GlobalTechserve
MARINE SDN BHD

DREDGING SERVICES,

SAND MINING OPERATIONS & SAND TRADING (LOCAL & EXPORT)

DREDGING SERVICES

Despite more than few decades of research and development, sedimentation is still probably the most serious technical problem faced by the water and irrigation industry worldwide. As the sediments accumulate in reservoir, rivers and canal; the system gradually losses its ability to store or flow water for the purposes for which it was built (or its existence). The problem if left unaddressed, may ultimately result in major flash floods and expiration of the system itself (ie. interruption of water supply for irrigation, for human usage, problem to flood mitigation system, ports operations, dam operations etc).

With vast experiences in dredging sediments off reservoirs, rivers, marinas, coastal, canals, etc. in several countries worldwide, Globaltechserve Marine Sdn Bhd, have myriads of outstanding dredging solutions for the industry, be it for small operations or larger ones to resolve clients problems in the long run. Amongst them, a unique dredge system (that can be customised to meet customer's project requirements ie. cutterhead, pumping system and propulsion systems; GlobalTechserve Marine through its associate (the world's leader in design and construction of one truck transportable, self-propelled dredging systems) would be able to provide the solutions to the sedimentation problem within the said areas. Nevertheless, below are details of the types of practical dredging machines and systems that we are ready to offer.

1) GTMSB DS1 – IMS DREDGER (CUTTER SUCTION DREDGER)

Model 7012 HP Versi-Dredge

The 7012 HP Versi-Dredge is a one truck transportable dredge and is ideal for rivers, small ports, canals, lakes, and small beaches. The 7012 HP is easy to operate, and its cutterhead design eats away a variety of materials such as sand, gravel, thick mud, light clays, and salt. The one truck transportable, self-propelled dredge can dig down to a standard depth of 30' without having to be disassembled for road transport and has been used all over the world from Martinique to India.

Advantages of Versatile Dredges/ Dredging System:

- High productivity: up to 4 times over excavators and nearly twice more than other similar dredges.
- Patented ***Starwheel®*** *Drive* self-propulsion; no cable/tug.
- Able to operate anywhere on water, not just from sides.

- No extra work to operate and move a disposal barge, besides having to operate excavator.
- No wasted time unloading material into barge and moving elsewhere (no multiple-handling of material).
- Horizontal cutterhead maintains even water bottom.
- Dredge allows consistent work pattern.
- Fewer workers, with low stress & danger.
- High-tech system; better public perception.

Versi-Dredge®
(Sediment Removal)

Weedmaster®
(Advanced Vegetation Removal Technology)

GlobalTechserve MARINE SDN BHD

Efficient Cutterhead

AUGER CUTTERHEAD

- Low-turbidity cutterhead
- Replaceable hardened carbide-steel cutter teeth with reinforced steel brackets.
- Cutterhead shroud clean-out for easy debris removal.
- Cutterhead is accessible from front gantry and does not require operator to service from a work boat.
- Can be completely assembled and disassembled in the field with ordinary hand tools.
- Same day shipment on most cutterhead parts.

WEEDMASTER CUTTERHEAD

- 9' (2.7 meter) Weedmaster Cutterhead
- Available on Model 5012 LP Versi-Dredge.
- Stationary teeth for cleaning vegetation from cutter teeth to help prevent wrapping.

- Shreds vegetation into 3-5 inch pieces which are then pumped to the discharge area.
- Optional hyacinths rake auto-feeds floating vegetation to the cutterhead.

In-Land Transportability

- Versi-Dredge is one-truck transportable.
- The Starwheel never need to be disassembled nor reattached for transport.
- Allows easy transport of Versi-Dredges to more remote areas.

DREDGE LAUNCHING

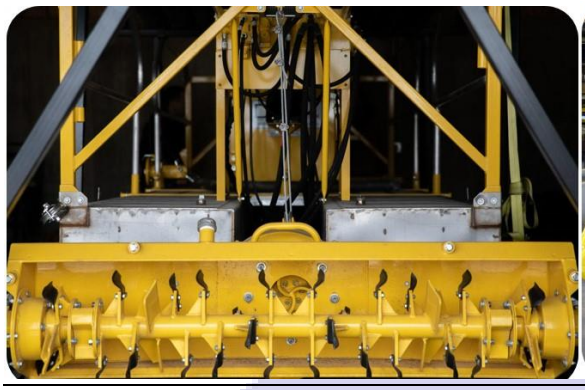
- The Versi-Dredge can be easily launched and retrieved with just one (1) crane.
- Then, just hook up the discharge hose or 'broadcaster' and dredging can begin immediately.

2) GTMSB DS2 – GTM D6 (CUTTER SUCTION DREDGER – MINI)

The GTM D6 Sediment Removal System, is uniquely portable dredge. It is the most affordable small diesel dredge in its class. Simple and easy to operate. The D6 is more durable than machines weighing and costing twice as much.

This small dredge was developed to perform jobs inaccessible to other equipment. Weighing approximately 4,000 pounds, the D6 can access retention ponds, golf courses, sediment lagoons, home association lakes, marinas and a myriad of other tasks that excavators and large hydraulic dredges simply cannot get to.

GTM D6 SPECIFICATION



- It excavates sediment with a durable, high-torque, direct-drive cutter head and pumps at rates up to 1500 GPM through the highly abrasion-resistant, hydraulic submersible dredge pump
- The 6" submersible pump installed on this machine is manufactured in-house and is able to pass softball-sized debris without damage or clogging

Dimensions Length 21 ft. Width 71 in. Height 64 in. Weight (less fuel) 3,800 lbs.	**Slurry Pump** Manufacturer Geoform International, Inc. Material AR Steel, 400-500 Brinell Discharge Diameter 6 in. Performance 1,500 GPM Max 1,100 GPM @ 50 ft. TDH Supplied with open faced trash impeller enclosed impeller available
Working Capacity Working Depth 13 ft. Cut Width 66 in.	**Travel System** Double pulley hydraulic windlass with 2 hydraulic motors
Floatation 2 (two) pontoons 26 in. X 22 in. X 192 in. Construction Stainless Steel 16 gauge, 3 separate compartments each float (6 compartments total) Internal stiffeners on all sides	**Cutterhead** Width 66 in. Diameter 14 in. Drive Variable speed duel hydraulic motor Direct Drive Replaceable, hardened steel trencher teeth and mixing paddles

Engine		Hydraulic System	
Type	B3.3 Cummins 4 cylinder diesel	Pump	Tandem gear 2.60in³/rev. and .91in³/rev.
Horsepower	65 hp @ 2500 rpm	Filtration	10 micron
Fuel capacity	30 gallons	Reservoir	25 gallons
		Oil cooler thermostatically controlled	
		Stainless steel tubing on boom	
		Impeller high-low speed selector valve	
Instrumentation		**Safety Engine Shut-Down**	
Tachometer/hour meter		High engine coolant temperature	
Slurry pump hydraulic pressure gauge		Low engine oil pressure	
Cutterhead hydraulic pressure gauge		High hydraulic oil temperature	
Discharge pressure gauge		Low hydraulic oil level	

GTM D6 - ADVANTAGES

DURABLE & LONG LASTING

- Faster job completion time without breakdowns
- Safer during operation

EFFICENT PERFORMANCE

- Performance comparable to a higher priced 8 inch dredging system
- Complete jobs quicker
- Easy to operate

PORTABLE & LIGHTWEIGHT

- Engineered to reach job sites that large bulky equipment cannot reach
- Able to move from one site to another quickly, decreasing labour and project time
- Only 2-3 workers to operate, cutting labour costs
- Mobilization costs are a fraction of a typical six inch dredge
- The launching and loading are more like a boat than a conventional dredge or excavator

GTM D6 SYSTEM OPERATION

Before

During

After

The GTM D6 Dredge System eliminates all of those issues in one go by using a hydraulic boom with an attached cutterhead to suck up any unwanted sediment, debris and etc.

3) GTMSB DS3 – AMPHIBIAN

- Land Clearing and remediation work at Mining Areas, Plantation and Swampy Land Area.
- Deepening and widening of Canals and river ways.
- Building Bunds, Flood Prevention and Land Reclamation.
- Building Walls for Fish and Shrimp Ponds as well as Mining waste water treatment ponds.
- Clearing of River ways and Water Reservoir.
- Digging Trenches for Oil and Gas Piping Installation in water bogged & swampy environment.
- Transporting and Clearing obstacles at Landslide and earthquake area.
- Building Water Irrigation bunds at Paddy Field and Plantation.
- Wet land construction.




GTMSB SAND MINING OPERATIONS

Sand mining is the extraction of sand, mainly through an open pit but sometimes mined from beaches and inland dunes or dredged from ocean and river beds. Sand is often used in manufacturing, for example as an abrasive or in concrete. Sand can replace eroded coastline. Some uses require higher purity than others; for example sand used in concrete must be free of seashell fragments.

Sand mining presents opportunities to extract rutile, ilmenite and zircon, which contain the industrially useful elements titanium and zirconium. These minerals typically are found in ordinary sand deposits and are separated by water elutriation.

Delivery of marine sand using trailing 3 in 1 suction hopper.

At the processing plant, the materials are screened and sorted according to their various sizes —from boulders to large cobbles—by conveyor belts and then crushed into smaller pieces. Once broken down, the pieces are screened and re-sorted based on specified parameters like size or weight. When bulk processing sand, the tiny rocks are scrubbed down to wash away clay and organic impurities, after which the sand is drained and dried. One last sorting process occurs before the materials are packaged and shipped off.

3 in 1 Conveyor Belt (5000 M3)

The mixture of sand and water is pumped into the hopper of the dredging vessel. The vessel can discharge its load through discharge pipeline to the shore or reclamation area.

Equipment

The bulldozers and excavators also construction equipment will help to shape the shore or reclamation area and build the template.

Barges (270ft to 300ft)

GTMSB EQUIPMENT LIST

Name	Type	Capacity	Year Build	Remarks
Jade	3 in 1 conveyor belt vessel	3500 M3	2012	Dredging depth -30 to - 40M
JBB 21	3 in 1 conveyor belt vessel	5000 M3	2016	Dredging depth -50 to - 60M
Leader HK	3 in 1 conveyor belt vessel	5000M3	2009	Dredging depth -50 to - 60M
CP798	3 in 1 conveyor belt vessel	5000M3	2013	Dredging depth -50 to - 60M
Kirana Naree	Mother vessel	33,000 M3	2011	Depth - 14M
Desert Unity	Mother vessel	33,000 M3	2006	Depth - 14M
7 Star	Sand pump dredger	1000 M3/ hour	2015	Dredging depth -60 to - 70M

4) GTMSB DS4 – 3 in 1 – TRAILING SUCTION HOPPER DREDGER

3 IN 1 CONVEYOR BELT JUTA 1 (5000 M3 M3)

The trailing suction hopper of Juta 1 (5000 M3 M3) are ocean going vessel that can collect sand and silt from seabed and transported over large distances. Juta 1 deploys trailing suction hopper dredges for the construction and maintenance of ports and waterways as well as land reclamati on and coastal defence and riverbank protection.

Trailing suction hopper dredger are equipped with one or two suction pipes ending in drag heads when a vessel reaches the dredging location. It reduces speed and lowers the suction pipes to the seabed. The drag head moves slowly over the bed collection the sand like giant vacuum cleaner.

The mixture of sand and water is pumped into the hopper of the dredging vessel. The vessel can discharge its load in various ways depending on the project specifications. The vessel can discharge its load by grabber (10 M3) while using tug and barges to perform the discharging method.

Another discharge method, direct loading is used when the vessel can get close to the discharge location such as Mother Vessel as shown.

The sand is transported by a conveyor directly to the discharge location.

Other method can be used by through floating pumped pipelines into the reclamation area.

Equipment

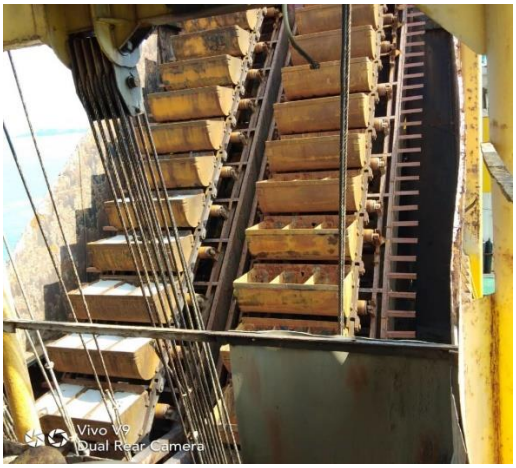
A trailing suction hopper dredger is equipped with the following equipment:

- One, or more, rearward extending suction pipes
- One or more, dredging pumps to create an under pressure in order to suck the substance into the hopper
- Transportation tubes to transport the substance from the pipes to the hopper
- An overflow to discharge the redundant water overboard
- Degassing installation to extract any possible gas from the substance in order to reduce damage and increase fluency

3 IN 1 CONVEYOR BELT JADE (5000 M3)

5) GTMSB DS5 - Sand Pump Dredger

- Capacity. 1200 m3 per hour.
- 2400 HP. Suction pump.
- Max dredging depth – 70m



6) GTMSB DS6 – CLAMP SHELL DREDGER

LOGISTIC VESSEL

BARGES (270FT TO 300FT) – 3 – 5 UNITS (3500MT – 5000MT) – BY TUGBOATS OR SELF PROPEL

GTMSB SAND TRADING (LOCAL & EXPORT)

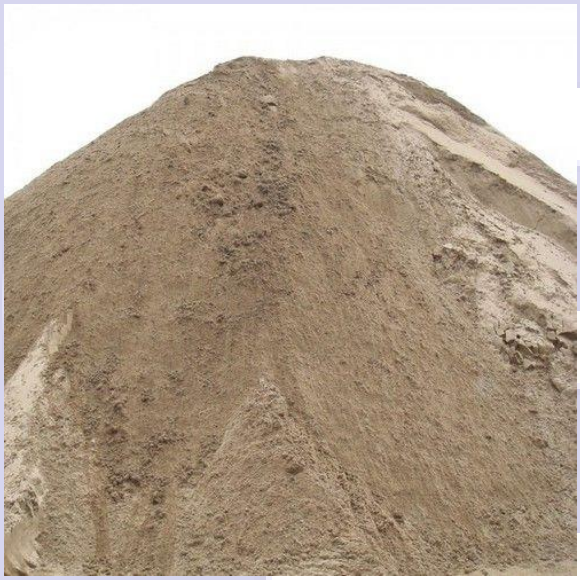
Types of sand that we trade for local & export purpose from various valid concession owners with full relevant permits & license. (4b /4c / K2 / S.T.S points / MV & Shipping services arrangements etc.).

Export Markets among others, to China / India as well.

Fine Sand

Medium Fine Sand

Coarse Sand



River Sand

Sea Sand

Silica Sand

Estuary Sand

SOME OF GTMSB TRACK RECORDS

GTMSB TRACK RECORD 1

Maintenance Dredging Services for Sediment Removal Works within Balancing Pond, Sungai Dua, Pulau Pinang, Perbadanan Bekalan Air Pulau Pinang (PBAPP) 2019

Maintenance dredging services for sediment removal works within **Balancing Pond, Sungai Dua, Pulau Pinang (48,298m²)**. A suitable dredging system (that can produce clean, smooth and even cutting / trimming process of the pond) is required to perform the task within the specified pond area.

Perfomance of Maintenance Dredging Works within "Balancing Pond, Sungai Dua, Pulau Pinang, Perbadanan Bekalan Air Pulau Pinang (PBAPP)"

Dumping Ground at Balancing Pond, Sungai Dua, Pulau Pinang (Perbadanan Bekalan Air Pulau Pinang)

Demobilization of IMS 7012 HP Versi-Dredger

GTMSB TRACK RECORD 2

Propose Construction and Completion of Sewerage Treatment Plant and Ancillary Work For Medini Development Iskandar Malaysia 2012 (Package Utility 1)

Client: MEDINI ISKANDAR, JOHOR

Sub-Contract Works: (Marine Outfall – Silt curtain – Dredging- 1,500mm HDPE pipe installation)



Installation of double layer silt curtain

GTMSB TRACK RECORD 3

Operation at Phillipines (Sea Sand June 2019)

Client: Hong Kong Airport Authority





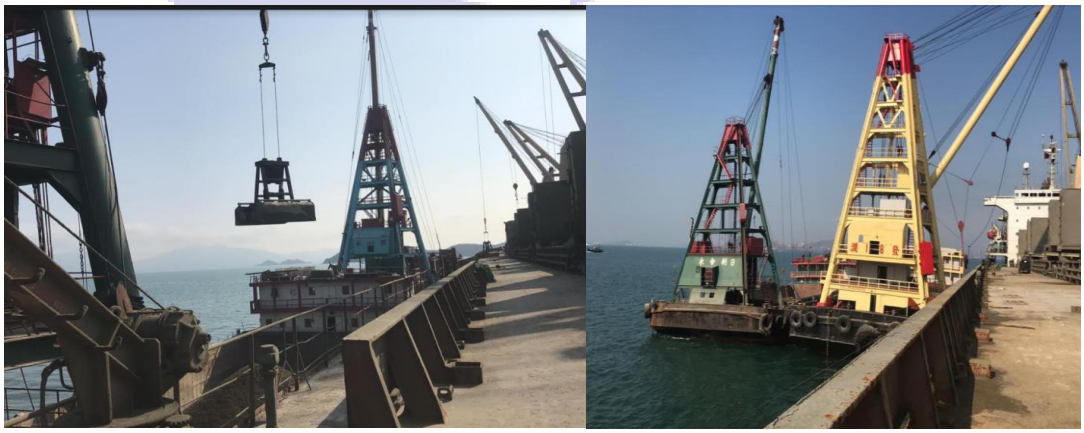
GTMSB TRACK RECORD 4

RECLAMATION WORKS FOR HONG KONG INTERNATIONAL AIRPORT THIRD RUNWAY (DEC 2018 TO DEC 2022)

Client: Hong Kong Airport Authority

Sub-Contract Works: To Supply Dredger, Mother Vessel for the Delivery of the Marine Sand

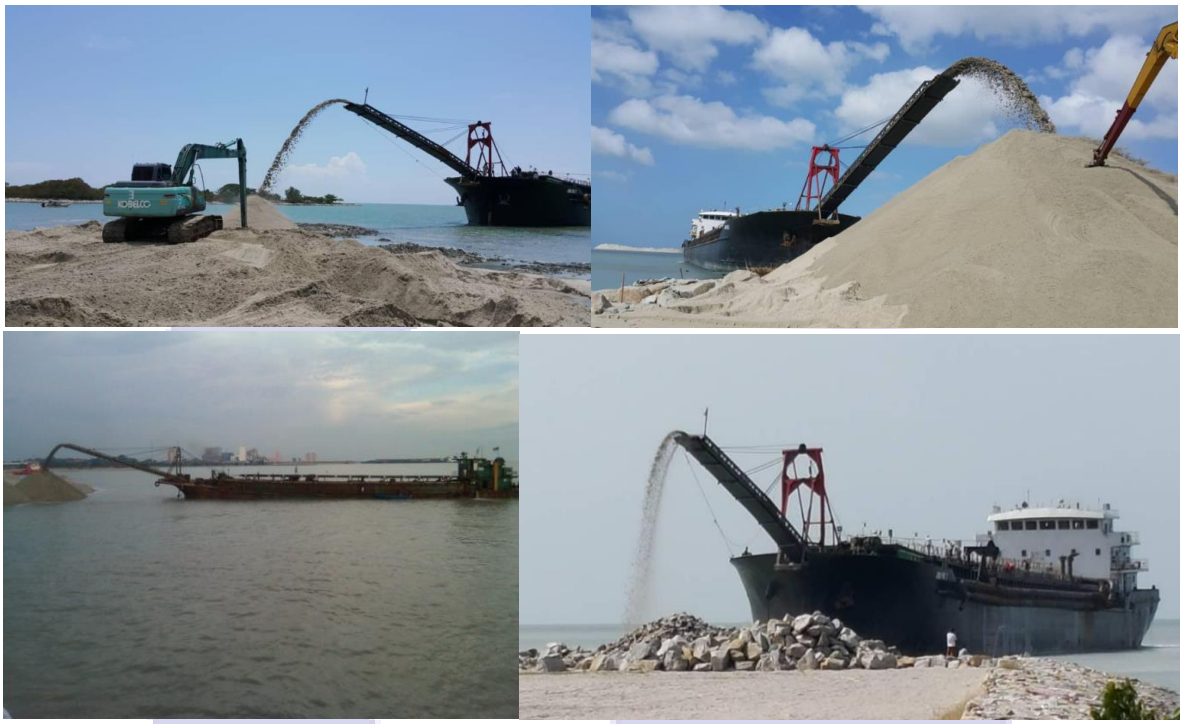

UNLOADING OF MARINE SAND (AT ANCHORING POINT)



GTMSB TRACK RECORD 5

CADANGAN PENAMBAKAN TANAH KERAJAAN BAG PLOT E HINGGA PLOT G DAN PLOT I HINGGA L, SELUAS 66 EKAR UNTUK TUJUAN PEMBANGUNAN PERNIAGAAN, DAERAH MELAKA TENGAH, MELAKA

DELIVERY OF MARINE SAND



KAJ DEVELOPMENT SDN BHD, DELIVERY OF SEA SAND (FEB 2014)