

# AquaSeed's SweetSpring™ Salmon

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# Overview

- Who We Are
- Domsea Heritage and Breeding
- SweetSpring Smolt RAS System
- SweetSpring Growout RAS System
- Marketing SweetSpring Salmon





# Who We Are

- Privately held company incorporated in 1988
- Locations in WA
  - Main office - ***Seattle***
  - Freshwater based farms –  
***Rochester & Shelton***
- SweetSpring Contract Growers
  - Teton Fishery
  - Hill Fishery





# Domsea Heritage

- Domsea<sup>®</sup> Coho pedigree stock
  - founded by Union Carbide in 1969
  - Acquired by Campbell Soup in 1979
  - Acquired by AquaSeed and relocated to Swecker Salmon Farm in 1991
- Longest pedigree bred salmon: 20 generations (40 yrs)





# Domsea<sup>®</sup> Pedigree Breeding

- Professionally managed selection program
  - Selection program initiated in 1971 with 40 families
  - Selected for fresh water performance
    - Growth rate, shape, reproduction and low rate of defect
- Historical improvement 7% per generation
- Upgrading program to include genomic and commercial performance information
- Expect to double rate of improvement with the new technology being developed





# The SweetSpring Advantage

- Domsea Coho stock bred and reared in fresh water
- Grown in pathogen free water
- Proven track record of Coho reared in tank systems
- Experienced management team





# SweetSpring Smolt RAS System Layout

- HTE microbead biofilter
- Two 4.6m x 1.2m tanks
- One 1.8m x 0.9m first feeding tank
- Two radial flow separators
- Foam fractionator with ozone
- Two Low Head Oxygenators (LHOs)









# SweetSpring Smolt RAS System Parameters

- 2650 lpm recirculating flow
- 38 lpm replacement water
- 100% system volume replacement per day
- 20 minute system turnover rate
- Optimum 15C (59F) growing temp
- Produces 24,000 smolts @ 60 grams every two months



# Sweet Spring Grow-out RAS System Bio-plan

- Produce 136,000 kilos of 3 kilo fish per year
- New crop added every two months
- Each crop is moved to a larger tank every two months
- Eight month grow-out from 60 grams to 3 kilos





# Sweet Spring Grow-out RAS System Filtration, CO2 Stripping, and LHO

- Lower head loss than conventional FSB
- Below grade fluidized sand bed biofilter
- CO2 stripper is combined with the pump sump
- Split system flow
- Water pumped from the pump sump to the LHOs – other pumps supply biofilter





# Sweet Spring Grow-out RAS System Tanks

- Four tanks from 6.1m x 1.5m to 12m x 3m
- Tank number and sizing for 8 month grow-out
- Tanks have built in inflow nozzles
- Two 6.1m x 3m purge tanks
- Purge tanks are sized to hold one crop for up to 15 days purge time



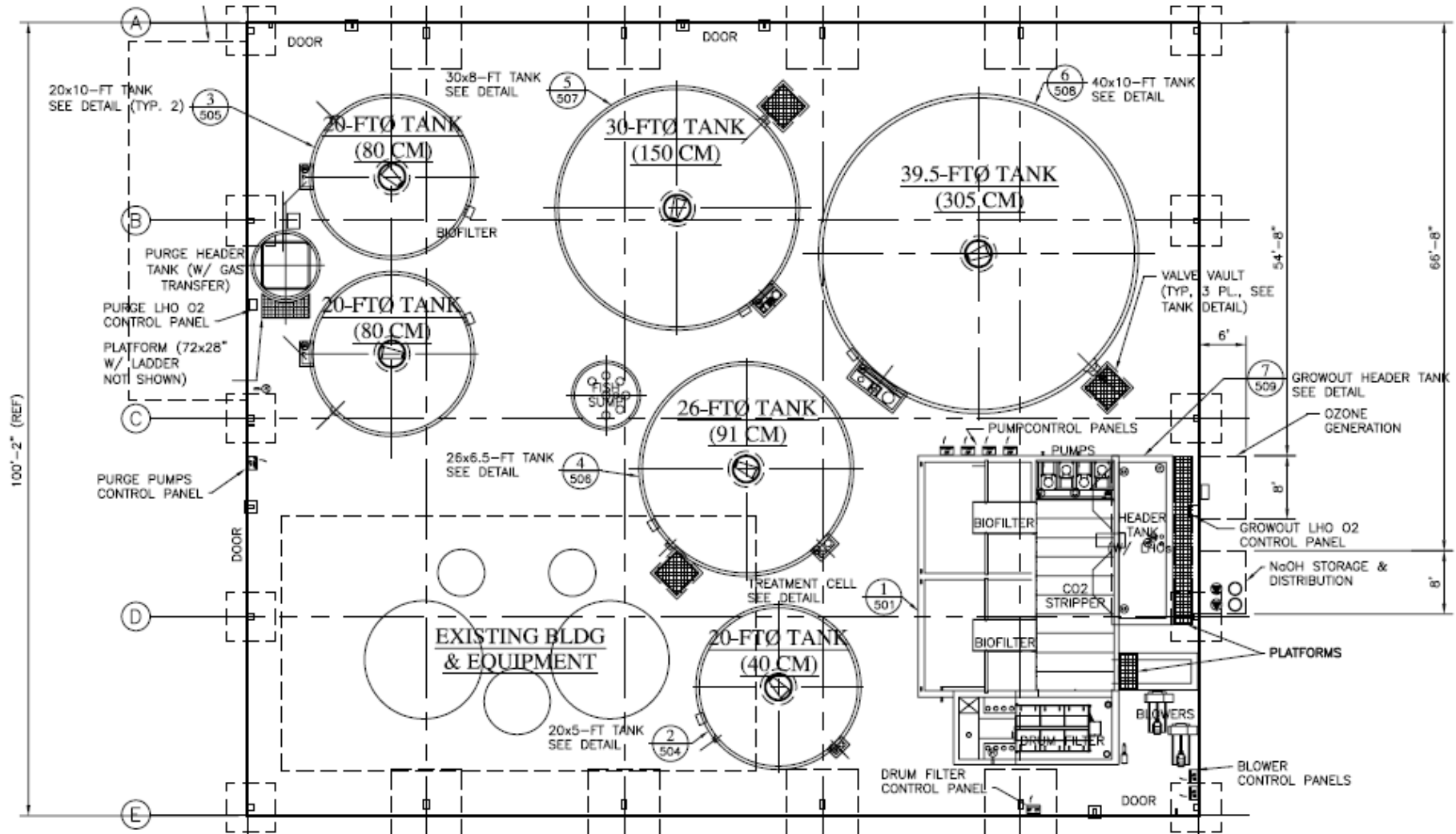
# Sweet Spring Grow-out RAS System

## Fish transfer

- Pneumatically actuated tank center drain screens
- Central fish handling sump
- Transvac twin canister vacuum pump
- Fish are pumped tank to tank from the central fish handling sump using the tank center screens

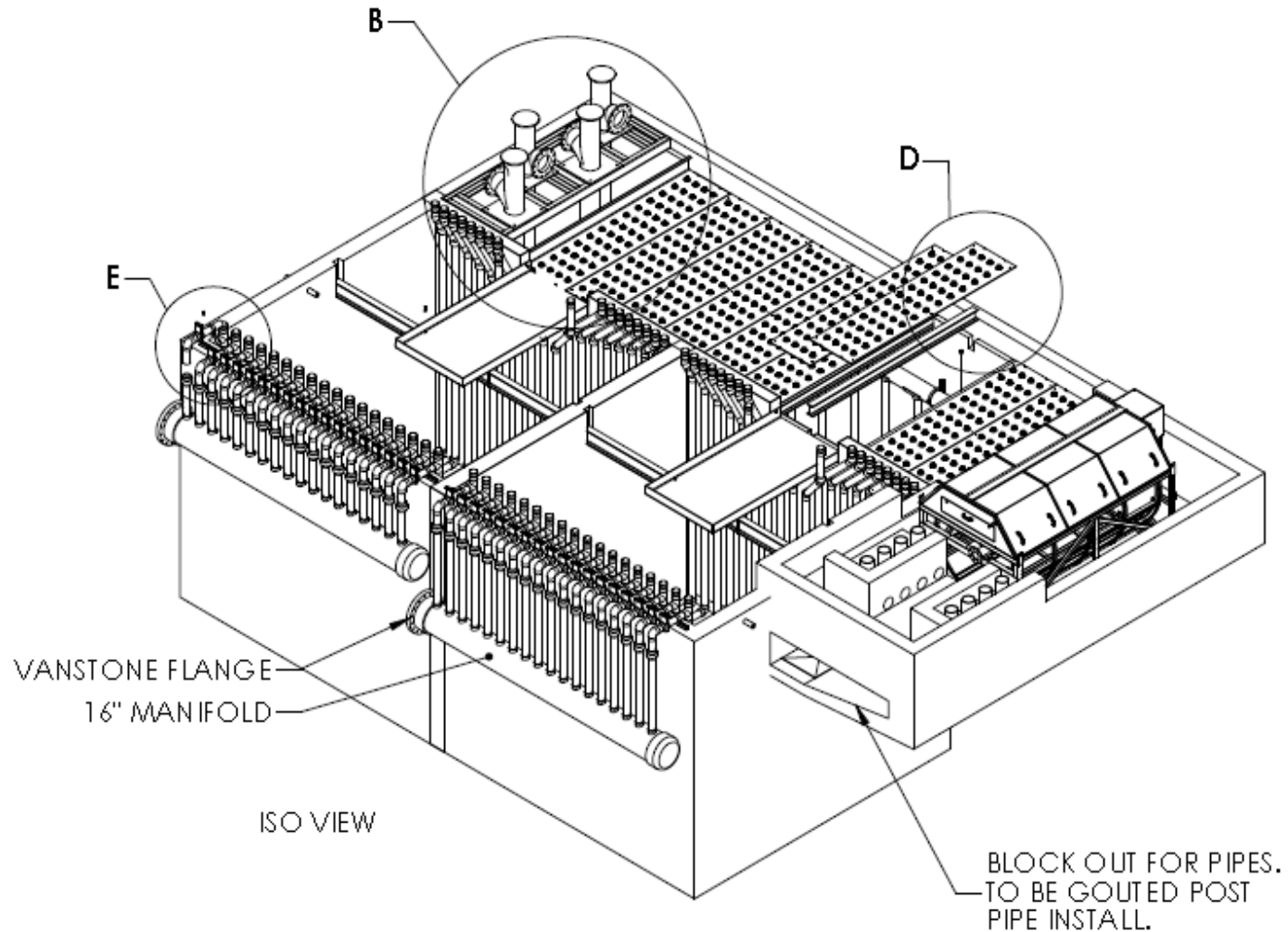


# SweetSpring Grow-out RAS System





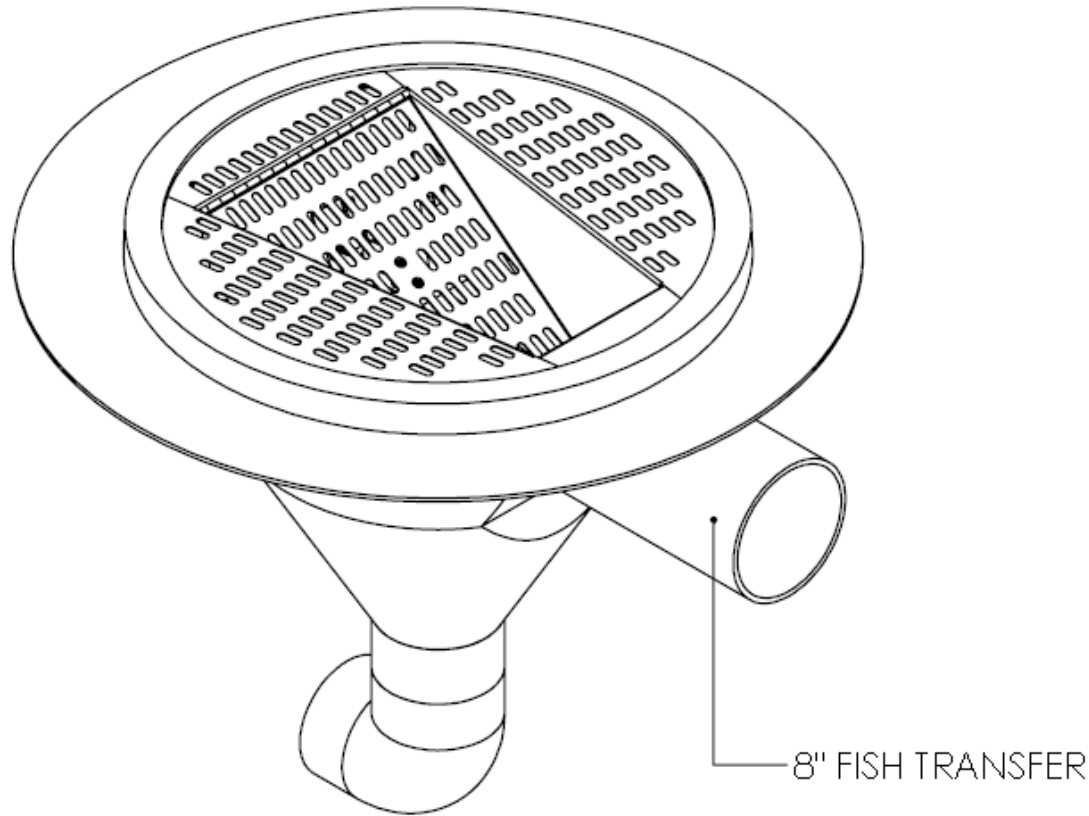
# SweetSpring Grow-out RAS System





# SweetSpring Grow-out RAS System

## Fish Transfer Sump





# Marketing Sweet Spring **Super-Green** Salmon

## Super Green Requirements

- **Mercury** below 216 ppb
- **PCB** below 11 ppb
- **Omega-3s** > 250 mg/day

<http://www.montereybayaquarium.org/>

## SweetSpring Salmon

- **Mercury** – 25 ppb
- **PCB** – 10.5 ppb
- **Omega-3s** – 437 mg/day

***Ranked Seafood Watch  
"Best Choice"***





# Collaborative Innovation



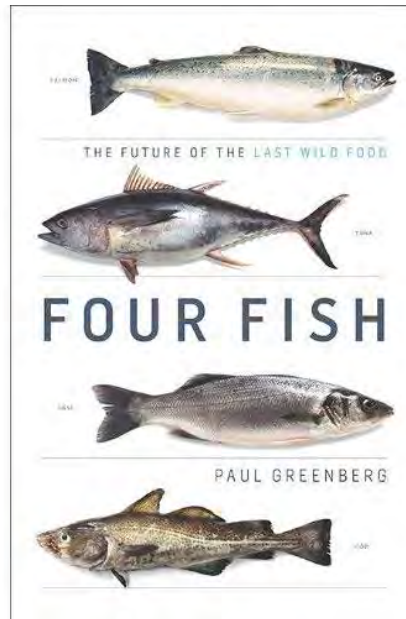


# Sweet Spring's Marketing Channels

- Retail
  - Overwaitea
- Food Service
  - Compass Group (Microsoft)
  - Seafood Watch Collaborators







“Let the fittest, most closed system survive and reap the economic benefit inherent within that victory.”

*Paul Greenberg, 2010 (pg 74)*



# Thank You...



[www.sweetspringsalmon.com](http://www.sweetspringsalmon.com)