**APPLICATION**
**PRIVATE NONPROFIT SALMON HATCHERY PERMIT**
**STATE OF ALASKA**
**DEPARTMENT OF FISH AND GAME**

## I. IDENTIFICATION OF APPLICANT

### A. Private Nonprofit Corporation

Name Northern Southeast Regional Aquaculture Association, Inc.

Address 1308 Sawmill Creek Road
Sitka, AK 99835

Phone 907-747-6850

(Please attach a copy of Articles of Incorporation for the above nonprofit corporation organized in accordance with Alaska Statute 10.20)

See Appendix 1: NSRAA Articles of Incorporation

### B. Individual Completing This Form

Name Adam Olson

Address 1308 Sawmill Creek Road
Sitka, AK 99835
Phone 907-747-6850

### C. Relation to Above Nonprofit Corporation

Operations Manager

## II. STATEMENT OF APPLICANT'S GOALS AND OBJECTIVES

Explain why you have decided to apply for a hatchery permit and what you generally expect to accomplish by the operation of the proposed hatchery.

Northern Southeast Regional Aquaculture Association, Inc. is applying for a Private Non-Profit (PNP) permit to collect and release the progeny of up to 1,000,000 Keta River stock Chinook salmon green eggs in the Little Port Walter area using the existing NOAA facilities at that location. This requested number is based upon a target release number of smolts utilizing multiple rearing strategies, and available rearing capacity as advised by NOAA biologists experienced with the Little Port Walter site.

Due to an increased interest by NOAA in groundfish research, funding for salmon has been steadily reduced to that remote research station. NOAA has agreed to fund 5 years of zero

check Keta Chinook research out of LPW, which NSRAA has both scientifically and financially collaborated on. The last two brood years of Keta Chinook eggs collected at LPW (BY 21 and 22) were done so under the Hidden Falls Hatchery (HFH) PNP permit (FTP 18J-1015). Previously Chinook at LPW were propagated under an ARP permit and thus were the property of the state on return. This would eliminate the ability to cost recovery harvest any surplus fish to broodstock needs.

The Keta Chinook program is currently still in the broodstock development phase due to both reduced marine survival on releases from LPW and small numbers of wild cohorts available to initiate the program. During the next 5 years, a portion of the yearly eggtake (~10%) will be designated for the experimental zero check program, with the bulk being traditionally reared as yearlings to perpetuate the brood returns. The yearling production may include a saltwater overwinter program in addition to traditional freshwater overwinter program. As of August 2022, HFH is permitted to release Keta Chinook at LPW (FTP 22J-1013). The proposed maximal release, in combination, would not exceed 1,000,000 fish.

## III. PRODUCTION GOALS AND HATCHERY SITE INFORMATION

| A. Egg Capacities by species | Millions of eggs required for hatchery at start-up | at capacity |
|---|---|---|
| Keta Stock Chinook Salmon | up to 1 | up to 1 |

**B. Location Description**

**1. Site (stream and/or lake name, ADF&G stream number, and exact geographical coordinates)**

Little Port Walter 56°22'56.6"N+134°39'01.7"W. Sashin Lake (ADF&G #109-10-10090)

**2. Site Physical Description (attach topographic map and photographs of proposed site).** See Appendix 2: LPW Photographs.

**a. Topography**

Moderately Sloped Fjord

**b. Geology**

Greywacke

**c. Soils**

Hatchery is already constructed.

## C. Current Land Use and Ownership Status

### 1. Have the land or usage rights been acquired?

Cooperative use of existing facilities will be determined by the mutual use agreement between National Marine Fisheries Service and Northern Southeast Regional Aquaculture Association, Inc.

### 2. What is (will be) the legal form of any usage rights?

The legal form of the usage rights will be the mutual use agreement between Little Port Walter Research Station and Northern Southeast Regional Aquaculture Association, Inc.

### 3. List the additional state and federal permits needed by the applicant to build and operate the proposed hatchery. Examples may include: U.S. Army Corps of Engineers Permit; Department of Natural Resources Water Use, Land Use, and Tidelands Lease Permits; and U.S. Forest Service Land Use Permit.

**Use Permits (land and water)**

Because existing LPW buildings, pipelines, raceways, and other facilities will be used, Northern Southeast Regional Aquaculture Association, Inc. will only require fish transport permits for Chinook eggtake and release at the Little Port Walter site under this PNP. NSRAA is currently in the process of obtaining a DNR tidelands land use permit for a portion of Little Port Walter to rear and release Keta Chinook under the HFH PNP permit. Extant Little Port Walter permits include an MOU with USFS, nuisance permit, DNR water use permit, and Sashin Creek Water rights permit ADL 64399.

## D. Water Supply

The water quantity, minimum and maximum temperatures, and the amounts of silt loading will be critical factors in the evaluation of water supply adequacy. **Care should be exercised in the evaluation of these questions.**

### 1. Source (e.g., lake, stream, well, spring). Have the water usage rights been acquired?

Facility water supply is taken from Sashin Creek. Little Port Walter Research Station holds water rights in the Sashin system, and terms and amount of water sharing will be outlined in the mutual use agreement with Northern Southeast Regional Aquaculture Association, Inc.

**2. Water source characteristic (e.g., substrate, size of drainage area, gradient, ground water characteristics).**

The Sashin Creek watershed, a 5.2 square mile area, is mountainous and partially timbered; much is muskeg or bare rock. Two large lakes on the watershed, Round Lake and Sashin Lake, flow into and stabilize the discharge of Sashin Creek. The maximum water flow recorded for Sashin Creek is 2,650 cubic feet per second; the minimum, .75 cubic feet per second. Sashin Creek, from the outlet of Sashin Lake to Little Port Walter Bay, is about 2 miles long. A high waterfall in Sashin Creek about .7 miles above Little Port Walter Bay restricts the salmon to the portion of the stream below the falls.
-Roger Vallion, National Marine Fisheries Service

**3. Water quality characteristics (in every case, cite the qualifications of the individual making the assessment and the method(s) used).**

**a. Recommended parameters to measure for evaluating potential hatchery water supply. Either fill out the table below or attach a copy of the water quality analysis conducted.**

See Appendix 3: Little Port Walter Contaminant Analysis.

| Water Qualities | Standards | Levels for the hatchery water source |
|---|---|---|
| Alkalinity | at least 20 mg/L as $caCO_3$ | |
| Ammonia (unionized) | <0.0125 mg/L | |
| Arsenic | <0.05 mg/L | |
| Barium | <5.0 mg/L) | |
| Cadmium | <0.0005 mg/L (< 100 mg/L alkalinity<br><0.005 mg/L (≥ 100 mg/L alkalinity) | |
| Carbon dioxide | <1.0 mg/L | |
| Chloride | <4.0 mg/L | |
| Copper | <0.006 mg/L (< 100 mg/L alkalinity)<br><0.03 mg/L (≥ 100 mg/L alkalinity) | |
| Dissolved oxygen | >8.0 mg/L | |
| Hydrogen sulfide | <0.003 mg/L | |
| Iron | <0.1 mg/L | |
| Lead | <0.02 mg/L | |
| Magnesium | <15 mg/L | |
| Mercury | <0.0002 mg/L | |
| Nickel | <0.01 mg/L | |
| Nitrate ($NO_3$) | <1.0 mg/L | |
| Nitrate ($NO_2$) | <0.1 mg/L | |
| Nitrogen ($N_2$) | <110% total gas pressure<br>(<103% nitrogen gas) | |
| Petroleum (oil) | <0.001 mg/L | |
| pH | 6.5 - 8.0 | |

| | |
|---|---|
| Potassium | <5.0 mg/L |
| Salinity | <5.0 ppt |
| Selenium | <0.01 mg/L |
| Silver | <0.003 mg/L (fresh water) |
| | <0.003 mg/L (salt water) |
| Sodium | <75.0) mg/L |
| Sulfate $SO_4^{-2}$ | <50.0 mg/L |
| Total dissolved solids | <400.0 mg/L |
| Total settleabel solids | <80.0 mg/L (25 JTU) |
| Zinc | <0.005 mg/L |

Note: Synergistic and antagonistic chemical reactions must be considered when evaluating a water source against these criteria.

**b. Attach a temperature profile (minimum of one year of data) of the hatchery water source. Also, provide vertical profiles if a lake water source is proposed.**

See Appendix 4: Sashin Seasonal Temperature.

**c. List monthly levels of dissolved oxygen in the hatchery water source. If a lake source, provide seasonal oxygen profiles**.

Sashin Creek oxygen saturation between 90% and 100% year-round.

**d. If a lake source, provide information on surface area, depth, and water storage capacity.**

Water is taken from the stream below Sashin Lake's outlet and does not affect Sashin lake water levels.

**e. Describe the silt load (include consideration of possible seasonal high water).**

Negligible silt load.

**4. Water Flow Data**.

This information should be based on the equivalent of long-term USGS stream gauge data (10 years or more data) or the U.S. Forest Service Water Resources Atlas synthetic hydrograph model.

**a. Attach a seasonal profile, including yearly minimum and maximum flows.**

See Appendix 5: Sashin Creek Monthly Flows.

**b. List a historical range of water flow conditions, if available.**

See Appendix 5: Sashin Creek Monthly Flows.

## 5. Water Distribution System

Describe the water distribution system in at least the following dimensions:

**a. Type, size, elevation and locations of water intake, screening, and water use/reuse system.**

Type: Lake-fed stream.

Elevation: approximately 150 ft

Locations of intake: 600-700 yds above tidewater and barrier falls that blocks anadromous fishes.

Screening: slotted aluminum sheet in an underwater gallery.

Use/reuse system: gravity flow, submerged water line across inner bay to raceways and wetlab.

**b. Size, length, and type of pipe, insulation, and distribution system. Include elevations of water surfaces at each point in the system from intake through incubation and rearing to fishladder or other discharge.**

A 4" polyethylene line and an 8" polyethylene line run parallel from the intake at 150 ft. above sea level, submerged across the inner bay, then the 8" line runs into raceways at approximately 4' above sea level, and the 4" line runs into the incubation building at 30' above sea level.

**c. If a hydroelectric generation system will be used, will effluent from this system be used in the hatchery? If so, describe plans to address possible problems with gas supersaturation.**

There is currently a small hydroelectric generator installed at LPW but is not used. There is no second use of the water after running through the turbine. In the future a hydroelectric generator may be used but due to the low head supply gas supersaturation issues are not expected. A run of the river hydroelectric system would be more beneficial and practical to supplement the facility in the future.

**d. Describe provisions for an emergency water system in the event of primary water system failure.**

The Little Port Walter facility has water recycling mechanisms, as well as the ability to pump in salt water to augment faltering flow rates. A sump beneath the incubators chills and aerates used water, then pumps it back to the intake. NSRAA will investigate a heated recirculation system to advance the zero check Chinook program. This may involve a saltwater heat exchanger as well.

### 6. Water Treatment System

Describe any water treatment facilities that you will employ to meet minimal water quality standards (influent or effluent).

Little Port Walter currently has no treatment of influent or effluent water for fish rearing purposes. Currently the proposed ADEC general permit for Aquaculture Facilities in Alaska does not intend to place limits on solids in hatchery wastewater. Effluent pH and DO limits may require mixing zones to remain in compliance, but treatment works are not likely to be utilized.

### 7. Annual Water Budget

Attach a graph showing seasonal variation in flow required for eyeing, incubation, freshwater rearing, freshwater lens in saltwater pens, adult holding, and fish ladder operations.

Eggtakes will begin in September, with fresh water requirements limited to heath tray usage and the previous broodyear of freshwater overwinter production. In January and February the emerging fry will be ponded into freshwater vertical raceways or new circular tanks on land. After three months, in May, flow and raceway volume will be doubled. The zero-check program will likely be transferred to saltwater net pens in May with release June-October. After another three months flow will be increased again, and remain at that level until a portion of the smolts are placed into saltwater net pens in October for overwintering. A portion may remain in freshwater vertical raceways overwinter. All yearling smolts will then be released in May. No freshwater will be required for adult holding.

See Appendix 6: LPW Monthly Freshwater Requirements

## IV. HATCHERY DESIGN AND CONSTRUCTION INFORMATION

### A. Biocriteria for Design and Construction

Describe the critical operational assumptions and objectives which determine the design size and capacity of the proposed hatchery. Specific reference should be made to the following (for reference, a table of CFMD assumptions for salmon survival is provided, Table I):

**BROOD STOCK – SPECIES**

Keta River Stock Chinook Salmon (O. tshawytscha),

1. Eggs per female spawner: approximately 5,000
2. Brood stock requirements at 2:1 sex ratio: approximately 240 females, accounting for 20% holding mortality. And approximately 480 males to ensure genetic diversity.
3. Green egg requirements: approximately 1,000,000
4. Estimated holding mortality: 20%

**HATCHERY FACILITY**

5. Eyed eggs (up to 30% loss from green egg stage): estimated 700,000
6. Eyed egg density per incubation unit: approximately 112,000
7. Total number of incubation units: 9 stacks of 15 trays = up to 135 heath trays
8. Number of cabinets per unit: 15
9. Water requirements at 5gal/min/unit= 45 gal/min
10 Water requirements with 10% loss= 49.5 gal/min

**FRESHWATER REARING UNITS**

At the Little Port Walter facility, Chinook fry are ponded into 12'X10'cylindrical freshwater raceways suspended in saltwater floats. These 10 raceways each use 60 gallons of fresh water per minute at initial ponding, rising as the fish grow, to a flow rate of 240 gallons/minute before transfer to salt water. Once the Chinook fry reach a size of 2 grams, false bottoms are removed from the raceways, doubling the available space for the fry to grow to fingerling size. In May, at approximately 3 grams, the zero check group will be transferred to 40'x40'x20 saltwater net pens for release sometime from June-October. In October, at approximately 16 grams, the saltwater overwinter group are then transferred to 40'x40'x20' saltwater net pens, reaching a size of approximately 40-50 grams before release in May. The freshwater overwinter group will remain in 3 vertical raceways through the winter for release in May at approximately 20 grams.

11 Number of emerging fry (5% loss from eyed stage) approximately 665,000

12 Initial fry weight = .40 grams

13 Final Fry weight = 2 grams at 120gpm and 4,500 cubic feet (130 cubic meters). Final Fingerling Weight (before saltwater ponding) = 16 grams at 240gpm and 9,000 cubic feet (260 cubic meters).

14 Initial freshwater fry rearing space required. 66,000 fry per raceway at about 13 cubic meters. 10 raceways at 13 cubic meters each = 130 cubic meters of required space at initial size.

15 Final freshwater fry rearing space required. 260 cubic meters. Once the fry reach 2 grams, false bottoms are removed from raceways, doubling the fry rearing area. Estimated 20% of production will be transferred out as zero check.

16 Maximum number of rearing units. 13

17 Maximum water requirements at 2,400 gal/min and 10% loss 2,640 gal/min

18 Number of exchanges per hour (R-value) per raceway: R1 with fry. R2 with fingerlings.

**MARINE REARING UNITS**

19. Number of fry/fingerling/or smolts after 3% loss from 2-16 gram stage: approximately 645,000

20. Initial weight at 3g = about 387 kg (20% of production as zero check)
    Initial weight at 16g = about 6,192 kg (60% of production as saltwater overwinter)
    Initial weight at 18g = about 2,322 kg (20% of production as freshwater overwinter)
    Total initial weight= 8,901 kg

21. Final weight at 12g (zero check), 40g (saltwater overwinter), 20g (freshwater overwinter), after 5% loss in salt water = about 18,628 kg

22. Initial rearing space required (40'x40'x20' pens * 5) = 3,850 cubic meters

23. Final rearing space required: Same

24. Maximum number of rearing units: 5 Pens

**PROJECTED RETURN**

25. Number of returning fish at 1.5% ocean survival = 9,191 per brood year

Table 1. Salmon survival goals at various life stages and fecundities[1] to use in budget documents and hatchery planning.

| | Hatchery | | | | Lake | Marine |
|---|---|---|---|---|---|---|
| Species | Green to eyed egg | Eyed Egg to emergent fry | Emergent fry to fingerling | Fingerling to smolt | Fry/fingerling to smolt | Survival to adult |
| Chum | .90 (.90)[2]<br>.90 (.90) | .95 (.855)[3]<br>.95 (.855) | .90 (.770)[4] | | | .007 (.006)<br>.02 (.015) |
| Pink | .90 (.90)<br>.90 (.90) | .95 (.855)[3]<br>.95 (.855) | .90 (.770)[4] | | | .007 (.006)<br>.02 (.015) |
| Coho | .90 (.90)<br>.90 (.90)<br>.90 (.90) | .95 (.855)[5]<br>.95 (.855)<br>.95 (.855) | .90 (.770)[6]<br>.90 (.770) | .80 (.616)[7] | .10 (.086)<br>.20 (.154) | .10 (.009)<br>.10 (.015)<br>.10 (.062) |
| Chinook | .90 (.90)<br>.90 (.90)<br>.90 (.90) | .95 (.855)[5]<br>.95 (.855)<br>.95 (.855) | .90 (.770)[6]<br>.90 (.770) | .80 (.616)[7] | .10 (.086)<br>.20 (.154) | .03 (.003)<br>.03 (.005)<br>.03 (.018) |
| Sockeye | .90 (.90)<br>.90 (.90)<br>.90 (.90) | .95 (.855)[5]<br>.95 (.855)<br>.95 (.855) | .90 (.770)[6]<br>.90 (.770) | .80 (.616)[7] | .10 (.086)<br>.20 (.154) | .10 (.009)<br>.10 (.015)<br>.10 (.062) |

[1] Fecundities by species (eggs per female spawner):

| | |
|---|---|
| Chum | 2,200 |
| Pink | 1,600 |
| Coho | 2,800 |
| Chinook | 6,500 |

Sockeye 3,000

[2] Cumulative survivals in parenthesis.
[3] Fry to ocean.
[4] Fingerling to ocean.
[5] Fry to lake/stream.
[6] Fingerling to lake/stream.
[7] Smolt to ocean.

## B. General description

Attach a written description of the proposed facility. This description should represent a solid concept of the proposed hatchery design. Also include preliminary sketches and drawings of at least the following in an appendix.

1. Incubation and rearing site plan.
2. Hatchery floor plan.
3. Water supply system.
4. Incubation/operation building.
5. Facility layout.

The site plan should include a plan view of all facilities at a scale of 1:100 or larger, a USGS 1:63360 scale topographical map showing the entire watershed and all facility locations, and a NOAA marine chart of the largest scale available showing all tidewater-based facilities and local data.

The Little Port Walter Facility is located on the shore of Little Port Walter, on the Chatham Strait side of Baranof Island. The hatchery facility includes the hatchery complex and outbuildings, and nearby saltwater broodstock holding pens, freshwater vertical raceways for fry rearing, and saltwater smolt rearing net pens. The hatchery complex houses the incubation room that will contain rows of stacked Heath, or other vertical tray style, incubators.

Broodstock will be collected from existing returns to Little Port Walter. Returning adults will be captured via seine, gillnet, or aggregation device, then transferred to saltwater holding pens until deemed ready for spawning. Adults will then be checked for ripeness and spawned for appropriate gametes. Standard procedures will be used for spawning and iodine disinfectant will be used throughout. Once gametes are collected they will be combined as appropriate and seeded into heath trays, one female per isolation tray unit, until BKD screenings are resolved and the eggs reach the eyed stage. Eggs will be treated with saltwater and/or formalin as needed to prevent the spread of fungus and parasites. They will then be shocked, picked, enumerated, and placed in incubators until percent of yolk sac remaining is approximately 4% of body weight. Fry will be ponded to freshwater raceways and fed through the spring, summer, and fall. Transfer to saltwater net pens will occur in late spring for the zero check group, late fall for the saltwater overwintering group, and the following spring from the freshwater overwintering group. All smolt will be released from Little Port Walter in May.

Water supply for the LPW site comes from Sashin Creek. This water is untreated and is gravity fed into the facility. Requested production will require up to 135 heath trays, depending on egg size, starting at up to 49.5 gallons per minute of fresh water. After transfer to raceways, each of 10 rearing units will require 60 gallons per minute initially, rising gradually to 240 gallons per minute per unit before transfer to saltwater. NSRAA does not intend to use freshwater lenses for saltwater overwintering, or broodstock ripening.

See Appendix 2: LPW Photographs
See Appendix 7: LPW Site Layout Drawings
See Appendix 8: Incubation Room Layout

## C. Proposed construction timetable

Prepare a timetable for the construction period which indicates the critical milestones for the project.

All facilities already exist at the intended location.

# V. BROOD STOCK

## A. Initial Donor Stock

Chinook brood stock for the proposed Little Port Walter site will be taken from existing Little Port Walter Chinook returns.

### 1. Identification of source.

Indicate stream name, ADF&G number or geographic coordinates, and salmon species for each proposed donor stock.

N/A

### 2. Capture techniques and holding facilities at the donor stream.

#### a. Capture techniques

Describe in detail the capture techniques you will use to harvest adults and take eggs. Please provide a map identifying the exact location of the holding facilities.

N/A

#### b. Holding facilities

Describe the holding facilities to be used for donor stock spawners (include schematics). List the loading rate [kg fish/ (L/min)] and density (kg fish/$mg^3$).

N/A

### 3. Transportation

Discuss method planned for transporting live fish and/or eggs

N/A

### 4. Spawning and fertilization

Discuss the spawning, fertilization, and disinfection procedures and the procedure for estimating percent fertilization.

N/A

## B. Brood Stock Returning to Hatchery

### 1. Capture techniques and holding facilities at the hatchery.

#### a. Capture Techniques

Describe in detail the techniques you will use to capture and ripen adults and take eggs.

Returning spawners are collected with a fish aggregation device, via seining or gillnetting, and at a weir trap. They will then be sorted by sex and placed into holding pens. Females are graded for ripeness usually the first week of September, then individual fish are dispatched for transport o the egg take area.. Males are not usually graded. Eggs are removed with zacknife and placed in individual plastic bags. Males are hand spawned into individual plastic bags. Appropriate bags or portions of bags are mixed and placed in one heath tray. During the broodstock development phase of this production, care will be taken to ensure the best possible crosses are made to diversify the stock.

Previously LPW has released both Unuk and Keta origin Chinook from Little Port Walter. Most of those releases were 100% CWT, with the exception of BY18 releases in 2020, which were all unmarked and untagged. During return years 2023-2025, either CWT or genetic screening will be utilized to eliminate Unuk propagation. Beginning in 2026, all returns to LPW will be of Keta stock origin. 100% CWT of future Keta releases can be suspended following BY23.

#### b. Holding facilities

Describe the holding facilities to be used for hatchery brood stock spawners (include schematics) and give the loading rate [kg fish/ (L/min)] and density (kg fish/$m^3$).

40’x40’x20’ net pens holding approximately 300 fish each. Approximately 900 cubic meters at approximately 2kg/cubic meter.

### 2. Transportation

Discuss method planned for transporting live fish and/or eggs (if different from those described in Part A).

Eggs will be taken from returning fish at the hatchery; no transportation will be necessary.

### 3. Spawning and fertilization

Discuss the spawning and fertilization procedures (if different from those described in Part A).

Females are graded, then individual fish are dispatched. Males are not usually graded. Eggs are removed with a zacknife and placed in individual plastic bags. Males are hand spawned into individual plastic bags, then appropriate bags are mixed, one female with one or more males, and placed in one heath tray. All equipment and materials used in eggtakes will be continuously disinfected with iodine treatments.

## VI INCUBATION AND REARING PLAN

### A. Incubators and Rearing Units

Describe the type of incubators and rearing facilities to be used.

Fertilized eggs will be placed in heath trays in batches of approximately 5,000 per tray isolation unit and divided into 9 stacks of 15 each, in an isolated area of the existing LPW incubation room. Once hatched they will be moved to 10 freshwater raceways in lots of approximately 66,000, and finally into saltwater net pens at various loading based on production group.

### B. Egg Handling

Describe the method by which you plan to handle the eggs from the spawning process through planting them in incubators.

All equipment and materials used for eggtakes will be continuously disinfected with iodine treatments. Once spawned, each batch of eggs (one female) will be fertilized, rinsed in freshwater, and set into a isolation compartment in a egg basket in a heath tray. The heath tray will be filled with a 1:100 iodine solution and eggs will water harden in the solution for 15 minutes before being flushed. Fertilized eggs will be kept compartmentalized by batch until BKD and/or genetic tests return from the appropriate lab. Any BKD positive results will be discarded, in addition to any mixed stock crosses.

### C Chemical Treatment

What chemicals and concentrations will be used for controlling fungus on eggs until the eyed stage?

Iodine baths will be used on all equipment and materials during egg take to prevent any infection from spreading. Formalin at a concentration of 1:600 will be used as a flow through treatment for 15minutes to control fungus. Saltwater treatments may be employed to combat any fungal growth or parasite spread at a concentration of 10ppt.

## D. Enumerations

Describe the method(s) to be used in estimating numbers of green eggs, eyed eggs, and fry.

Green egg estimates will be based on assumed fecundity multiplied by females spawned. At the eyed stage dead eggs will be picked via an electronic picker and will be enumerated via average egg size/total weight of dead eggs. Live eggs will be enumerated using the same methodology and seeded back into heath trays for hatch. Any remaining dead eggs or incubation mortalities will be periodically removed and enumerated throughout incubation so a know fry ponding number is produced at swim up. As fry grow and are transferred to various rearing containers mass weight enumeration will be used to split to different production groups. If the fry are 100%CWT, a hard population number will be provided by the Mark IV Tag Injectors during those operations.

## E. Rearing Plans

Describe any plans to rear the salmon including type of food.

Eggtakes will begin in September, with fresh water requirements limited to heath tray usage and the previous broodyear of freshwater overwinter production. In January and February the emerging fry will be ponded into freshwater vertical raceways or new circular tanks on land. After three months, in May, flow and raceway volume will be doubled. The zero-check program will likely be transferred to saltwater net pens in May with release June-October. After another three months flow will be increased again, and remain at that level until a portion of the smolts are placed into saltwater net pens in October for overwintering. A portion may remain in freshwater vertical raceways overwinter. All yearling smolts will then be released in May. At all stages fish will be fed a commercial fish feed diet from Skretting and/or EWOS.

## F. Disease Control

Describe plans for preventing or controlling disease during rearing.

All adults will be checked for BKD, and any positive results are discarded. Rearing density will be kept below 35 kg/cubic meter and flow rates will remain at a minimum an R1 to provide good water quality and flushing. Rearing mortalities will be removed frequently to remove hosts for pathogens. Individual rearing units will have separate tools for cleaning and mortality removal.

Tools used on multiple units (transfer equipment) will be disinfected between use on multiple units. Any disease outbreaks are treated after consultation with the Alaska Department of Fish and Game pathology lab department and the NSRAA veterinarian. Use of medicated feed articles will be done in accordance with the prescribed veterinary feed directive or appropriate INAD study protocol. Any occurrence of fungus or fresh water parasites will be combated with formalin and/or saltwater treatments.

## VII RELEASE PLAN

### A. Release Site(s)

1. Give exact location and description of proposed release site(s), including maps.

Chinook reared at the Little Port Walter facility will be released from their salt water net pens on site in Little Port Walter (56.382, -134.646). See Appendix 2: LPW Photographs.

2. List proposed number and age of each species to be released at each site.

Approximately 122,500 age-0 and 490,000 age-1 Chinook salmon each year.

### B. Transportation

Discuss the methods planned for transporting live fish from the hatchery to the release site(s).

Chinook reared at the Little Port Walter facility will be released from their saltwater net pens on site. Smolt will be transferred from vertical raceways, or land based circulars, via dipnet and bucket or aquaculture duty fish pump.

## VIII STAFFING

### A. Technical Advisors

Attach information about each technical advisor to the nonprofit corporation, indicating that person's name, address, role and responsibilities, and a brief statement of technical qualifications.

See Appendix 9: Technical Advisors

### B. Design and Construction

Attach a list of the names and qualifications of persons or corporations responsible for final design and construction of proposed facilities.

All buildings, facilities, and infrastructure currently exist at the proposed location.

## C. Administrative Personnel

List the administrative personnel who will support this facility when operational.

| Personnel Assigned (Titles) | Percentage of Time |
|---|---|
| 1. Scott Wagner (General Manager) | 20 |
| 2. Adam Olson (Operations Manager) | 20 |
| 3. Ilona Mayo (Office Manager) | 20 |

## D. Operating Personnel

List the operating personnel who will be assigned to this facility when operational.

| Personnel Assigned (Titles) | Percentage of Time |
|---|---|
| 1. Site Manager | 100 |
| 2. Fish Culturist | 100 |
| 3. Seasonal Technician | 80 |
| 4._____ | _____ |
| 5._____ | _____ |
| 6._____ | _____ |
| 7._____ | _____ |

# IX FINANCIAL PLAN

An estimate of hatchery construction and operating costs should be detailed here. These estimates would provide an indication of the cost recovery requirements of the proposed facility on an annual basis. Acceptance of this application by the Department of Fish and Game in no way implies agreement by the Department of Commerce and Economic Development to commit state loan funds for this project.

Initial capital investment is expected to be minimal. Most necessary rearing materials (incubators, egg take equipment, vertical raceways, and saltwater net pens) exist and are available at the Little Port Walter facility or other NSRAA facilities. Some additional incubator components will be required in addition to miscellaneous rearing supplies. The future installation of new circular tanks will require some capital investment but is not initially planned. The initial capital investment is expected to be approximately $50,000.

The overall operating costs of Chinook salmon production at the Little Port Walter Hatchery are estimated to be approximately $300,000. This is primarily fish feed and staff wages. Limited cost recovery operations will be conducted only when sufficient broodstock has been collected. It is expected approximately 50% of the annual return will be intercepted in traditional commercial fisheries. NSRAA requests the establishment of a Special Harvest Area within Little Port Walter to aid in the collection of broodstock and what cost recovery may be possible. The annual Salmon Enhancement Tax received by NSRAA and cost recovery conducted at other NSRAA SHA's will cover the operational costs for the Little Port Walter Hatchery.

## X. BASIC MANAGEMENT PLAN

The preparation of a draft Basic Management Plan will be completed prior to the public hearing. The applicant will be expected to work closely with ADF&G staff in developing the Basic Management Plan (see 5 AAC 40.820).

## XI DECLARATION AND SIGNATURE

I declare that the information given in this application is, to my knowledge, true, correct, and complete.

| Adam Olson | 06/28/2023 |
|---|---|
| Name of Applicant | Date Signed |

Adam Olson

Signature of Applicant

# APPENDIX 1. NSRAA ARTICLES OF INCORPORATION

Northern Southeast Regional

Aquaculture Association, Inc.

P.O. BOX 786 SITKA, ALASKA 99835

(9071 747-6850

RM. 205, OLD CITY HALL BLDG.

# ARTICLES OF INCORPORATION

# OF

# NORTHERN SOUTHEAST REGIONAL AQUACULTURE ASSOCIATION, INC.

THESE ARTICLES OF INCORPORATION are entered into by the undersigned incorporators, for the purpose of forming a Corporation pursuant to the provisions of the Alaska Non-profit Corporation Act, AS 10.20.005, and AS 10.20.151, and in accordance with the following:

## NAME 1.0

The name of the corporation shall be, pursuant to AS 10.20.021, and is, NORTHERN SOUTHEAST REGIONAL AQUACULTURE ASSOCIATION, INC.

## DURATION 2.0

The corporation shall have a period of duration which shall be perpetual, pursuant to AS 10.20.011(1).

## PURPOSE 3.0

The principal purposes for which the corporation is formed are as follows:

3.1 To engage in aquaculture in a region of Southeastern Alaska which includes all land and water bounded by ADF&G regulatory districts 9, 10, 11, 12, 13, 14, 15 and 16.

3.2 To seek, receive and maintain funds, property and services, and to apply them, or the income there from, to above stated purposes; and to carry on, encourage and aid activities in furtherance of the above stated purposes.

3.3 To conduct these activities and achieve these objects without pecuniary profit to the members.

3.4 To do everything and anything reasonably necessary, proper, advisable or convenient for the accomplishment of the purposes of the above set forth, and to do all other things incidental to them, or connected with them that are not forbidden by the Alaska Non-profit Corporations Act.

3.5 To do everything and anything reasonably necessary, proper, or advisable, to operate and conduct the aquaculture activities for purposes that are beneficial to the public interests, specifically, but not limited to, lessening the burdens of government.

3.6 This corporation is organized exclusively for charitable, religious, educational, and scientific purposes, including, for such purposes, the making of distributions to organizations that qualify as exempt organizations under Section 501(c)(3) of the Internal Revenue Code of 1954 (or the corresponding provision of any future United States Internal Revenue Law). Under no circumstances shall the corporation undertake any activities which exceed, contravene, or conflict with those activities permissible for corporations which qualify as exempt under said section or law.

POWERS 4.0

The following powers are to be construed in limitation of the powers sshich the corporation may have under present or future laws of the United States, including the Internal Revenue Code of 1954 as Amended, and the Laws of the State of Alaska, including the Alaska Non-profit Corporation Act as Amended, and the powers hereinafter specified shall be limited or restricted by reference to, or inference from, these Articles of Incorporation, and such provisions shall be construed to limit the corporation from carrying on any business or exercising any power, or doing an act which a corporation in the State of Alaska may not, at the time lawfully carry on, exercise, or do, in the State of Alaska or in any other state, territory or country.

4.1 To such an extent as a nonprofit corporation organized under the Laws of the State of Alaska may now or hereafter lawfully do, to do each and everything necessary, suitable, convenient, or proper for, or in connection with, or incidental to, the accomplishment of any one or more of the powers herein enumerated, or designed directly or indirectly, and in order to promote the interests of the Corporation and to enhance the value of its properties; and in general to do any and all things and exercise any and all powers, rights and privileges which a corporation now or hereafter organized under the Laws of the State of Alaska, or under any act amendatory thereof, supplemental thereto, or substituted therefore may do.

4.2 To adopt, apply for obtain, register, purchase, lease, or otherwise acquire and to maintain, protect, hold, use, own, exercise, develop, manufacture under, operate, and introduce, and to sell and grant licenses or other rights in respect of, assign or otherwise dispose of, or in any manner deal with and contract with reference to, any trademarks, trade names, patents, patent rights, patents pending, concessions, franchises, designs, copyrights and

distinctive marks 'and Tights analogous thereto, and inventions, improvements, processes, recipes, formulas, and the like, including, but not limited to, such thereof as may be covered by, used in connection with, or secured or received under, letters patent of the United States of America or elsewhere, and any or all rights connected therewith or appertaining thereto.

4.3 To acquire by purchase, exchange, lease, bequest, or otherwise, to import, manufacture, produce, to hold, own, use, manage, improve, alter, develop and to grant a security interest in, pledge, sell export, assign, transfer, lease, exchange, or otherwise dispose of or deal in or with, goods commodities, wares, machinery, supplies, merchandise, and all other personal property of every kind and description, tangible or intangible, whereso-ever situate, and any and all rights, interests or privileges therein.

4.4 To acquire by purchase, exchange, lease, devise, or otherwise, and to hold,own,maintain, manage, improve, develop, and operate, and to sell, transfer, convey, lease, mortage, exchange, or otherwise dispose of or deal in or with, real property, wheresoever situate, and any and all rights, interests, or privileges therein; and to erect, construct, make, improve, and operate, or to aid or subscribe toward the erection, construction, making, improvement, and operation of, offices, warehouses, plants, mills, stores, laboratories, studios, workshops, buildings and other establishments and installations, and equipment, machinery, apparatus, and other facilities of every kind and description.

4.5 To do everything necessary, proper, advisable or convenient for the accomplishment of any of the purposes, or the attainment of any of the objects, or the furtherance of any of the powers herein set forth, either alone or associated with others, and incidental or pertaining to, or growing out of, or connected with its business or powers, provided the same be not inconsistent with the Laws of the State of Alaska.

4.6 All decisions by the Board of Directors regarding the reproduction, hatching, planting, or raising of any specie or species of fish, or the location of any hatchery or hatchery facility shall be made in such a manner as to provide or plan for the beneficial needs of the respective user groups.

NON-PROFIT STATUS 5.0

This corporation is not organized for the distribution of profits to a class of members or shareholders.

## OFFICE 6.0

The corporation's office is to be located in Sitka, Alaska, and within the Greater Sitka Borough.

## COMMENCEMENT OF BUSINESS 7.0

The corporation may commence business, without consideration of the value of at least $1,000.00 having been received as capital, pursuant to AS 10.20.161, and upon the issuance of a Certificate of Incorporation as a nonprofit corporation.

## REGISTERED ADDRESS AND AGENT 8.0

The registered office of the corporation shall be at Sitka, Alaska, with a mailing address of P. 0. Box 786, Sitka, Alaska, and the name of its registered agent at that address is Northern Southeast Regional Aquaculture Association, Inc., pursuant to AS 10.20.036.

## DIRECTORS 9.0

The Business of the corporation shall be managed by its Board of Directors, each of whom shall be at least 19 years of age.

9.1 The number of directors constituting the entire board shall not be less than nine(9), or more than seventy-five(75), and subject to such minimum, may be increased or decreased from time to time up to a maximum of seventy-five (75) members in a manner not prohibited by law.

9.2 The names and addresses of the persons who are to serve as directors until the first annual meeting, and who shall adopt the initial By-Laws of the corporation pursuant to AS 10.20.056, are set forth pursuant to the requirements of AS 10.20.191, and are as follows:

| | |
|---|---|
| Eric Jordan | P. O. Box 479<br>Sitka, Alaska 99835 |
| Herman Kitka, Sr. | P. O. Box 641<br>Sitka, Alaska 99835 |
| James Swift | P. O. Box 1725<br>Sitka, Alaska 99835 |
| Clint Buckmaster | P. O. Box 1254<br>Sitka, Alaska 99835 |
| Moses Johnson | P. O. Box 929<br>Sitka, Alaska 99835 |
| Charles Carlson | P. O. Box 903<br>Sitka, Alaska 99835 |
| Dexter Kyle | P. O. Box 84<br>Sitka, Alaska 99835 |

| | |
|---|---|
| David Turcott | P. 0. Box 479<br>Sitka, Alaska 99835 |
| James Moore | P. 0. Box 1446 Sitka, Alaska 99835 |
| William J. Steizenmuller III | P. O. Box 631<br>Sitka, Alaska 99835 |
| Melvin Seifert | P. 0. Box 479<br>Sitka, Alaska 99835 |
| Earle W. Johnson | P. 0. Box 1173 Sitka, Alaska 99835 |
| Jeff David, Sr. | P. 0. Bos 174<br>Haines, Alaska 99827 |
| Stan Wood | P. 0. Box 348<br>Haines, Alaska 99827 |
| Jev Shelton | 853 Basin Road Juneau, Alaska 99802 |
| Roger Gregg | P. 0. Box 1834 Juneau, Alaska 99802 |
| Jack Pasquan | Route 3, Box 3624 Juneau, Alaska 99801 |
| Don Gray | P. 0. Box 1835 Juneau, Alaska 99802 |
| Dave Lesh | 613 - 4th Street Juneau, Alaska 99802 |
| Jo Ann Lesh | 613 - 4th Street Juneau, Alaska 99802 |
| Bruce Lewis | P. 0. Box 7<br>Juneau, Alaska 99802 |
| Eldon Dennis | P. 0. Box 70<br>Juneau, Alaska 99802 |
| Russell Bartoo | P. O. Box 847<br>Juneau, Alaska 99802 |
| Max Lewis | P. 0. Box 7<br>Juneau, Alaska 99802 |
| A. W. Soddy | P. 0. Box 761<br>Juneau, Alaska 99802 |
| Y. R. Nayudu | 130 Seward Street Juneau, Alaska 99802 |

| | |
|---|---|
| Ed Johnson | P. 0. Box 261<br>Auke Bay, Alaska 99821 |
| David Cantillon | 210 Ferry Way<br>Juneau, Alaska 99801 |
| Heida Boucher | 200 Franklin Street<br>Juneau, Alaska<br>99801 |
| Bill Overstreet | 155 S. Seward Street<br>Juneau, Alaska<br>99801 |
| Gail Wallace | P. O. Box W<br>Haines, Alaska 99827 |
| Albert Dick | Hoonah, Alaska 99829 |
| John Hughes | P. O. Box 401<br>Pelican, Alaska 99832 |
| Carolyn Nease | P. O. Box 116<br>Angoon, Alaska 99820 |
| Dave Pearson | P. O. Box 4175<br>Sitka, Alaska 99835 |
| Laurie Grant | P. O. Box 830<br>Sitka, Alaska 99835 |
| Jim Davis | P. O. Box 945<br>Sitka, Alaska 99835 |
| Jake Phillips | Pelican, Alaska 99832 |
| Kathy Kyle | P. O. Box 84<br>Sitka, Alaska 99835 |
| Ben Grussendorf | P. O. Box 928<br>Sitka, Alaska 99835 |
| Robert Ford | P. O. Box 1181<br>Sitka, Alaska 99835 |
| Brad Sele | P. O. Box 1728<br>Sitka, Alaska 99835 |
| Warren Pellet | P. O. Box 394<br>Sitka, Alaska 99835 |
| Carl Kerr | P. O. Box 71<br>Sitka, Alaska 99835 |
| Gabe George | P. O. Box 479<br>Sitka, Alaska 99835 |
| Ron Hawk | P. O. Box 2778<br>Juneau, Alaska 99803 |

9.3 The composition of the Board of Directors, as of the first annual meeting, and as of successive annual meetings, shall be determined as is provided by the By-laws of the corporation.

INCORPORATORS

The incorporators are all natural persons over the age of 19 years, and they shall call the organization meeting of the directors by giving at least three (3) days notice of the meeting by mail to each director named, and they have the following names and addresses: 10.0

Warren Weathers
P.O. Box 4578
Mt. Edgecumbe, Alaska 99835

William J. Steizenmuller III
P. O. Box 631
Sitka, Alaska 99835

Earle W. Johnson
P. O. Box 1173
Sitka, Alaska 99835

DIVIDENDS AND DISSOLUTIONS DISTRIBUTION 11.0

No dividend may be paid and no part of the income or profit of the corporation may be distributed to its members, directors or officers. The corporation may pay compensation in a reasonable amount to its directors, or officers for services rendered, may confer benefits in conformity with its purposes, but upon dissolution or final liquidation may not make distribution to its directors or officers so that no payment, benefit or distribution can be considered to be a dividend or distribution of income or profit pursuant to AS 10.20.136. In the event of dissolution, the provisions of AS 10.20.295(3) shall apply as to all of the corporation's assets which shall be transferred or conveyed only in accordance therewith and subject in any event to the following restrictions:

11.1 No part of the net earnings of the corporation shall inure to the benefit of, or be distributable to, its directors, trustees, officers, or other private persons, except that the corporation shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the purposes set forth in Article 3.0.

11.2 No substantial part of the activities of the corporation shall be the carrying on of propaganda, or otherwise attempting, to influence legislation, and the corporation shall not participate in or intervene in, including the publishing or distribution or statements, any political campaign on behalf of any candidate for public office.

11.3 Notwithstanding any other provision of these articles, the corporation shall not carry on any other activities not permitted to be carried on:

11.3.1 By a corporation exempt from Federal income

tax under S 501(c)(3) of the Internal Revenue Code, 1954, or the corresponding provision of any future United States Internal Revenue Law, or,

11.3.2 By a corporation to which contributions are deductible under Section 170(c)(2) of the Internal Revenue Code of 1954, or the corresponding provision of any future United States Internal Revenue Law. DISSOLUTION 12.0

The corporation may be dissolved upon a 2/3 vote of the Board of Directors at a regular or special meeting called for such purpose.

Upon the dissolution of the corporation, the Board of Directors shall, after paying or making provision for the payment of all of the liabilities of the corporation:

12.1 Dispose of all assets of the corporation exclusively for the purposes of the corporation in such a manner, or to such organization or organizations organized and operated exclusively for charitable, educational, religious or scientific purposes as shall at the time, qualify as an exempt organization or organizations under S501(c)(3) of the Internal Revenue Code of 1954, or the corresponding provisions of any future United States Internal Revenue law, as the Board shall determine.

12.2 Any of such assets not so disposed of shall be disposed of by the Superior Court of the Judicial District in which the principal office of the corporation is then located, exclusively for such purposes or to such organization or organizations, as said Court shall determine them to be organized and operated exclusively for such purposes.

AMENDMENTS 13.0

13.1 These restated Articles of Incorporation may be amended at any regular or special meeting of the Board of Directors of the corporation called for that purpose, provided a quorum of at least a majority of the Board of Directors is present, and by vote of two-thirds (2/3) of the Directors present and in attendance in person at the meeting, provided that notice shall be mailed to each Director at its last address of record, at least thirty (30) days prior to the meeting, stating that an amendment at the regular or special meeting is proposed, and further stating the general nature of such amendment.

13.2 Amended Articles shall be executed and acknowledged by the officers of the corporation, and shall be filed and recorded in the same place and manner as the original Articles.

IN WITNESS WHEREOF, these restated Articles of Incorporation have been signed in duplicate at Sitka, Alaska, in the manner following, and effective as of the date next below written, and are hereby presented for filing with the Commissioner of Commerce, together with the fee of $15.00 as required by AS 10.20.635.

DATE November 10, 1978

PRESIDENT

By _____

Dexter Kyle

SECRETARY

By _____

Robert H. Ford

State of Alaska)
) ss
First District )

STATEMENT OF ADOPTION OF RESTATED ARTICLES OF INCORPORATION

of

NORTHERN SOUTHEAST REGIONAL AQUACULTURE ASSOCIATION, INC.

I HEREBY CERTIFY that I am the duly elected President of Northern Southeast Regional Aquaculture Association, Inc., and that the attached Restated Articles of Incorporation of Northern Southeast Regional Aquaculture Association, Inc., were adopted by a unanimous vote of the Board of Directors at a regularly scheduled meeting of the Board on November 10, 1978, and that they supersede the original Articles of Incorporation and all amendments.

By _____

Dexter B. Kyle, President

ATTEST:

By Robert H. Ford

(CORPORATE SEAL)

STATEMENT PURSUANT TO AS 10.20.181 & AS 10.20.206

The name of the corporation is NORTHERN SOUTHEAST REGIONAL AQUACULTURE ASSOCIATION, INC.

There are no members of the corporation entitled to vote, and the amendments incorporated in the Restated Articles of Incorporation were adopted by a majority vote of the directors in office of the corporation at a duly scheduled meeting held on November 10, 1978.

The Restated Articles of Incorporation correctly set out the provisions of the Articles of Incorporation as amended, and they have been adopted as required by law, and they do supersede the original Articles of Incorporation and all amendments thereto.

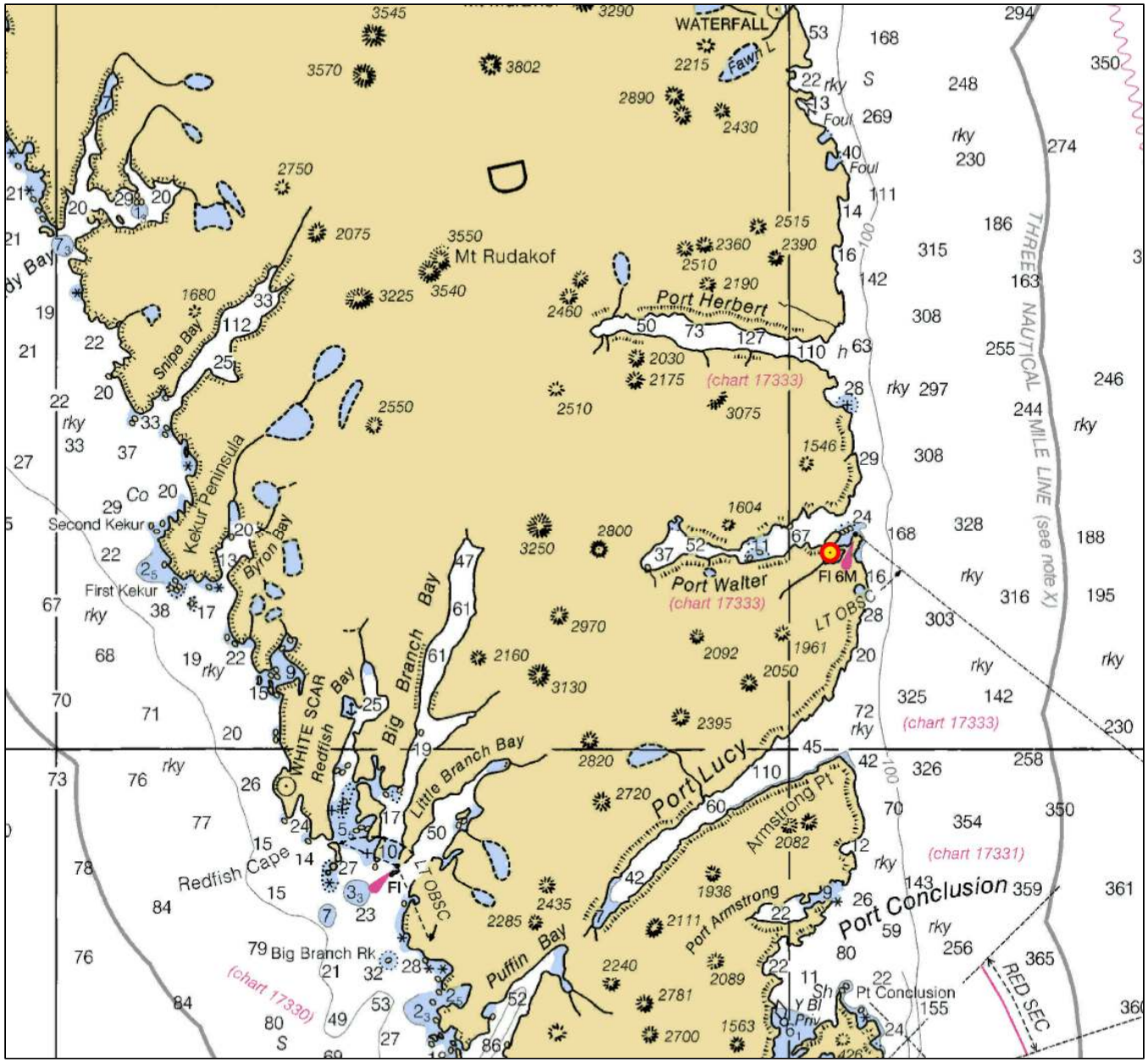
DATE:

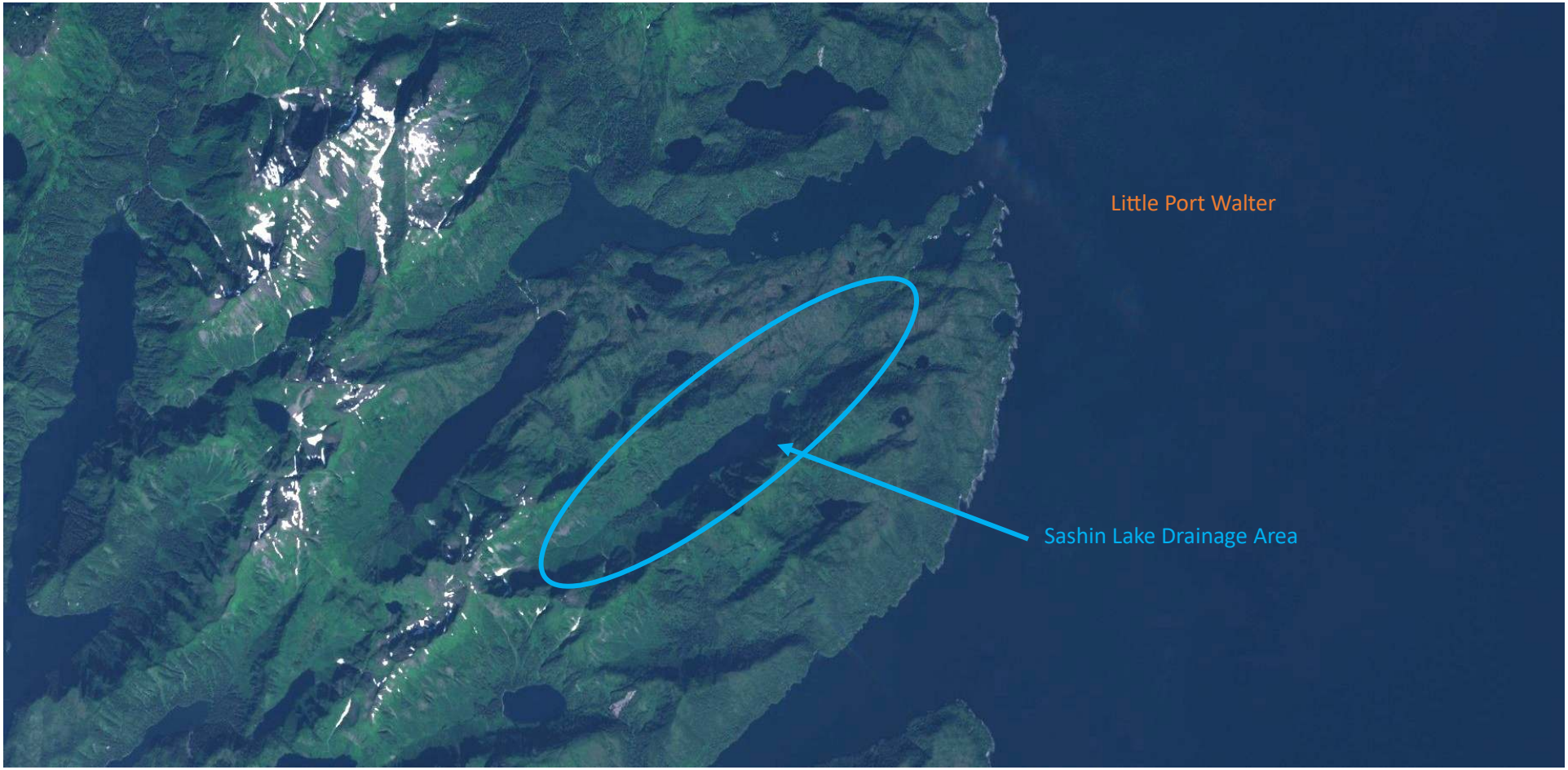
PRESIDENT

Robert H. Ford

APPENDIX 2. LPW PHOTOGRAPHS

-Site Chart and map
-Aerial photographs


WATERFALL
Fawn L
Mt Rudakof
Port Herbert
Snipe Bay
Kekur Peninsula
Second Kekur
First Kekur
Byron Bay
Big Branch Bay
WHITE SCAR Bay
Redfish Bay
Little Branch Bay
Port Walter
(chart 17333)
Fl 6M
LT OBSC
Port Lucy
Armstrong Pt
(chart 17331)
Port Armstrong
Port Conclusion
Pt Conclusion
Redfish Cape
Fl
Big Branch Rk
(chart 17330)
Puffin Bay
THREE NAUTICAL MILE LINE (see note X)
RED SEC




*Sentinel-2 L1C Image*


Freshwater
Raceways
Saltwater Holding/
Spring Rearing Pens


Wetlab and Incubation
Saltwater Holding Pens
Freshwater Raceways


Wetlab and incubation
Saltwater Holding Pens
Freshwater Raceways

# APPENDIX 3. LITTLE PORT WALTER CONTAMINANT ANALYSIS

Admiralty ENVIRONMENTAL 641 W. Willoughby Ave., Suite 301 Juneau, AK 99801 (907) 463-4415 (480) 247-4476

Ms. Dodie Leopold
17109 Point Lena Loop Rd.
Juneau, AK 99801

June 19, 2015

**Domestic Drinking Water Sampling**
Date of Collection: May 31, 2015
Sampling Location: Little Port Walter

**Summary**

Samples from the Little Port Walter bath sink and Berkey filter were collected at 07:00 hours on May 31, 2015 for total metals analyses. The samples were collected by Tom Abbas.

Samples were delivered to Admiralty Environmental via USPS, and transferred for analysis to Eurofins Eaton Analytical laboratory in South Bend, IN upon laboratory receipt. All regulatory holding times were met for all tests.

The official laboratory report follows this table, and includes the analytical results, case narrative, chain of custody form, and cooler receipt forms.

Kind Regards,

David Wetzel
Admiralty Environmental

eurofins | Eaton Analytical

# LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

# STATE CERTIFICATION LIST

| State | Certification | State | Certification |
|---|---|---|---|
| Alabama | 40700 | Montana | CERT0026 |
| Alaska | IN00035 | Nebraska | E87775 |
| Arizona | AZ0432 | Nevada | IN000352015-1 |
| Arkansas | IN035 | New Hampshire* | 2124 |
| California | 2920 | New Mexico | IN00035 |
| Colorado | IN035 | New Jersey* | IN598 |
| Colorado Radiochemistry | IN035 | New York* | 11398 |
| Connecticut | PH-0132 | North Carolina | 18700 |
| Delaware | IN035 | North Dakota | R-035 |
| Florida (Primary AB)* | E87775 | Ohio | 87775 |
| Georgia | 929 | Oklahoma | D9508 |
| Hawaii | IN035 | Oregon* | IN200001 |
| Idaho | IN00035/E87775 | Pennsylvania* | 68-00466 |
| Illinois* | 200001 | Puerto Rico | IN00035 |
| Illinois Microbiology | 200001 | Rhode Island | LAO00241 |
| Indiana Chemistry | C-71-01 | South Carolina | 95005 |
| Indiana Microbiology | M-76-07 | South Dakota | IN00035 |
| Iowa | 098 | Tennessee | TN02973 |
| Kansas* | E-10233 | Texas* | T104704187-14-7 |
| Kentucky | 90056 | Texas/TCEQ | TX207 |
| Louisiana* | LA150003 | Utah* | IN00035 |
| Maine | IN00035 | Vermont | VT-8775 |
| Maryland | 209 | Virginia* | 00127 |
| Massachusetts | M-IN035 | Washington | C837 |
| Michigan | 9926 | West Virginia | 9927 C |
| Minnesota* | 018-999-338 | Wisconsin | 999766900 |
| Mississippi | IN035 | Wyoming | IN035 |
| Missouri | 880 | | |

*NELAP/TNI Recognized Accreditation Bodies

110 South Hill Street
South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

# Laboratory Report

Client: Admiralty Environmental, LLC

Attn: Hope O'Neill
641 West Willoughby Avenue
Suite 301
Juneau, AK 99801

Copies to: Diana Cote, David Wetzel

Report: 341712
Priority: Standard Written
Status: Final
PWS ID: Not Supplied
Alaska Lab ID # IN00035

**Sample Information**

| EEA ID # | Client ID | Method | Collected Date / Time | Collected By: | Received Date / Time |
|---|---|---|---|---|---|
| 3257534 | AE12616 PanabodeBerkeyFilter | 200.8 | 05/31/15 07:00 | Client | 06/09/15 09:00 |
| 3257535 | AE12616 Panabode Bath Sink | 200.8 | 05/31/15 07:00 | Client | 06/09/15 09:00 |
| 3257535 | AE12616 Panabode Bath Sink | 245.1 | 05/31/15 07:00 | Client | 06/09/15 09:00 |

**Report Summary**

Note: Sample containers were provided by the client.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Traci Chlebowski at (574) 233-4777.

*Note: This report may not be reproduced, except in full, without written approval from EEA.*

Traci Chlebowski ASM — 06/19/2015

Authorized Signature | Title | Date

Client Name: Admiralty Environmental, LLC
Report #: 341712

Client Name: Admiralty Environmental, LLC Report #: 341712

Sampling Point: AE12616 PanabodeBerkeyFilter PWS ID: Not Supplied

| Metals | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Analyte ID # | Analyte | Method | Reg Limit | MRL† | Result | Units | Preparation Date | Analyzed Date | EEA ID # |
| 7440-38-2 | Arsenic | 200.8 | 10 * | 1.0 | < 1.0 | ug/L | --- | 06/11/15 18:24 | 3257534 |

Sampling Point: AE12616 Panabode Bath Sink PWS ID: Not Supplied

| Metals | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Analyte ID # | Analyte | Method | Reg Limit | MRL† | Result | Units | Preparation Date | Analyzed Date | EEA ID # |
| 7440-38-2 | Arsenic | 200.8 | 10 * | 1.0 | < 1.0 | ug/L | --- | 06/11/15 18:26 | 3257535 |
| 7440-50-8 | Copper | 200.8 | 1300 ! | 1.0 | **480** | ug/L | --- | 06/11/15 18:26 | 3257535 |
| 7439-92-1 | Lead | 200.8 | 15 ! | 1.0 | **2.1** | ug/L | --- | 06/11/15 18:26 | 3257535 |
| 7439-97-6 | Mercury | 245.1 | 2 * | 0.1 | < 0.1 | ug/L | 06/11/15 22:30 | 06/12/15 02:20 | 3257535 |

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

| Reg Limit Type: | MCL | SMCL | AL |
|---|---|---|---|
| Symbol: | * | ^ | ! |

## Lab Definitions

**Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) -** is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

**Internal Standards (IS) -** are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

**Laboratory Duplicate (LD) -** is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

**Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) -** is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

**Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) -** is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

**Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) -** is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

**Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) -** is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

**Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) -** is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

**Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) -** is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

**Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) -** is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

**Surrogate Standard (SS) / Surrogate Analyte (SUR) -** is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

# Eurofins Eaton Analytical
## Run Log

Run ID: **203924** Method: **200.8**

| Type | Sample Id | Sample Site | Matrix | Instrument ID | Analysis Date | Calibration File |
|---|---|---|---|---|---|---|
| ICB | 3258703 | | RW | DS | 06/11/2015 17:14 | |
| ICV | 3258710 | | RW | DS | 06/11/2015 17:30 | |
| ICB | 3258711 | | RW | DS | 06/11/2015 17:32 | |
| LRB | 3258684 | | RW | DS | 06/11/2015 17:35 | |
| QCS | 3258712 | | RW | DS | 06/11/2015 17:40 | |
| LFB | 3260268 | | RW | DS | 06/11/2015 17:43 | |
| CCV | 3258698 | | RW | DS | 06/11/2015 18:16 | |
| CCB | 3258699 | | RW | DS | 06/11/2015 18:18 | |
| FS | 3257534 | AE12616 PanabodeBerkeyFilter | DW | DS | 06/11/2015 18:24 | |
| FS | 3257535 | AE12616 Panabode Bath Sink | DW | DS | 06/11/2015 18:26 | |
| MS | 3260231 | AE12616 Panabode Bath Sink | DW | DS | 06/11/2015 18:29 | |
| MSD | 3260232 | AE12616 Panabode Bath Sink | DW | DS | 06/11/2015 18:31 | |
| CCV | 3258701 | | RW | DS | 06/11/2015 18:34 | |
| CCB | 3258702 | | RW | DS | 06/11/2015 18:36 | |

# QC Summary Report

| Sample Type | Analyte | Method | MRL | Client ID | Result Flag | Amount | Target | Units | % Recovery | Recovery Limits | RPD | RPD Limit | Dil Factor | Extracted | Analyzed | EEA ID # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ICB | Arsenic | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 17:14 | 3258703 |
| ICB | IS-Bismuth | 200.8 | N/A | --- | | 1.0000 | 1.0 | N/A | 100 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:14 | 3258703 |
| ICB | Copper | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 17:14 | 3258703 |
| ICB | Lead | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 17:14 | 3258703 |
| ICB | IS-Scandium | 200.8 | N/A | --- | | 1.0000 | 1.0 | N/A | 100 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:14 | 3258703 |
| ICB | IS-Yttrium | 200.8 | N/A | --- | | 1.0000 | 1.0 | N/A | 100 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:14 | 3258703 |
| ICV | Arsenic | 200.8 | 1.0 | --- | | 50.3560 | 50.0 | ug/L | 101 | 90 - 110 | --- | --- | 1.0 | --- | 06/11/2015 17:30 | 3258710 |
| ICV | IS-Bismuth | 200.8 | N/A | --- | | 0.9752 | 1.0 | N/A | 98 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:30 | 3258710 |
| ICV | Copper | 200.8 | 1.0 | --- | | 50.1400 | 50.0 | ug/L | 100 | 90 - 110 | --- | --- | 1.0 | --- | 06/11/2015 17:30 | 3258710 |
| ICV | Lead | 200.8 | 1.0 | --- | | 49.2730 | 50.0 | ug/L | 99 | 90 - 110 | --- | --- | 1.0 | --- | 06/11/2015 17:30 | 3258710 |
| ICV | IS-Scandium | 200.8 | N/A | --- | | 0.9634 | 1.0 | N/A | 96 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:30 | 3258710 |
| ICV | IS-Yttrium | 200.8 | N/A | --- | | 0.9753 | 1.0 | N/A | 98 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:30 | 3258710 |
| ICB | Arsenic | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 17:32 | 3258711 |
| ICB | IS-Bismuth | 200.8 | N/A | --- | | 0.9770 | 1.0 | N/A | 98 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:32 | 3258711 |
| ICB | Copper | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 17:32 | 3258711 |
| ICB | Lead | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 17:32 | 3258711 |
| ICB | IS-Scandium | 200.8 | N/A | --- | | 0.9637 | 1.0 | N/A | 96 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:32 | 3258711 |
| ICB | IS-Yttrium | 200.8 | N/A | --- | | 0.9750 | 1.0 | N/A | 97 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:32 | 3258711 |
| LRB | Arsenic | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 17:35 | 3258684 |
| LRB | IS-Bismuth | 200.8 | N/A | --- | | 0.9700 | 1.0 | N/A | 97 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:35 | 3258684 |
| LRB | Copper | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 17:35 | 3258684 |
| LRB | Lead | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 17:35 | 3258684 |
| LRB | IS-Scandium | 200.8 | N/A | --- | | 0.9606 | 1.0 | N/A | 96 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:35 | 3258684 |
| LRB | IS-Yttrium | 200.8 | N/A | --- | | 0.9758 | 1.0 | N/A | 98 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:35 | 3258684 |
| QCS | Arsenic | 200.8 | 1.0 | --- | | 53.3380 | 50.0 | ug/L | 107 | 90 - 110 | --- | --- | 1.0 | --- | 06/11/2015 17:40 | 3258712 |
| QCS | IS-Bismuth | 200.8 | N/A | --- | | 0.9757 | 1.0 | N/A | 98 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:40 | 3258712 |
| QCS | Copper | 200.8 | 1.0 | --- | | 52.1620 | 50.0 | ug/L | 104 | 90 - 110 | --- | --- | 1.0 | --- | 06/11/2015 17:40 | 3258712 |
| QCS | Lead | 200.8 | 1.0 | --- | | 50.8040 | 50.0 | ug/L | 102 | 90 - 110 | --- | --- | 1.0 | --- | 06/11/2015 17:40 | 3258712 |
| QCS | IS-Scandium | 200.8 | N/A | --- | | 0.9574 | 1.0 | N/A | 96 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:40 | 3258712 |
| QCS | IS-Yttrium | 200.8 | N/A | --- | | 0.9765 | 1.0 | N/A | 98 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:40 | 3258712 |
| LFB | Arsenic | 200.8 | 1.0 | --- | | 101.0100 | 100 | ug/L | 101 | 85 - 115 | --- | --- | 1.0 | --- | 06/11/2015 17:43 | 3260268 |
| LFB | IS-Bismuth | 200.8 | N/A | --- | | 0.9709 | 1.0 | N/A | 97 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:43 | 3260268 |
| LFB | Copper | 200.8 | 1.0 | --- | | 100.7230 | 100 | ug/L | 101 | 85 - 115 | --- | --- | 1.0 | --- | 06/11/2015 17:43 | 3260268 |
| LFB | Lead | 200.8 | 1.0 | --- | | 101.2920 | 100 | ug/L | 101 | 85 - 115 | --- | --- | 1.0 | --- | 06/11/2015 17:43 | 3260268 |
| LFB | IS-Scandium | 200.8 | N/A | --- | | 0.9527 | 1.0 | N/A | 95 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:43 | 3260268 |
| LFB | IS-Yttrium | 200.8 | N/A | --- | | 0.9665 | 1.0 | N/A | 97 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 17:43 | 3260268 |
| CCV | Arsenic | 200.8 | 1.0 | --- | | 48.6740 | 50.0 | ug/L | 97 | 85 - 115 | --- | --- | 1.0 | --- | 06/11/2015 18:16 | 3258698 |
| CCV | IS-Bismuth | 200.8 | N/A | --- | | 0.9835 | 1.0 | N/A | 98 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:16 | 3258698 |
| CCV | Copper | 200.8 | 1.0 | --- | | 47.3910 | 50.0 | ug/L | 95 | 85 - 115 | --- | --- | 1.0 | --- | 06/11/2015 18:16 | 3258698 |
| CCV | Lead | 200.8 | 1.0 | --- | | 48.5370 | 50.0 | ug/L | 97 | 85 - 115 | --- | --- | 1.0 | --- | 06/11/2015 18:16 | 3258698 |

## QC Summary Report (cont.)

| Sample Type | Analyte | Method | MRL | Client ID | Result Flag | Amount | Target | Units | % Recovery | Recovery Limits | RPD | RPD Limit | Dil Factor | Extracted | Analyzed | EEA ID # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CCV | IS-Scandium | 200.8 | N/A | --- | | 0.8736 | 1.0 | N/A | 87 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:16 | 3258698 |
| CCV | IS-Yttrium | 200.8 | N/A | --- | | 0.9159 | 1.0 | N/A | 92 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:16 | 3258698 |
| CCB | Arsenic | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 18:18 | 3258699 |
| CCB | IS-Bismuth | 200.8 | N/A | --- | | 0.9734 | 1.0 | N/A | 97 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:18 | 3258699 |
| CCB | Copper | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 18:18 | 3258699 |
| CCB | Lead | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 18:18 | 3258699 |
| CCB | IS-Scandium | 200.8 | N/A | --- | | 0.8582 | 1.0 | N/A | 86 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:18 | 3258699 |
| CCB | IS-Yttrium | 200.8 | N/A | --- | | 0.8882 | 1.0 | N/A | 89 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:18 | 3258699 |
| FS | Arsenic | 200.8 | 1.0 | AE12616 PanabodeBerkeyFilter | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 18:24 | 3257534 |
| FS | IS-Bismuth | 200.8 | N/A | AE12616 PanabodeBerkeyFilter | | 0.9834 | 1.0 | N/A | 98 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:24 | 3257534 |
| FS | IS-Scandium | 200.8 | N/A | AE12616 PanabodeBerkeyFilter | | 0.8427 | 1.0 | N/A | 84 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:24 | 3257534 |
| FS | IS-Yttrium | 200.8 | N/A | AE12616 PanabodeBerkeyFilter | | 0.8983 | 1.0 | N/A | 90 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:24 | 3257534 |
| FS | Arsenic | 200.8 | 1.0 | AE12616 Panabode Bath Sink | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 18:26 | 3257535 |
| FS | IS-Bismuth | 200.8 | N/A | AE12616 Panabode Bath Sink | | 0.9835 | 1.0 | N/A | 98 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:26 | 3257535 |
| FS | Copper | 200.8 | 1.0 | AE12616 Panabode Bath Sink | | 480 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 18:26 | 3257535 |
| FS | Lead | 200.8 | 1.0 | AE12616 Panabode Bath Sink | | 2.1 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 18:26 | 3257535 |
| FS | IS-Scandium | 200.8 | N/A | AE12616 Panabode Bath Sink | | 0.8471 | 1.0 | N/A | 85 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:26 | 3257535 |
| FS | IS-Yttrium | 200.8 | N/A | AE12616 Panabode Bath Sink | | 0.8990 | 1.0 | N/A | 90 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:26 | 3257535 |
| MS | Arsenic | 200.8 | 1.0 | AE12616 Panabode Bath Sink | | 48.6120 | 50.0 | ug/L | 97 | 70 - 130 | --- | --- | 1.0 | --- | 06/11/2015 18:29 | 3260231 |
| MS | IS-Bismuth | 200.8 | N/A | AE12616 Panabode Bath Sink | | 0.9822 | 1.0 | N/A | 98 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:29 | 3260231 |
| MS | Copper | 200.8 | 1.0 | AE12616 Panabode Bath Sink | | 531.0840 | 531.682999 | ug/L | 99 | 70 - 130 | --- | --- | 1.0 | --- | 06/11/2015 18:29 | 3260231 |
| MS | Lead | 200.8 | 1.0 | AE12616 Panabode Bath Sink | | 53.2900 | 52.097999 | ug/L | 102 | 70 - 130 | --- | --- | 1.0 | --- | 06/11/2015 18:29 | 3260231 |
| MS | IS-Scandium | 200.8 | N/A | AE12616 Panabode Bath Sink | | 0.8389 | 1.0 | N/A | 84 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:29 | 3260231 |
| MS | IS-Yttrium | 200.8 | N/A | AE12616 Panabode Bath Sink | | 0.8920 | 1.0 | N/A | 89 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:29 | 3260231 |
| MSD | Arsenic | 200.8 | 1.0 | AE12616 Panabode Bath Sink | | 47.8590 | 50.0 | ug/L | 96 | 70 - 130 | 1.6 | 10 | 1.0 | --- | 06/11/2015 18:31 | 3260232 |
| MSD | IS-Bismuth | 200.8 | N/A | AE12616 Panabode Bath Sink | | 0.9783 | 1.0 | N/A | 98 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:31 | 3260232 |
| MSD | Copper | 200.8 | 1.0 | AE12616 Panabode Bath Sink | | 522.0160 | 531.682999 | ug/L | 81 | 70 - 130 | 1.7 | 11 | 1.0 | --- | 06/11/2015 18:31 | 3260232 |
| MSD | Lead | 200.8 | 1.0 | AE12616 Panabode Bath Sink | | 52.6590 | 52.097999 | ug/L | 101 | 70 - 130 | 1.2 | 16 | 1.0 | --- | 06/11/2015 18:31 | 3260232 |
| MSD | IS-Scandium | 200.8 | N/A | AE12616 Panabode Bath Sink | | 0.8407 | 1.0 | N/A | 84 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:31 | 3260232 |
| MSD | IS-Yttrium | 200.8 | N/A | AE12616 Panabode Bath Sink | | 0.8905 | 1.0 | N/A | 89 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:31 | 3260232 |
| CCV | Arsenic | 200.8 | 1.0 | --- | | 47.6440 | 50.0 | ug/L | 95 | 85 - 115 | --- | --- | 1.0 | --- | 06/11/2015 18:34 | 3258701 |
| CCV | IS-Bismuth | 200.8 | N/A | --- | | 0.9558 | 1.0 | N/A | 96 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:34 | 3258701 |
| CCV | Copper | 200.8 | 1.0 | --- | | 46.5240 | 50.0 | ug/L | 93 | 85 - 115 | --- | --- | 1.0 | --- | 06/11/2015 18:34 | 3258701 |
| CCV | Lead | 200.8 | 1.0 | --- | | 48.4890 | 50.0 | ug/L | 97 | 85 - 115 | --- | --- | 1.0 | --- | 06/11/2015 18:34 | 3258701 |
| CCV | IS-Scandium | 200.8 | N/A | --- | | 0.8126 | 1.0 | N/A | 81 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:34 | 3258701 |
| CCV | IS-Yttrium | 200.8 | N/A | --- | | 0.8674 | 1.0 | N/A | 87 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:34 | 3258701 |
| CCB | Arsenic | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 18:36 | 3258702 |
| CCB | IS-Bismuth | 200.8 | N/A | --- | | 0.9440 | 1.0 | N/A | 94 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:36 | 3258702 |
| CCB | Copper | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 18:36 | 3258702 |
| CCB | Lead | 200.8 | 1.0 | --- | < | 1.0 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/11/2015 18:36 | 3258702 |
| CCB | IS-Scandium | 200.8 | N/A | --- | | 0.8084 | 1.0 | N/A | 81 | 60 - 125 | --- | --- | 1.0 | --- | 06/11/2015 18:36 | 3258702 |

| QC Summary Report (cont.) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Type | Analyte | Method | MRL | Client ID | Result Flag | Amount | Target | Units | % Recovery | Recovery Limits | RPD | RPD Limit | Dil Factor | Extracted | Analyzed | EEA ID # |
| CCB | IS-Yttrium | 200.8 | N/A | --- | | 0.8602 | 1.0 | N/A | 86 | 60 - 125 | | | 1.0 | | 06/11/2015 18:36 | 3258702 |

# Eurofins Eaton Analytical
## Run Log

Run ID: **203950** Method: **245.1**

| Type | Sample Id | Sample Site | Matrix | Instrument ID | Analysis Date | Calibration File |
|---|---|---|---|---|---|---|
| ICB | 3260914 | | RW | DE | 06/12/2015 01:07 | |
| IPC | 3260921 | | RW | DE | 06/12/2015 01:23 | |
| ICB | 3260922 | | RW | DE | 06/12/2015 01:25 | |
| QCS | 3260923 | | RW | DE | 06/12/2015 01:27 | |
| LRB | 3260924 | | RW | DE | 06/12/2015 01:29 | |
| LFB | 3255958 | | RW | DE | 06/12/2015 01:33 | |
| CCC | 3255963 | | RW | DE | 06/12/2015 02:01 | |
| CCB | 3255964 | | RW | DE | 06/12/2015 02:03 | |
| FS | 3257535 | AE12616 Panabode Bath Sink | DW | DE | 06/12/2015 02:20 | |
| CCC | 3260927 | | RW | DE | 06/12/2015 02:30 | |
| CCB | 3260928 | | RW | DE | 06/12/2015 02:32 | |
| QCS | 3260929 | | RW | DE | 06/12/2015 02:34 | |
| LRB | 3260930 | | RW | DE | 06/12/2015 02:36 | |
| LFB | 3260932 | | RW | DE | 06/12/2015 02:40 | |
| CCC | 3260935 | | RW | DE | 06/12/2015 03:08 | |
| CCB | 3260936 | | RW | DE | 06/12/2015 03:10 | |
| CCC | 3260937 | | RW | DE | 06/12/2015 03:35 | |
| CCB | 3260938 | | RW | DE | 06/12/2015 03:37 | |

# QC Summary Report

| Sample Type | Analyte | Method | MRL | Client ID | Result Flag | Amount | Target | Units | % Recovery | Recovery Limits | RPD | RPD Limit | Dil Factor | Extracted | Analyzed | EEA ID # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ICB | Mercury | 245.1 | 0.1 | --- | < | 0.1 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/12/2015 01:07 | 3260914 |
| IPC | Mercury | 245.1 | 0.1 | --- | | 0.9560 | 1.0 | ug/L | 96 | 95 - 105 | --- | --- | 1.0 | --- | 06/12/2015 01:23 | 3260921 |
| ICB | Mercury | 245.1 | 0.1 | --- | < | 0.1 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/12/2015 01:25 | 3260922 |
| QCS | Mercury | 245.1 | 0.1 | --- | | 1.0600 | 1.0 | ug/L | 106 | 90 - 110 | --- | --- | 1.0 | --- | 06/12/2015 01:27 | 3260923 |
| LRB | Mercury | 245.1 | 0.1 | --- | < | 0.1 | | ug/L | --- | --- | --- | --- | 1.0 | 06/11/2015 22:30 | 06/12/2015 01:29 | 3260924 |
| LFB | Mercury | 245.1 | 0.1 | --- | | 0.9950 | 1.0 | ug/L | 99 | 85 - 115 | --- | --- | 1.0 | 06/11/2015 22:30 | 06/12/2015 01:33 | 3255958 |
| CCC | Mercury | 245.1 | 0.1 | --- | | 1.0200 | 1.0 | ug/L | 102 | 90 - 110 | --- | --- | 1.0 | --- | 06/12/2015 02:01 | 3255963 |
| CCB | Mercury | 245.1 | 0.1 | --- | < | 0.1 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/12/2015 02:03 | 3255964 |
| FS | Mercury | 245.1 | 0.1 | AE12616 Panabode Bath Sink | < | 0.1 | | ug/L | --- | --- | --- | --- | 1.0 | 06/11/2015 22:30 | 06/12/2015 02:20 | 3257535 |
| CCC | Mercury | 245.1 | 0.1 | --- | | 1.0100 | 1.0 | ug/L | 101 | 90 - 110 | --- | --- | 1.0 | --- | 06/12/2015 02:30 | 3260927 |
| CCB | Mercury | 245.1 | 0.1 | --- | < | 0.1 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/12/2015 02:32 | 3260928 |
| QCS | Mercury | 245.1 | 0.1 | --- | | 1.0800 | 1.0 | ug/L | 108 | 90 - 110 | --- | --- | 1.0 | --- | 06/12/2015 02:34 | 3260929 |
| LRB | Mercury | 245.1 | 0.1 | --- | < | 0.1 | | ug/L | --- | --- | --- | --- | 1.0 | 06/11/2015 22:30 | 06/12/2015 02:36 | 3260930 |
| LFB | Mercury | 245.1 | 0.1 | --- | | 1.0200 | 1.0 | ug/L | 102 | 85 - 115 | --- | --- | 1.0 | 06/11/2015 22:30 | 06/12/2015 02:40 | 3260932 |
| CCC | Mercury | 245.1 | 0.1 | --- | | 1.0600 | 1.0 | ug/L | 106 | 90 - 110 | --- | --- | 1.0 | --- | 06/12/2015 03:08 | 3260935 |
| CCB | Mercury | 245.1 | 0.1 | --- | < | 0.1 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/12/2015 03:10 | 3260936 |
| CCC | Mercury | 245.1 | 0.1 | --- | | 1.0700 | 1.0 | ug/L | 107 | 90 - 110 | --- | --- | 1.0 | --- | 06/12/2015 03:35 | 3260937 |
| CCB | Mercury | 245.1 | 0.1 | --- | < | 0.1 | | ug/L | --- | --- | --- | --- | 1.0 | --- | 06/12/2015 03:37 | 3260938 |

## Sample Type Key

| Type (Abbr.) | Sample Type | Type (Abbr.) | Sample Type |
|---|---|---|---|
| CCV | Continuing Cali. Verification | | |
| CCB | Continuing Calibration Blank | | |
| CCC | Continuing Calibration Check | | |
| FS | Field Sample | | |
| ICV | Initial Cali. Verification | | |
| ICB | Initial Calibration Blank | | |
| IPC | Instrument Performance Check | | |
| LFB | Laboratory Fortified Blank | | |
| LRB | Laboratory Reagent Blank | | |
| MS | Matrix Spike | | |
| MSD | Matrix Spike Duplicate | | |
| QCS | Quality Control Sample | | |

Lab note:: AE Div-Ship to Environs Seattle Bend

341712

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Juneau, AK 99801
(907) 463-4415 fax (480) 247-4476

# CHAIN OF CUSTODY/TRANSMITTAL RECORD

PAGE 1 OF 1

278148

*NO PWSID*

CLIENT: Little Port Walter (NOAA)

**Project: Little Port Walter**

| | |
|---|---|
| REPORT TO: Tom Abbas | PHONE#: 907-723-4457 |
| ADDRESS: PO Box 2530 Little Port Walter Sitka AK 99835 | SAMPLED BY: Tom ABBAS |
| EMAIL: dodie.leopold@noaa.gov; tommy.abbas@noaa.gov | |

AE 12616

12616 per bottles ss 6-15

| DATE | TIME | SITE DESCRIPTION /IDENTIFIER | MATRIX | # OF BOTTLES | total arsenic | total arsenic, lead, copper, and mercury | | Field Results pH | Temp | D.O. |
|---|---|---|---|---|---|---|---|---|---|---|
| 31MAY15 | 0700 | Panabode Berkey Filter | $H_2O$ | 1 | 1 | | pH 4255 | 3257534 | | |
| 31MAY15 | 0700 | Panabode Bath Sink | $H_2O$ | 1 | | 1 | ↓ | 3257535 | | |
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Client Provided Sample Container

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Printed Name: Tommy D. ABBAS | Printed Name: Eva Korous | Printed Name: Hope O'Neill | Printed Name: S Spurgeon |
| DATE: 31MAY2015 | DATE: 6/3/15 | DATE: 6/8/15 | DATE: 6-9-15 |
| TIME: 0730 | TIME: 0924 | TIME: 0930 | TIME: 0900 |

Via USmail

Section to Be Completed by Receiving Laboratory

| | | | |
|---|---|---|---|
| Temp/Loc: | 18.17 | 5.4°C Blue | |
| Thermo ID#: | SR#1 | | |
| Condition of Custody Seals: | ✓ | | |
| Initialed By: | EK | | |
| Shipped Via: | — | | |

# Admiralty Environmental Cooler Receipt Form

Client: **Admiralty Environmental, LLC**
Project: **Little Port Walter (NOAA)** AE# 12616

Date Opened: **6/3/2015** Opened by: **E.Korous**

## A. External Cooler Conditions

• Local Sampling Event

1. Project ID: **Total Metals**

2. COC Attached? **yes** Properly Completed? **yes** Signed by AE employee? **yes**

Small Temp. Blank **18.17** (temp in Celsius)
Large Temp. Blank: **n/a** (temp in Celsius)

• Air-Transported Sampling Event

1. Project ID: **n/a**

2. COC Attached? **n/.a** Properly Completed? **n/a** Signed by AE employee? **n/a**
3. Airbill attached? **n/a** Airbill #: **n/a**
4. Custody Seals? **n/a**
5. Seals intact? **n/a**

Temp. Blank: n/a (temp in Celsius)

COMMENTS:

## B. Sample Conditions

Number of Samples Received: **2** Packing type: **Cooler**
Number of Bottles Received: **2**
1. Samples in proper bags? **yes**
2. Bottles intact? **yes**
3. Sufficient sample volume? **yes**
4. Labels agree with COC? **yes**
5. Samples delivered within holding time? **yes**

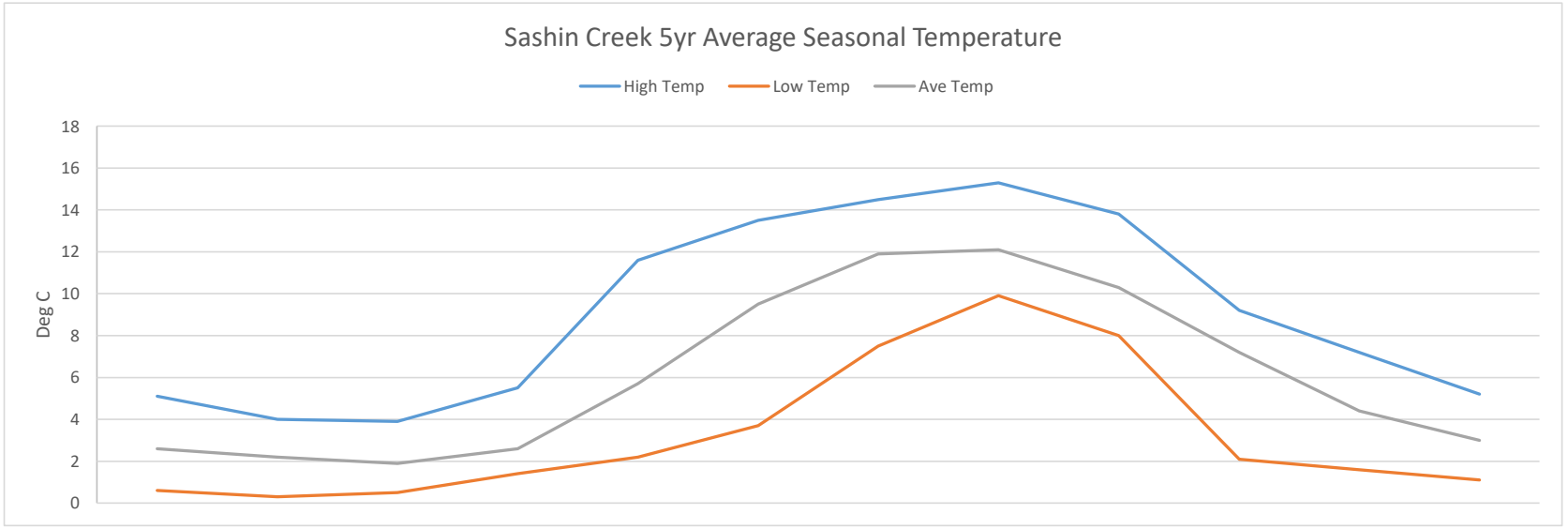
Problems encountered: **no**

Was the project manager called? **no**

COMMENTS:

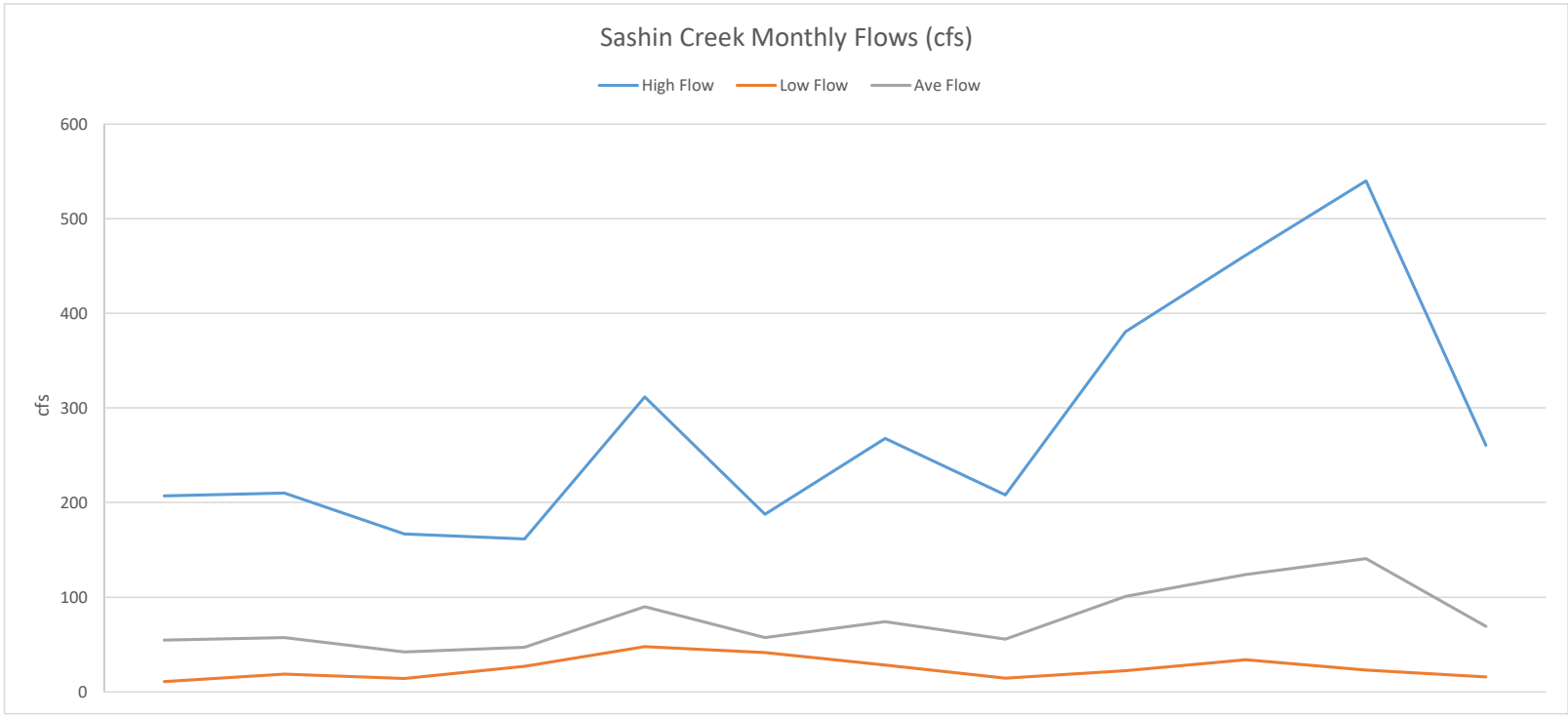
Signature: _____ Date and time: 6/3/15 0924

# APPENDIX 4. SASHIN SEASONAL TEMPERATURE



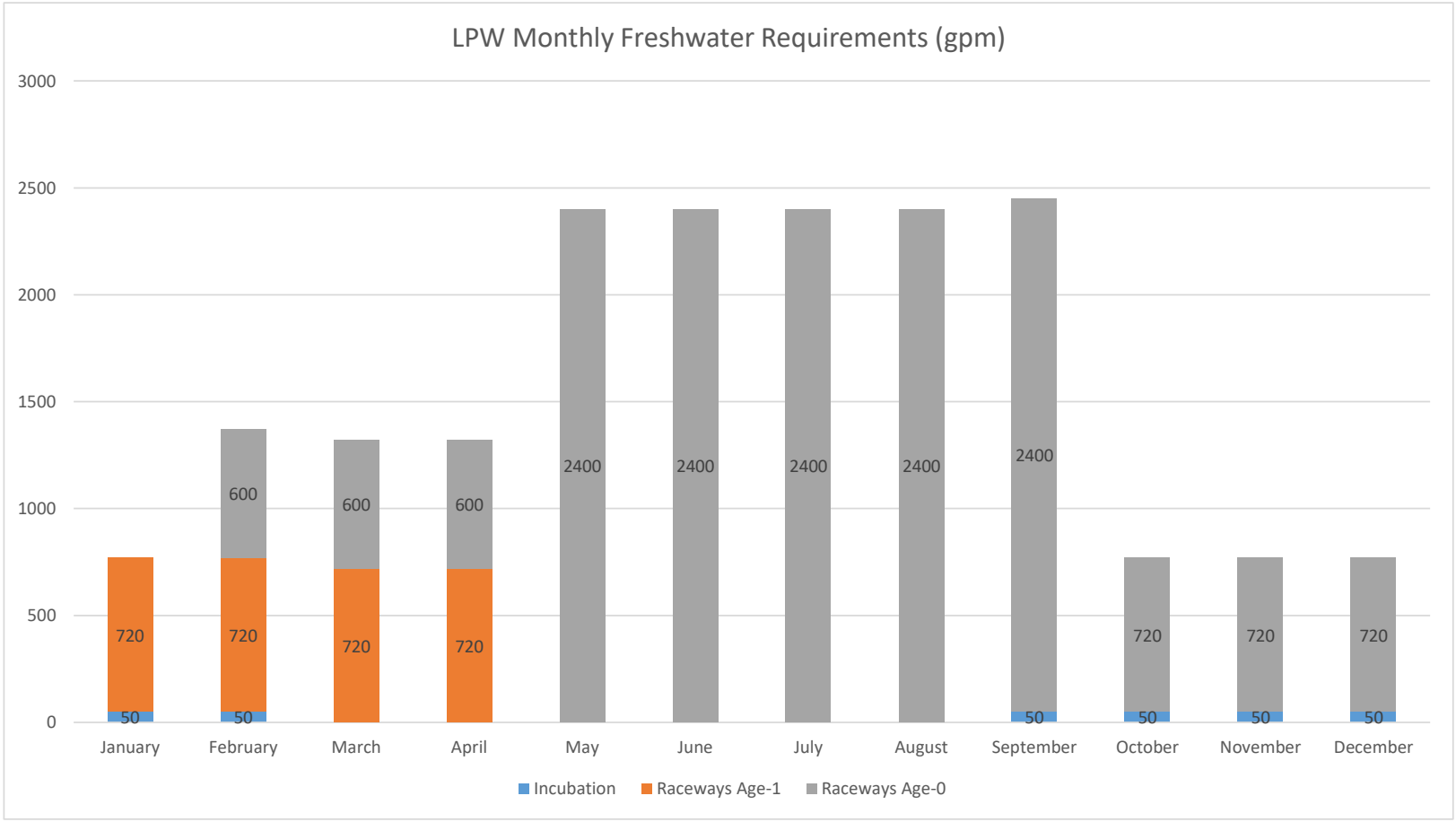

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| High Temp | 5.1 | 4 | 3.9 | 5.5 | 11.6 | 13.5 | 14.5 | 15.3 | 13.8 | 9.2 | 7.2 | 5.2 |
| Low Temp | 0.6 | 0.3 | 0.5 | 1.4 | 2.2 | 3.7 | 7.5 | 9.9 | 8 | 2.1 | 1.6 | 1.1 |
| Ave Temp | 2.6 | 2.2 | 1.9 | 2.6 | 5.7 | 9.5 | 11.9 | 12.1 | 10.3 | 7.2 | 4.4 | 3 |

# APPENDIX 5. SASHIN CREEK MONTHLY FLOWS

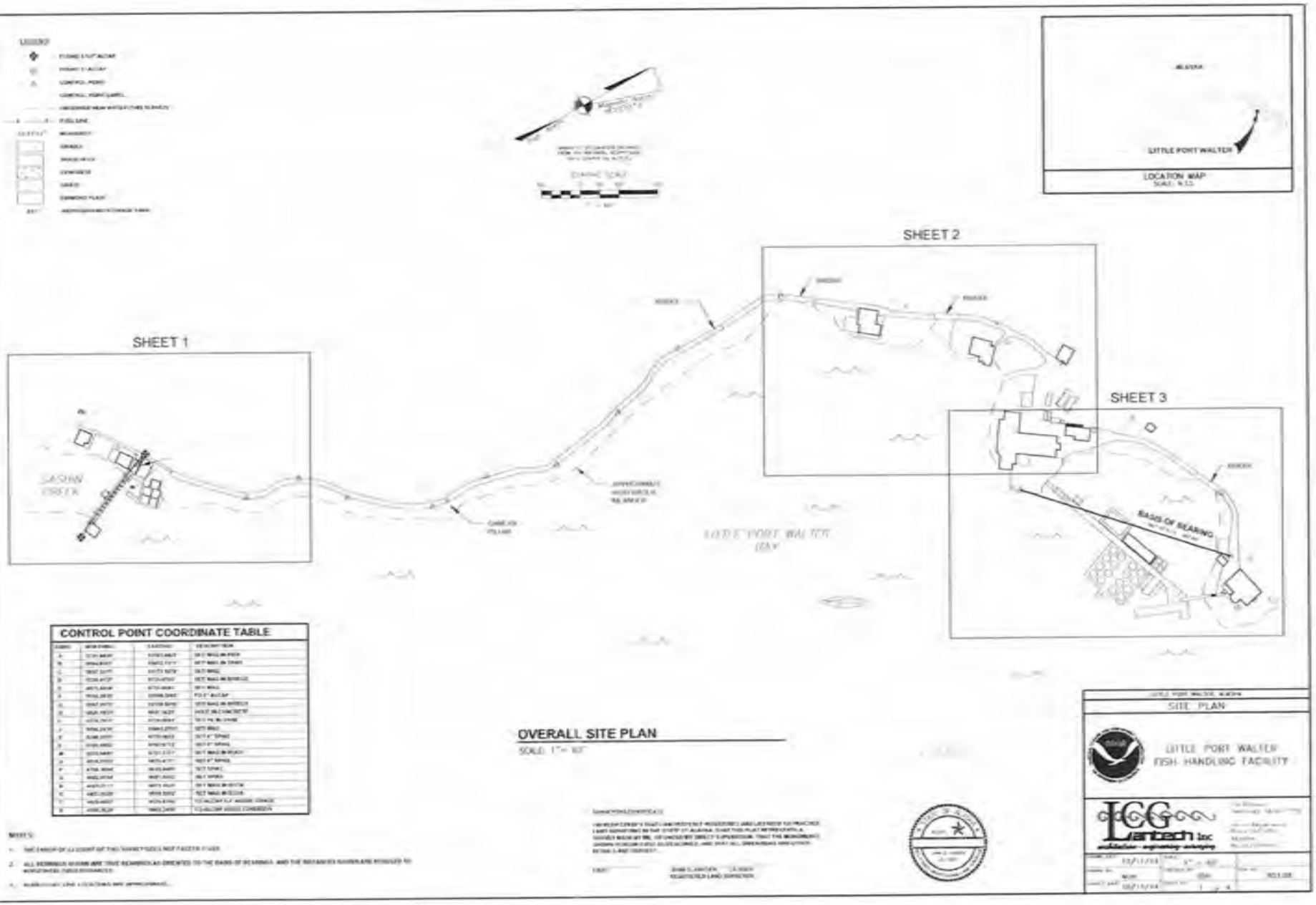



| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| High Flow | 207.2 | 210.1 | 166.9 | 161.6 | 311.6 | 187.6 | 267.9 | 208.0 | 380.7 | 461.4 | 540.0 | 260.5 |
| Low Flow | 10.8 | 18.7 | 14.0 | 26.8 | 47.9 | 41.6 | 28.3 | 14.5 | 22.2 | 33.9 | 23.1 | 15.6 |
| Ave Flow | 54.5 | 57.2 | 42.2 | 47.1 | 89.9 | 57.3 | 74.0 | 55.6 | 100.7 | 123.8 | 140.8 | 69.0 |

APPENDIX 6. LPW MONTHLY FRESHWATER REQUIREMENTS



# APPENDIX 7. LPW SITE LAYOUT DRAWINGS




## CONTROL POINT COORDINATE TABLE

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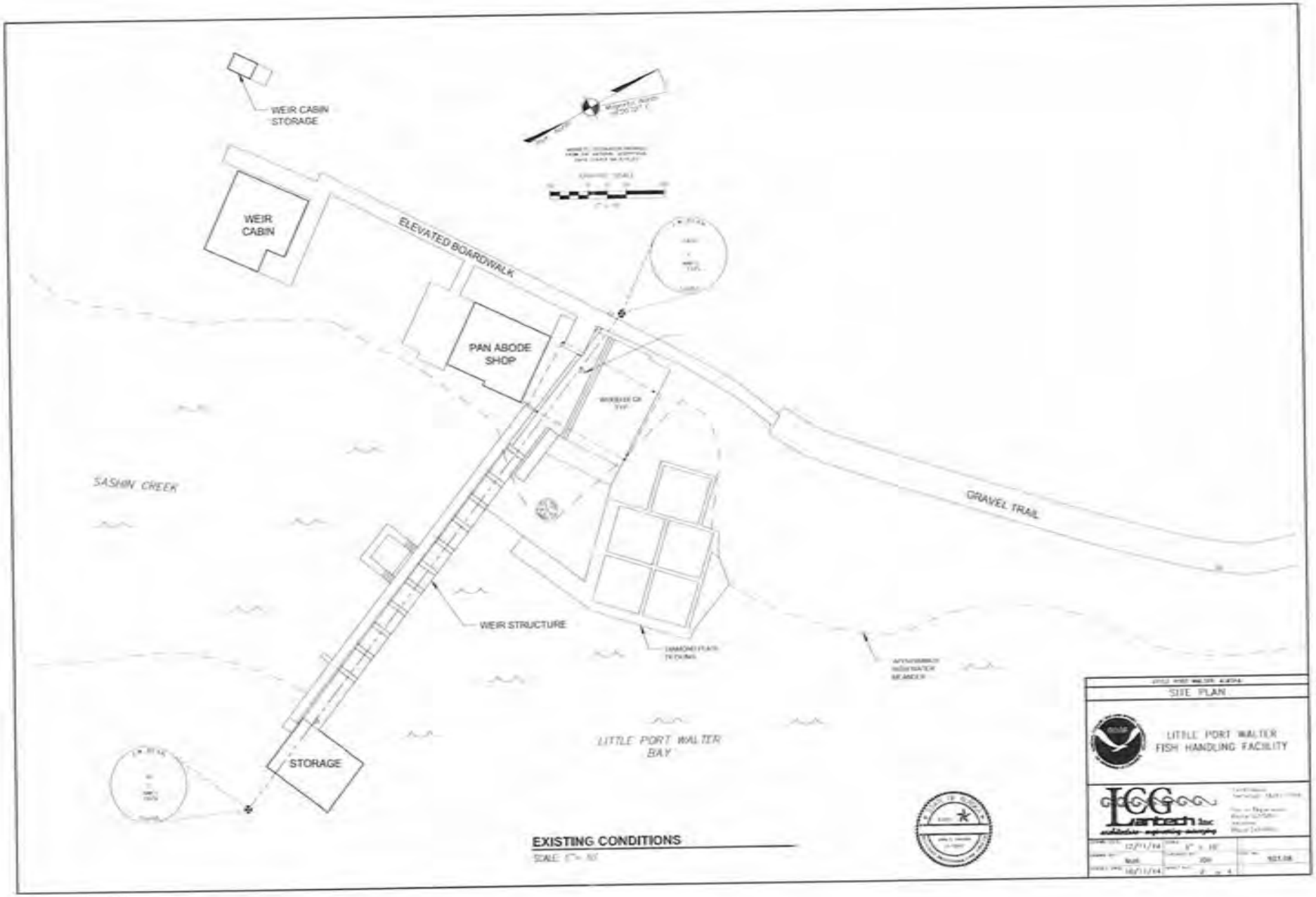
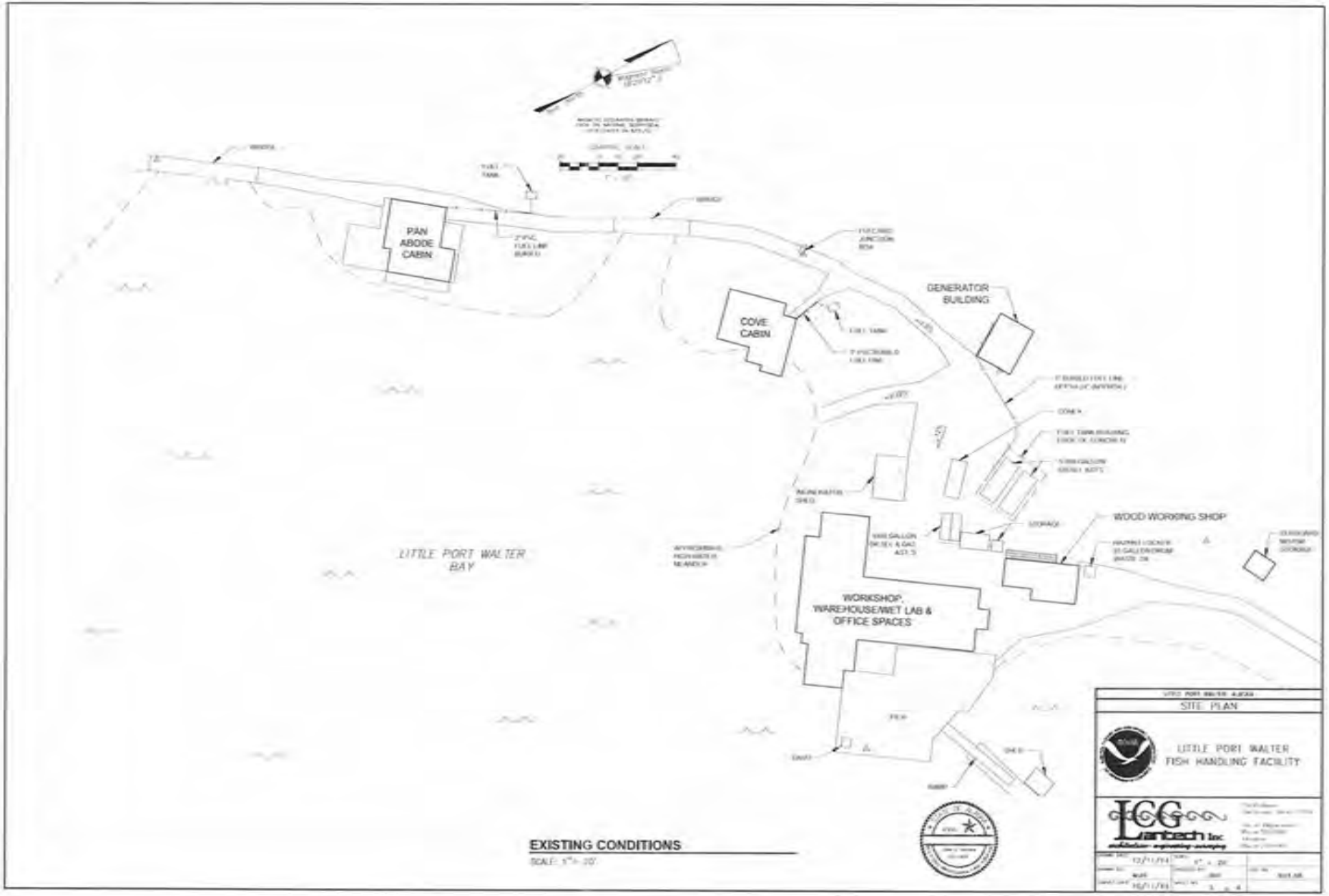
## OVERALL SITE PLAN

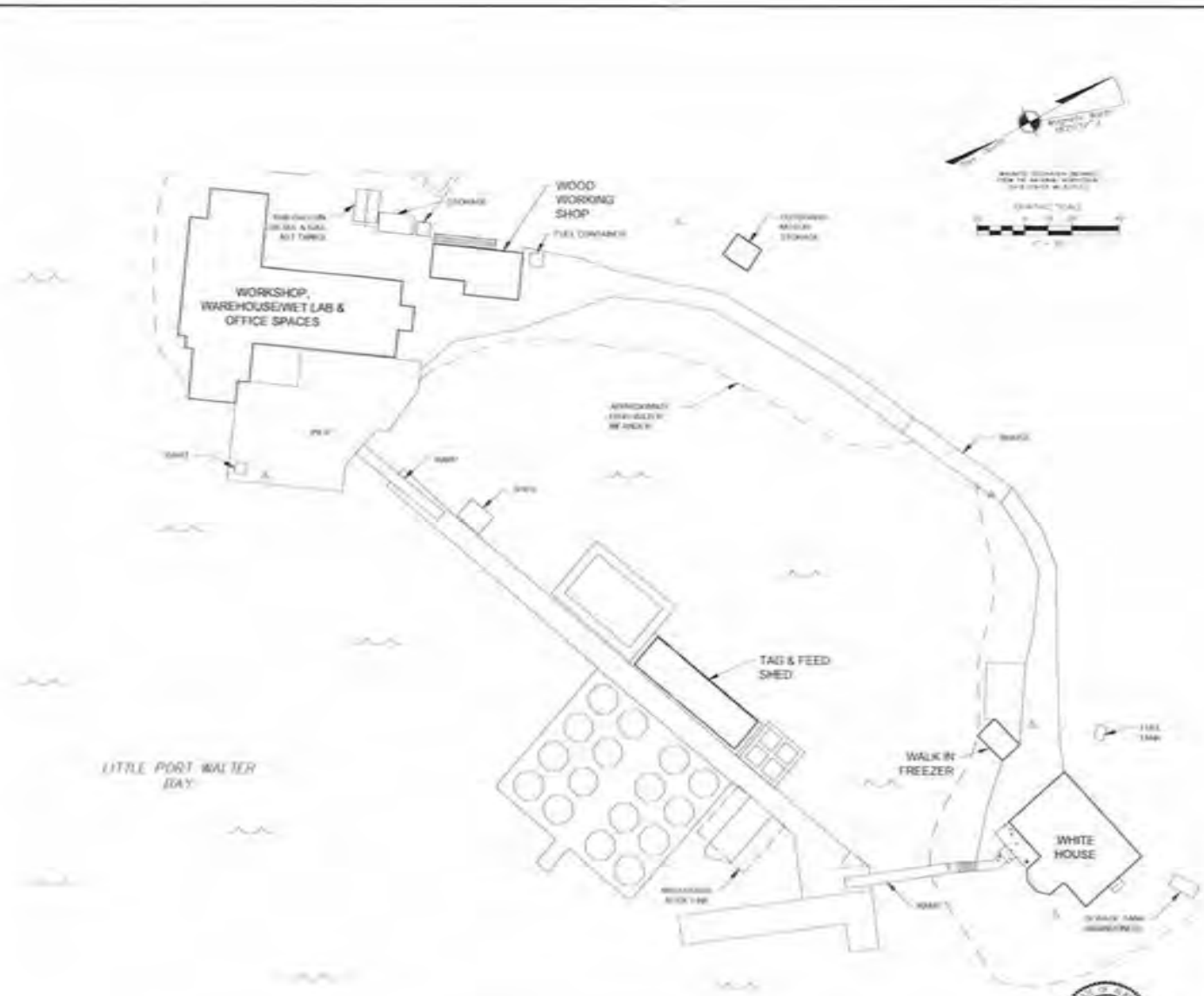
SCALE: 1" = 10'

NOTES:

1. [illegible]
2. [illegible]
3. [illegible]


WEIR CABIN STORAGE
WEIR CABIN
ELEVATED BOARDWALK
PAN ABODE SHOP
SASHIN CREEK
GRAVEL TRAIL
WEIR STRUCTURE
STORAGE
LITTLE PORT WALTER BAY
EXISTING CONDITIONS
SCALE: 1"= 50'
SITE PLAN
LITTLE PORT WALTER
FISH HANDLING FACILITY
ICG
Lantech Inc.
12/11/14
JDH
921.08


PAN ABODE CABIN
COVE CABIN
GENERATOR BUILDING
WOOD WORKING SHOP
WORKSHOP, WAREHOUSE/WET LAB & OFFICE SPACES
LITTLE PORT WALTER BAY
SITE PLAN
LITTLE PORT WALTER FISH HANDLING FACILITY
LCG Lantech Inc.
EXISTING CONDITIONS
SCALE: 1"=~20'




**EXISTING CONDITIONS**

SCALE: 1"= 20'

LITTLE PORT WALTER, ALASKA

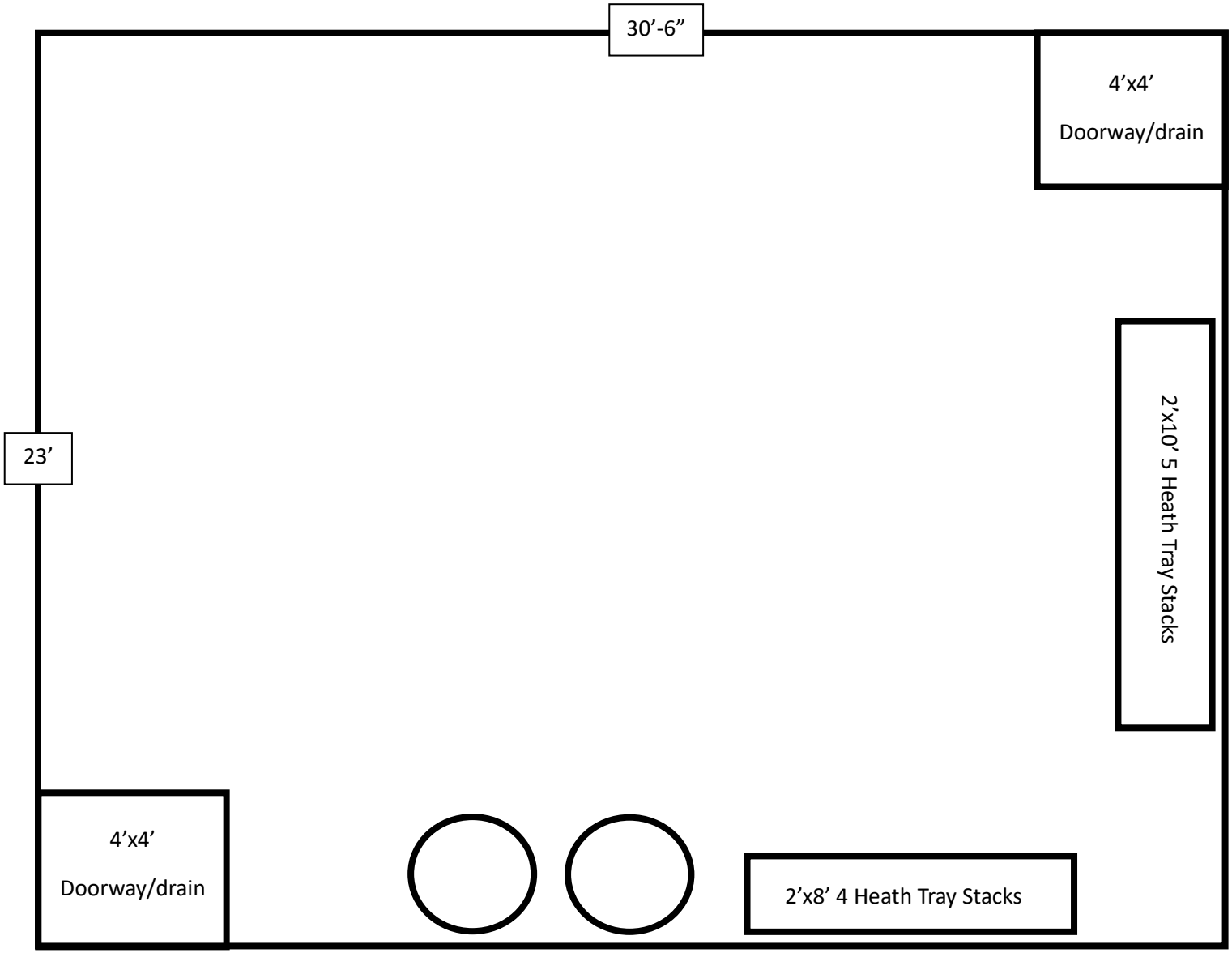
SITE PLAN

LITTLE PORT WALTER
FISH HANDLING FACILITY

LCG Lantech Inc
civil/structural · engineering · surveying

| | | |
|---|---|---|
| 12/11/14 | 1" = 20' | |
| MJR | JSH | 601.08 |
| 12/11/14 | 1 of 1 | |

APPENDIX 8. INCUBATION ROOM LAYOUT



APPENDIX 9. TECHNICAL ADVISORS

Andrew Gray – NOAA Fisheries – Alaska Fisheries Science Center – Supervisor of current Little Port Walter operations

- B.S. Biology and B.S. Genetics from Washington State University
- M.S. Genetics/Cellular Biology from Washington State University

Charlie Waters – NOAA Fisheries – Alaska Fisheries Science Center – Little Port Walter Research Station Manager

- B.S. Biology and B.S. Environmental Science from University of North Carolina Chapel Hill
- PhD Aquatic and Fishery Sciences from University of Washington
- Specializes in fishery genomics and the genetic basis of fitness-related traits in salmon
- 16 years of experience working at Little Port Walter, including 3.5 years as Station Manager