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GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

July 22, 2019

Ms. Erin Gleason
Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, AK 99501

RE: WORK PLAN FOR LANDFARM SOIL SAMPLING, ICICLE SEAFOODS EGEGIK CANNERY, EGEGIK, ALASKA (FILE NO. 2543.38.002)

Dear Ms. Gleason:

On behalf of our client, Icicle Seafoods, Inc. (Icicle), we are pleased to submit our work plan to conduct landfarm soil sampling at the Icicle Seafoods Egegik Cannery, Egegik, Alaska (the Property). The Property is an active Alaska Department of Environmental Conservation (ADEC) listed contaminated site (File number 2543.38.002). The purpose of the soil sampling is to progress towards a cleanup complete designation for the Property. The project objectives are to collect representative soil samples to evaluate the remedial progress of Icicle Seafoods Egegik Cannery landfarms and confirm soil underlying the landfarm footprints has not been impacted.

## PROJECT AND SITE DESCRIPTION

Four isolated spills have occurred at the Egegik Icicle Seafoods facility at locations which include the Freezer Plant day tank, the tank farm secondary containment system, the Generator Building day tank, and the Mechanics' Bunkhouse day tank. Petroleum-contaminated soils from previous spill cleanup activities have been placed in two separate landfarm areas for remediation. A vicinity map showing the approximate location of the landfarms is included as Figure 1.

The landfarms consist of approximately 38 and 51 cubic yards (cy) of impacted soils. Multi-incremental (MI) soil samples collected in 2013 from the landfarms contained diesel range organics (DRO) concentrations greater than the ADEC Method Two cleanup level. The 2013 MI soil samples had no detectable concentrations of gasoline range organics (GRO), benzene, ethylbenzene, toluene, and xylenes and concentrations of residual range organics (RRO) less than the ADEC Method Two cleanup levels. The landfarms are tilled annually, and urea fertilizer is applied to the landfarm soils to promote bioremediation.

## PROJECT ACTIVITIES

The project consists of conducting a visual assessment of the landfarm areas, collecting MI soil samples from the landfarm soil for laboratory analysis, soil sampling beneath the landfarm footprints, and preparing a summary report. Shannon & Wilson will provide a Qualified Environmental Professional (QEP), as defined by 18 AAC 75.333 (ADEC, January 2018), to conduct and document the field work. Schylar Healy is currently scheduled to conduct the field activities. Her resume is included in Attachment 1. Soil samples will be submitted to SGS North America Inc. (SGS) of Anchorage, Alaska for laboratory analysis. SGS will contract the analytical laboratory services directly to Icicle.

This project will be conducted in general accordance with ADEC regulation 18 AAC 75 and Interstate Technology Regulatory Council (ITRC) *Incremental Sampling Methodology, Technical and Regulatory Guidance* (February 2012).

### Task 1 – Visual Assessment of Landfarm Areas

The landfarm areas will be visually assessed and photographed prior to initiating soil sampling. The visual assessment will include observations of the presence/absence of soil berms, potential stressed vegetation, evidence of tilling, and surface water. Photographs will be taken to document the landfarm conditions. In addition, the dimensions of the landfarm areas will be measured with a field tape and GPS coordinates will be collected in order to develop a scaled site plan.

### Task 2 – Multi-Incremental Soil Sampling

MI sampling methods will be used to obtain a statistically representative sample of the soil in each landfarm. Each landfarm is a discrete decision unit identified as ICLP-DU1 (25 feet by 95 feet) and ICLP-DU2 (50 feet by 100 feet). Each decision unit is approximately 1-foot deep. One MI sample will be collected from each decision unit using the methodology outlined in the ITRC and the process described below. For quality control purposes, a triplicate set of samples will be collected from one decision unit to evaluate the precision of the MI sampling procedure.

1. A square-based grid system will be used to overlay each decision unit. The grid system will be sized to contain at least 100 possible sampling locations/grid cells. The individual grid cells will be identified using an alphanumeric naming convention where the vertical axis gradation is alphabetical, and the horizontal axis gradation is numerical. A list of the grid cell identifiers will be compiled in Microsoft Excel® and the RANDBETWEEN

random number function will be used to select 30 grid cells from each decision unit for collection of sub-portion samples. Locations for each of the 30 sub-portion primary samples will be in the northwest quadrant of the grid cells. Flags will be placed at each primary sub-portion location to aid in replicate sample collection (see Step 5) and mapping.

2. At each sub-portion sample location, approximately 20 grams of soil will be collected between 0 to 12 inches below ground surface (bgs) using a new or decontaminated sampling spoon and placed into a common container (double-bagged 1-gallon Ziploc®). Attempts will be made to collect silt and fine-grained sand with particle diameters of less than 2 millimeters. A field scale will be used to calibrate the sample size to obtain the target sub portion sample mass.

3. After the 30 randomly selected grid cells have been sampled, the bulk sample volume will be verified using a field scale. SGS recommends submitting a minimum bulk sample volume of 600 grams of soil to allow for post-sieving and subsample processing.

4. Steps 1 through 3 will be repeated as sampling activities continue to the second DU.

5. In order to verify whether the MI sampling and analytical procedures produced samples that accurately reflect the decision units, an MI duplicate and MI triplicate will be collected from one of the decision units. Of the two decision units, Decision Unit ICLP-DU2 has the highest historical analytical results; therefore, the triplicate sample set will be collected from Decision Unit ICLP-DU2. The MI duplicate and triplicate sub-portion samples will be collected from the northeast and southeast quadrants of each of the 30 selected grid cells, respectively.

6. The four MI samples, including the triplicate sample set, will be labeled, sealed, and placed in a cooler for laboratory submittal. The cooler will be maintained at a temperature of approximately 0 to 6 degrees Fahrenheit until arriving at SGS. SGS will perform post-sieving and subsample processing.

Four samples, including one triplicate set, will be delivered to SGS using chain of custody procedures. The soil samples will be analyzed for DRO by Alaska Method (AK) 102.

## Task 3 –Landfarm Footprint Sampling

Five spatially-representative field screening samples will be collected from within the footprint and beneath each of the landfarm areas to evaluate whether the underlying soil has been impacted. Each soil sample will be collected from approximately 6 inches below

the original ground surface (approximately 1.5 feet below the landfarm surface) using a clean, decontaminated hand shovel. The soil samples will be "screened" for volatile organic compounds (VOCs) using a photoionization detector (PID) and ADEC-approved headspace screening techniques. The PID will be calibrated before screening activities with 100 parts per million (ppm) isobutylene standard gas. The field screening samples will be collected in re-sealable plastic bags, warmed to a common temperature, and tested within 60 minutes of collection.

Based on PID readings and visual/olfactory observations, two analytical soil samples from each landfarm will be collected from the field screening locations with highest potential to contain target analytes over the ADEC cleanup levels. In addition, one duplicate soil sample will be collected for quality control purposes. The five analytical samples including one duplicate will be submitted to SGS and analyzed for GRO by AK 101, DRO by AK 102, RRO by AK 103, and benzene, toluene, ethylbenzene, and xylenes (BTEX) by Environmental Protection Agency (EPA) Method 8021. For quality control purposes, one trip blank will be submitted and analyzed for GRO by AK 101 and BTEX by EPA Method 8021.

Decontamination water generated during the Tasks 2 and 3 soil sampling efforts, if any, will be containerized in a 5-gallon bucket then spilled onto the soil within the respective landfarm area.

### Task 4 –Summary Report

The results of the sampling event will be presented in a summary report. The report will include a description of the visual assessment observations and field procedures, a scaled site plan showing the DU sampling grid and sub-portion sample locations, laboratory analytical results, a laboratory data review checklist, conclusions regarding the regulatory status, and recommendations, as necessary. The report and opinions presented will be based solely upon the services described herein and will not be based on tasks or procedures beyond the scope of the described services.

## SCHEDULE

We are prepared to conduct the landfarm soil sampling during Icicle's postseason in August 2019 (tentatively between August 1 and 14). It is estimated that the field work can be conducted in one day but based on flight schedules one overnight accommodation will be necessary. The laboratory testing will be conducted on a standard 10 business day

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turnaround. The summary report can be finalized about 30 days following receipt of the analytical results.

If you approve of this work plan, please sign in the space provided and return a copy of this letter. If you have questions or comments, please call the undersigned at (907) 561-2120.

Sincerely,

SHANNON & WILSON

for Schylar Healy
Environmental Scientist

LeeAnne Osgood, P.E.
Associate

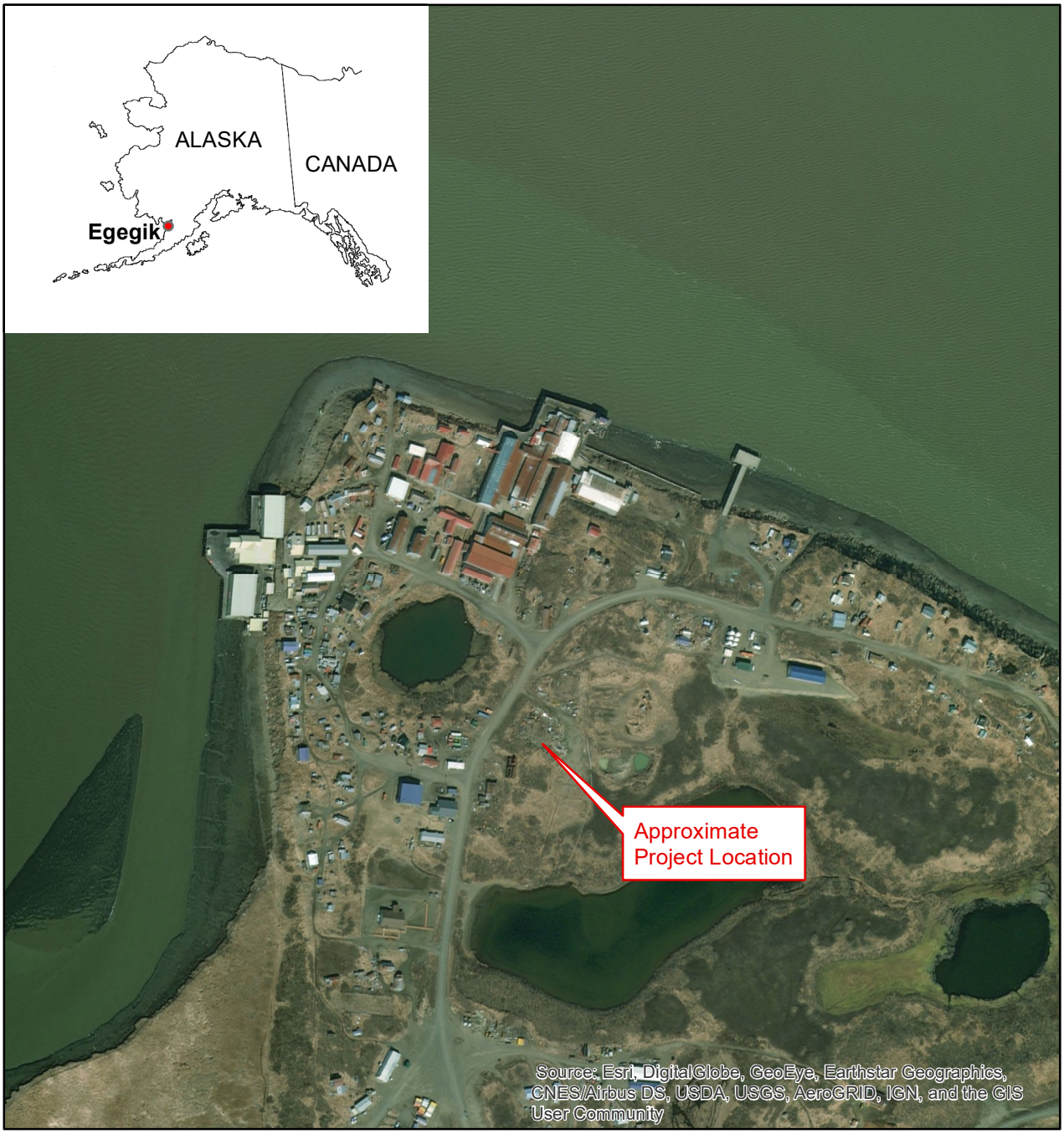
Enc. Figure 1 and Attachment 1

## ACCEPTANCE

I approve the landfarm soil sampling at Icicle Seafoods Egegik Cannery, Egegik, Alaska to proceed.

By: _____ Date: _____
Signature

Printed Name and Title: _____

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Icicle Seafoods Egegik Cannery
Egegik, Alaska

## VICINITY MAP

July 2019 103355-001

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**FIG. 1**

ATTACHMENT 1: QEP RESUME

Attachment 1

# State of Alaska Qualified Environmental Professional (QEP) Resume

## Schylar Healy
## Environmental Scientist

***Education:***
B.S., Geographic Science; Applied Geographic Information Systems (AGIS) and Environmental Conservation Sustainability and Development (ECSD), James Madison University, 2015

***Registrations/Certifications:***
State of Alaska Qualified Environmental Professional (18 AAC 75.333)
American Red Cross First Aid/CPR Training
OSHA 40 Hour HAZWOPER Training
Coastal Training Program Washington "Using the Revised Washington State Wetland Rating System (2014) in Western Washington" 12-hour Certificate of Completion

***Memberships:***
Alaska Native Plant Society

***Professional Summary:***
Since joining Shannon & Wilson in 2018, Schylar has conducted environmental site characterization activities throughout Alaska including groundwater monitoring, groundwater well installation and development, and soil sampling using a variety of drilling methods. Her responsibilities include preparing environmental permits and reports, conducting Phase I and Phase II Environmental Site Assessments (ESAs), performing wetlands delineations, field surveying, developing Stormwater Pollution Prevention Plans (SWPPPs), technical writing, research, and using Geographic Information System (GIS) as a tool for data quality standardization, interpretation, and management. She is proficient in ADEC and EPA regulations and sampling methods, as well as the NEPA and USACE permitting processes.

***Project Experience:***
***Anchorage Water and Wastewater Utility (AWWU) Pump Station 12 Release Investigation, Anchorage Alaska***
Schylar supported release investigation activities conducted at AWWU Pump Station 12. Project activities include advancing soil borings, installing groundwater monitoring wells, and collecting soil and groundwater samples. Schylar was responsible for the production of a final report presenting recommendations for future analysis. **2019**

***Municipality of Anchorage (MOA) Sullivan Arena Warm Storage Building Site Characterization Activities Anchorage, Alaska*** Schylar supported site characterization activities at the MOA Sullivan Arena Warm Storage building. Site characterization activities included advancing soil borings to sample for laboratory analysis and completing the borings as groundwater monitoring wells for analytical sampling. **2019**

***Matanuska-Susitna Borough (MSB) Solid Waste Department (SWD), Landfill Monitoring Program, Alaska.*** Schylar supports the MSB-SWD landfill monitoring program as a field sampling personnel and has conducted field sampling activities per the ADEC-approved QAPP. Schylar has collected quarterly groundwater samples for the Central Landfill (CLF). **2018**

***Municipality of Anchorage (MOA) Solid Waste Service(SWS) Landfill Water Quality Monitoring Program, Anchorage Vicinity, Alaska.*** Schylar supports the MOA-SWS water quality monitoring program as a field sampling personnel. Schylar has conducted groundwater sampling for the MOA Merrill Field Landfill (MFL) and MOA Regional Landfill (ARL). **2018**

***Holiday Alaska, Inc., Groundwater Monitoring, Anchorage, Alaska***. Schylar conducted the annual groundwater monitoring field activities at the Anchorage fueling station. Project activities included well purging and collecting field parameters and analytical samples. Groundwater concentration data were used to evaluate trends in plume characteristics and the effectiveness of the remedial actions. Additionally, Schylar was responsible for the production of a final report presenting recommendations for future analysis. **2018**

***City of Unalaska, Landfill Water Quality Monitoring Program, Shoreline Erosion Evaluation.*** Schylar preformed a shoreline erosion assessment to evaluate the integrity of the new landfill cells located along Summer Bay Road. Due to the natural terrain and local site restrictions, the new landfill cells were constructed in close proximity to the shoreline. The project was conducted in accordance to the *Unalaska Landfill Revised Shoreline Erosion Monitoring Plan* and consisted of performing a geospatial analysis of the shoreline condition, reporting on the historically compared results, and providing recommendations for future management. **2018**

***Phase I Environmental Site Assessments (ESA), Various, Anchorage, Alaska.*** Performed initial property assessment, ownership research, interviews, site visits, and database research on properties in Alaska. Coordinated between clients, state and federal regulatory agencies, municipal or regional city offices, utility companies, and private citizens. Identified environmental concerns and produced reports in accordance with ASTM International E 1527-15 Standard Practice for Environmental Site Assessments guidance document. **2018**

***ADOT UST Closure Reporting, Various, Alaska.*** Schylar reported on the site assessment, cleanup activities, and tank inspections of the Yukon Kuskokwim Correctional Center, the Anchorage Correction Complex, and Hiland Mountain Correction Center removal activities. If contamination was encountered, Schylar discussed the nature and extent of contamination. **2018**

**Center of Environmental Management of Military Lands (CEMML), Fairbanks, Alaska.*** Schylar served as a Wetlands Mapping Specialist/Wetlands Ecology Technician, performing wetland delineations, mapping and classifying vegetation communities, creating and managing geospatial data, reviewing and entering field data into geodatabases, and aided with preparation of wetland delineation reports and maps, as well as others GIS and natural resource management tasks for the Fort Wainwright natural resource management team. Schylar also piloted the use of Collector for ArcGIS Application for the 2017 and 2018 Wetlands Field Crews. **2017-2018**

**For previous employer*