

**STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINING, LAND AND WATER**

**LAND USE PERMIT APPLICATION**

AS 38.05.850

**Applicants must complete all sections of this application. In addition, applicants proposing:**

- the use of the uplands and non marine waters must also complete the Supplemental Questionnaire for Use of Uplands and Non Marine Waters accompanying this application;
- off-road travel must also complete the Supplemental Questionnaire for Off-Road Travel accompanying this application; and/or
- the use of tide and submerged lands must also complete the Supplemental Questionnaire for Use of Marine Waters accompanying this application.

**Other items that must accompany the completed application are:**

- a **(non-refundable) \$100 application filing fee;**
- a 1:250,000 or 1:63,360 scale USGS map showing the location of the proposed activity;
- additional items identified and required in any supplemental questionnaire(s) to this application; and
- additional pages if more space is necessary to answer the questions completely.

RECEIVED BOARD

2017 JUN 14 PM 02:00

JUNEAU

**Completed Land Use Permit Applications should be mailed to one of the following offices:**

**Public Information Center  
550 W. 7<sup>th</sup> Ave, Suite 1260  
Anchorage, AK 99501  
(907) 269-8400**

**Public Information Center  
3700 Airport Way  
Fairbanks, AK 99709  
(907) 451-2705**

**MLW Information Office  
P.O. Box 111020  
Juneau, AK 99811-1020  
(907) 465-3400**

CID: 35830

LAS # 31772

<b>Applicant Information:</b>			
City and Borough of Juneau Docks and Harbors Department			N/A
Applicant Name			Date of Birth
City and Borough of Juneau Docks and Harbors Department		Carl Uchtyl	
Doing Business As		Contact Person	EIN
155 South Seward Street			Carl.Uchtyl@juneau.org
Mailing Address with City, State and Zip			Email Address
( )	(907) 586.0294	( )	(907) 586.0295
Home Phone	Work Phone	Cell Phone	FAX
If you are applying for a corporation, give the following information:			
Name, address and place of incorporation: _____			
Is the corporation qualified to do business in Alaska? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> . If yes, provide name, address and phone number of resident agent: PND Engineers, Inc (Agent), 9360 Glacier Hwy, Suite 100, Juneau AK 99801; 907.586.2093			
<b>Type of User, Select one:</b> <input type="checkbox"/> Private non-commercial (personal use) <input type="checkbox"/> Commercial Recreation or Tourism			
<input checked="" type="checkbox"/> Public Non-profit including Federal, State, Municipal Government Agency <input type="checkbox"/> Other commercial or industrial			

<b>Duration of Project:</b> The proposed activity will require the use of state land for: (Check one)		Material will be placed
<input checked="" type="checkbox"/> a single term of less than one year. Beginning month: <u>September 2017</u> Ending month: <u>April 2018</u>		over approximately
<input type="checkbox"/> a multi year term for up to 5 years. Beginning year: _____ Ending year: _____		30-45 days during this
		period.
If multi year and seasonal, circle months of use in each year. Jan., Feb., Mar., Apr., May, Jun., Jul., Aug., Sept., Oct., Nov., Dec.		

**Project Location**

Latitude/Longitude or UTM: 58°22'22.08"N / 134°39'49.32"W or

JNU B-2 Section: 27, Township: 40 South, Range: 65 East, Meridian: Copper River  
(The spaces below are to be used if the boundaries of the proposed project cross section lines.)

Section: \_\_\_\_\_, Township: \_\_\_\_\_, Range: \_\_\_\_\_, Meridian: \_\_\_\_\_

Section: \_\_\_\_\_, Township: \_\_\_\_\_, Range: \_\_\_\_\_, Meridian: \_\_\_\_\_

Proposed project will require the use of up to 65 acres. (Add additional sheets as necessary)

**Project Description** - Describe in detail your intended use of state land. (State land also includes all tide and submerged lands beneath coastal waters and all shorelands beneath other navigable water bodies of the state.) Discuss development and activities. (Attach additional pages as necessary.)

Phase III of the Statter Harbor Improvements Project includes dredging within the harbor area. This permit is for the in water disposal of up to 30,375\* cubic yards of dredged materials on state lands just outside Statter Harbor. Disposal operations will be conducted over a period of approximately 30-45 days from a barge. It is estimated about 2 loads (~500 CY each) will be placed daily approximately 4 hours apart. Once the disposal operations are completed the material will stay in place. The disposal site is approximately 65 acres minimized to the extent possible based on barge limitations. The disposal placement and mound height has been simulated using the US Army Corps of Engineers Multiple Placement Fate model. The results for the proposed disposal location are attached.

\*Note: 24,300 cubic yards will be dredged from the harbor. A bulking factor has been applied due to increased water content and fluff during excavation. With the bulking factor of 1.25 applied the actual volume of the material could be up to 30,375 cubic yards.

Should a portion of the permitted area be closed to the general public? Yes  No . If yes, explain which portion and provide justification for exclusive use:

The barge will be utilizing the area, however it is not necessary to close the area to the public.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Site Description** - Briefly describe the current condition of the proposed site of use, noting any trash, garbage, debris or signs of possible site contamination (If significant, we recommend you provide pictures to establish initial conditions):

The site is entirely submerged, it is not anticipated that any trash, garbage is debris is present. Bathymetry data is available from the National Oceanic and Atmospheric Administration, Survey H10681. This data was imported into the USACE model and used to model how the material is anticipated to settle at the site.

Are there improvements or materials on the site now? Yes  No  If yes, briefly describe the improvements, their approximate value, and who owns them (We recommend you provide pictures of improvements):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Site Description continued** - Describe the natural vegetation --- ground cover, trees, shrubs --- and any proposed changes. Describe the location of any estuarine, riparian, or wetlands and any noticeable animal use of area.

The proposed site is fully submerged. Changes to the bathymetry will occur from placement of dredged material.

**Site Access** - Describe how you plan to access the site, and your mode of transportation.

The site will be accessed via a barge from Statter Harbor.

If your access is by aircraft, specify the type and size of aircraft: \_\_\_\_\_

To access the site, the aircraft is equipped with floats  wheels  skis .

**Number of people**

1. Indicate the number of employees and supervisors who will be working on the site. Unknown - Contractor Dependent
2. Indicate the number of customers who will be using the site per year or season. n/a
3. Indicate the number of days the site will be used per year or season. Approximately 30-45

**Environmental Risk / Hazardous Substances** - In the course of your proposed activity will you generate, use, store, transport, dispose of, or otherwise come in contact with toxic and/or hazardous materials, and/or hydrocarbons? **Yes**  **No** . **If yes, please describe:**

No - Dredge material has been tested for contamination. All chemicals of concern were below the screening levels. See attached Dredge Material Characterization (PND 2016) and the 2016 Determination of In-Water Suitability from the US Army Corps of Engineers

The types and volumes of fuel or other hazardous substances present or proposed: n/a

The specific storage location(s): n/a

The spill plan and prevention methods: n/a

**Environmental Risk/Hazardous Substances (continued)** - If you plan to use either above or below ground storage containers (like tanks, drums, or other containers) for hazardous material storage, answer the following questions for each container:

Where will the container be located?  n/a

What will be stored in the container?  n/a

What will be the container's size in gallons?  n/a

Give a description of any secondary containment structure, including volume in gallons, the type of lining material, and configuration:  
 n/a

Will the container be tested for leaks? Yes[ ] No[ ]

Will the container be equipped with leak detection devices? Yes[ ] No[ ]. If no, describe:  n/a

Do you have any reason to suspect, or do you know if the site may have been previously contaminated? Yes[ ] No[ ]. If yes, please explain:  
 n/a

Date Stamp:

\_\_\_\_\_  
Signature of Applicant or Authorized Representative Title

AS 38.05.035(a) authorizes the director to decide what information is needed to process an application for the sale or use of state land and resources. This information is made part of the state public record and becomes public information under AS 09.25.110 and 09.25.120 (unless the information qualifies for confidentiality under AS 38.05.035(a)(9) and confidentiality is requested.) Public information is open to inspection by you or any member of the public. A person who is the subject of the information may challenge its accuracy or completeness under AS 44.99.310, by giving a written description of the challenged information, the changes needed to correct it, and a name and address where the person can be reached. False statements made in an application for a benefit is punishable under AS 11.56.210.

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## **Environmental Risk Questionnaire**

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STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINING, LAND AND WATER

- |                                                                                                                                    |                                                                                                              |                                                                                                                                 |                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> <b>Contract Administration</b><br>550 W 7th Ave., Suite 640<br>Anchorage, AK 99501-3576<br>(907) 269-8594 | <input type="checkbox"/> <b>Northern Region</b><br>3700 Airport Way<br>Fairbanks, AK 99709<br>(907) 451-2740 | <input type="checkbox"/> <b>Southcentral Region</b><br>550 W 7th Ave., Suite 900C<br>Anchorage, AK 99501-3577<br>(907) 269-8552 | <input type="checkbox"/> <b>Southeast Region</b><br>400 Willoughby,<br>Suite #400<br>P.O. Box 111020<br>Juneau, AK 99801<br>(907) 465-3400 |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|

**APPLICANT ENVIRONMENTAL RISK QUESTIONNAIRE**

The purpose of this questionnaire is to help clarify the types of activities you propose to undertake. The questions are meant to help identify the level of environmental risk that may be associated with the proposed activity. The Division of Mining, Land and Water's evaluation of environmental risk for the proposed activity does not imply that the parcel or the proposed activity is an environmental risk from the presence or use of hazardous substances.

Through this analysis, you may become aware of environmental risks that you did not know about. If so, you may want to consult with an environmental engineer or an attorney.

City and Borough of Juneau - Docks and Harbors Department

Applicant's Name	Doing Business As		
<u>155 South Seward Street</u>	<u>Juneau</u>	<u>AK</u>	<u>99801</u>
Address	City	State	Zip
<u>( )</u>	<u>( 907 ) 586.0294</u>	<u>Carl.Uchtyl@juneau.org</u>	<u>Carl Uchtyl</u>
Message Phone	Work Phone	E-Mail	Contact Person

Describe the proposed activity:

Phase III of the Statter Harbor Improvements Project includes dredging within the harbor area. This permit is for the in-water disposal of up to 30,375 cubic yards of dredged material (includes bulking factor) just outside Statter Harbor within Auke Bay. Disposal operations will take place over approximately 30-45 with an estimated 2 loads placed per day during a 12-hour shift.

In the course of your proposed activity will you generate, use, store, transport, dispose of, or otherwise come in contact with toxic and/or hazardous materials, and/or hydrocarbons? Yes  No

If yes, please list the substances and the associated quantities. Use a separate sheet of paper, if necessary.

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If the proposed activities involve any storage tanks, either above or below ground, address the following questions for each tank. Please use a separate sheet of paper, if necessary, and, where appropriate, include maps or plats:

a. Where will the tank be located? n/a

b. What will be stored in the tank? n/a

c. What will be the tank's size in gallons? n/a

d. What will the tank be used for? (Commercial or residential purposes?) n/a

e. Will the tank be tested for leaks? n/a

f. Will the tank be equipped with leak detection devices? Yes  No . If yes, describe: \_\_\_\_\_

Do you know or have any reason to suspect that the site may have been previously contaminated? Yes  No .

If yes, please explain: \_\_\_\_\_

There is no reason to believe the proposed disposal site is contaminated. Additionally, a dredge material sampling and analysis plan was developed and implemented for the dredge basin in Statter Harbor. The Dredge Material Characterization Report (PND 2016) outlines the findings. Based on the results the US Army Corps of Engineers issued an in-water suitability determination under POA-2008-782-M4 dated January 4, 2017.

I certify that due diligence has been exercised and proper inquiries made in completing this questionnaire, and that the foregoing is true and correct to the best of my knowledge.

\_\_\_\_\_  
Applicant

\_\_\_\_\_  
Date

AS 38.05.035(a) authorizes the director to decide what information is needed to process an application for the sale or use of state land and resources. This information is made a part of the state public land records and becomes public information under AS 40.25.110 and 40.25.120 (unless the information qualifies for confidentiality under AS 38.05.035(a)(9) and confidentiality is requested). Public information is open to inspection by you or any member of the public. A person who is the subject of the information may challenge its accuracy or completeness under AS 44.99.310, by giving a written description of the challenged information, the changes needed to correct it, and a name and address where the person can be reached. False statements made in an application for a benefit are punishable under AS 11.56.210.

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**Land Use Permit Application  
Supplemental Questionnaire**

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**Land Use Permit Application Supplemental Questionnaire for:  
Use of Marine Waters (Tide & Submerged Lands)**

**Tidelands** are that portion of the intertidal zone below the elevation of mean high water. This elevation varies by location. Contact the nearest DNR regional office for assistance. **Submerged lands** are those below the lowest tidal elevation. The State of Alaska, with few exceptions, owns these lands out to 3 miles off shore. – If your activity includes the use of State tide and or submerged lands and the waters above them, answer the questions below and those applicable sections determined below. All site development details identified in this section must be represented graphically in the scaled drawings on Page 9 of the supplement.

Does the applicant own the directly adjacent, upland water front property? **Yes**  **No**  If no, give name(s) and current address / phone # of that property owner.

The proposed location is not directly adjacent to any uplands lots, the closest uplands lots are >0.5 miles away.

Give names and current addresses / phone #s for both upland property owners on either side of the above water front property. \_\_\_\_\_

**Note:** You must obtain the upland owner's written permission for any use of uplands you do not own including for waste disposal, access to roads, waterlines, power lines, or shore ties above MHW, and you must provide a copy to DNR before a permit is issued. If not the immediately adjacent upland property owner, does the applicant have legal access across the uplands? **Yes**  **No**  Please explain.

Will your tideland use also involve any use of adjacent State owned uplands? **Yes**  **No**  (If yes, indicate uses and show on your development plan diagram.)  Shore tie  Waterline  Power line  Access to roads  Other Explain:

**Type of Use, Activity, Development (Answer All )**

Will you be developing / using a Mooring Buoy system or anchoring a commercial or industrial use vessel for more than 14 days? **Yes**  **No**  ( If yes, please also answer all questions in **Part 1 on pg. 2 and Part 6 on pg. 8.**)

Will you be anchoring or mooring a commercial or industrial related floating facility that is or can be occupied, i.e. a float camp or floating lodge, a float house you rent, a seafood processor? **Yes**  **No**  (If yes, please answer all questions in **Part 2, pgs. 2, 3 and Part 6 on pg. 8.**)

Will you be anchoring or mooring your own personal use Float house? **Yes**  **No**  (If yes, please also answer all questions in **Part 2, pgs. 2, 3 and Part 6 on pg. 8.**)

Will you be placing non-occupied structures including but not limited to Piling, Dolphins, Fixed docks, Floating docks, or other floating structures? **Yes**  **No**  (If yes, please also answer all questions in **Part 3, pg. 3 and Part 6 on pg. 8.**)

**Type of Use, Activity, Development (continued)**

Are you seeking authorization to use or develop a Log Transfer Facility, a floating Log Storage area, or a Log Ship Loading site? Yes  No  (If yes, please also answer all questions in Part 4, pgs. 4, 5, 6 and Part 6 on pg. 8.)

Will you be placing fill or dredging material on a beach? Yes  No  (If yes, please also answer all questions in Part 5, pgs. 6, 7 and Part 6 on pg. 8.)

**Part 1. Anchoring vessels and mooring buoy systems**

Does the proposed use location include a known anchorage? Yes  No  If yes, have alternative locations been considered to reduce impact to the anchorage? Yes  List below. No  If no, explain why.

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What type of vessel will use the site?  Commercial Fish Tender/ Processor  Log Ship  General Cargo Ship  Unoccupied Barge  Fuel Barge  Passenger Vessel  Other: \_\_\_\_\_

Does the anchoring vessel require the ability to be able to occupy this site all year long? Yes  No  If No, what months will the site be needed? From \_\_\_\_\_ to \_\_\_\_\_

What is the maximum swing radius of vessel at anchor? Length \_\_\_\_\_ feet (distance from anchor to the aft of the vessel)

Will the vessel require the placement of a mooring buoy system? Yes  No  Number of buoys: \_\_\_\_\_  
If placing buoys, fill out applicable parts of Part 3 to explain the anchoring system.

**Part 2. Floathouses and Commercial, Industrial Floating Lodges, Float camps, Caretaker Residences** (including seafood processors). An associated part of approving this type of use is The US Army Corps of Engineers (USACE) permit. Their general permit, GP 89-4N, for occupied floating facilities can be obtained you meet all conditions of GP 89-4N. Please obtain a copy of GP 89-4N from the Corps, review the conditions and indicate below if your facility will meet all of these conditions. This will help streamline the approval process.

Does your project meet all conditions for general permit GP 89-4N? Yes  No

If no, you must Contact USACE at 1-800-478-2712 and apply for an individual Corps of Engineers permit.

**Description of Facility** Note: The structures and dimensions must be shown on the development plan diagram

Float Dimensions: float \_\_\_ x \_\_\_ float \_\_\_ x \_\_\_ float \_\_\_ x \_\_\_ Total float area \_\_\_ sq ft

Living quarters total area: \_\_\_ sq ft. Number of stories: \_\_\_ Maximum occupancy \_\_\_ persons

Describe other structures on floats, such as storage and generator sheds; give structure dimensions.

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Describe anchoring system and address all that apply: No. of anchors \_\_\_\_\_ Type \_\_\_\_\_ Weight \_\_\_\_\_  
No. of Rock bolts \_\_\_\_\_ No. of Shore ties \_\_\_\_\_

Other methods \_\_\_\_\_

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**Part 2. (continued)**

Grounding is prohibited. What is the water depth beneath the facility at extreme low tide \_\_\_\_\_

How many feet of maximum draft does the floating facility have \_\_\_\_\_

Describe your potable Water Source: type, location, ownership of the source \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Wastewater System. Describe how you will handle human waste, black water, grey water \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Do you have an approved ADEC marine sanitation system Yes[ ] No[ ] Approval # \_\_\_\_\_

Describe how you will dispose of all solid waste including human waste and household garbage generated on facility \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Part 3. Non occupied structures - Piling, Dolphins, fixed docks, floating docks, or other floating structures.**

Select all boxes that apply for structures located below MHW and show all on the development plan diagram

- Fixed pile-supported dock, wharf or landing (non-floating) - dimensions \_\_\_\_ x \_\_\_\_ feet No. of pilings \_\_\_\_
- Ramp to floating dock - dimensions \_\_\_\_ x \_\_\_\_ feet
- Boat haulout or non-floating ramp - dimensions \_\_\_\_ x \_\_\_\_ feet
- Floating dock Dimensions \_\_\_\_ x \_\_\_\_ feet; \_\_\_\_ x \_\_\_\_ feet; \_\_\_\_ x \_\_\_\_ feet; \_\_\_\_ x \_\_\_\_ feet; \_\_\_\_ x \_\_\_\_ feet;
- Floating breakwater - materials \_\_\_\_\_ Dimensions \_\_\_\_ x \_\_\_\_ feet
- Other floating structures (e.g., net pens, gear storage float) - describe materials, structures, dimensions \_\_\_\_\_

- Storage sheds or similar structures on docks - description \_\_\_\_\_ Dimensions \_\_\_\_ x \_\_\_\_
- Bulkhead - type (log crib, sheet pile, etc) \_\_\_\_\_  
Dimensions \_\_\_\_ x \_\_\_\_ Cubic Yards of Fill \_\_\_\_\_
- Individual pilings not counted under fixed dock above. Number \_\_\_\_
- Dolphins - Number \_\_\_\_\_ Number of piling per dolphin \_\_\_\_\_
- Anchors- Number \_\_\_\_\_ Type \_\_\_\_\_ Weight \_\_\_\_\_
- Rock bolts- Number \_\_\_\_\_
- Shore ties- Number \_\_\_\_\_ Note: You must obtain the upland owner's permission to place shore ties above MHW before a permit is issued.

Note: Grounding is prohibited.

What is the water depth beneath the floating structures at extreme low tide? \_\_\_\_\_ feet

**Part 4. Temporary log transfer facility (LTF) including floating log storage area.**

Siting of an LTF which discharges wood into the marine waters must meet the 1985 Alaska Timber Task Force siting criteria guidelines and the criteria established under the US EPA's - NPDES general permit and the AK Dept of Environmental Conservation 401 certification.

What is the maximum length of time that you will need to use the facility \_\_\_\_\_ years.

What will be your seasonal periods of operation? \_\_\_\_\_

What is the total timber volume you need to transfer across this LTF? \_\_\_\_\_ mmbf.

How many total acres do you need for this facility? \_\_\_\_\_ acres.

**Note:** This acreage must include all improvements including the anchors and lines. It must include the area required for such items as log raft construction, off shore storage, associated barge and vessel moorage, and shoreties.

Does the associated transfer site require a log raft building area?  Yes  No  If yes then:

How many boom logs \_\_\_\_\_ and anchors \_\_\_\_\_ and what is the total length of boom logs \_\_\_\_\_ feet, that you need for the rafting area?

Will the log rafts ground or be moored in water at depths less than 40 feet as measured from MLLW?  Yes  No

What is the near shore depth \_\_\_\_\_ feet, and the offshore depth \_\_\_\_\_ feet, of the log rafting area as measured from MLLW (0.0' elevation)?

What nautical chart did you use for reference \_\_\_\_\_, please include a copy of this area of the chart with the attachments.

Will you need an associated in-water log storage area?  Yes  No  If yes, then answer the set of questions in the **Floating Log Storage Area** section of **Part 4**.

Will you need an associated log ship moorage and loading area?  Yes  No  If yes then complete Part 1 on page 2.

What kind of transfer facility do you propose to operate? (i.e. A-Frame letdown, slide ramp, drive down ramp, barge ramp)

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**Will you be transferring logs into the marine waters?**

**No, logs will never be discharged into the water, they will always be transported directly onto barges.**

**Yes - new facility.** The applicant must conduct a dive survey of the near shore area to document the pre-project underwater topography and habitat conditions that will be covered by the discharge of bark on to the likely one-acre zone of deposit. The initial dive survey must be done to guidelines established for bark monitoring by the USEPA and the Alaska Department of Environmental Conservation. A written report of findings including photographic documentation must be submitted prior to review and consideration of this application.

**Yes - existing facility.** Include a report of the last dive survey with attachments. The applicant / operator is responsible to conduct bark monitoring dive surveys, done to the guidelines established by the US EPA and the Alaska Department of Environmental Conservation to document the current extent of bark accumulation at the site. A written report of current monitoring findings must be submitted prior to review and consideration of this application.

**Is this an existing LTF that has been fully approved and used to transport timber in the past?  Yes  No**   
If Yes, then answer the following set of questions. If No, you are finished with **Part 4**.

**Part 4. (continued)**

Was the facility constructed before 1985? **Yes** [ ] **No** [ ]

Is the facility currently authorized? **Yes** [ ] **No** [ ] If Yes, provide the Army Corp of Engineer's Permit Name and number (i.e. Mud bay 43) : \_\_\_\_\_ and attach a copy of it and all modifications.

What is the EPA - NPDES authorization number? \_\_\_\_\_ Date of approval \_\_\_\_\_ and who is the authorized operator: \_\_\_\_\_

When was the facility last actively used? \_\_\_\_\_ How long was it used for? \_\_\_\_\_  
How much volume was transferred? \_\_\_\_\_ mmbf

What type of log entry system is currently authorized? (i.e. A-Frame letdown, slide ramp, drive down ramp, barge ramp)

\_\_\_\_\_

\_\_\_\_\_

Is there a tideland survey for the site? [ ] **Yes** [ ] **No**, ATS# \_\_\_\_\_

Does the existing facility require a physical modification? **Yes** [ ] **No** [ ] If yes, please submit your modification request to the USACE and include a copy with this application. Please briefly explain the modification.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Floating Log Storage Area**

Will the storage area be inside the permit area at the log transfer facility? **Yes** [ ] **No** [ ] If no, Will there be a separate tract or tracts? **Yes** [ ] **No** [ ] If yes how many tracts do you need? \_\_\_\_\_ and list below the acreage of each tract.

\_\_\_\_\_

\_\_\_\_\_

How long do you need to use the storage area (s)? \_\_\_\_\_

How much volume will be moved thru this storage area? \_\_\_\_\_ mmbf.

How many log booms and anchors and what is the total length of the log boom perimeter that will be needed for storage?  
# of log booms \_\_\_\_\_, # of anchors \_\_\_\_\_ total length of all log booms \_\_\_\_\_ feet.

Will you be using shore ties? **Yes** [ ] **No** [ ] If yes how many? \_\_\_\_\_ and if you are not the upland owner have you received permission to place shore ties? **Yes** [ ] **No** [ ] If yes, provide a copy of this permission, if no, you need to obtain and provide this.

Will the log rafts ground or be moored in water at depths less than 40 feet as measured from MLLW? **Yes** [ ] **No** [ ]

What is the near shore depth and the offshore depth of the log storage area as measured from MLLW?  
Near shore depth \_\_\_\_\_ feet, Offshore depth \_\_\_\_\_ feet.

What nautical chart did you use for reference \_\_\_\_\_. If possible please include a copy with the attachments.

**Part 4. (continued)**

If the log storage area is one which has been fully approved and used to store log rafts in the past then answer the following:

When was the site last actively used? \_\_\_\_\_ and for how long ? \_\_\_\_\_

If known, how much volume was stored here? \_\_\_\_\_ mmbf

Is the facility currently authorized? **Yes** | **No** | If yes, provide the Army Corp of Engineer's Permit Name and number (i.e. Mud bay 43) : \_\_\_\_\_ and attach a copy of the permit and all modifications

What is the DNR authorization number? \_\_\_\_\_

What is the EPA - NPDES authorization number? \_\_\_\_\_ Date of approval \_\_\_\_\_ and who is the authorized operator: \_\_\_\_\_

Has there been a recent dive survey completed? **Yes** | **No** | If yes, then include a copy of this report with the attachments.

Note: The applicant may have to conduct a dive survey of the log storage area to document the underwater topography and habitat that would be covered by the bark zone of deposit or to establish current bark accumulation levels. If required due to level of use, a bark monitoring dive survey must be done to guidelines established by the USEPA and the Alaska Department of Environmental Conservation to document the current conditions at the site

**Part 5. Use that involves dredging, placing fill material or altering beaches.**

NOTE: When altering the location of the line of mean high water on a beach by placing fill on or seaward of this line you need to be aware of the following. The line of mean high water (MHW) is the boundary where State (public) ownership of tide and submerged land begins. This boundary is an elevation contour on the beach and is determined by the tidal stage of MHW water elevation against the beach topography. This line is not fixed by a past survey of the upland property if that land survey shows a meandered boundary as is typically done. A meandered boundary is intended to be dynamic and move over time as natural forces affect the beach. Natural forces can either erode beach material or deposit material and as a result, the boundary can naturally move. Another natural way that boundaries can change is in tidal areas where glaciers have recently receded and the land is rebounding or uplifting over time. When any natural process is interrupted by the actions of man, such as placing material to stop erosion, the boundary line becomes fixed from that point on.

What is the elevation of the line of MHW at the proposed permit site? \_\_\_\_\_ feet

Are you proposing to alter the line of MHW in any manner? **Yes** | **No** | If yes, explain what you intend to do?

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**Placing fill material on a beach.**

What is the purpose of the fill? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Is there an upland survey that has established a meandered boundary line? **Yes** | **No** | If yes, Survey # \_\_\_\_\_  
(if a subdivision survey please provide a legible copy) (ATS, ASLS, US Survey#)

**Part 5.** (continued)

Will heavy equipment be used below the mean high water line to alter the beach? **Yes**  **No**  If yes, explain

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How many cubic yards of fill are you proposing to place at and below the line of MHW? \_\_\_\_\_ cubic yards

What are the dimensions of fill area below MHW elevation? \_\_\_\_\_

How many linear feet along the (beach) line of MHW will be covered with fill? \_\_\_\_\_ feet.

Is there more than one area along the beach which will be filled? **Yes**  **No**  Identify the location of each area on the development plan diagram.

Will any of the fill material come from State owned uplands or tide and submerged lands? **Yes**  **No**  If yes, then what is the source? \_\_\_\_\_ and how many cubic yards? \_\_\_\_\_.

If you are intending to limit beach fill to the area above the current line of MHW will any of the fill or associated retaining wall material including the toe of the fill or retaining wall extend beyond the line of MHW? **Yes**  **No**

Is the adjacent upland property encumbered with a public easement along the waterfront boundary? **Yes**  **No**

How will the fill affect public access along the beach? \_\_\_\_\_

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**Excavation of materials from a beach.**

What is the purpose of the excavation? \_\_\_\_\_

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How many linear feet along the beach will be affected? \_\_\_\_\_ feet

To what depth will you be excavating? \_\_\_\_\_ feet

How many cubic yards will be excavated from the area seaward of the line of MHW? \_\_\_\_\_ cubic yards and what will this excavated material be used for or where will it be disposed of?

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**Part 6. Dismantle, Removal, Restoration Plan** – The permit will require that upon expiration, completion, or termination the site shall be vacated and all improvements and personal property removed. The site shall be left in a clean, safe condition acceptable to the Regional Manager. Your answers to the following questions will establish your proposed restoration plan.

A. Explain how you plan to dismantle and remove the improvements and restore the site to a clean, safe condition acceptable to the Regional Manager. **Note:** One acceptable alternative is returning the permit site to the condition that existed before the site was developed or used.

The dredge material cannot be removed after placement. A landuse permit application was filled out at the direction of ADNR despite the fact the placement is permanent.

B. If your project involves fill describe how it will be removed and where will it be removed to. How will you document that the original line of Mean High Water has been restored? (i.e. photo documentation, resurvey)

See above

C. If your project involves anchors and/or pilings how do you plan on removing them? Where is the nearest community that provides this type of removal equipment / service?

N/A

D. Describe the disposal method and identify the disposal site or sites for structural components, solid wastes, and hazardous wastes.

N/A

E. If components can be reused for other projects, such as anchors, identify where they would be stored? \_\_\_\_\_

N/A



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**Dredge Material Characterization Report**

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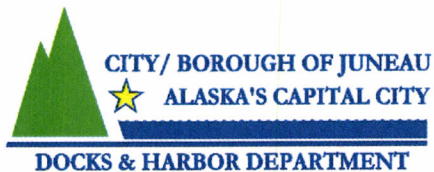
**City and Borough of Juneau  
Statter Harbor Improvements-Phase III**

**DREDGE MATERIAL  
CHARACTERIZATION REPORT**



DECEMBER 2016

PREPARED FOR:



City and Borough of Juneau  
Docks and Harbors  
155 S. Seward Street  
Juneau, AK 99801

PREPARED BY:



ENGINEERS, INC.

PND Engineers, Inc.  
9360 Glacier Hwy, Ste. 100  
Juneau, Alaska 99801  
December 2016  
PND 152069.04

**STATTER HARBOR IMPROVEMENTS PHASE III  
DREDGE MATERIAL CHARACTERIZATION REPORT**

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**DECEMBER 2016**

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Table 1 – DMMU and Z Sediment Sample Data

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Table 4 – Dry-Weight Analytical Results for Sediment Samples

Table 5 – Physical Properties Laboratory Test Results

**C – Borehole Logs**

**D – Analytical Report**

## **1 INTRODUCTION & SUMMARY**

This report presents the results of the Dredged Material Management Program (DMMP) sediment characterization for the Statter Harbor Improvements project in Juneau, Alaska, completed by PND Engineers, Inc. (PND). Between the dates of October 15 and 20, 2016, 5 boreholes were completed at the site to depths ranging between 0 and 14 feet below the existing mudline for a combined geotechnical and sediment characterization effort. The information in this report pertains only to the latter.

Some chemicals of concern were detected in the site sediment; however, all results were below Screening Levels (SL). Therefore, the material to be dredged meets the criteria for open-water disposal.

The sediment characterization program described herein was completed in general accordance with the project Sampling and Analysis Plan (SAP) (PND 2016). The SAP was prepared pursuant to the guidelines established by the US Army Corps of Engineers' (USACE) Dredged Material Evaluation and Disposal Procedures User's Manual (USACE 2015) and the U.S. Environmental Protection Agency (EPA) Inland Testing Manual (USEPA 1998). The SAP was distributed by the USACE for review prior to commencing the field investigating to the U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration (NOAA), the EPA and the Alaska Department of Conservation's (ADEC) Waste Water Division for comment and approval. The agency approved SAP incorporated review comments from the USACE, EPA and AKDEC. The sediment characterization field work was completed under USACE Nationwide Permit (NWP) 6 – Survey Activities.

The following sections provide relevant project and background information, summary of the field methods for sediment sampling and summarize the results of laboratory chemical analysis along with other supporting information. Detailed information is in the appendices, including the analytical reports, borehole logs, tables and figures.

## **2 PROJECT OVERVIEW**

### **2.1 Site History**

The development of moorage facilities began in Auke Bay prior to 1959. Around 1985 a floating breakwater was constructed, allowing for a large increase in moorage within Auke Bay and the construction of the original Statter Harbor moorage facilities.

The harbor is now primarily a transient harbor serving fishermen, charter operators, local boat owners, live-aboards and larger sailing and pleasure yachts. The transient capacity is approximately 324 vessels and there are an additional 70 stalls for long term moorage. The portion of the harbor proposed for dredging ranges in depth from approximately 0 feet to -16 feet Mean Lower Low Water (MLLW) and is not currently occupied by harbor facilities. It was the former location of the privately owned DeHart's Marina.

### **2.2 Project Description**

The City and Borough of Juneau is planning the following improvements to the Harbor as part of the third phase of the Statter Harbor Improvements project:

- Dredging 24,250 cubic yards of material (sediment) to provide a berth elevation of -17 feet, MLLW.
- Installation of a moorage float system to be located within the dredge basin consisting of approximately 420 linear feet of moorage floats, gangway, gangway landing float and float support piles.
- Installation of a second moorage float system immediately offshore of the dredge basin and connected to the existing public moorage facility. It consists of approximately 240 linear feet of moorage floats, (5) finger floats and float support piles.
- Construction of an uplands retaining wall structure spanning approximately 170 linear feet.

### **2.3 Dredge Plan**

The Site Plan in Appendix A shows the dredging plan which includes three Dredged Material Management Units (DMMUs) and sediment sampling borehole locations. Subsurface profiles depicting the DMMUs across several transects within the harbor expansion footprint are also included in Appendix A.

The total dredge volume is 24,250 cubic yards and will be excavated with side slopes inclined at 2H:1V (2 horizontal to 1 vertical) with 1 foot of overdepth over the entire dredging footprint and side slopes.

Upon obtaining confirmation that the dredged material is suitable for open-water disposal the next step will be to work with regulatory agencies to determine a suitable disposal site. Open-water dredge disposal is proposed at Fritz Cove, approximately 3.95 nautical miles south of Auke Bay, due to normal silty water conditions from the Mendenhall River outflows. It is unknown whether the disposal site has ever been subject to sampling. The disposal location (Figure 1) is at latitude 58° 20' 08.70" N and longitude 134° 38' 16.78" W. The dredge material, if uniformly distributed, would cover the disposal area to a depth of approximately 8 inches.

## **3 FIELD METHODS**

### **3.1 Sampling Equipment, Locations and Protocols**

A Tier II testing program was completed the week of October 15, 2016 to collect adequate sediment volumes for chemical testing to characterize the material (sediment) planned for dredging and open water disposal. Samples for biological testing were collected and archived for potential further testing in the event the chemical analysis results exceeded the DMMP Threshold SLs.

Sediment samples were collected using a drill rig staged over the water from a landing craft. The drilling was performed using drilling equipment owned and operated by Denali Drilling, Inc. of Anchorage, Alaska, and the landing craft was owned and operated by Poundstone Freight, LLC based out of Auke Bay, Alaska. A PND geologist oversaw the exploration program; examined and classified the soils encountered, obtained representative samples and prepared a detailed log of each borehole.

Samples for DDMUs' 1 and 2 were obtained using standard Shelby tubes, 5 feet in length, that were pushed into the mudline surface. Previous sampling in the vicinity of this investigation proved difficult to obtain sediment material both at and immediately below the mudline surface. Sediment within the proposed dredge basin site was anticipated to be comprised of fine sand and silt/clay-size particles suspended in a saturated state. A plastic catcher, typically used within split spoon samplers to catch soil particles upon retrieval of the sampler to the surface, was screwed into each Shelby tube tip and used to increase the prospect of obtaining suitable quantities of soil material for analysis.

Samples for DDMU 3 were obtained within plastic liner tubes inside a 2.5-inch-inside-diameter stainless-steel split spoon sampler advanced by a 340-pound automatic hammer free-falling 30 inches. Upon retrieval, each sample tube was sealed within its respective plastic liner tube, labeled, and stored refrigerated at  $\pm 4$  °C preceding compositing. Each sample retrieved was visually classified in the field using a system based on the Unified Soil Classification System (USCS) per ASTM D 2488.

Sample handling, labeling, compositing, transport, chain-of-custody, decontamination and hygiene protocols were followed as described in the SAP (PND 2016).

A log of each borehole is included in Appendix C and depicts PND's interpretation of the subsurface conditions observed at the time of drilling and sampling. The logs include the classification of the soils encountered based on visual and/or laboratory testing, sampling locations and laboratory testing completed. The logs show discrete interpreted depths where the soils or their characteristics change, although the change may actually be gradual.

Details of each sediment sample collected, including depth interval and recovery, are summarized in Table 1 in Appendix B.

### **3.2 Positioning Methods**

The borehole locations were initially positioned using a handheld GPS with stored latitude and longitude coordinates and further adjusted using swing ties (i.e. triangulation) performed with a Leupold Laser and known surveyed locations throughout the Harbor. Prior to the start of the field investigation, the GPS and laser were checked for accuracy against survey monuments in the vicinity of the Harbor and found to have horizontal accuracies of  $\pm 10$  feet and  $\pm 3$  feet, respectively. Tide charts and datums provided by NOAA for Station No. 9452210 and lead line measurements were used to determine the elevations of the mudline, samples, and soil and bedrock horizons.

Table 2 in Appendix B lists the proposed coordinates for each borehole along with the actual coordinates where each borehole was drilled. These locations are also depicted on the Site Plan in Appendix A.

### **3.3 Compositing Plan**

Each DMMU and Z-sample submitted for non-volatile chemical analytical and physical testing comprised a homogenized composite of approximately equal volumes of multiple subsamples of various depths obtained from several boreholes as described in the SAP (PND 2016). Prior to compositing each aggregate sample, one discrete sample was collected immediately after opening a single sealed sample tubes for each DMMU and Z-sample for the testing of volatile analytes.

Table 3 in Appendix B, summarizes the compositing plan showing the subsamples of each composited DMMU and Z-sample.

### **3.4 Deviations from the SAP**

Sediment sampling, processing and analysis were performed in general accordance with the procedures described in the SAP. Some minor deviations occurred as required to adjust to field conditions encountered. These deviations are discussed below.

- Borehole locations were adjusted to accommodate adverse field conditions. Challenges included encountering shallow bedrock within the proposed dredge basin at the proposed location of BH-2. After completing the geotechnical probing to determine the extent of the bedrock, BH-2 was relocated (BH-2A) to the edge of the bedrock to allow for drilling and sample recovery.
- All target Z-Sample depths were adjusted in the field based on actual mudline elevation to target within 1 foot of the planned dredge Elevation of  $-17$  feet MLLW.
- SAP target intervals were changed for the following samples:
  - DMMU-3 sample locations were changed from BH-1 to BH 4. Additionally BH-7 was added. DMMU-3 SAP target sample interval from 4 to 6 feet below mudline from BH-4 (formerly BH-1) was collected from 8 to 9 feet below mudline.
  - DMMU-3 SAP target sample interval from 6 to 10 feet below mudline from BH-2A was collected from 4 to 6 feet below mudline.
  - DMMU-3 SAP target sample interval from 6 to 10 feet from BH-3 below mudline was taken from 5 to 9 feet below mudline.
  - Borehole BH-7 was added for DMMU-3 and samples were obtained from 6 to 8 feet below mudline and 12 to 14 feet below mudline.
- Sediment samples were not collected from the following SAP target intervals due to no sample recovery:
  - No material was recovered from Borehole B-4, 0 to 4 feet below mudline for DMMU-2. Due to this only one sample was obtained for DMMU-2.

- Due to poor sample recovery, (2) additional boreholes were attempted - Boreholes BH-6 and BH-7. Both boreholes yielded no sample recovery within units' DMMU-1 and DMMU-2. Borehole BH-7 had recovery for DMMU-3 at intervals 6 to 8 feet below mudline and 12 to 14 feet below mudline.

### **3.5 Disposal Site Sampling**

### **3.6 Field Quality Control**

Per the SAP, field replicates were not taken because samples submitted to the laboratory were composited. Duplicate samples and matrix spike samples were used to assess sample precision in the laboratory.

## **4 LABORATORY ANALYTICAL TESTING**

### **4.1 Laboratory Quality Control**

Laboratory quality control and assurance measures included trip blanks, methanol blanks, laboratory spikes and spike replicators, corrective actions, etc. as described in the SAP. A full summary of methods and results is included in the Job Narrative section of the laboratory report in Appendix D.

### **4.2 Results**

Laboratory analytical testing for conventional parameters, GRO/BTEX, DRO/RRO, SVOCs, chlorinated pesticides, PCBs, and Metals and testing for physical properties (grain size distribution and moisture content) was completed on each DMMU and Z-sample by TestAmerica Laboratories, Inc.

Contaminants of concern were either not detected or detected at concentrations below the DMMP SLs for each DMMU and Z-sample tested. Test results for Diesel and Residual Range Organics (DRO and RRO) were below clean up levels per Alaska Department of Environmental Conservation.

Based on the physical properties testing, and sampling from previous drill investigations in the nearby vicinity of the proposed dredge basin, the dredge disposal material is interpreted to consist of primarily very fine to fine sand with subordinate silt, clay and small amounts of isolated coarse gravel material. Soil particles comprising DMMU-1 and DMMU-2 exist in a saturated state with very loose densities. The soil particle density within DMMU-3 is interpreted to locally vary from very loose to medium dense.

The chemical analytical test results and the physical properties test results are summarized in Tables 4 and 5, respectively, in Appendix B. The Laboratory reports with the complete results of the chemical and physical analyses are included in Appendix D, which also include the chain-of-custody forms used to document the transfer of the samples between PND and TestAmerica.

Follow-up biological testing or bioaccumulation testing will not be completed because chemical analytical testing results do not indicate concentrations of contaminants of concern above the DMMU threshold SLs.

## **5 CLOSURE**

This report was prepared in accordance with generally accepted professional principles and practices at the time this report was prepared. This report is for use on this project only and is not intended for reuse without written approval from PND. This report is not to be used in a manner that would constitute a detriment directly or indirectly to PND or CBJ.

## **6 REFERENCES**

PND Engineers, Inc. (PND) (2016). "Sampling and Analysis Plan, Statter Harbor Improvements – Phase III Harbor Basin Dredging." June 2016.



*U.S. Army Corps of Engineers (USACE) (2015). "Dredged Material Evaluation and Disposal Procedures User Manual." Dredged Material Management Office, Seattle District, November 2015.*

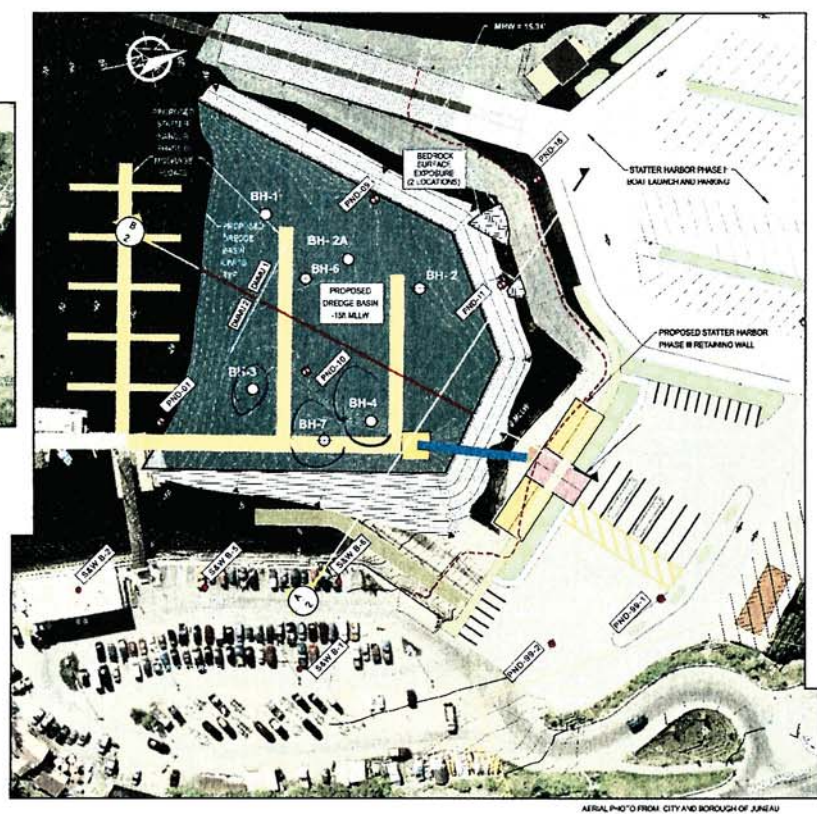
*US Environmental Protection Agency and US Army Corps of Engineers (USEPA/USACE) (1998). Evaluation of Dredged Material Proposed for Discharge in Waters of the US (Testing Manual). Inland Testing Manual. February 1998.*

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## Appendix A – Figures

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**LEGEND**

- BH-1 TEST BOREHOLE LOCATION THIS INVESTIGATION
- Subsurface profile location
- PROPOSED -18R MLLW DREDGE LIMITS (SEE SUMMARY TABLE FOR DMMU LOCATIONS)
- PREVIOUSLY DRILLED BOREHOLE LOCATIONS
  - PHD INC. - BOREHOLES DRILLED 2011 THROUGH 2014
  - PHD INC. - 1999 (STATTER HARBOR PARKING IMPROVEMENTS)
  - SHANNON & WELSH, INC. - 1999 (STATTER HARBOR PARKING IMPROVEMENTS)

**DREDGE SUMMARY TABLE**

DREDGE AREA	APPROX. DREDGE VOLUME (CY)	SURFACE AREA (SF)
DMMU 1,2,3	24,232	85,745

**STATTER HARBOR - MODERATE RANK DMMU SUMMARY TABLE**

DMMU NO.	APPROX. VOLUME (CY)	NO. SAMPLES	DESCRIPTION	BOREHOLE NUMBER
1	6,345	2	TOP 4 FEET	1, 2
2	6,345	2	TOP 4 FEET	3, 4
3	11,542	3	BELOW 4 FEET	2, 3, 4

- NOTES**
- VERTICAL DATUM IS MEAN LOWER LOW WATER (MLLW) FEET;
  - BATHYMETRIC CONTOURS IN THE SAP SAMPLING LOCATIONS FROM PHD ENGINEERS, INC. 2016

**SAMPLING AND ANALYSIS PLAN - NOT FOR CONSTRUCTION**

CITY & BOROUGH OF JUNEAU, ALASKA  
STATTER HARBOR IMPROVEMENTS PH III  
CBJ PROJECT - DH08-081

SHEET TITLE: **SAP SITE PLAN w/ SAMPLING LOCATIONS**  
1  
1 of 2



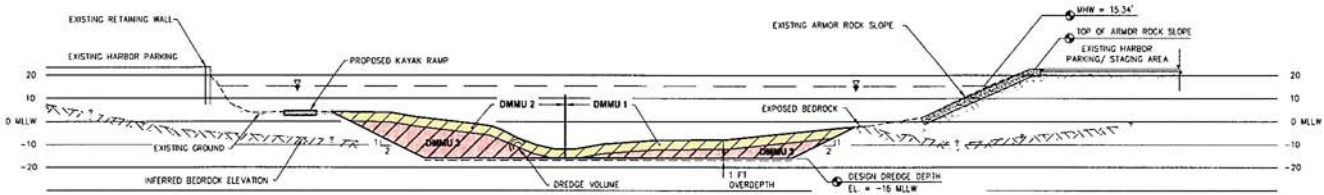
**REVISIONS**

REV.	DATE	DESCRIPTION	DWN.	CHK.	APP.

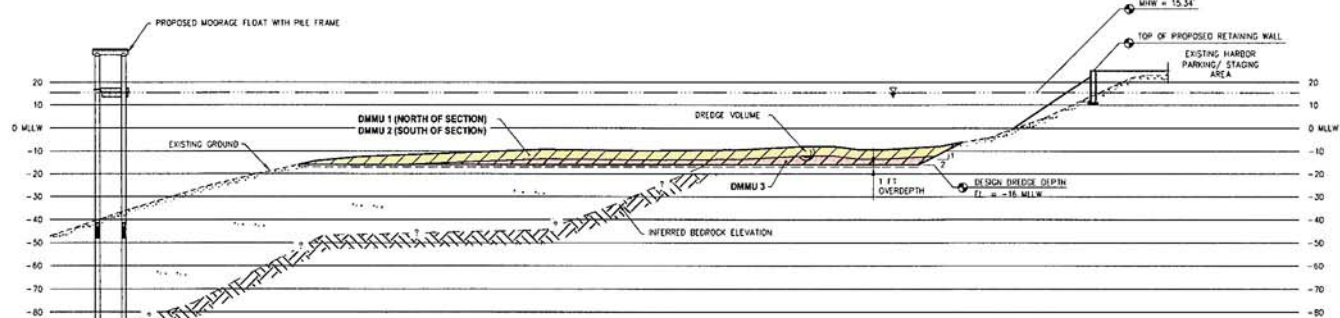
**P N D ENGINEERS, INC.**

1000 Glacier View Lane Ste 200  
Juneau, Alaska 99801  
Phone: 274-6233  
Fax: 274-6234  
www.pndengineers.com

DESIGN: PJD CHECKER: ORS SCALE: SCALE IN FEET  
DRAWN: PJD APPROVER: ORS 0 40 80 FT. DATE: OCT. 2015 PHD PROJECT NO. 152009



**PROFILE A - VIEW SOUTH**  
 SCALE IN FEET  
 0 20 40 FT.  
 VERTICAL SCALE EQUALS HORIZONTAL SCALE



**PROFILE B - VIEW WEST**  
 SCALE IN FEET  
 0 20 40 FT.  
 VERTICAL SCALE EQUALS HORIZONTAL SCALE

SAMPLING AND ANALYSIS PLAN - NOT FOR CONSTRUCTION



REVISIONS				
REV.	DATE	DESCRIPTION	OWN.	APP.

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 Fax: (907) 586-2400  
 www.pnd.com

DESIGN: PJD CHECKED: JLD SCALE: AS SHOWN  
 DRAWN: PJD APPROVED: CRS DATE: OCT. 2016

**CITY & BOROUGH OF JUNEAU, ALASKA**  
**STATTER HARBOR IMPROVEMENTS PH III**  
 CONTRACT NO. DHB-081

PROJECT TITLE: **SAP SUBSURFACE PROFILES**  
 SHEET NO.: **2**  
 TOTAL SHEETS: **2 OF 2**  
 PND PROJECT NO. 152069

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Appendix B – Tables

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**Table 1**  
**DMMU and Z Sediment Sample Data**

DMMU No.	Borehole[1]	Sample No.	Depth Interval (feet)	Penetration (inches)	Recovery (inches)	Recovery (%)
DMMU-1	BH-1	1	0 to 4	48	10	21%
	BH-2A	1	0 to 4	48	10	21%
DMMU-2	BH-3	1	0 to 4	48	36	75%
DMMU-3	BH-2A	2	4 to 6	24	12	50%
	BH-3	2	5 to 7	24	20	83%
	BH-3	3	8 to 9	24	18	75%
	BH-4	2	8 to 9	24	20	83%
	BH-7	2	6 to 8	24	3	13%
	BH-7	3	12 to 14	24	3	13%

[1] Only boreholes and samples with recovery are shown

[2] Discrete samples for of GRO/BTEX and total sulfides analyses collected directly from sealed sample tubes before compositing to prevent volatilization.

**Table 2**  
**Proposed and Actual Borehole Locations**

Borehole No.	Proposed Location			Actual Location		
	Northing	Easting	Mudline Elevation (ft MLLW)	Northing	Easting	Mudline Elevation (ft MLLW)
BH-1	2497725.16	2394144.34	-12	2394144.34	2497725.16	-11
BH-2	2497828.85	2394250.00	-7	N/A - Borehole Moved		
BH-2A	N/A - Borehole Location Added			2394199.56	2497785.07	-11
BH-3	2497924.78	2394177.11	-7	2394085.34	2497864.23	-7.5
BH-4	2497864.23	2394085.34	-8	2394173.20	2497923.27	-7
BH-7	N/A - Borehole Location Added			2394129.65	2497926.08	-3



**Table 3**  
Statter Harbor SAP Sampling Summary

SAMPLE DEPTH BELOW MUDLINE (FEET)	BOREHOLE BH-1	ELEVATION (FT MLLW)
0		-11
1		-12
2	DMMU 1 SAMPLE 1	-13
3		-14
4		-15

SAMPLE DEPTH BELOW MUDLINE (FEET)	BOREHOLE BH-2A	ELEVATION (FT MLLW)
0		-11
1		-2
2	DMMU 1 SAMPLE 1	-13
3		-14
4		-15
5	DMMU 3 SAMPLE 2	-16*
6		-17**

SAMPLE DEPTH BELOW MUDLINE (FEET)	BOREHOLE BH-3	ELEVATION (FT MLLW)
0		-7.5
1		-8.5
2	DMMU 2 SAMPLE 1	-9.5
3		-10.5
4		-11.5
5		-12.5
6		-13.5
7	DMMU 3 SAMPLE 2	-14.5
8		-15.5
9	SAMPLE 3	-16.5*
10	+	-17.5**

SAMPLE DEPTH BELOW MUDLINE (FEET)	BOREHOLE BH-4	ELEVATION (FT MLLW)
0		-7
1		-8
2	DMMU 2 SAMPLE 1	-9
3		-10
4		-11
5		-12
6		-13
7	DMMU 3	-14
8		-15
9	SAMPLE 2	-16*
10	+	-17**

SAMPLE DEPTH BELOW MUDLINE (FEET)	BOREHOLE BH-7	ELEVATION (FT MLLW)
0		-3
1		-4
2	DMMU 2 SAMPLE 1	-5
3		-6
4		-7
5		-8
6		-9
7		-10
8		-11
9	DMMU 3	-12
10		-13
11		-14
12		-15
13	SAMPLE 3	-16*
14		-17**

\* DESIGN DEPTH = -16 FT  
 \*\* OVER DEPTH = -17 FT  
 + Z-Sample Locations



Table 4  
Dry Weight Analytical Results for Sediment Samples

CHEMICAL	CAS(1) NUMBER	SL	BT	ML	Sample							
					DMMU 1		DMMU 2		DMMU 3		Z-Sample	
					Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
<b>METALS (mg/kg dry weight)</b>												
Antimony	7440-36-0	150	---	200	0.24	J	0.18	J	0.24		0.28	
Arsenic	7440-38-2	57	507.1	700	5.2		3.6		6.2		6.4	
Cadmium	7440-43-9	5.1	11.3	14	0.35		0.24		0.29		0.35	
Chromium	7440-47-3	260	260	---	35		33	F1	47		49	
Copper	7440-50-8	390	1,027	1,300	18		8.9		21		22	
Lead	7439-92-1	450	975	1,200	5.1		2.4		4.6		3.5	
Mercury	7439-97-6	0.41	1.5	2.3	0.021	J	0.013	J	0.019	J	0.035	
Selenium	7782-49-2	---	3	---	0.52	J	0.37	J	0.62	J	0.6	J
Silver	7440-22-4	6.1	6.1	8.4	0.059	J	0.029	J	0.054	J	0.068	J
Zinc	7440-66-6	410	2,783	3,800	59		28		47		48	
<b>PAHs (ug/kg dry weight)</b>												
Naphthalene	91-20-3	2,100	---	2,400	9.1	J B	ND		ND		ND	
Acenaphthylene	208-96-8	560	---	1,300	11	J	12	F1 F2	ND		ND	
Acenaphthene	83-32-9	500	---	2,000	9	J	49	F1 F2	5.2	J	ND	
Fluorene	86-73-7	540	---	3,600	19		ND		9	J	ND	
Phenanthrene	85-01-8	1,500	---	21,000	81		130	F1 F2	30		ND	
Anthracene	120-12-7	960	---	13,000	53		15	F1 F2	17		ND	
2-Methylnaphthalene	91-57-6	670	---	1,900	ND		ND		3.1	J	2.7	J
<b>Total LPAH</b>	---	5,200	---	29,000	182.1		206		64.3		2.7	
Fluoranthene	206-44-0	1,700	4,600	30,000	230		170	F1 F2	42		ND	
Pyrene	129-00-0	2,600	11,980	16,000	270		170	F1 F2	49		ND	
Benz(a)anthracene	56-55-3	1,300	---	5,100	92		70	F1 F2	17		ND	
Chrysene	218-01-9	1,400	---	21,000	210		69	F1 F2	21		ND	
Benzofluoranthenes (b, j, k)(6)	205-99-2 205-82-3 207-08-9	3,200	---	9,900	260		91	F1 F2	27	J	ND	
Benzo(a)pyrene	50-32-8	1,600	---	3,600	95		64	F1 F2	15	J	ND	
Indeno(1,2,3-c,d)pyrene	193-39-5	600	---	4,400	52		35	F1 F2	6	J	ND	
Dibenz(a,h)anthracene	53-70-3	230	---	1,900	18	J	8.2	J	ND		ND	
Benzo(g,h,i)perylene	191-24-2	670	---	3,200	43		33	F1 F2	ND		ND	
<b>Total HPAH</b>	---	12,000	---	69,000	1270		710.2		177		ND	
<b>CHLORINATED HYDROCARBONS (ug/kg)</b>												
1,4-Dichlorobenzene	106-46-7	110	---	120	ND		ND		ND		ND	
1,2-Dichlorobenzene	95-50-1	35	---	110	ND		ND		ND		ND	
1,2,4-Trichlorobenzene	120-82-1	31	---	64	ND		ND		ND		ND	
Hexachlorobenzene (HCB)	118-74-1	22	168	230	ND		ND		ND		ND	
<b>PHTHALATES (4)</b>												
Dimethyl phthalate	131-11-3	71	---	1,400	ND		ND	F1	ND		ND	
Diethyl phthalate	84-66-2	200	---	1,200	ND		ND		ND		ND	
Di-n-butyl phthalate	84-74-2	1,400	---	5,100	ND		ND		ND		ND	
Butyl benzyl phthalate	85-68-7	63	---	970	ND		ND		ND		ND	

Bis(2-ethylhexyl) phthalate	117-81-7	1,300	---	8,300	ND		ND		ND		ND	
Di-n-octyl phthalate	117-84-0	6,200	---	6,200	ND		ND		ND		ND	
<b>PHENOLS (ug/kg)</b>												
Phenol	108-95-2	420	---	1,200	67	J	22	J	73		240	
2-Methylphenol	95-48-7	63	---	77	ND		ND		ND		ND	
4-Methylphenol	106-44-5	670	---	3,600	ND		ND		ND		ND	
2,4-Dimethylphenol	105-67-9	29	---	210	ND		ND		ND		ND	
Pentachlorophenol	87-86-5	400	504	690	ND		ND		ND		ND	
<b>MISCELLANEOUS EXTRACTABLES (ug/kg)</b>												
Benzyl alcohol	100-51-6	57	---	870	ND		ND	F1	ND		ND	
Benzoic acid	65-85-0	650	---	760	310	J	ND		ND		ND	
Dibenzofuran	132-64-9	540	---	1,700	6.5	J	4.1	J F1 F2	ND		ND	
Hexachlorobutadiene	87-68-3	11	---	270	ND		ND		ND		ND	
N-Nitrosodiphenylamine	86-30-6	28	---	130	ND		ND		ND		ND	
<b>PESTICIDES &amp; PCBs (ug/kg)</b>												
4,4'-DDE	72-55-9	9			ND		ND		ND		ND	
4,4'-DDD	72-54-8	16			0.12	J B	0.093	J B	0.07	J B	ND	
4,4'-DDT	50-29-3	12			ND		ND	F1	ND		ND	F1 F2
Sum of 4,4'-DDD, 4,4'-DDE and 4,4'-DDT		---	50	69	0.12	J B	0.093	J B F1	0.07	J B	ND	
Aldrin	309-00-2	9.5	---	---	ND		ND		ND		ND	
Total Chlordane (sum of cis- chlordane, trans-chlordane, cis- nonachlor, trans-nonachlor, oxychlordane)	5103-71-9 5103-74-2 5103-73-1 39765-80-5 27304-13-8	2.8	37	---	0.18	J	ND		0.072	J	ND	
Dieldrin	60-57-1	1.9	---	---	ND		ND		ND		ND	
Heptachlor	76-44-8	1.5	---	---	ND		ND		ND		ND	F2
Total PCBs	---	130	38 (3)	3,100	0.39	J	0.67	J	ND		ND	
<b>ALASKA GRO</b>												
		<b>Max allowed (mg/kg)</b>			<b>mg/kg</b>		<b>mg/kg</b>		<b>mg/kg</b>		<b>mg/kg</b>	
GRO C6 - C10	AK101	1400			ND		ND		ND		ND	
<b>ALASKA DRO</b>												
		<b>Max allowed (mg/kg)</b>			<b>mg/kg</b>		<b>mg/kg</b>		<b>mg/kg</b>		<b>mg/kg</b>	
DRO nC10 - nC25	AK102	12500			25	J	6.8	J	10	J	12	J
RRO nC25-C36	AK103	22000			54	J	16	J	19	J	13	J

**QUALIFIERS/ABBREVIATIONS**

- ^ - Instrument related QC exceeds the control limits
- \* - LCS or LCSD exceeds the control limits
- B - Compound was found in the blank and sample
- EDL - Estimated detection limit
- J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
- LCS - Laboratory Control Sample
- LCSD - Laboratory Control Sample Duplicate
- MDL - Method Detection Limit
- ND - Not detected at the reporting limit (or MDL or EDL if shown)
- RL - Reporting limit or requested limit (radiochemistry)

**Table 5****Physical Properties Laboratory Test Results**

Sample	Moisture Content (%)	Grain Size Distribution (%)					
		Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt	Clay
DMMU-1	26.2	3.9	12.5	24.2	43.5	9.1	6.8
DMMU-2	21.1	1.9	4.5	15.6	67.8	5.7	4.6
DMMU-3	30.5	4.8	3.6	12.9	42.9	21.2	14.6
Z-Sample	32.5	1.9	2	6.5	51.8	22.5	15.2