Alaska Endangered Species list will be impacted by developing the site you reference.

If the site has any streams, as much of Yakutat does, I would urge you to contact the Alaska Department of Fish & Game Habitat Division to determine whether a Title 16 Fish Habitat permit may be required. Information on Habitat permits can be found at the following link:

<http://www.adfg.alaska.gov/index.cfm?adfg=uselicense.main>

Thanks for your inquiry –  
Moira

*Moira Ingle  
Wildlife Biologist/ESA Coordinator  
Threatened, Endangered, and Diversity Program  
Alaska Department of Fish and Game  
333 Raspberry Road  
Anchorage, AK 99518  
907-267-2877  
Moira.Ingle@alaska.gov*

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**From:** Rose Pollock [mailto:Rose@BGESINC.com]  
**Sent:** Wednesday, October 04, 2017 8:53 AM  
**To:** Ingle, Moira A (DFG)  
**Subject:** State-listed Species, Yakutat

Hello Moira,

I am conducting a National Environmental Policy Act (NEPA) Environmental Assessment (EA) for a property in Yakutat, Alaska. The address of the proposed project site is 115 Airport Road, Yakutat. Maps showing the site location are attached. Can you please advise whether any state-listed threatened or

endangered species might be impacted by developing the site?

If you need any further information to make that determination, please let me know.

Thank you,

Rose Pollock  
Environmental Scientist II  
BGES, Inc.  
Office: (907) 644-2900  
Cell: (907) 748-9955

**APPENDIX F**

**LETTERS OF NO ADVERSE EFFECT FROM ALASKA STATE HISTORIC  
PRESERVATION OFFICER AND TRIBAL HISTORIC PRESERVATION OFFICER**



THE STATE  
of **ALASKA**  
GOVERNOR BILL WALKER

**Department of Natural Resources**

DIVISION OF PARKS & OUTDOOR RECREATION  
Office of History & Archaeology

550 West 7<sup>th</sup> Ave., Suite 1310  
Anchorage, Alaska 99501-3565  
Main: 907.269.8721  
<http://dnr.alaska.gov/parks/oha>

August 9th, 2016

File No.: 3130-1R IHS  
2016-00927

Kevin Bingley  
Alaska Area Native Health Services  
4141 Ambassador Dr.  
Anchorage, AK 99508-5928

SUBJECT: Joint Venture Construction Program (JVCP), New Health Clinic Construction, Yakutat Tlingit Tribe

Dear Mr. Bingley:

The Alaska State Historic Preservation Office (AKSHPO) received your correspondence regarding the subject project on August 3<sup>rd</sup>, 2016. Upon review, we believe that a finding of **no adverse effect** is appropriate for the proposed undertaking.

For future review consideration, we offer the following comments:

1. When the Area of Potential Effect (APE) is within the boundaries of an eligible or listed historic property, please also consider the effects of the project on that historic property. This includes applying the Criteria for Adverse Effects found at 36 CFR 800.5 to determine whether the project may adversely affect the surrounding historic property.
2. Please define the APE in a manner that includes all components of the project that have the potential to effect historic properties, including ancillary activities such as utility connections and material sources.
3. The presence or absence of known historic properties within a project area is only one aspect of the Section 106 identification process. The lead federal agency needs to also consider the potential to encounter previously unidentified resources, taking multiple factors into account including (but not limited to): topography, past and current use, soil development, previous cultural resource surveys in the APE, and known site distribution. These considerations should be clearly explained in the submitted documentation.
4. The Section 106 identification process is intended to identify historic properties (potential, eligible, or listed) that may be affected by the undertaking prior to project implementation. While it may be occasionally "...reasonable to manage encounters with undocumented resources on a discovery basis." as stated within your correspondence, it is only appropriate to do so *if* the project is considered to have low potential to encounter previously unidentified cultural resources. However, if the literature review and initial project assessment indicate that previously unidentified resources may be present within the APE, then more intensive identification efforts (e.g. pedestrian survey) may be appropriate to demonstrate a reasonable and good faith effort.

5. While some inadvertent discoveries may be unavoidable, routinely relying on post-review discovery as a means for site identification is not appropriate and fails to meet the reasonable and good faith identification standard.

Thank you for the opportunity to review and comment. Please contact Mckenzie Johnson at 907-269-8726 or [mckenzie.johnson@alaska.gov](mailto:mckenzie.johnson@alaska.gov) if there are any questions or we can provide further assistance.

Sincerely,



*Deputy* Judith E. Bittner  
State Historic Preservation Officer

JEB: msj

Ec: Roger Harritt, ANTHC-Cultural Resource Manager, [rkharritt@anthc.org](mailto:rkharritt@anthc.org)

**SECTION 306108 REVIEW  
WITH THE YAKUTAT TLINGIT TRIBE (YTT)  
AND  
INDIAN HEALTH SERVICE (IHS)**

The IHS is proposing the following project in Yakutat, Alaska for the new clinic development project.

**SCOPE OF UNDERTAKING:** The Yakutat Tlingit Tribe (YTT) will vacate the leased space used to operate the Yakutat Community Clinic and construct a new approximately 10,000 square-foot health clinic on a new 2.5-acre site. Land will be conveyed from the Yakutat City Borough to YTT for the purpose of developing the new clinic. The U.S. Department of Agriculture (USDA) will provide funds for construction and the IHS is providing funding for the staffing of the new clinic.

**AREA OF POTENTIAL EFFECT (APE):** The Preliminary APE, as created through tribal cooperation, is detailed below. A Preliminary APE map is attached for review

**APE SITE REVIEW:** The following sites have been identified in the Preliminary APE.

Site No.	AHRS ID	Site Name	Age	Description
1	YAK-00041	Yakutat and Southern Railroad Historic District	1940-1971	Associated with the cannery operation in Yakutat. The district includes a cannery building, the original Lima engine and the tender, ballast dump cars, flat bed/stake cars, fish loading facilities, a maintenance complex, rail alignments, several engines, cars and bridges, a pile driver, the Situk trestle, wheel sets, 3 turntables and a storage shed. The district area is an eleven-mile-long corridor that extends from the Yakutat town site to Johnson's Slough at the mouth of the Situk River, and a mile-long spur at Lost River. The district has been determined to be eligible for the NRHP (DOE-K).
2	YAK-00072	Yakutat Landing Field	1940-1946	This site is a polygon delineating an auxiliary airfield and staging area, including two 7400' runways for pursuit and bombardment planes traveling between Alaska and the lower 48 states. Significance of the site complex is its association with the Aleutian Campaign of WWII. Facilities included in the site complex are a dock and wharfage including a warehouse, and a minor naval air facility with a <u>seaplane ramp at Monti Bay</u> . Also included are living quarters, barracks, a mess hall, operations building, storage, radio communications facilities, hangars. Contributing sites include YAK-00091, and YAK-00092. Determined to be eligible for the NRHP (DOE-S).
3	YAK-00117	28 <sup>th</sup> Engineer Road	WWII?	Associated with the Yakutat Landing Field, YAK-00072.
4	YAK-00118	Infantry Road	WWII?	Associated with the Yakutat Landing Field, YAK-00072

**PRELIMINARY FINDING:**

*No impact is anticipated to historic or cultural resources*

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In compliance with Section 306108 of the National Historic Preservation Act (54 USC 306108) and 36CFR§800, the IHS has initiated a Historical Property review for this project. The effect on cultural, spiritual, and historical properties as anticipated by the IHS representative and the tribe is outlined above. The IHS is documenting the above finding as preliminary consultation with the tribe. These findings apply only to the project as defined under the Scope of Undertaking, and any changes to the project will require further Section 306108 Review in accordance with 36 CFR 800.4. In the event of a discovery, all construction activities will cease in the immediate area of the finds pending further consultations between the IHS, Alaska SHPO, and the Tribe.

IHS Representative:

Name: [Signature]  
Title: SIC Deputy President - AANHS  
Date: 6/17/16

Tribal Representative:

Name: [Signature]  
Title: President  
Date: 6-15-2016

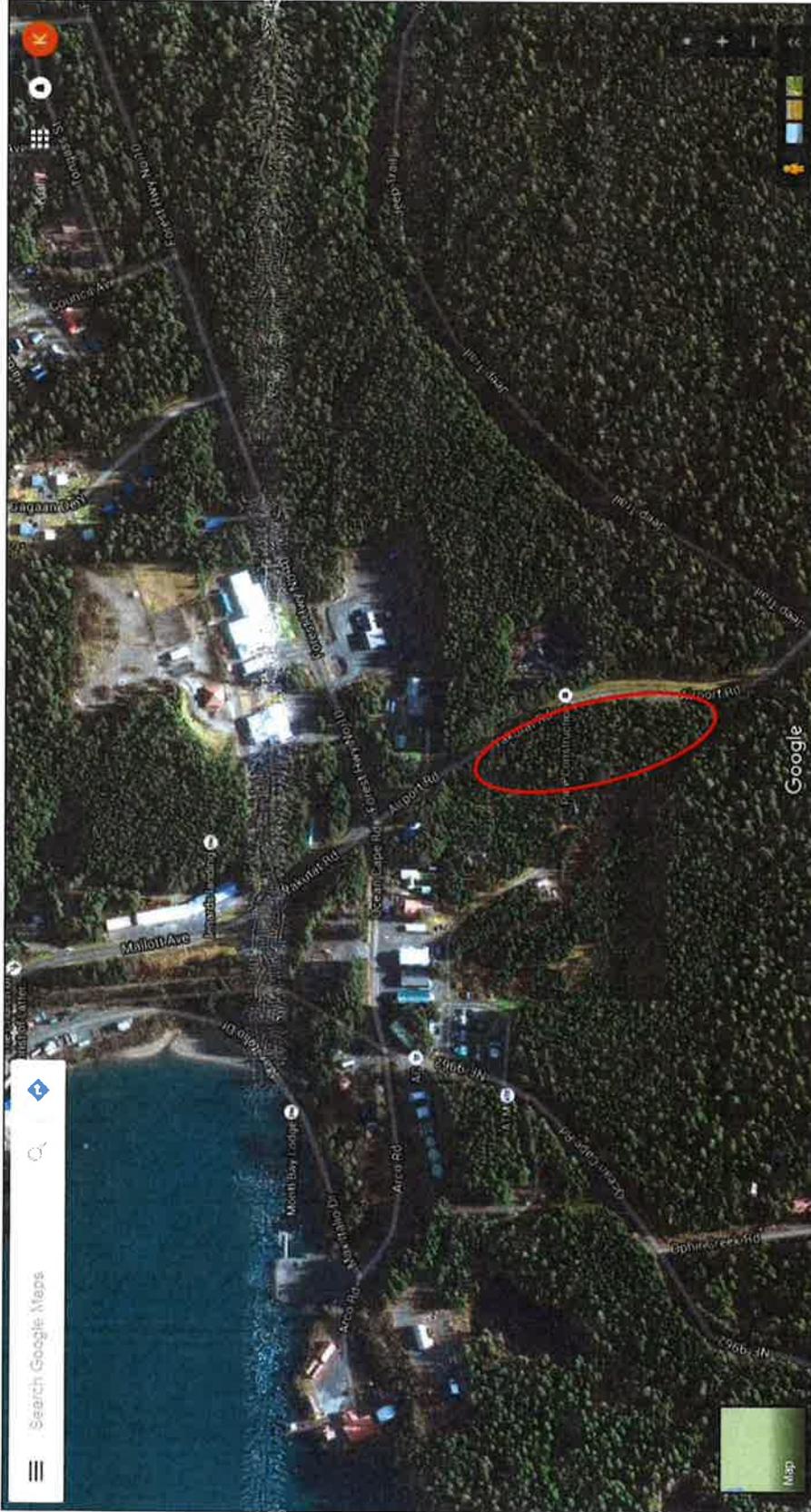


Figure 1. Yakutat, proposed location of the new health clinic, in a 3.5-acre area south of the community core area.

**APPENDIX G**  
**CORRESPONDENCE WITH THE PLANNER OF THE YAKUTAT CITY PLANNING AND**  
**ZONING DEPARTMENT**

**From:** [Rhonda Coston](#)  
**To:** [Rose Pollock](#);  
**Subject:** Re: Zoning for new Health Center  
**Date:** Wednesday, October 04, 2017 4:46:25 PM

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Hello Rose,

The large piece of property, which the new clinic site property will be subdivided from, after completion of the process through the State of Alaska is currently zoned "Holding".

The Planning and Zoning Commission agreed that a zoning that would best suit this development under our code is likely to be "Light Industrial". Until the property survey is approved by the state, the lands involved in this cannot be conveyed to the Borough, so the Borough cannot yet quit claim deed the property to the Tribe. Once this process is complete, we can then proceed to changing the zoning from Holding to Light Industrial, if that is the wish of the Planning & Zoning Commission and approved by our Borough Assembly.

Rhonda Coston

On October 4, 2017 at 9:04 AM Rose Pollock  
<Rose@BGESINC.com> wrote:

Hello Rhonda,

I am preparing a National Environmental Policy Act (NEPA) Environmental Assessment (EA) for the proposed site of the new Yakutat Community Health Center, at 115 Airport Road. Can you tell me how that property is currently zoned? A map of the site is attached.

Thank you,

Rose Pollock

Environmental Scientist II

BGES, Inc.

Office: (907) 644-2900

Cell: (907) 748-9955