

Verw: 1718DOV-MS(Dam)
Datum: 29/05/2017

TO WHOM IT MAY CONCERN
METHOD STATEMENT ~ DRAFT
FOR THE CONSTRUCTION OF
HUT DAM, FARM 394/5, SWELLENDAM DISTRICT, SANGASDRIFT TRUST

A) GENERAL

SCOPE OF WORK

The project entails the construction of a zoned earthfill dam with a gross capacity in the order of $\pm 330\,000\text{m}^3$ including an open channel spillway and piped outlet works. The embankment will have a maximum height of $\pm 14\text{m}$, a total length in the order of $\pm 519\text{m}$ and a crest width of $\pm 4\text{m}$. The bulk of the embankment earthfill would come from inside the dam basin below the full supply level.

The proposed construction period is planned for January 2019 to May 2019.

MATERIALS

Imported sand (finger drains in wall), In-situ soils (dam wall), concrete – outlet pipe trenches

CONSTRUCTION AREA AND SITE CAMP

The construction site will include the total footprint of the dam, borrow areas and related works as well as 10m wide workspace surrounding the site. In addition to this a suitable area would be made available, if required by the contractor, where operators will be allowed to park and stay in caravans on the premises. However, the contractor will have to negotiate with the landowner regarding the provision of required services.

General site management and maintenance will be done in accordance with the Environmental Management Plan (EMP).

The camp will be kept orderly and housekeeping will be done on regular basis with all rubbish removed from site on weekly basis.

The construction area will be demarcated, so will the borrow pits be if separate from construction area.

Dedicated access roads will be maintained to an agreed and acceptable standard by the contractor.

All construction plant and equipment will be restricted to the construction area in order not to harm or damage the surrounding vegetation.

There will be a designated eating area as well as a smoking area provided with smoking bins. No smoking will be allowed anywhere else on site. Special care would be given to smoking rules at or near the plant refueling point.

Clearing of any vegetation for construction purposes will only be permitted inside the demarcated construction site and along agreed access roads.

Solid waste control:

A garbage bin will be placed on site and be emptied weekly at an approved waste area or as arranged with the land owner. No burning or burying of waste will be allowed.

ABLUTION FACILITIES

Chemical toilet system will be used on site which will be serviced on a weekly basis. It will be secured and not closer than 30m from a water body.

PLANT

Plant maintenance on site:

Plant will be kept in good order and inspected daily, drip trays will be provided for plant that is stationary and also be inspected daily. Only minor services will be done on site and all used/damaged machine parts will be removed.

Oil & Fuel spills:

Drip trays will be positioned to catch accidental leaks or spillages at the refueling point at all times, all liquids collected in the drip trays will be decanted into a marked and sealed drums which will be taken to an approved spoil or treatment facility. There will be 4 drip trays on site.

Fuel storage; refueling and fuel spills:

The construction plant will be refueled using a mobile fuel tanker. Drip trays and a suitable spill kit will be on standby and available at the refueling point. In case of an accidental spill, the contaminated material will be disposed of at the nearest approved disposal site. The fuel tanker will be parked on top of a raised embankment reducing the risk for any machine driving into it accidentally and causing a fuel spill. No containers with hazardous substances will be stored on site and fluids that are necessary for servicing equipment will be brought from the home-based workshop when needed and taken away after use. Contaminated soils will be collected and removed to the nearest landfill site or as arranged with the owner.

A bulk fuel storage tank will be considered at a dedicated location on site either in addition to or as an alternative to the mobile fuel tanker, if required. The installation will comply with applicable building as well as health & safety regulations including a bunt wall in case of spillage.

B) CONSTRUCTION

SITE CLEARANCE & REHABILITATION

The first step will be to prepare the construction site by way of stripping and clearing the footprint area of the works including borrow pits as well as the demarcated work space from all vegetation and contaminated material, either by hand or machine.

Plant material will either be spoiled at a registered waste site or burnt on site in accordance with applicable regulations. Reusable topsoil will be collected and stockpiled at dedicated areas for the rehabilitation of the site after completion in particular the downstream slope of the embankment, parts of the spillway channel cutting as well as other disturbed areas outside the footprint of the works.

FOUNDATION PREPARATION & DE-WATERING

Foundation preparation entails stripping off and removing topsoil as well as unsuitable material within the footprint of all the works to an acceptable standard before any form of construction work will be allowed to continue.

In case of an in-stream dam as well as under saturated site conditions, the stream and surface water will be collected and diverted through or around the construction site by way of a combination of temporary works including cut-off and bypass channels, a small coffer dam, temporary pumps, etc, to collect and contain the water in order to ensure safe and acceptable working conditions. The outlet pipe will be installed early in order to be used as bypass when construction takes place in the stream bed.

Sedimentation at the outflow side downstream of the works will be limited by way of ponding or cascading with stone formed berms and filters of made up of hay bales in combination of bidum to suite site conditions.

EARTH WORKS: EXCAVATION & EMBANKMENT

Excavations of the cut-off trench, spillway channel, outlet works including the pipe trench, strip drains as well as for small structures such as manholes and concrete weirs, etc, will take place as the project progresses. All reusable material will either be used directly in fill or be stock-piled for later use in the embankment or other land fill zones as part of the works.

Construction of the embankment entails a basic cut and fill operation with limited waste or spoil. Bulk earthworks comprise the excavation of material from within the basin of the dam below the flood level and placing and compacting it in the embankment using heavy equipment such as excavators, tippers, compaction rollers, water trucks, etc. The embankment is zoned including a clay-filled cut-off trench and central core zone held in position and protected by sloped mass earthfill on both the up- and downstream sides. Final finishing includes a rip-rap layer against the upstream slope and a topsoil layer over the downstream slope.

CONCRETE WORKS AND CEMENT BATCHING

All concrete will be imported as “ready-mix” concrete from a local supplier. No concrete will be mixed on site and surplus or waste will be sent back to the supplier who will dispose of it. Concrete chutes of the supply trucks will be cleaned and washed at a dedicated wash bay from where contaminated water and waste will be spoiled at a registered dump site. Small quantities of hand-mixed concrete will be done on mixing boards and wasted similarly to the above.

C) DIVERSE & OTHER

Environmental Awareness:

An induction course will be conducted by the ECO on the construction site at commencement of works.

Environmental awareness training of new and follow up of older staff members as well as sub-contractors will be conducted at regular intervals or as deemed necessary.

Emergency procedures and Fire hazard:

There will be two fire extinguishers at the fuel bowser and employees will be trained how to use them in case of emergency. All fire equipment will be serviced monthly and they will be checked bi-weekly by the acting fire officer. No open fires will be allowed on site. A water truck with capacity of 10 000 liters will be on site in case of any fire emergency. The site agent of the contractor will also act as the environmental officer on behalf of the contractor if a dedicated person or agent is not appointed.

Administration:

All relevant Material and Safety Data sheets will be available on site throughout the contract.

The contact numbers of the *local police* and *emergency services* including the number of a *spill response team* in the event of a major spill, will be provided to all employees.

A general search and rescue will be conducted.

Sediment and erosion control:

No sediment will be able to enter the stream as the newly constructed dam wall will act as a buffer to contain sediment from the construction area. Topsoil from temporary stockpiles will be used to cover exposed areas to encourage the fast growth of vegetation to prevent unnecessary erosion.

Storm water management:

Existing storm water ditches will be maintained in order to let water flow freely to the river without eroding the soil. Existing drainage furrows will be maintained and kept clean at all times in order to prevent rainwater from scouring and eroding surrounding areas and sedimenting the stream.

Dust and noise control:

Working hours will be from 7am till 6pm during weekdays, plant will be equipped with standard factory fitted silencer systems. Dust will be controlled by watering dusty areas with water truck.

Contaminated water control:

Discharges such as cement, lubricants, fuels, etc, will be minimized in accordance with the EMP.

No go areas:

All activities will be limited to the agreed and dedicated construction areas.
