

WTR[®] Fish Recovery and Return Screens

Pump and Condenser Protection



Fish Recovery and
Return Screens to Meet
US EPA 316(b)

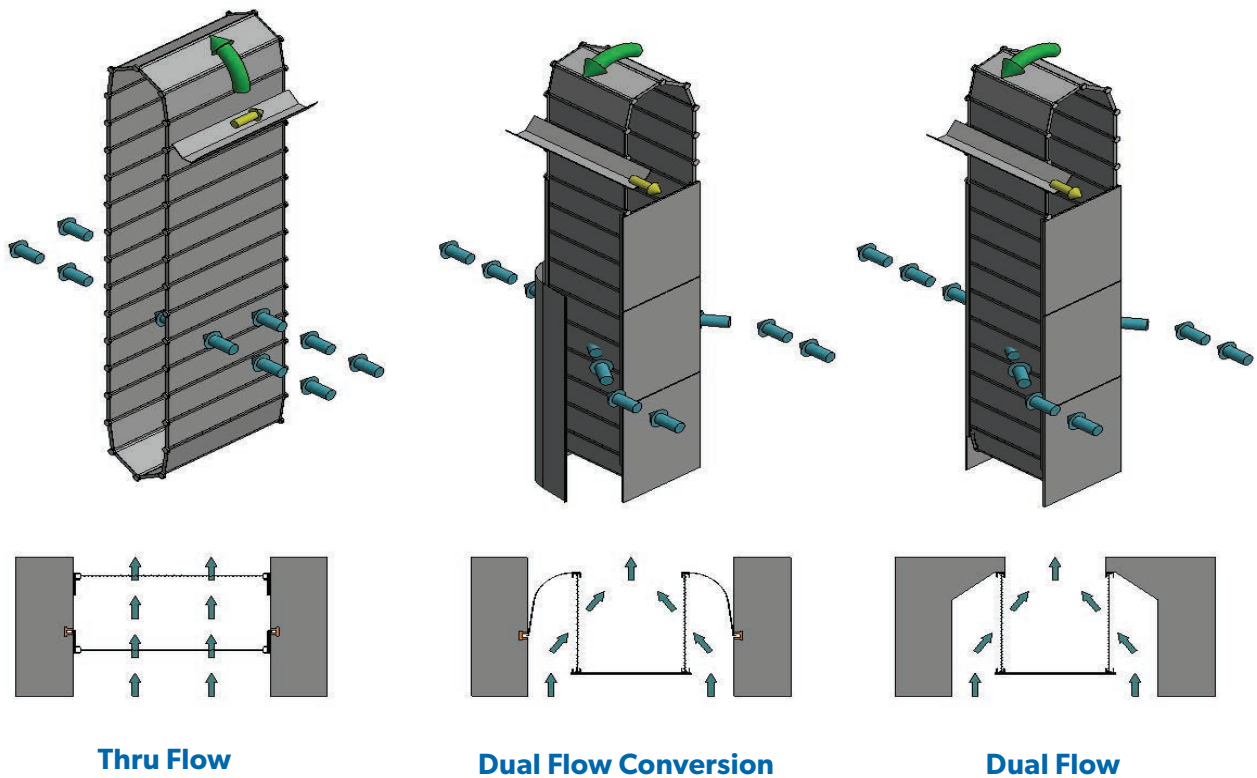
Fish Recovery and Return Screens

The US EPA Clean Water Act, Section 316(b) allows for numerous different compliance methods to meet Best Technology Available (BTA) requirements for impingement mortality standards. One of the more cost effective means of compliance is based on option 5, allowing the owner to “operate a modified traveling screen that the EPA or other permitting authority determines is the best technology available for impingement reduction.”

WTR’s team members have been involved with 316(b) since 1977 and were instrumental in the development of the hydraulically optimized fish bucket for fish recovery, also known as a “modified Ristroph screen.” This revolutionary design significantly decreased impingement mortality while increasing the rate at which otherwise impinged fish were extracted. The hydraulically optimized fish recovery bucket has been deemed one of the Best Technologies Available for meeting impingement mortality standards.

WTR’s Fish Recovery and Return (FRR) Screens are one of the most cost effective means for compliance under 316(b), Sec. 5 and are available for new intakes or retrofit into existing facilities. WTR’s FRR Screens are designed to automatically and reliably filter incoming water and discharge recovered marine life and debris into the appropriate handling trough. Screens can be designed to handle typical waterborne debris as well as unusual grasses, seaweed, jellyfish and many different types of debris. WTR’s FRR Screens are available in various flow patterns, including Thru Flow (TF), Dual Flow Conversion (DFC), and Dual Flow (DF).

All flow patterns are available as Fish Recovery and Return to meet 316(b) environmental requirements. Specialized watertight, hydraulically optimized fish recovery buckets allow for the quick recovery of juvenile marine life. Marine organisms are elevated to the head section, where gentle fish sluice sprays aid in discharging them into a return trough for reinsertion to their indigenous environment. After the fish sprays, the screen continues rotation past higher pressure debris sprays, washing the captured screenings into a separate debris trough for discharge, separation, or disposal.



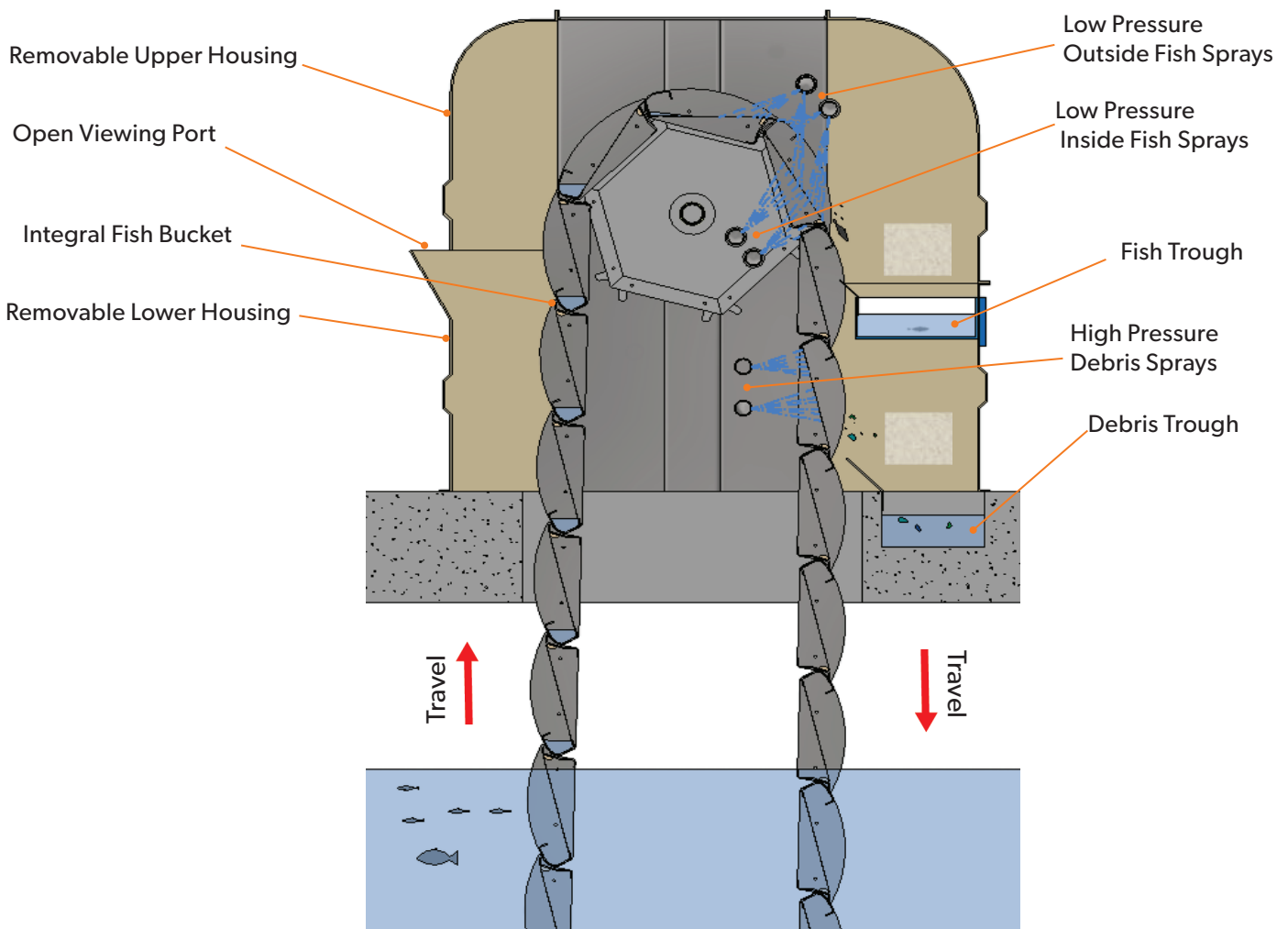
Fish Recovery Screen Flow Patterns

Features:

- Screens built to site specific conditions for flow, mesh aperture, debris and marine life handling.
- Hydraulically optimized fish buckets and high net panel efficiency reduce velocity and head loss.
- Descending discharge with inclined mesh reduces spray water and enhances marine discharge.
- Materials of mainly Carbon Steel (epoxy coated or galvanized) or Stainless Steel (304L, 316L, Duplex or other).
- Mesh opening is typically 2mm or sizes from 0.5mm to 9.5mm (0.019" to 0.375") square opening are available.
- Variable Frequency Drive (VFD) motors incorporate multiple speeds, provide flexibility and user interface.

COMPONENT OPTIONS

- Shaft mounted drive to reduce maintenance and eliminate shear pins, drive chain, sprockets and bulky chain guards.
- Smooth top mesh inserts in square or rectangular openings to provide greater open area.
- Oversized, non-lubricated carrier chain rollers, pins and bushings to reduce horsepower and extend chain life.
- Dual spray headers to provide positive, overlapping coverage for debris removal and flushing.
- Full rim sprockets to drive the carrier chain via the sidebars, to extend chain life and reduce joint wear.
- Anti-friction take up bearings for continuous operation to decrease maintenance attention.
- Chain tensioning from deck level to provide instant access for adjustment and eliminate ladders and platforms.
- Roll around boot section for positive tracking to eliminate submerged sprockets with constant jamming.
- Panel-to-panel seals and frame-to-panel seals to eliminate bypassing for fine mesh applications.
- Manual or automatic self flushing spray headers and debris trough to prevent debris accumulation.
- Replaceable track wear bars to extend frame life and ease future overhauling of main chain guide tracks.
- Control systems for Differential Control (ultra-sonic or radar) with HMI touchscreen or via DCS monitoring.



Fish Recovery Screen Sizing Data

Plant / Site Name _____

Site Location _____ (City, State, Country)

Construction New Existing New Expansion

Water Source Fresh Brackish Sea Cooling Pond

Number of Channels _____ Indoor Outdoor Covered

Flow Rate per Channel _____ GPM _____ M³/sec _____ MGD

Channel Width (each) _____ Feet _____ Meters

Deck Elevation or Depth _____ Feet _____ Meters

Hi Water Elev. or Depth _____ Feet _____ Meters

Lo Water Elev. or Depth _____ Feet _____ Meters

Invert / Bottom Elev. _____ Feet _____ Meters

Desired Mesh Opening _____ Inch _____ mm

Desired Flow Pattern Thru Flow Dual Flow Conversion Dual Flow

Desired Materials _____ Mesh _____ Panels _____ Main Frame

Typical Debris Expected _____

Typical Marine Life _____

Upstream Bar Screen Yes No Clear Bar Opening _____ In. _____ mm

Main Power _____ Voltage _____ Phase _____ Hertz Hazardous

Approx. Distance From Last Screen to Fish Return Point _____ Feet _____ Meters

Special Options _____

CONTACT DETAILS

Company Name _____

Contact Person Name _____

Email and Phone Number _____



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Represented by: