

	PROJECT:
	Annex B - Equipment
	DOCUMENT DESCRIPTION: TECHNICAL DESCRIPTION
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TECHNICAL DESCRIPTION

Interceptor™ – The biggest cleanup in history

APPROVAL STATUS

Revision	Date	Issued for	Written by	Checked by	Approved by
0	18-07-2019	VR	EJ		

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1 CONTENTS

1	Contents	2
2	System description	3
2.1	Main Floaters + Superstructure.....	5
2.2	Barge + Dumpsters	6
2.3	Main Conveyor	7
2.4	Shuttle Conveyor	8
2.5	Barrier	9
3	Operational procedure	10

2 SYSTEM DESCRIPTION

INTERCEPTOR™
TYPE 50

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GENERAL

Type	version 2.0, 42 m³ storage
Release	2019
Series size	3
Basic functions	Concentrating and extracting floating river waste Storage of waste on transportable barge with dumpsters
Classification	Built according to Bureau Veritas classification hull drawings
Owner	The Ocean Cleanup Interception B.V. (Rotterdam, NL)

PONTOON DIMENSIONS

Length	24 m
Width	8.1 m
Air draft (unloaded)	4.4 m (excl. navigation light / optional wind turbines)
Draft (unloaded)	1.35 m
Mass	50 metric tonnes

MAIN CONVEYOR

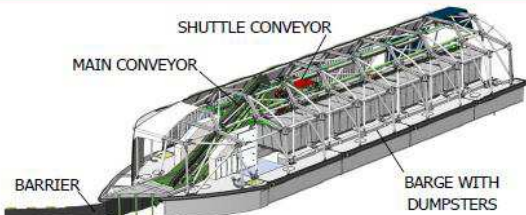
Type	Stainless steel mesh conveyor belt
Size (WxL)	1.5 x 9 m
Mesh size	30 mm
Belt velocity range	0.1 to 0.6 m/s
Extraction capacity	~ 40 m³/h (max. waste influx)

SHUTTLE CONVEYOR

Function	Distribute waste over dumpsters
Type	Stainless steel mesh conveyor belt
Size (WxL)	1.6 x 3.2 m
Storage volume	~ 2 m³

BARGE DIMENSIONS

Debris storage volume	42 m³
Nr. of dumpsters	6
Mass	14,4 / 25 metric tonnes (incl. dumpsters, excl./incl. debris)
Length	12.4 m
Width	4.24 m (incl. fenders)
Max. draft (loaded)	0.74 m
Max. air draft (unloaded)	1.98 m



POWER SYSTEM

Solar Power system	24 solar panels, 7.7 kWp
Wind turbines (optional)	2 x 1 kWp
Battery	Lead-acid (AGM) 36 kWh

BARRIER

Manufacturer	Bolina Ltd.
Height	600 mm + 300 mm net
Length	Adjustable (10 to 160 m)
Safety	20 metric tonnes weak link

MOORING SYSTEM

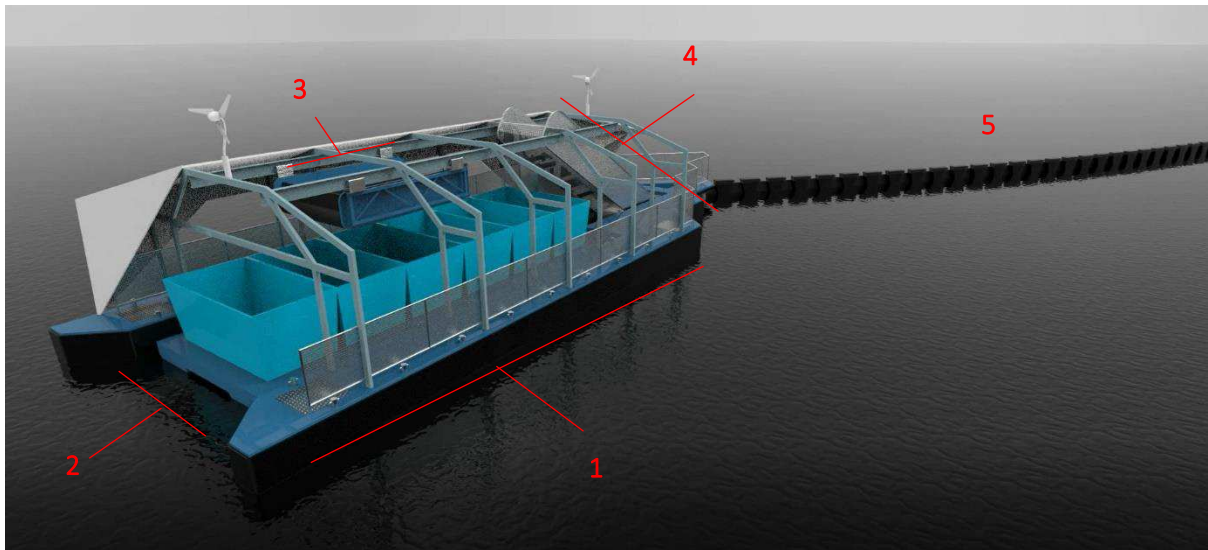
4-point mooring configuration
4 * 28 mm stud link chain
Anchor type depending on site specifications

Latest update: March 2019. This specification is subject to change without prior notice.

THE OCEAN CLEANUP

TECHNICAL DESCRIPTION

The system consists of the following parts:



1) Main Floaters + Superstructure

Catamaran-like structure, consisting of 2 floaters with a total length of 25m, connected to each other by a steel superstructure. Functions as cover + protection of inner structure

2) Barge + Dumpsters

Fits precisely in between the two floaters of the pontoon, and carries 6 dumpsters in which all debris is collected

3) Shuttle Conveyor

Moves the collected debris from the Main Conveyor to all dumpsters. Divides the collected debris in such a way that the Barge + Dumpsters are loaded equally

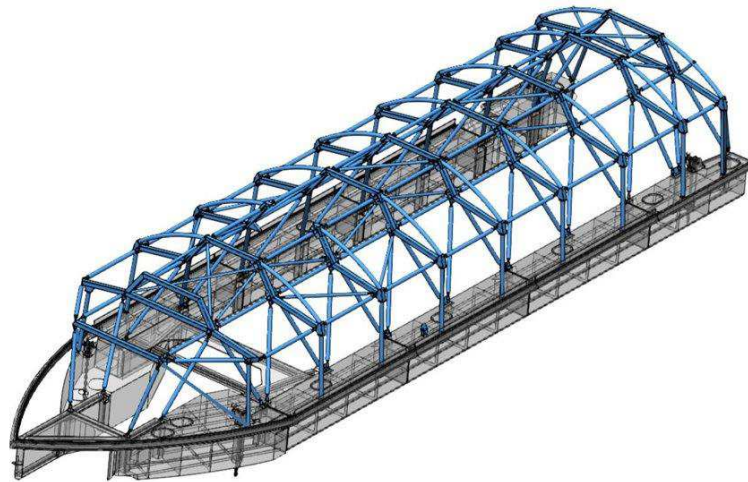
4) Main Conveyor

Moves the collected debris from Barrier onto the Shuttle Conveyor.

5) Barrier

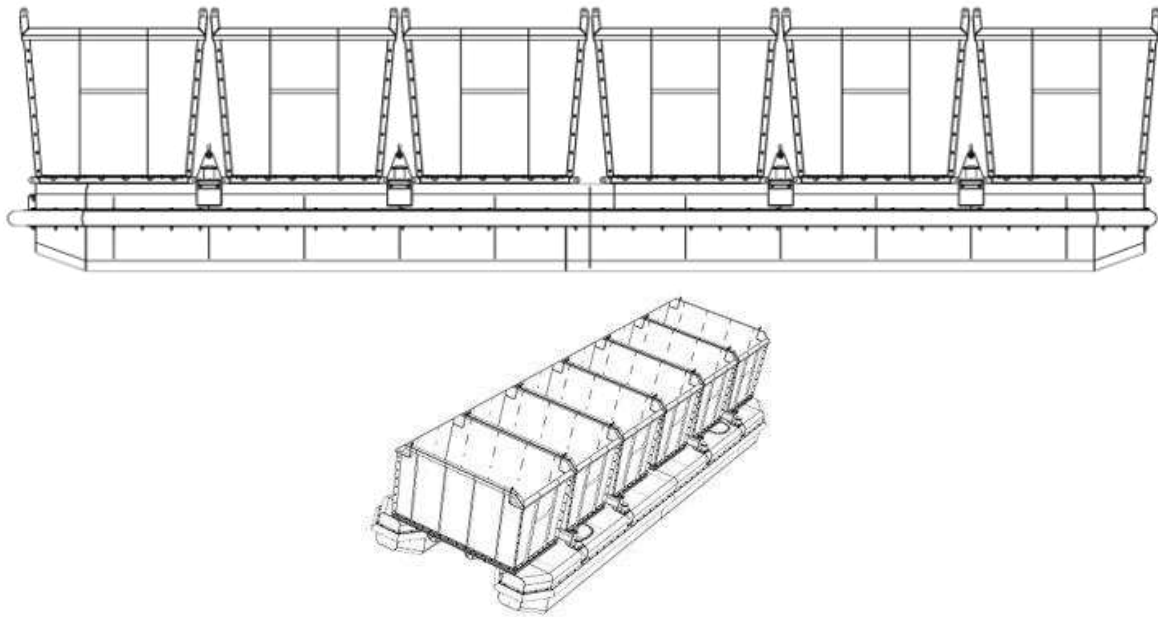
Collects all floating debris in the river. The flow of the river automatically guides all the floating debris to the entry point of the Main Conveyor of the Interceptor

2.1 Main Floaters + Superstructure



- Three Unique Floater designs, Front, Mid and Rear
- Front and Rear floaters mount mooring chain stoppers
- Front floater supports the main conveyor
- Barrier Support frame transfers load from barrier
- Secondary support frame for cabinets and access walkway
- Fendering + Kickboards mounted to side of all floaters
- Total Pontoon Width = 8.1 m
- Total Pontoon Length (Type 75) = 30.7 m
- Freeboard = 0.55 m
- Draft = 0.75 m
- Provide overall structure to system.
- Mounting points for:
 - Roof Panels
 - Solar Panels
 - Navigation lights
 - Wind Turbines
 - Shuttle Conveyor Track
- Minimal unique components used to form roof construction
- Turbines / Complexity of Nav. Lights are modular and can be installed where required

2.2 Barge + Dumpsters



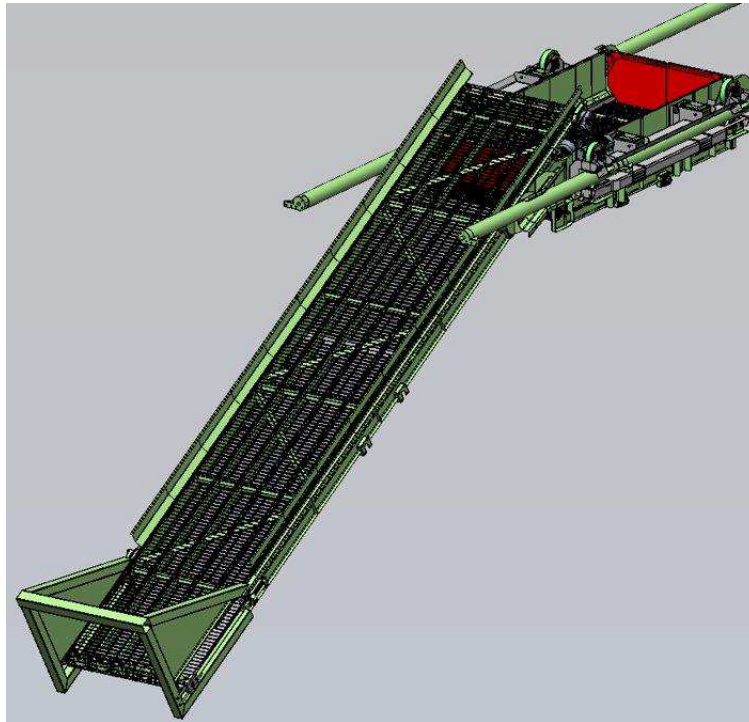
Barge

- Catamaran construction of floaters with structural cross beams that act as alignment features for dumpsters
- Modular construction for different capacities
- Fendering all the way around barge, including nose
- Multiple mooring points for securing barge in pontoon and towing between quay

Dumpsters

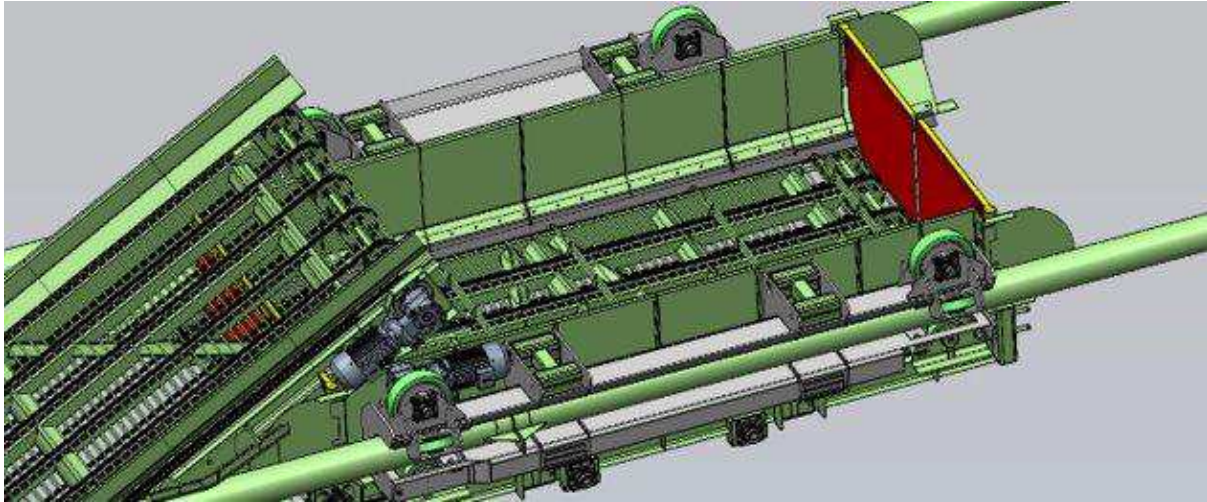
- Dumpster capacity of 7 m³ to orange line
- Lifting points for fork lift
- Four lifting points on corners and two extra on sides to facilitate tipping on shore.

2.3 Main Conveyor



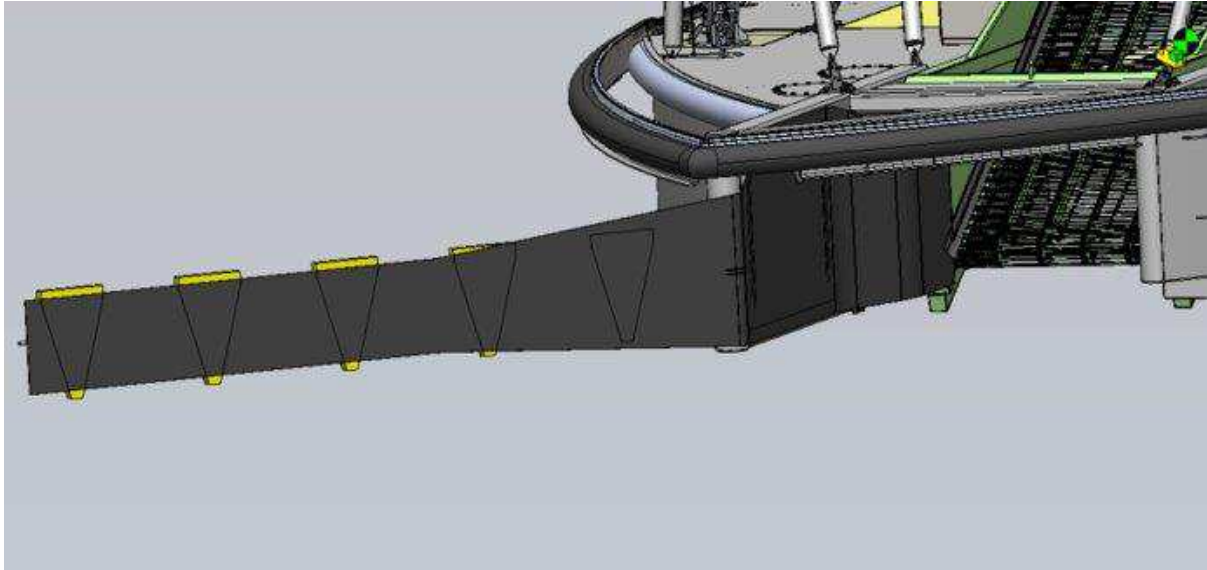
- 1.5m Width, 70% Open Area, 0.3 m/s – 1 m/s.
- Transport particles > 30 mm.
- 70mm Flights to aid transport of debris
- Stainless Steel Construction
- EPDM Rubber edge shields to avoid side obstructions
- Mounted between shuttle tubes and front floater support
- External lower support frame to aid water flow.

2.4 Shuttle Conveyor



- Capacity of 2m³ of Debris
- Removable retention flaps to avoid spillage of light debris
- Load cells on each wheel to quantify debris mass
- Encoder / End stops to provide shuttle position data
- Coated Steel frame for shuttle frame
- Stainless Steel Belt and guides

2.5 Barrier



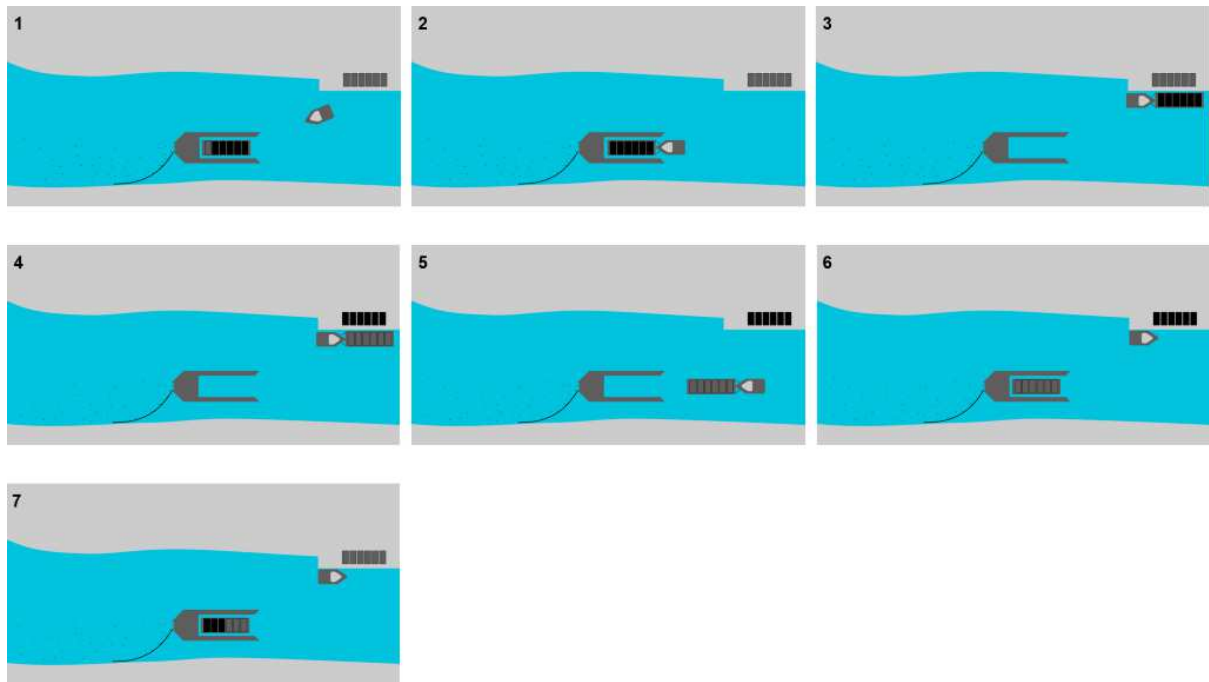
- Bolina Modular Debris Boom
- Net installed to avoid overtopping of debris
- Cable routed at the rear side of the barrier to take the load of the mooring
- Red 'Self Powered' Navigation lights installed along the barrier to signify obstruction to waterway
- Radar deflectors installed along the barrier to provide extra warning of obstruction to passing vessels
- Connected to the structural member at the front of the Pontoon
 - Smooth 'decoupled from tension' section guides debris to conveyor
 - 5-10m section fixed to the structural member on land
 - End of this section is brought on to the deck of a vessel to attach main beam
 - Tapered section to make up for rigid mounting to pontoon

- anchors and piles for mooring
- mooring lines

Plus all other auxiliary equipment delivered by The Ocean Cleanup.

3 OPERATIONAL PROCEDURE

Once the Interceptor™ is fully loaded with collected Debris, the following procedure is started:



1. Offloading vessel present
2. Decouple barge from system and couple to vessel
3. Load full dumpsters to quay
4. Replace by empty dumpsters
5. Sail empty barge to system and couple barge to system
6. Sail offloading vessel back to quay
7. Debris loaded in waste trucks while extraction operation continues