VAQUITA

CATEGORY A
MARINE RESEARCH VESSEL

VAQUITA is an Ocean Spirit 43, a high-volume 43-foot catamaran designed by Woods and constructed by Coplan Boats. Configured as a motorised vessel, she capitalises on the fuel efficiency of round bilge hulls and the superior stability of her 7.8-metre beam.

CLASSIFICATION:

Registered under the South African Maritime Safety Authority (SAMSA) as a Category A vessel – the highest operational classification under South African small vessel regulations – *VAQUITA* is certified for unrestricted offshore operation. This includes transoceanic and deep-sea voyages. To meet this classification, the vessel complies with rigorous safety standards, including the installation of life-saving equipment, navigational systems, and reliable communication gear. Category A vessels undergo strict inspections and must demonstrate readiness for extended offshore missions in both local and international waters.

SURVEY SPECIFICATIONS:

Purpose-built for hydrographic survey work, *VAQUITA* is outfitted for endurance missions of 10 to 14 days of continuous 24-hour operation at a cruising speed of 5.5 knots. Structural reinforcement is in place to support transducer poles for mounting a pinger sub-bottom profiler and Multibeam sonar (7101 or equivalent). The vessel is also equipped with fittings for a sheath block and side -scan winch. Additional one-phase or three-phase electrical power can be supplied by an optional generator. For geotechnical sampling, a hydraulic winch system has been installed to facilitate grab sampling and sediment collection.

The vessel is currently moored at Durban Marina.


VAQUITA
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PORT OF DURBAN
O.N. 22415
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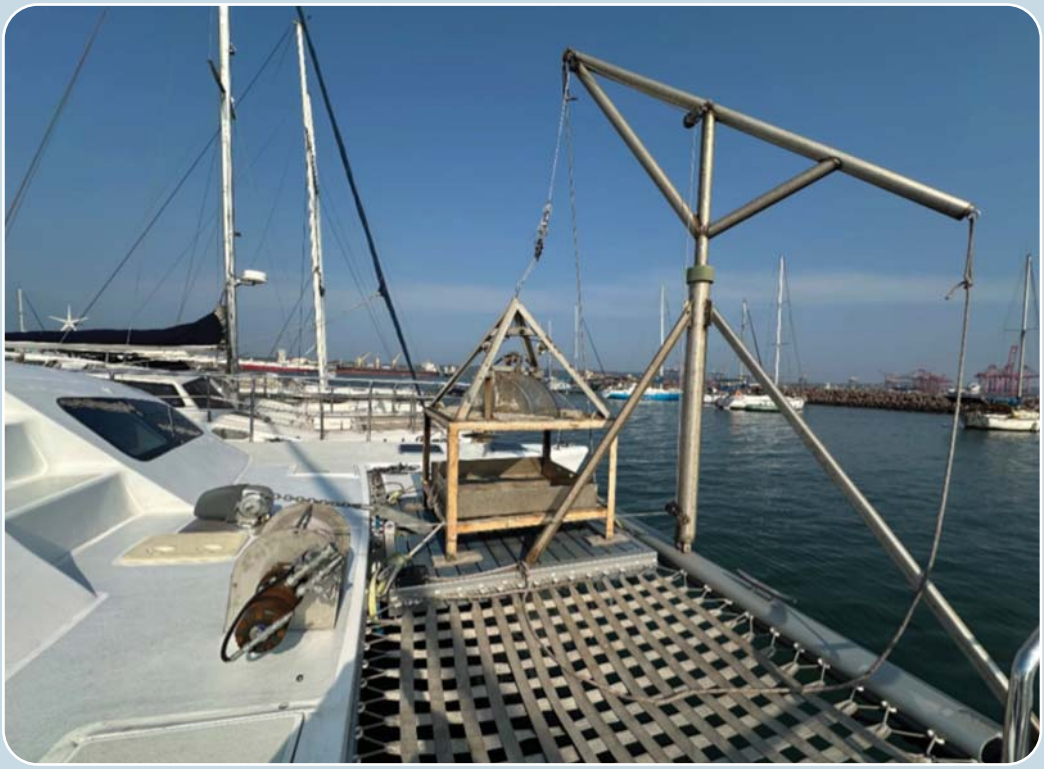
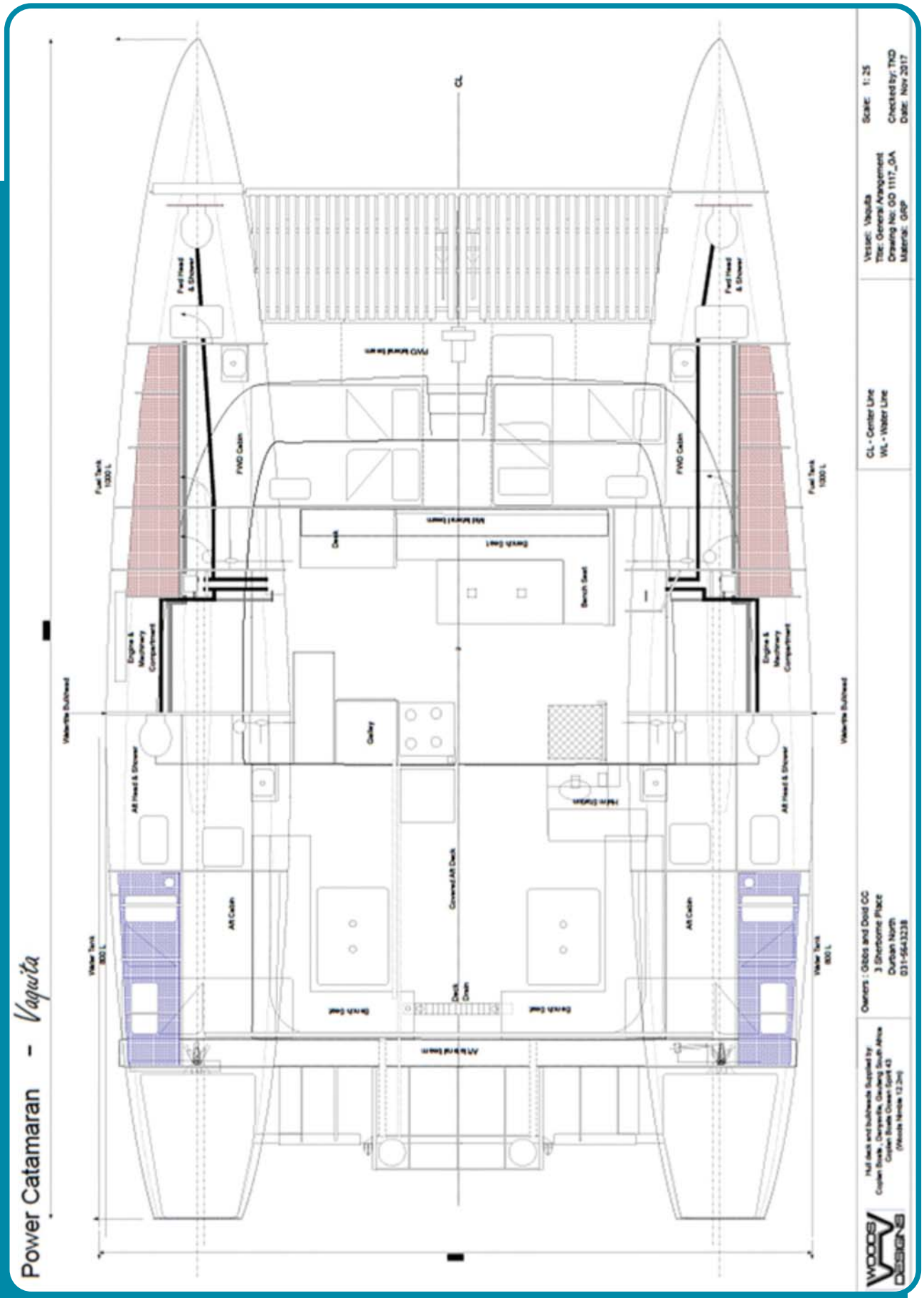
GARMIN


VAQUITA




Power Catamaran - Vaquita
CL
FWD Cabin
Aft Cabin
Galley
Bench Seat
Engine & Machinery Compartment
Fuel Tank 1200 L
Water Tank 800 L
Vessel: Vaquita
Title: General Arrangement
Drawing No: GO 1117_GA
Material: GRP
Scale: 1:25
Checked by: THD
Date: Nov 2017
CL - Center Line
WL - Water Line
Owners : Gibbs and Dold CC
3 Sherborne Place
Durban North
031-5643238
WOODS DESIGNS

VESSEL BUILD PARTICULARS

LOA	12.9m
Beam	7.85m
Draft	1.25m
Engines	2 x 57hp Yanmar
Fuel	2 X 1250 litre
Water	2 X 750 litre
Holding tanks	2 X 75 litre black water tanks
Cabins	4 X Double cabins with shower and toilet
Saloon	Seating for 6
Galley	Gas Stove, double sink, double door fridge freezer
Covered After Deck	Seating for 12
Helm Station	All round visibility through clear windows.
Open After deck	Storage for 2 X 9kg gas bottles, life raft and gas cooker
Foredeck	2 X Rope hatches, 2 x wet lockers and 1 X Anchor chain locker and Windlass

CONSTRUCTION DETAILS

- Hulls – Below Chine, GRP with Biaxial glass layup. Above chine, GRP Biaxial glass with core.
- Bridge deck – GRP with biaxial glass layup plus Nida core. 150mm high, 9mm marine ply matrix (350mm X 350mm).
- Aft Deck – GRP with 75mm honeycomb core. 120mm high, 9mm Marine Ply matrix (350mm X 350mm).
- Bulkheads and structural elements keel to bridge deck height – 15mm Marine Ply and encapsulated with GRP, bulkheads bonded to hull and glassed with combination of woven roving and chopstrand.
- Bulkheads and structural elements bridge deck to cabin roof height – GRP foam cored / Marine Ply 16mm.
- Forward, middle and stern lateral beams 20mm Marine Ply / GRP biaxial glass.
- Internal components are coated with a Polyester-based finishing coat (Flowcoat)
- External components are coated with a 2K polyurethane system above waterline.
- Components below the waterline are epoxy coated to protect against osmosis followed with a 2 component epoxy primer and black antifouling.
- All glass is approved toughened safety glass.

PROPULSION AND STEERING SYSTEMS

ENGINES AND PROPULSION:

The vessel is powered by two newly installed, mid-mounted Yanmar 4JH57 diesel engines. These are 4-stroke, naturally aspirated units delivering 57 HP each, directly coupled to 2.63:1 reduction gearboxes. This setup is designed to provide a maximum speed of 9.5 knots and a cruising speed of 8 knots, offering a balance of efficiency and performance for offshore survey operations.

Each gearbox drives a 35 mm stainless steel shaft, connected via a flexible coupling, which passes through a thrust bearing and Vetus double-lip shaft seal. The shafts are supported by two cutlass bearings-one at the outboard end of the stern tube and another in the P-bracket-and turn 20-inch, three-blade propellers, ensuring smooth, efficient propulsion.

STEERING SYSTEM:

The steering configuration includes two rudders mounted to skegs for enhanced directional stability and structural strength. Each rudder features a flanged 35 mm rudder stock, supported by top and bottom Vesconite bearings, with the upper bearing located 500 mm above the waterline. The stocks are keyed to tillers, which are independently actuated by port and starboard Vetus hydraulic rams, enabling precise hydraulic control from the helm.

ENGINE ROOMS AND AUXILIARY SPACE:

The full-height engine compartments house all primary systems, including propulsion, fuel, and water management. The aft section of the fuel tanks is located within these compartments. Ample space is available for the future installation of additional systems such as a generator, dive compressor, or watermaker/desalinator, ensuring flexibility for mission-specific requirements.

BOUND BY BLUE • DRIVEN BY DISCOVERY

KUNYE SEA

| VESSEL CHARTER | MARINE MAPPING | HYDROGRAPHIC SURVEY |

DOMESTIC SYSTEMS

The vessel is equipped with two pressurized freshwater systems (hot and cold), as well as a freshwater deck wash system. The pressurized freshwater supply also serves the electric toilets located in each of the four cabins. These toilets are plumbed to macerate and discharge black water into holding tanks situated in the engine rooms. Each tank is fitted with a 50mm diameter discharge line on both the port and starboard sides for efficient waste removal.

Every cabin includes a washbasin and a shower, both of which drain by gravity into a sump tank. The sump is fitted with an automatic pump to discharge the grey water.

A combined washing machine and spin dryer unit is installed in the starboard-side companionway.

ELECTRICAL SYSTEMS

The vessel is fitted with both a 12V DC and a 220V AC electrical system. Identical systems are installed on both the port and starboard sides for redundancy, thereby ensuring reliability.

Each engine is equipped with a 150A (3600W) alternator that charges a dedicated bank of six 12V DC 100Ah deep-cycle batteries (CSB 12390). Each electrical system includes a 3000W smart inverter with parallel capability, a 220V AC battery charger, and a 120A MPPT solar charge controller.

Each hull is equipped with two 12V DC bilge pumps, positioned on either side of the watertight bulkhead. Additionally, a manual bilge pump is located in each engine compartment for emergency use.

SOLAR POWER SYSTEM

The vessel is equipped with six 420W TRINA monocrystalline solar panels, delivering a combined output of up to 2.5kW. Solar energy is managed through two Victron SmartSolar MPPT 150/85 charge controllers and routed to two Victron MultiPlus II 3kVA inverters. These inverters are connected to a bank of eight 1.2kW Hubble lithium house batteries. In conjunction with the Voltec starter batteries, which are charged by the engine alternators, this integrated system provides a reliable and efficient renewable power supply-supporting scientific operations both underway and while at anchor.

ELECTRONIC AND NAVIGATION EQUIPMENT

Radio	Garmin CHF 315i Marine Radio
Chart plotter 12”	Garmin GPSMAP 8412xsv with G3V, East Africa charts
Radar	Garmin GMR 18xHD Radar
Sonar module	Garmin GSD 26
Chirp transducer	Garmin Xdcr, B275LHW, 12pin, 1kW, Chirp, Bron
Transducer	Garmin Aimar DST810 Smart Transducer
Autopilot	Garmin Reactor 40, Hyd/Smartpump with GFR10 Rubber Feedback Sensor
Electronic system	Garmin NMWE 2000

HYDROGRAPHIC / ELECTRONIC WINCH SYSTEM

VAQUITA has a rear stainless steel support structure to attach a range of hydrographic survey equipment. For single / multi-beam and seismic applications, a thick walled 70mm diameter pole enables the equipment to be raised out of the water while relocating and then dropped to adjustable depths of between 200 mm and 1000 mm below the hull and propellor. A removable base plate allows for the attachment of equipment with alternative bolt patterns during mobilization. Raising the hydrographic equipment is supported by an electronic Runva 9500 lbs winch. This winch has 200m of 4mm dyneema line (with a breaking strain of 1300 kg), which can also be deployed to tow side-beam and magnetometer equipment. This system is also appropriate for dragging sampling or plankton nets which can be pulled onto the rear scoop for collection.

HYDRAULIC WINCH SYSTEM

VAQUITA is equipped with a stainless-steel hydraulic winch with 300m of 6mm dyneema line with a breaking strain of 3200 kg. The line runs up a stainless-steel hoist attached to the beam on the front of the trampoline, which projects one meter beyond the beam to enable the lifting of a large sediment grab. A bearing system in the base of the hoist allows it to swivel back over the hard slatted surface of the trampoline on which the grab sample cradle can be attached. A high-pressure saltwater hose enables rapid washing of any sediment samples.

The winch line speed varies from 60 m/minute to 50 m/minute over the first 100m of line. The hydraulic motor generates 1000 daNm of torque which can comfortably lift 1000 kg of load. The speed and direction of the motor is controlled through a bidirectional valve generating up to 80 rev/minute, with a hydraulic break ensuring that the winch line is held fast when the motor is in neutral.

A 32 cm^3/rev displacement pump drives the system with a flow rate of 30 l/minute and pressure of 180 bar, when the engine is idling at 1000 rev/minute. The pump is connected to the port engine by a double belt through an electromagnetic clutch that is only engaged when the winch is to be operated at sea. 90 litres of hydraulic fluid in the reservoir ensures that the oil temperature is maintained in the system's safe operating range.

SAFETY SYSTEMS

The vessel is fitted with a 1.5kg fire extinguisher in each cabin, a 2.5kg in the galley and an automatic fire extinguisher in each engine room.
The vessel carries the required safety equipment to satisfy SAMSA category A requirements.
A 12-person life raft is located on the stern box.

GALLEY

The galley is mid mounted for easy access aft and forward. The galley has the following, double sink with hot and cold water, double door inverter fridge freezer, gas stove and microwave oven.

CABINS

The vessel has four cabins. The forward cabins are setup as queen size beds with shower and toilet ensuite. The aft cabins are setup with 2 single bunks with shower and toilet ensuite. Each cabin and ensuite are fitted with a porthole for light and cooling.

SALOON

The saloon has an L bench that can seat 6 people around a table. On the port side of the L bench is a desk with drawers (ships office). Storage for the galley is provided beneath the L Bench.

AFT DECK

The covered aft deck is equipped with two L-shaped bench seating areas and tables on the port and starboard sides, offering ample workspace, integrated power outlets, and dedicated storage for sample bottles. An elevated helm station is located on the starboard side, providing enhanced visibility from above the main deck level.
Additional features on the outside aft deck include port and starboard escape hatches, a gas braai (grill), a sink, and a live bait well. A pole and winch system is also installed, enabling the deployment and retrieval of hydrographic equipment.

FORE DECK

The fore deck has seven hatches comprising port and starboard rope lockers, a central chain locker for the windlass and anchor chain, two wet lockers and a port and starboard hatch for cooling of the interior cabins.
A hydraulic winch is installed with attachments to a front-loaded hoist to enable grab sampling, with a high-pressure saltwater hose facilitates rinsing of the deck and sediment samples.

CREW

SKIPPER:
Cyril Foley
SECOND HELM'S MAN:
Kelven Grung
DECKHAND:
Jason Foley
SECOND DECKHAND:
Fern Darley Waddilove

COPLAN BOATS

CONTACT PERSON: Milton Coplan
CELL: 083 631 5196
ADDRESS: 1 1st Road, Apple Orchards, Walkerville, Gauteng, 1976

MANUFACTURER'S CERTIFICATE OF ORIGIN

VESSEL DATA:

Hull Identification Number:	OS43-7
Beam:	7.85m
Draft:	1.25m
Length:	12.9m
Construction:	
Model Name:	Ocean Spirit 43 motorized catamaran (Woods Design-UK)
Place of Construction:	Coplan Boats Walkerville, South Africa
Hull Material:	GRP with Nida core
Deck:	GRP with Nida core
Bulkheads:	GRP encapsulated 16mm Marine Ply

CERTIFICATION

I, David William Abrahams, do herby certify the facts recited herein and that I have personal knowledge of these facts because I:
Personally performed the construction or Supervised the construction at and on behalf of Coplan Boats.