1999 Dam Safety Inspection Reports

PUB 1.2
Attachment I

Port Union Development

NEWFOUNDLAND POWER
A FORTIS COMPANY

NEWFOUNDLAND POWER

April 26, 2000

Memo From: J. P. Halliday

To: M. C. Hunter

Subject: 1999 Dam Safety Inspection Reports
Port Union Development

File: 401.01.03.29.01

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Attached are the Dam Safety Inspection reports for structures located in the Port Union Development. Several structures in this development have been rehabilitated in recent years and should operate safely with minor repairs and maintenance.

Halfway Pond Dam, however, remains in poor condition, with continued erosion along the upstream slope and crest. This reservoir should continue to operate at low levels until repairs are carried out to this structure.

The outlet structure at Well's Pond is also in poor condition, with the gate left fully open to maintain low water levels. This practice should continue until a decision is made on the status of this structure.

Attach:

REGISTERED PROFESSIONAL ENGINEER
GARY K. HUMBY
SIGNATURE
2000/4/26
DATE
PROVINCE OF NEWFOUNDLAND

PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
NEWFOUNDLAND POWER INC.
To practice Professional Engineering in Newfoundland and Labrador. Permit No. as issued by APEGN 10088 which is valid for the year 2000

DAM SAFETY INSPECTION

Whirl Pond Dam & Outlet

Dam Type: Timber Cribwork

Date & Time of Examination: 1999-11-30 @ 12:00 pm

Operational Status at Time of Examination:

Reservoir Water surface elevation	2' below FSL
Releases	Gate open ≈ 12"
Weather Conditions	Cloudy 0°C
Water in storage	
Recent Seismic Events	None

Examining Party

G. Humby
P. Halliday
D . Laing

INSPECTION CHECKLIST FOR TIMBER-CRIB DAM

WHIRL POND TIMBER-CRIB DAM

Structure

Timber structural members	Good
Timber planking	Good, few rotten planks along walkway need to be replaced.
Crib Content	Good, some ballast missing from crib work at outlet.

Upstream Face

Alignment	Good, timbers in upstream face in fair condition.
Seepage on Downstream Face	Minor seepage on left side probably through timber facing. Flow ≈ 0.5gal/min
Downstream toe settlement	None observed

Crest

Surface cracking	None observed
Settlement	None observed

Abutments

Seepage	None observed

Remarks: Fill placed on downstream slope for access to outlet makes inspection difficult.

WHIRL POND OUTLET

OUTLET WORKS

Intake

Trashrack	Fish Screen – Good, new screens installed in 1999.
Concrete	N/A

Outlet Conduit

Metal work	N/A
Penstock	N/A

Control Facilities

Gatehouse	N/A
Crane	N/A
Gate and controls (description)	Mechanical lift
General condition	Good
Operation at time of examination	Open
Control System Mechanical items	Good
Ventilation	N/A
Lighting	N/A
Stop logs	
General condition	N/A
Seals	N/A

Chute

Debris	None observed
Walls	
Movement (offsets)	None observed
Settlement	None observed

Joints	Good
Cracks or areas of distress	None observed
Condition of backfill	N/A

Floor

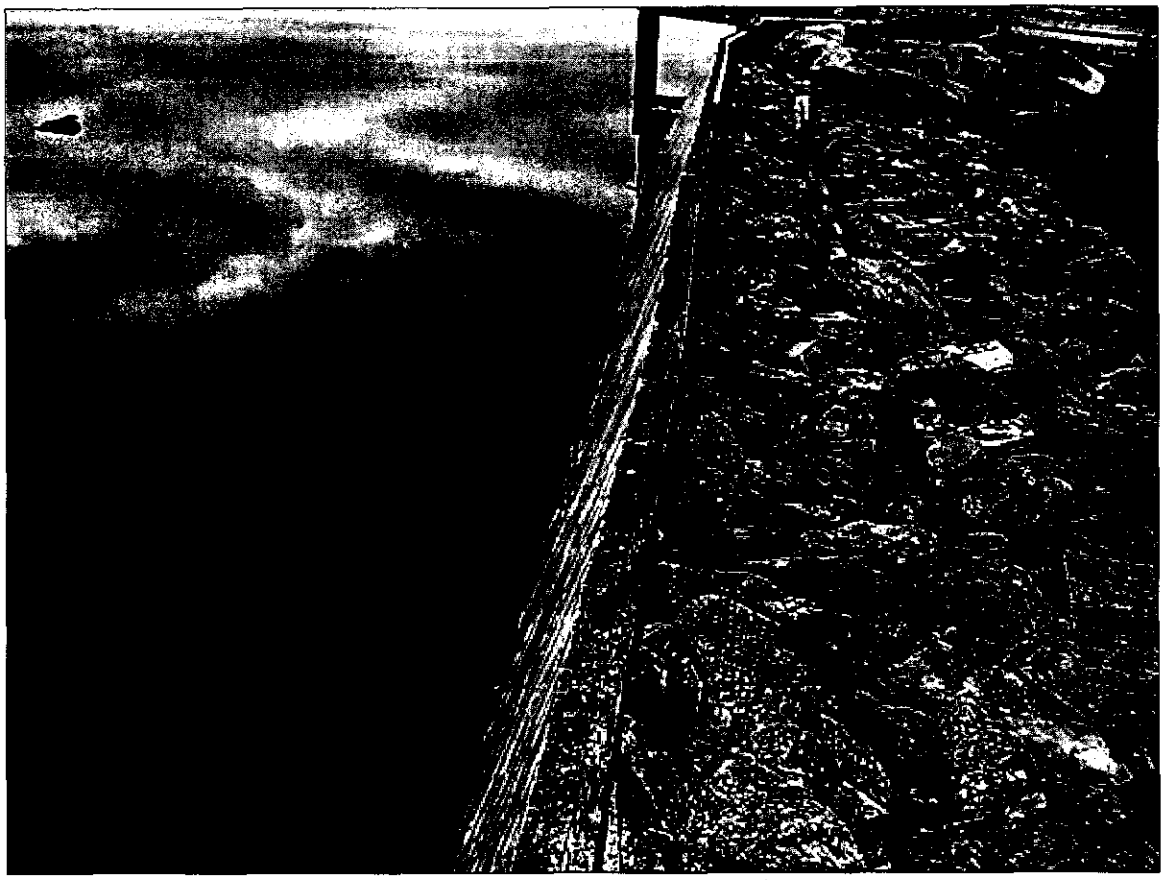
Movement	Not visible
Settlement	_____
Joints	_____
Drains	_____
Cracks	_____
Drains	
Amount of flow	_____
Location of seeping drains	_____

Stilling Basin(observed operation)

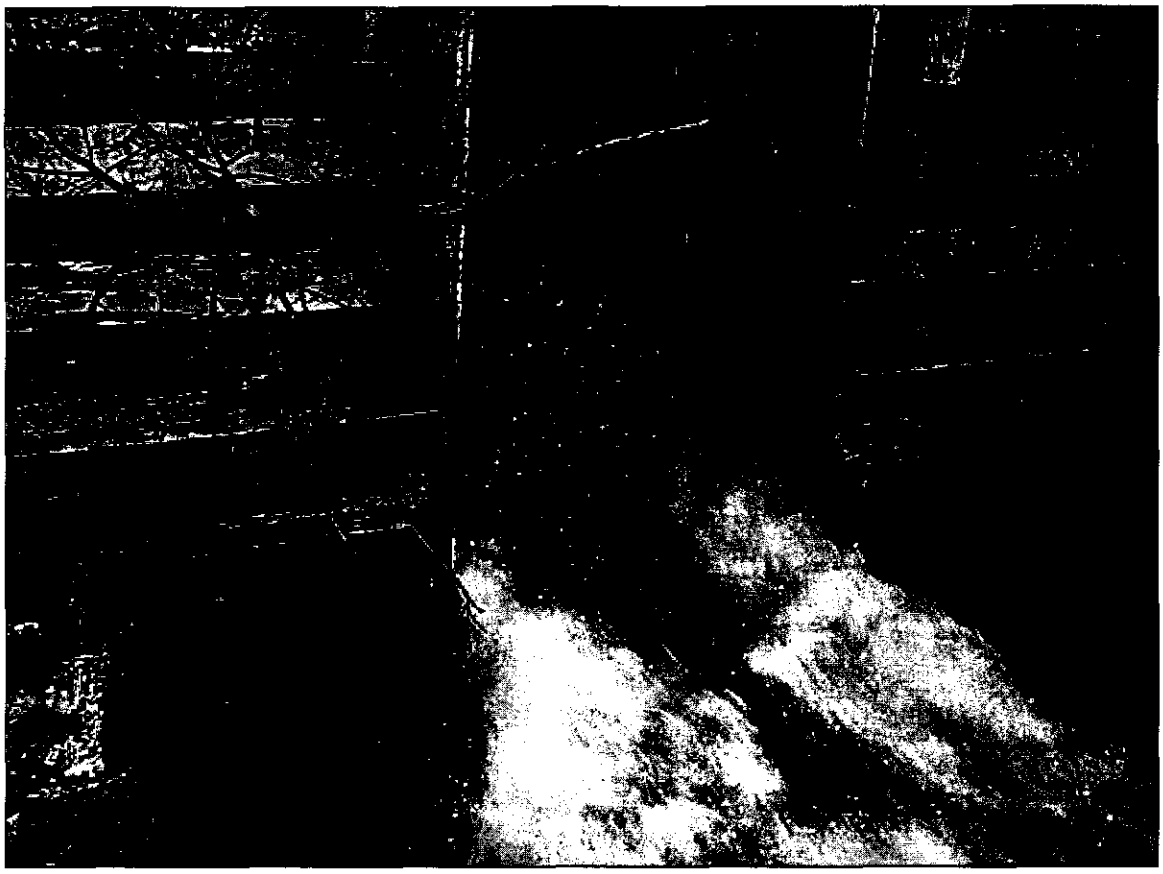
Debris in basin	None observed
Walls	Rock walls good
Movement (offsets)	_____
Settlement	_____
Joints	_____
Cracks or areas of distress	_____
Floor (if visible)	Not visible
Cracks or areas of distress	_____
Movement	_____
Joints	_____
Erosion	_____
Outlet Channel	
Slope protection	Good
Stability of side slopes	Good
Vegetation or other Obstructions	Good

Remarks: Generally in good condition except for few minor leaks. Gate appeared to be in good condition.

Development: Port Union
Structure: Whirl Pond Dam and Outlet



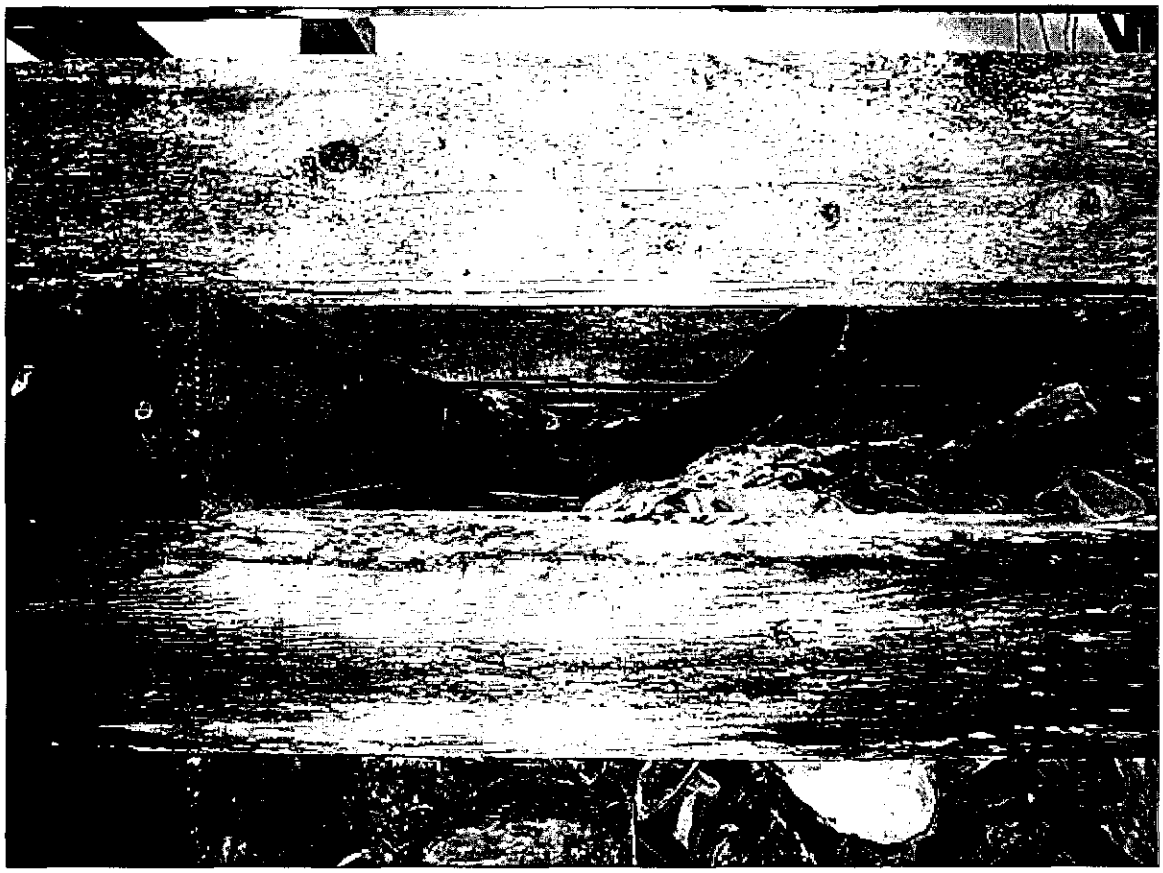
Timber on upstream face



Outlet from downstream

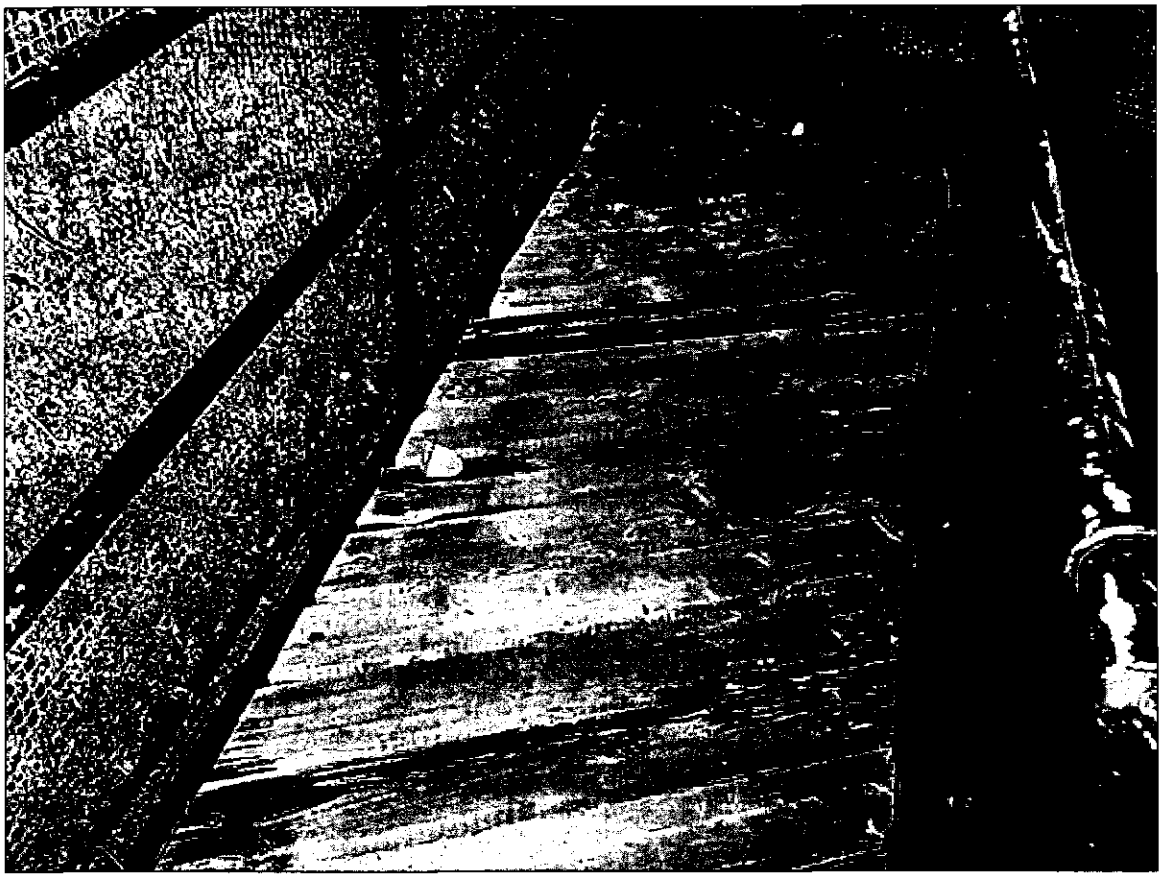
Development: Port Union
Structure: Whirl Pond Dam and Outlet

Outlet – Left abutment from downstream

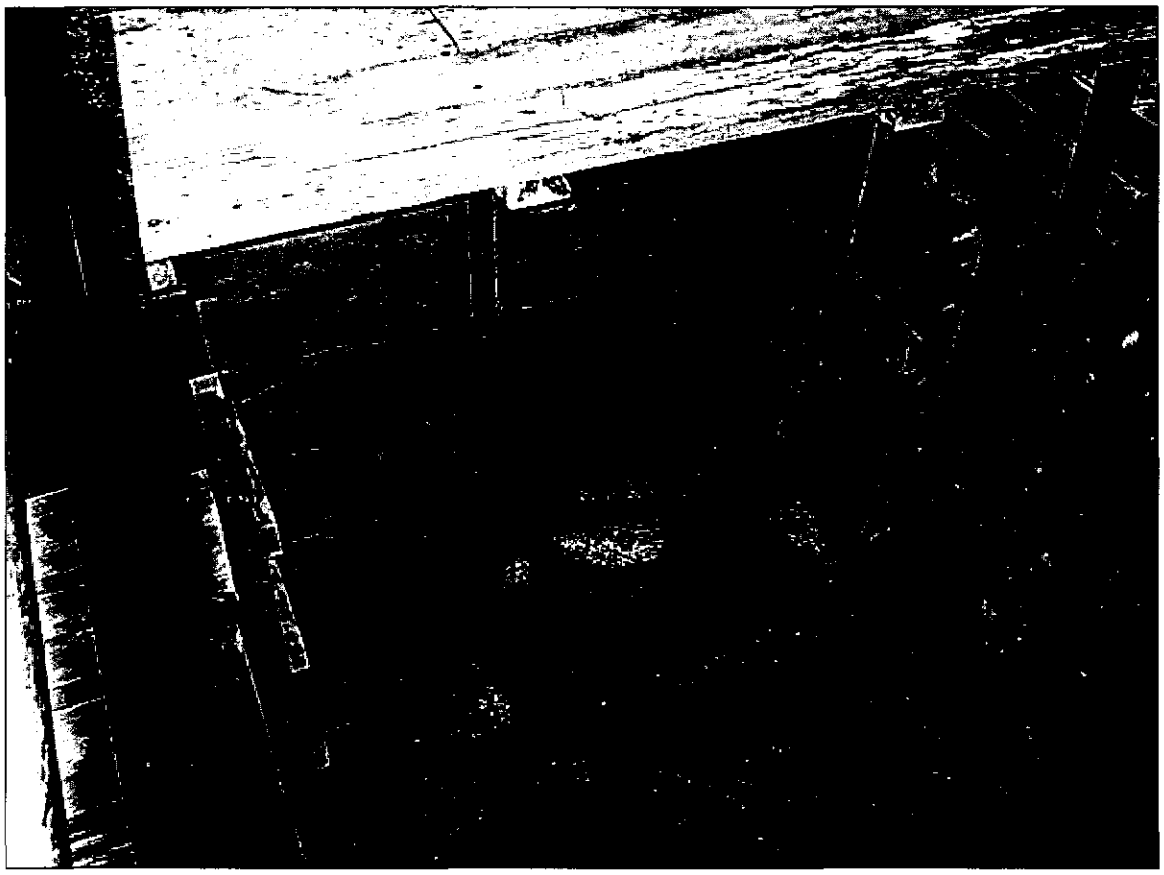


Ballast missing from crib work

Development: Port Union
Structure: Whirl Pond Dam and Outlet

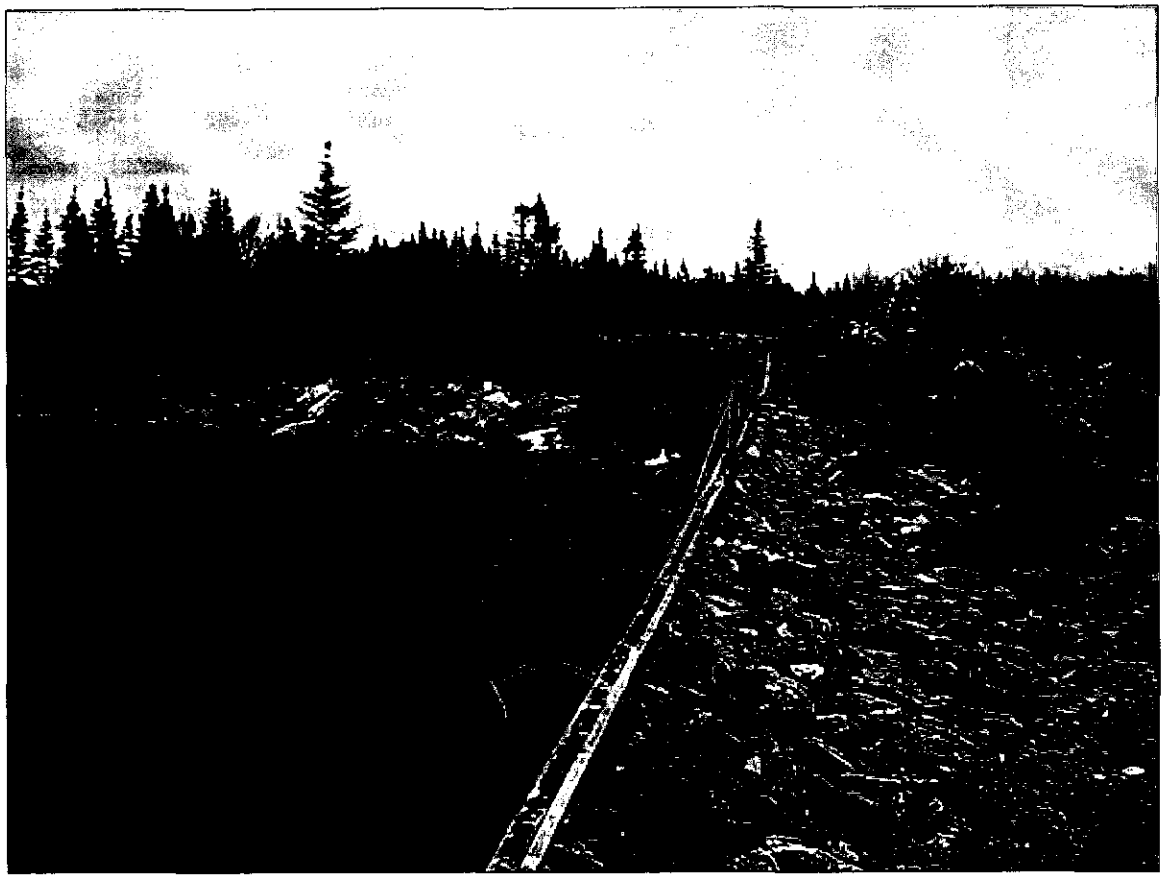


Fishscreen



Outlet gate from upstream

Development: Port Union
Structure: Whirl Pond Dam and Outlet



Looking toward left abutment

DAM SAFETY INSPECTION

Whirl Pond Spillway

Dam Type: Concrete

Date & Time of Examination: 1999-11-30 @ 12:00 pm

Operational Status at Time of Examination:

Reservoir Water surface elevation	≈ 2' below spill
Releases	N/A
Weather Conditions	Cloudy 0°C
Water in storage	
Recent Seismic Events	None

Examining Party

G. Humby
P. Halliday
D. Laing

INSPECTION CHECKLIST FOR CONCRETE DAM

DAM

Upstream Face

Cracks	None observed, structure rebuilt in 1999
Joint Offsets	None observed

Downstream Face

Cracks	None observed
Joint Offsets	None observed
Seepage on downstream face	Some leakage through the foundation of the structure. Flow ≈ 4-5 gal/min.

Downstream Toe

Cracks	None observed
Undercutting(from erosion)	None observed

Crest

Roadway	N/A
Walks	N/A
Parapet Wall	Good condition
Lighting, etc.	N/A

ABUTMENTS

Foundation at Downstream Toe of Dam

Seepage around dam

Location	Some leakage through foundation
Amount	4-5 gal/min
Measurement Methods	Visible

Remarks: Structure rebuilt in 1999 with new concrete cut off wall, upstream and downstream rip-rap, and concrete fish ladder. Overall, new structure in good condition.

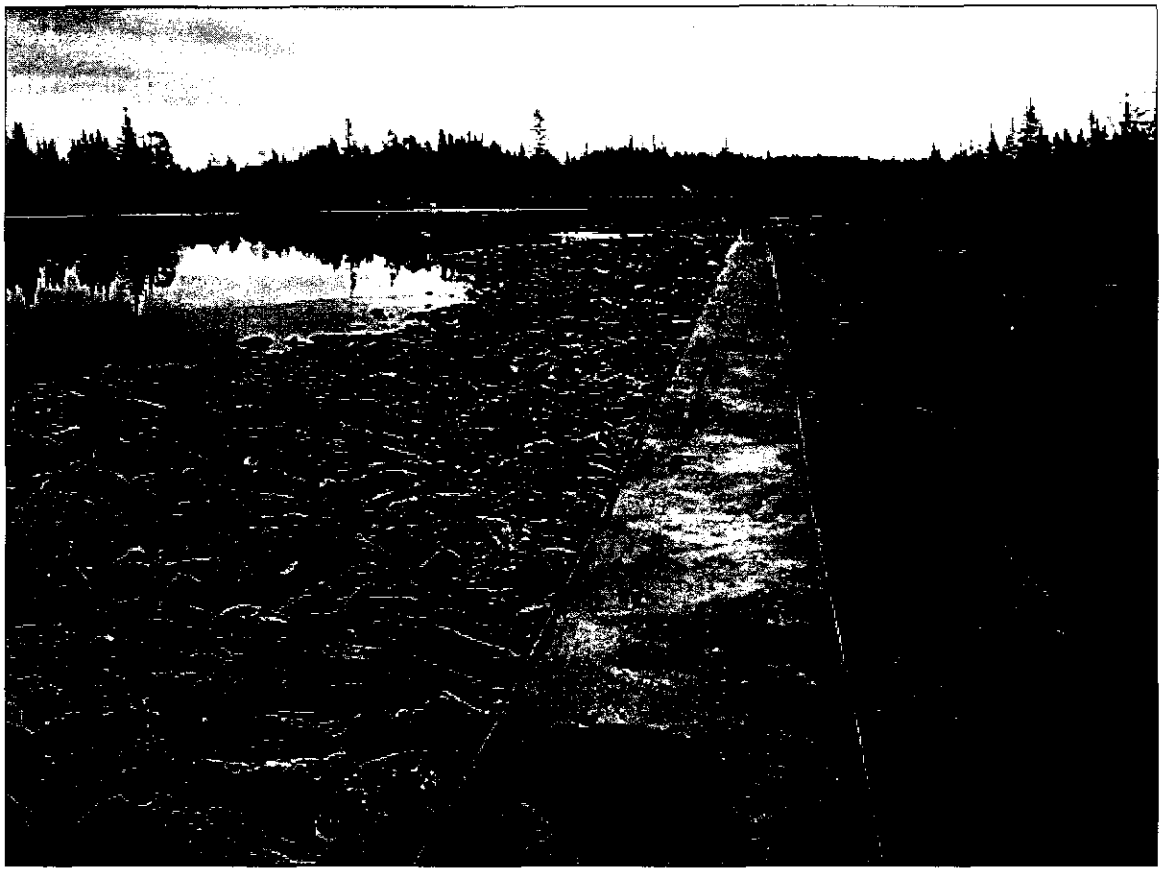
Development: Port Union
Structure: Whirl Pond Dam and Spillway

Old freeboard dam

View from left abutment

Development: Port Union
Structure: Whirl Pond Spillway

New fish ladder(constructed in 1999)



View along crest