

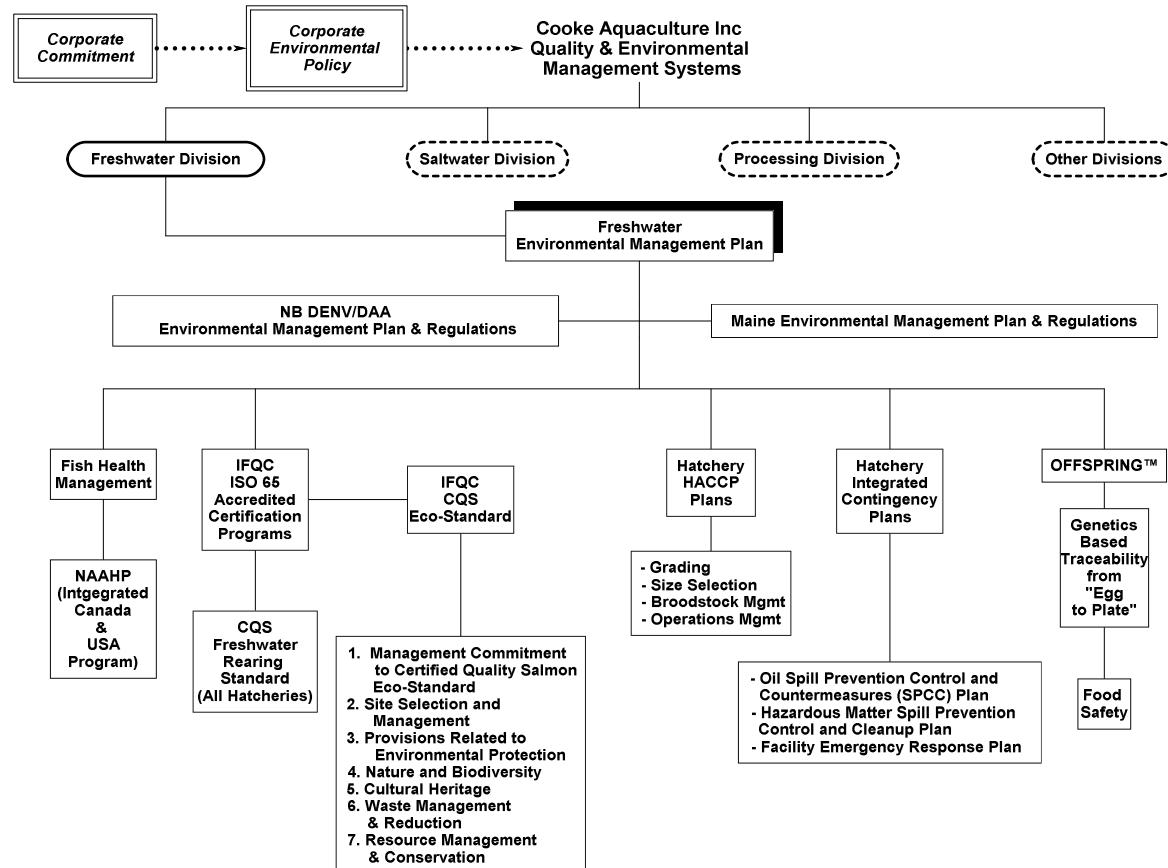
# COOKE AQUACULTURE FRESHWATER ENVIRONMENTAL MANAGEMENT PLAN



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*"Refusing to go with the flow"*

# Cooke Freshwater EMP



# FW EMP

- **COMPONENT MANUALS OF THE ENVIRONMENTAL MANAGEMENT PLAN**
- The major components of Freshwater Division's EMP, as depicted in the flow chart, are described in the following manuals:
  - **Manual 1:** Introduction & Concordance Register (*This Manual*)
  - **Manual 2:** Management Commitment & Environmental Policy
  - **Manual 3:** Canadian and US Environmental Management Plans and associated regulatory requirements
  - **Manual 4:** The FW Fish Health Management Plan
  - **Manual 5:** Certified Quality Salmon Freshwater Rearing Standard
  - **Manual 6:** CQS/Eco-Standard and associated SOPs
  - **Manual 7:** The Hatchery HACCP Plans with their hatchery-specific sub-plans
  - **Manual 8:** Canadian and US Hatchery Integrated Contingency Plans
  - **Manual 9:** The OFFSPRING™ genetics-based traceability program

# Management Commitment

**IFQC CQS-Eco Standard  
Statement of Management Commitment**

Cooke Aquaculture Inc is committed to aquaculture that is environmentally sensitive and sustainable. We have therefore established and will maintain an Environmental Management System for our Freshwater Division. The full scope of our commitment to doing business in harmony with the aquatic, terrestrial and aerial resources which embrace our facilities is further outlined in the Cooke Aquaculture Environmental Policy.

We commit to ensuring that our operations are viewed by our staff, customers, regulators and the public at large as respectful of the environment and representing modern and wise approaches to doing business.

Our commitment extends to annual reviews of our environmental performance which, together with ongoing vigilance of our day-to-day activities, will guide us in maintaining a state of equilibrium with our surrounding environment.

The strength of our commitment is measured by internal and external audits that evaluate environmental performance, processes for continuous improvement and the setting of meaningful environmental objectives that can be measured for success.

We commit to training our staff to oversee our company's pursuit of excellence in our Environmental Management System.

Glenn Cooke  
CEO  
Cooke Aquaculture Inc

# Our environmental policy guides us...

## **Cooke Aquaculture Inc. Synoptic Policy Statement**

Cooke Aquaculture Inc. is committed to minimizing the effects of its business on the environment and to respecting the needs of all users of its shared resources. We have implemented a world-class Environmental Management System that is consistent with the best practices of the industry and strives to go beyond compliance with regulatory requirements.

Cooke Aquaculture Inc. will, by following Standard Operating Procedures, conform to the provisions of the Certified Quality Salmon Eco-Standard administered by IFQC, an independent certification body accredited to EN45011/ISO Guide 65:1996.

Cooke Aquaculture Inc. will provide the necessary infrastructure, resources and training to its staff to enable them to conform to the provisions of our Environmental Management System. We will also include consultations with customers, regulators, stakeholders, neighbours, and the public when measuring performance of our Environmental Management System.

# Manual 3 – Provincial and Federal Regulatory Requirements

- Newfoundland
- New Brunswick
- Nova Scotia
- Maine

# Manual 4

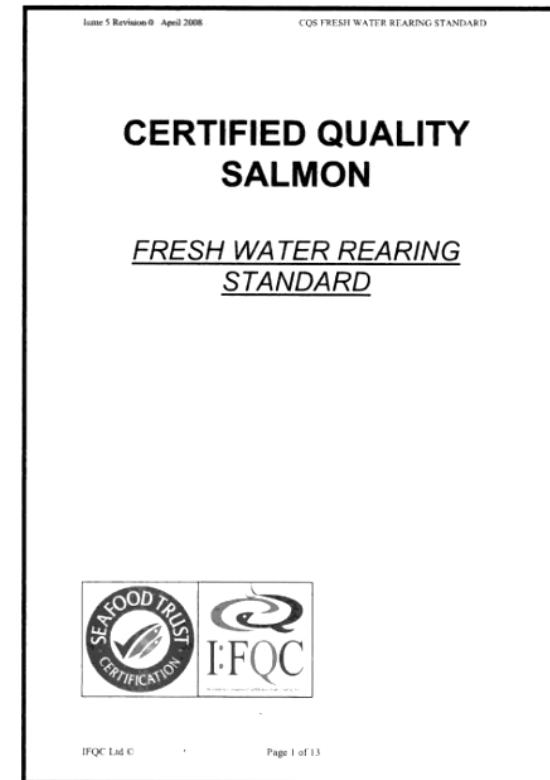
## Fish Health Management Plan

- As depicted in the EMP flow chart , this manual presents the ***Freshwater Division Fish Health Management Plan*** which provides details of bio-security procedures, fish handling techniques, and fish health testing protocols for hatcheries including brood-stock.
- The FHMP is strongly influenced by the requirements of the DFO/CFIA National Aquatic Animal Health Program, all Canadian Provincial aquaculture and Environment Departments requirements, US Federal and State of Maine regulatory requirements, the IFCQ Eco-Standard Certification program, as well as by other requirements for veterinarians and all who assist them in ensuring high standards of fish health are maintained in the company's freshwater facilities.

# Manual 5

## CQS Freshwater Rearing Standards

- The Global Trust ***Certified Quality Salmon Freshwater Rearing Standard*** has been selected by Cooke Aquaculture as the independent third party audited standard to which Freshwater Division seeks certification of its hatchery operations and related husbandry practices.
- The Standard is an internationally recognized, ISO-based standard for rearing freshwater phases of Atlantic salmon
- It includes internal CAI audits, as well as annual external audits undertaken by Global Trust auditors.



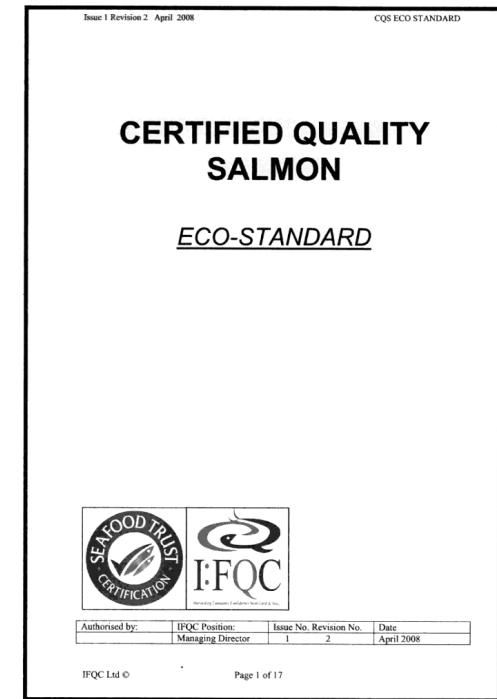
# CQS Standards cover

- Good management and husbandry practices – BMP's
- Workplace health and safety requirements
- Environmental management & monitoring program
- Fish health management program
- Documented systems operation & record-keeping plan
- Staff training program
- Facilities & equipment design & management program
- Equipment maintenance & calibration program
- Chemicals and medicines storage program
- Hygiene and disinfection program
- Bio-security program
- Staff facilities program

# Manual 6

## CQS ECO Standards and SOP'S

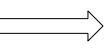
- The ***Global Trust Certified Quality Salmon Eco-Standard*** has been selected by Cooke Aquaculture as the independent third party audited standard to which Freshwater Division seeks certification of the environmental performance of its hatchery operations and related husbandry practices.
- This includes all management, physical and biological aspects of our operations that could have an impact on the surrounding aquatic, terrestrial and aerial environments.
- Like its pre-requisite, the CQS Freshwater Rearing Standard, the ***Eco-Standard*** is an internationally recognized, ISO-based standard for measuring environmental performance related to the freshwater rearing phases of Atlantic salmon.
- This includes internal CAI audits, as well as annual external audits undertaken by Global Trust auditors.



# CQS Eco Standards

- Management commitment
- Site Selection and Management
- Environmental Protection
- Nature and Biodiversity
- Cultural Heritage
- Waste Management and Reduction
- Resource Management and Conservation

# Management Commitment

- ❑ Statement of Commitment
- ❑ Environmental Policy
- ❑ Staff Training and Involvement
  - Managers must be aware of CQS-ES requirements
  - Provide training to staff on their responsibilities
  - QMS Coordinator to manage overall program
- ❑ **Baseline Assessment**
- ❑ Environmental Management Program
  - ie: Annual review of EMS
  - Annual setting of new objectives  **continuous improvement**
- ❑ Maintain appropriate records

# Site Selection & Management

- Sites to feature:
  - high quality construction
  - well maintained
  - detailed site plans
- Equipment inventories
- No unsightly junk yards
- Pest control
- Participate in local clean-up days for nearby areas
- Facilities to blend with surrounding area (low visibility)
- Cooperate with local groups (other resource users)

# Environmental Protection

- Prevention of spills, taints and odours
- Contingency and mitigation plans for leaks and spills
- Protection from oil contamination
  - Emergency Spill Response Plan
- Visual impact reduction
- Noise impact reduction
- Odour impact reduction
- Feed management & nutrient impact reduction

# Nature & Biodiversity

- Nature Conservation Designation
  - Sensitive to local biotic communities
  - Humane predator deterrent & control
  - GMO requirements
    - Allowable with special permission in feeds
    - No GMO fish
  - Strict conditions for hormone treatment
- Prevention of Farm Breaches (Escapes)
  - Adequate containment facilities and gear
  - Records and reporting

# Cultural Heritage

- New developments to:
  - Consider and report any archeological features to be assessed
  - Seek advice from professional archeologists
  - Discuss findings with site licensing authorities

# Waste Management & Reduction

- **Waste Management Plan**
  - Prevention, reduction, reuse, recycling & recovery
  - Annual waste audit (type, volume, disposition)
- **Waste Reduction & Recycling**
  - Long life span materials, recycled paper, rechargeable batteries, etc.
  - Recycling and composting programs
- **Waste Disposal**
  - Waste segregation (recyclable/non-recyclable; organic/non-organic)
  - Immediate and proper disposal
  - Effluent/wastewater discharge conditions
  - Contingency plan for unexpected high mortalities
  - Records of waste disposal

# Resource Management & Conservation

- Water Resources
  - Coordinate with other users
- Energy Conservation
  - Monitor and record energy consumption by type
  - **Annual energy audit**
  - Monitor and record energy consumption per unit of production
  - Methods & targets for energy reduction and conservation
  - High energy use equipment to be in peak working condition
  - Avoid unnecessary energy use
- Sustainability of Raw Materials used in Salmon Feed
  - Ingredients to conform to National standards
  - Raw materials from managed TAC fisheries
  - Feed companies to provide feed declaration

# Manual 7

## HACCP

- The ***Hatchery HACCP Plans*** are, in essence, the quality control procedures to be followed in hatchery and related operations. There are individual Hatchery HACCP Plans for each of FW Division's hatcheries, each one reflecting the specific characteristics of hatcheries together with hazard analyses, critical control points and procedures for minimizing quality related issues in smolt production and brood-stock maintenance.
- The ***Hatchery HACCP Plan*** is most closely related to the CQS Freshwater Standards

# Manual 8

## Integrated Contingency Plan

- The ***Hatchery ICPs*** include the **Oil Spill Prevention Control and Countermeasures (SPCC) Plan**, the **Hazardous Matter Spill Prevention Control and Cleanup Plan**, and the **Facility Emergency Response Plan**. There are separate **Hatchery ICPs** for facilities in Canada and the USA as a result of differing regulatory requirements in each jurisdiction.
- The ***Hatchery ICPs*** are most closely related to the IFQC CQS Eco-Standard

# Manual 9

## Offspring - Traceability

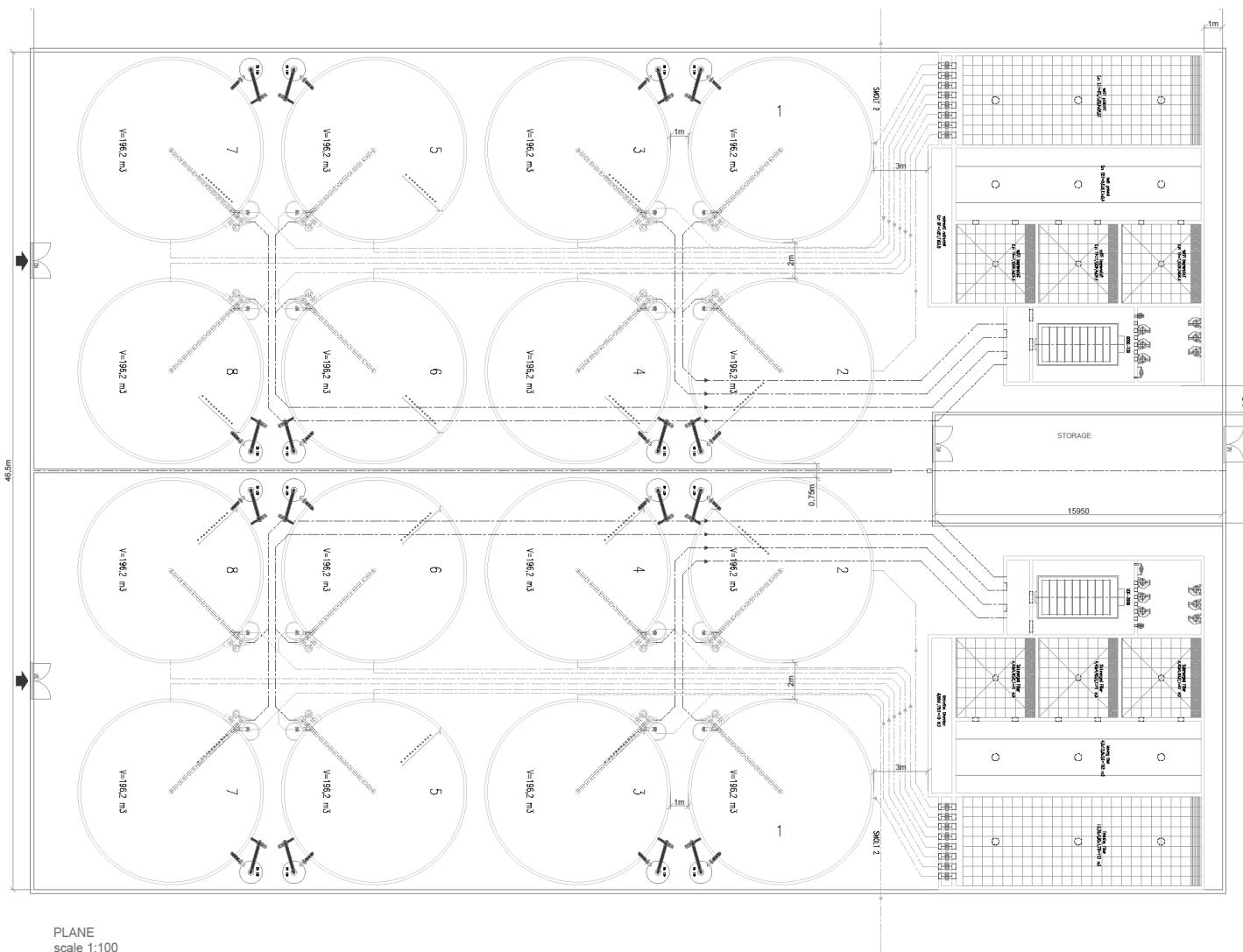
- Use of DNA in Brood-stock as a way of full traceability from egg to plate

# Proposed New Facility

- New state of the art Re-circulation facility using FW and some SW from protected groundwater sources.
- Designed to produce 3 million smolt annually representing 25% of Cooke's production in Canada and the US.
- Expected to provide up to 12 Full-time, part-time and seasonal jobs.

# Proposed new Facility





PLANE  
scale 1:100


**Bluefish Equipment ApS**  
 Projekt nr./projekt  
 Dokument nr./dokument  
 Beskrivelse  
 General Lay out  
 for 2 Smolt System  
 Dato 2009.09.05  
 Skala 1:100  
 Formats nr. xx-200

# Feed in

<u>Production Plan New Facility St Albans</u>												
<u>Month</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
SO group transferred from DH						5486	15880	27081	19776			
S1 A first group of S1's from DH	15060	15252	15009	17300						4266	5004	5803
S1 B second group of S1's from DH	12523	10359	12909	15978	18483					4265	8573	
Total Feed per Month - Kgs	27,583	25,611	27,918	33,278	18,483	5,486	15,880	27,081	19,776	4,266	9,269	14,376

# Water in

<u>Production Plan New Facility St Albans</u>												
<u>Month</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
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Make up (@350L/kg feed) - Daily in Lpm	216	222	219	270	145	44	125	212	160	33	75	113

# Waste out

<u>Production Plan New Facility St Albans</u>												
<u>Month</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
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Make up (@350L/kg feed) - Daily in Lpm	216	222	219	270	145	44	125	212	160	33	75	113
Dry waste - total Kg per day	133.5	137.2	135.1	166.4	89.4	27.4	76.8	131.0	98.9	20.6	46.3	69.6