

Solomon Gulch Hatchery

Increase in pink salmon permitted capacity from 230 million to 300 million green eggs.

PERMIT ALTERATION REQUEST

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STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
PRIVATE NONPROFIT PROGRAM

I. IDENTIFICATION OF APPLICANT

RECEIVED FEB 12 2014

A. Applicant Information

Michael H. Wells Valdez Fisheries Development Association Inc.
Applicant Name Organization
PO Box 125 (907) 835-4874
Address Phone Number
Valdez Alaska 99686
City State Zip

B. Hatchery Information

Solomon Gulch Hatchery 15
Hatchery Name PNP Permit Number

II. STATEMENT OF APPLICANT'S GOALS AND OBJECTIVES

- A. Describe the nature of the requested alteration, why you have decided to request it, and what you generally expect to accomplish by the expansion of your program, including answers to the following questions. Will the proposed project affect wild salmon stocks or existing fisheries? How will a significant contribution to common property fisheries be made? How will potential effects and interactions between introduced or enhanced stocks and wild stocks be assessed? What marking and recovery studies are being proposed that will allow the project to be evaluated? What are the potential benefits to fisheries or wild stocks from the proposed project? Has this project been discussed with the department's area or regional management biologists? (Attach additional pages as necessary.)

VFDA proposes to increase its pink salmon green egg capacity at its Solomon Gulch Hatchery by an additional 70 million eggs. This request will increase VFDA's Pink green egg capacity from 230 million to 300 million eggs total. The fishery enhancement programs at Solomon Gulch Hatchery are well established and have had a positive and proven track record for thirty years. The purpose of the PAR is to build on this success and enhance one of the earliest commercially viable fisheries in Prince William Sound. This proposed request will further benefit the common property purse seine fishery in Prince William Sound by providing increased early season fishing opportunity and production to the regions processors.

1. Based on a historic averaged survival of 94% from green egg to fry release, VFDA expects

to achieve annual releases of approximately 282 million pink salmon fry. Combined 10- year, odd/even year marine survival for SGH pink salmon is 6.34%. It is expected that this increase could yield an additional 4 million returning adults, boosting returns to between 16 and 18 million annually. It is estimated this increase could yield an additional \$5 million in revenue to the seine fleet.

2. Brood stock increases to provide an additional 70 million green eggs will require 82,000 fish (50/50 male/female assuming 1700 eggs /female (see SGH AMPs). These fish are currently available by factoring in annual brood surpluses and additional brood collection .

3. Impacts to wild stock pink salmon are expected to remain minimal and VFDA is aware of no adverse effects on natural runs in its long history. The SGH permit and subsequent PAR applications have considered that brood stocks are early and allow for a majority of the return to be harvested before mid July. This trait reduces conflict with returning wild stocks and allows for flexibility in fisheries management. The location of the SGH in Port Valdez provides a tool for managing wild stock interception.

VFDA has reviewed the study titled "Straying of hatchery salmon in Prince William Sound" (ADF&G 2012). This study noted that the SGH has a close proximity to its pink salmon donor stock streams and that its early run timing may reduce intermingling with fish homing to other areas. These factors may have contributed to the observance that relatively low numbers of hatchery pink salmon strays from SGH were found in PWS streams.

VFDA also considered the scope of the study " Interactions of wild and hatchery Pink and Chum Salmon in Prince William Sound and Southeast Alaska". (ADF&G 2013). Project research is just beginning and its results are not yet available for determining the impacts this PAR may have on PWS wild stocks.

4. It is not anticipated that the increase requested will require significant changes to management of cost recovery or the common property fisheries. VFDA works cooperatively with ADF&G to manage the SGH returns and communication between ADF&G and VFDA is ongoing throughout the season. This provides for maximum return to the common property and ensures surpluses of pink salmon are harvested at acceptable industry quality standards. The PWS Commercial Fisheries AMB in Cordova and the Fisheries Management Coordinator in Anchorage have been consulted.

5. All VFDA salmon are 100% thermally marked and required ongoing harvest monitoring will continue.

6. The PWS Sportfish AMB in Anchorage has been informed of this PAR. VFDA does not expect that this request will negatively impact existing sport fisheries in Port Valdez or require changes to fisheries management methods developed in VFDA's AMP. The existing coho salmon fishery enhancement program will remain at current permitted levels.

7. This request will be implemented over time as changes to water usage are evaluated. An approach of gradual increases to eggtakes will allow evaluation of impacts on hatchery operations, return management, survival and area wild stocks.

See Attachment A - VFDA Pink Salmon Production.

**PERMIT ALTERATION REQUEST**

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III. **IMPACTS ON EXISTING HATCHERY PROGRAM**

A. **Present Permitted Capacity**  
(numbers of green eggs by species)

Pink	230,000,000	Coho	2,000,000
Chum	_____	Chinook	_____
Sockeye	_____	Other	_____

B. **Capacity After Request**  
(numbers of green eggs by species)

Pink	300,000,000	Coho	2,000,000
Chum	_____	Chinook	_____
Sockeye	_____	Other	_____

C. **Water Use**

1. **List the total amount of water available and the source.**

10 CFS - 24" hydro plant tailrace tap 33 CFS - 42" hydro plant tailrace tap (anticipated to be constructed Spring of 2015) 10 CFS - hydro plant penstock tap 2 CFS - Solomon Creek Falls tap Double pass emergency recirculation capability in incubation. Future development of short term recirculation and degassing for long term rearing.
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2. **List the amount of water presently being used.**

10 CFS
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3. **List the additional amount of water needed for this alteration.**

6 CFS excluding fish ladder.
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**PERMIT ALTERATION REQUEST**

IV. **HATCHERY DESIGN**

- A. Please provide a detailed description of new facilities needed with this alteration (e.g., buildings, incubators, rearing space, piping, etc.). This description should represent a solid concept of the proposed hatchery changes/expansion. Drawings showing the layout of new structures should be attached when appropriate.

The existing incubation building will be increased by 1,700 square feet to accommodate the expansion. Head boxes will be reconfigured to provide water to the required 44 stacks of incubators necessary to increase incubation by 70 million green eggs. Additional capacity will be added to incubation pumping, distribution and emergency recirculation. Six saltwater short term rearing pens will be purchased to accomodate short term salt water rearing.

(Attachment B) This conceptual drawing is provided to show the expansion of the incubation building. It also shows proposed placement of incubtors and the extention of headboxes.

V. **DECLARATION AND SIGNATURE**

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

MIKE H. WELLS  
Name of Applicant

2-7-2014  
Date Signed

  
Signature of Applicant

**Attachment A.**

**Example of VFDA Pink Salmon Production Schedule**

**NOTE:** All fry releases and return harvests conducted at the Solomon Gulch Hatchery site.

ANTICIPATED PRODUCTION				PROPOSED INCREASES				
Eggtake	Eggtake Dates	Smolt Release	Estimated returns		Eggtake	Eggtake Dates	Smolt Release	Estimated Returns
230,000,000	July 21-Aug 17	216,200,000	13,707,080		20,000,000	July20-Aug 18	18,800,000	1,191,920
250,000,000	July 21-Aug 17	235,000,000	14,899,000		25,000,000	July 20-Aug 19	23,500,000	1,489,900
275,000,000	July 21-Aug 17	258,500,000	16,388,900		25,000,000	July 19-Aug 20	23,500,000	1,489,900
300,000,000	July 18-Aug 19	282,000,000	17,878,800		--	--	--	--

VFDA is requesting an increase of 70 million green pink salmon eggs. VFDA intends to gradually step up its egg take increases, but requests flexibility in doing so. It is possible that VFDA could reach a maximum permitted capacity of 300 million pinks eggs within three to five years of approval. Actual egg take increases and the brood year in which they are conducted will be outlined in the Annual Management Plans submitted for the SGH. The following is a general schedule of green egg production increases;

At the time of this PAR application, it is planned that VFDA will make a replacement of its main water supply line to the Solomon Gulch Hatchery in 2015. This new line will provide for a better delivery of VFDA’s existing and future water needs.

Once the new water supply line is installed and additional water supply is secured, VFDA will begin the first step to increase its pink salmon green egg capacity by a minimum of 20 million eggs. Work will begin to expand the incubation building to provide an additional 1700 square feet of floor space. Existing space and plumbing in the incubation building will be reconfigured to provide for the placement of the additional incubators necessary to achieve this first level of production. Pumping systems will be increased and head boxes extended to provide incubation for the full increase of 70 million green eggs. Additional saltwater rearing pens will be purchased for the anticipated increased releases as needed.

VFDA anticipates its first release of an additional 18.8 million pink salmon fry should occur by 2017. VFDA will evaluate the impacts of increased production on hatchery operations. If the increase is determined to be sustainable and no adverse impacts are observed, VFDA will consider further expansion of an additional 25 million green pink salmon eggs.

VFDA expects to see increased fry releases of approximately 258.5 million pinks by 2018 or 19. Impacts of increased returns on cost recovery and common property fisheries will be evaluated each year. Expansion of the incubation building will be complete and additional incubators and salt water rearing equipment will be in place. Assuming that an expanded pink salmon incubation program of 275 million green eggs is successful and it has the necessary water to do so, VFDA will finalize its expansion to 300 million pink eggs. Annual releases of approximately 282 million pink salmon fry are anticipated to begin thereafter.

The monitoring of impacts of increased pink salmon production on hatchery operations will be ongoing. VFDA will work cooperatively with ADF&G to monitor and resolve issues that affect wild salmon stocks and cost recovery, commercial and sport fisheries management.

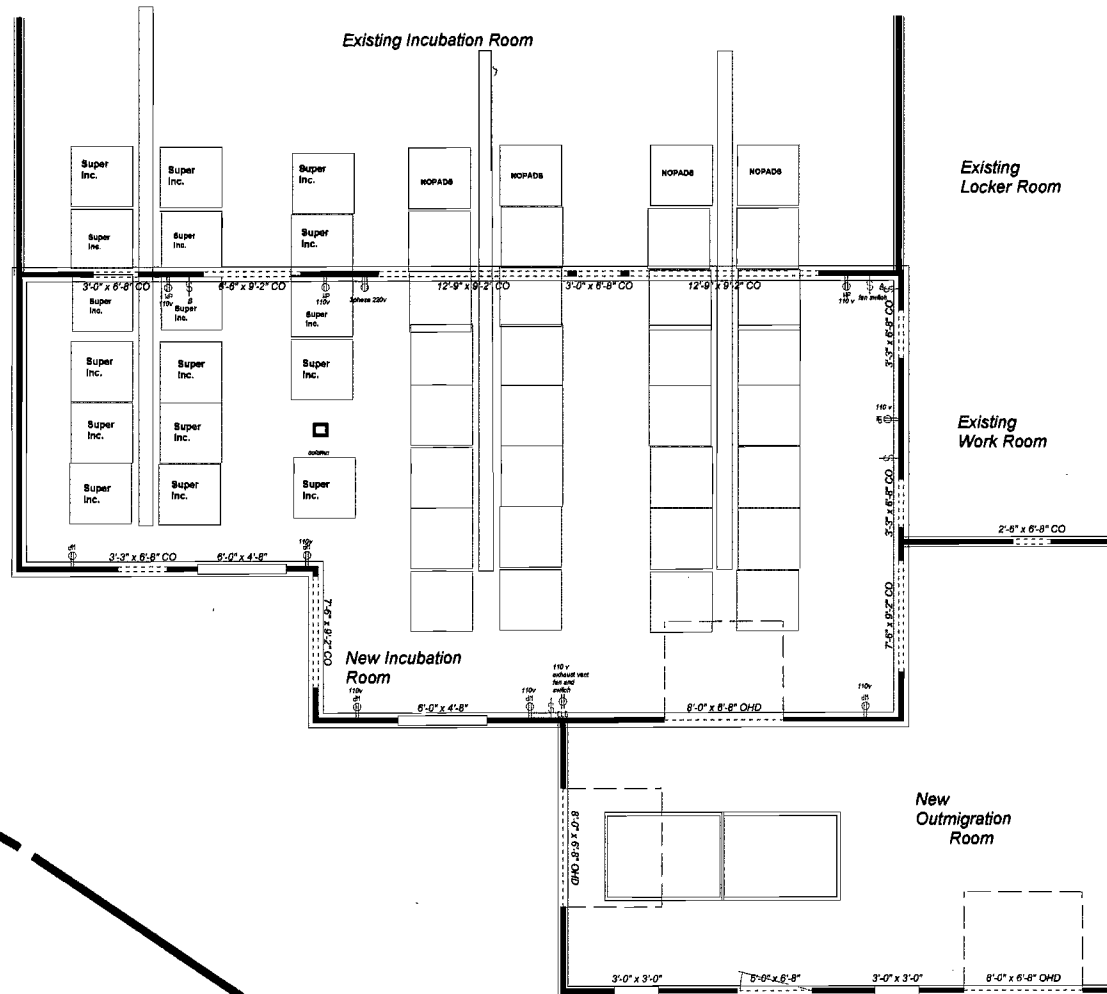
# Attachment B

PAR Modification A-3

Pink Incubation Expansion  
 32 NOPADS = 52 million  
 12 S. Incs for eyeing and hatch  
 = 18 million

**TOTAL CAPACITY = 70 MILLION**

- 1) Building only needs remodeling and O.M. Room rebuilt.
- 2) We have most of the NOPAD incubators in storage.
- 3) Must build all new Super Incs.
- 4) Only gives 70 million increase.
- 5) Floor drain troughs need engineered and cut into floor.
- 6) Head boxes need extended.



Valdez Fisheries Development Assoc.  
 Inc.  
 Solomon Gulch Hatchery

Project: Modify room to Incubation  
 Plan A-3.  
 January 5, 2012  
 Draft No.: 1  
 Designer: klm

Retaining Wall