

STANDARD
OPERATING
PROCEDURE
(SOP)

FOR
OPERATING
DREDGE
MACHINE



4" DREDGE

STANDARD OPERATING PROCEDURE (SOP) FOR OPERATING THE DREDGE
MACHINE FOR ALLUVIAL MINING ANALYSIS PURPOSES

LOCATION - FACILITY	MOSELEY MORAMORO
SUBDIVISION	MINING – OK TEDI LABORATORY
REVISED EDITION	1 ST EDITION
REVIEW DATE	1 ST JULY 2022
DRAFTED BY	P. RUMINTS (SENIOR TECHNICAL OFFICER)

Table of Content

1.0 Note	1
1.1 Purpose	2
1.2 Hazards	3
1.3 Specimen dimensions	4
2.0 Equipment Details	5
2.1 Components	6
2.2 Specifications	7
3.0 Setting up	8
3.1 Setting up procedures	9
4.0 Operating Procedures	10
4.1 Operating Procedures	11



NOTE

USAGE POLICIES & INSTRUCTIONS

- This equipment can only be operated upon approval from either the Laboratory Manager or a Technical Officer, or operated with the assistance or supervision of a technical officer.
- Strict compliance to operating procedures and safety requirements is required to operate this equipment. No Exceptions for substandard practices!
- If this equipment is acting unusual while operating STOP IMMEDIATELY! Please REPORT this malfunction to the Technical Officer and discuss the severity of the fault before proceeding or tag-out as faulty equipment.
- Any accidental damage to equipment or incidents encountered while operating this equipment must be reported immediately.



EQUIPMENT DETAILS

4" Dredge

Purpose:

This SOP ensures that the operator may operate this equipment appropriately according to the operating procedures to get reliable output without damages to the equipment or causing injuries to the operator. The 4" Dredge machine is used to conduct dredging in the river to determine gold recovery and gold grain size studies and analysis.

This 4" Dredge machine is composed of water pump with motor mounted onto a frame that sits above the sluice tray to put water onto the mat in the sluices. The pressure of the water pump is control to achieve maximum recovery.

Hazards:

- Footwear (Gum boots) foot in river bed.
- Diving suite or Diving pants

Safety Requirements:

Personal Protective Equipment (PPE)

1. Safety Gum boots
2. Industrial Hardware Clothing (Reflector ware)

Tools & Materials Required:

Recommended Tools

1. Magnifying lens
2. Pan Dish
3. Magnet (separate Black sand Fe_2O)

Test Specimen Prepared

1. River gravel
2. Washed down ore soil

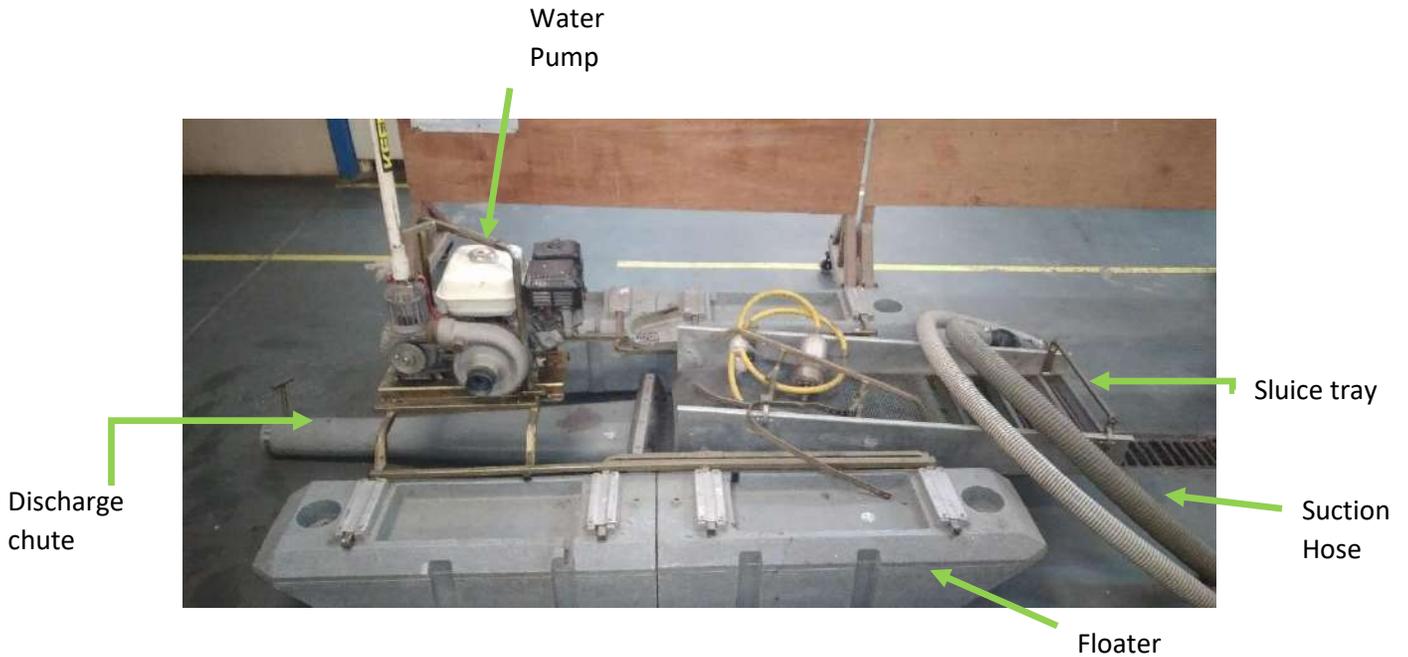


Specifications

HYDRAULICS CAPACITY - WEIGHT/LOAD LIMITS

No	Specifications	Capacities
1	Pump Brand	Honda
1	Maximum Power Output	300 kW
2	Maximum Fuel Capacity (Tank)	2.5 Litres
3	2 Stroke Fuel	
4	Intake Pipe Size	2" (2 inch) 50mm ϕ
5	Outlet Pipe Size	4" (4 inch) 100mm ϕ
	i Sluice Tray length	400 mm x 1200 mm x 200 mm
	ii Riffles height	20 mm
	iii Mat	Course & Fine

Compositions



SETTING UP

Setting-Up Procedures

Setting up equipment

Before operating the equipment there are few things of the equipments that needs to be set up before it can be operated.



1) Pipes & Sluices - Component Connections

Check out all the connections in the jointing components and ensure that the connections for water pipe from the intake to the outlet discharge is securely fasten. Ensure the sluice tray is securely mounted onto the floater frame.

2) Fuel Level

Always check for the fuel level to be on full level before operating the dredge, to ensure the dredge is operated uninterrupted. The maximum fuel tank capacity of this pump is 2.5 Litres.

3) Trap Mat

The inbuilt mats is a combination of fine mat placed under neat the course mat



OPERATING PROCEDURE

Operating Procedures

Operating Dredge

For operating the 3" Dredge machine follow the equipment set up procedures below to set up the equipment before proceeding onto operating the Dredge.



Operating Dredge without additional components – just inbuilt Fine Mat + High/Low Riffles

1. Operate the dredge without any extended sluices tray, using the short sluice and mat and high riffles
2. Start up the pump, while placing the water intake suction pipe end (nozzle) under the pool at potential alluvial bearing sites to suck in maximum alluvial materials and sand on to the sluice.
3. After running dredge for a length of time to get sand trapped on the mat, under the riffles to get sand filling up the mat, Stop the pump and take out the mat and wash the trapped sand into another bucket/container to wash the concentrates for gold contents.

Operating Dredge Using 1m length Sluice Tray + Fine Mat + High/Low Riffles

1. Operating Dredge Using 1m length Sluice Tray + Fine Mat + High/Low Riffles. Set up
2. Start up the pump, while placing the water intake suction pipe end (nozzle) under the pool at potential alluvial bearing sites to suck in maximum alluvial materials and sand on to the sluice.



3. After running dredge for a length of time to get sand trapped on the mat, under the riffles to get sand filling up the mat, Stop the pump and take out the mat and wash the trapped sand into another bucket/container to wash the concentrates for gold contents.

Operating Dredge Using 2m length Sluice Tray + Fine Mat + High/Low Riffles

1. Operating Dredge Using 2m length Sluice Tray + Fine Mat + High/Low Riffles. Set up
2. Start up the pump, while placing the water intake suction pipe end (nozzle) under the pool at potential alluvial bearing sites to suck in maximum alluvial materials and sand on to the sluice.
3. After running dredge for a length of time to get sand trapped on the mat, under the riffles to get sand filling up the mat, Stop the pump and take out the mat and wash the trapped sand into another bucket/container to wash the concentrates for gold contents.

