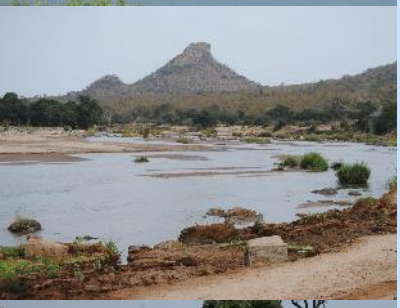
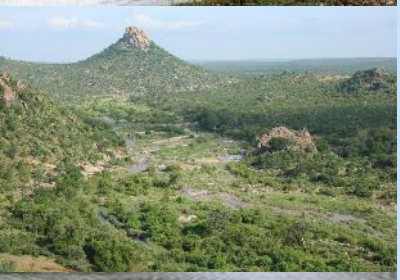
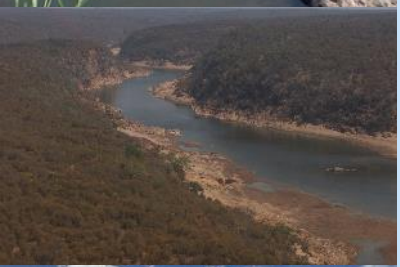






WATER MANAGEMENT

Fact Sheet

Introduction

Palabora Copper operates one of the largest underground block cave copper mines in the world. Naturally, the impact on the environment is significant. However, the Company has a well-defined and executed environmental programme to manage this impact effectively.

Palabora's water management programme is complex because of the various interlinked processes, large waste disposal facilities and the close proximity to the Kruger National Park and the Olifants River.

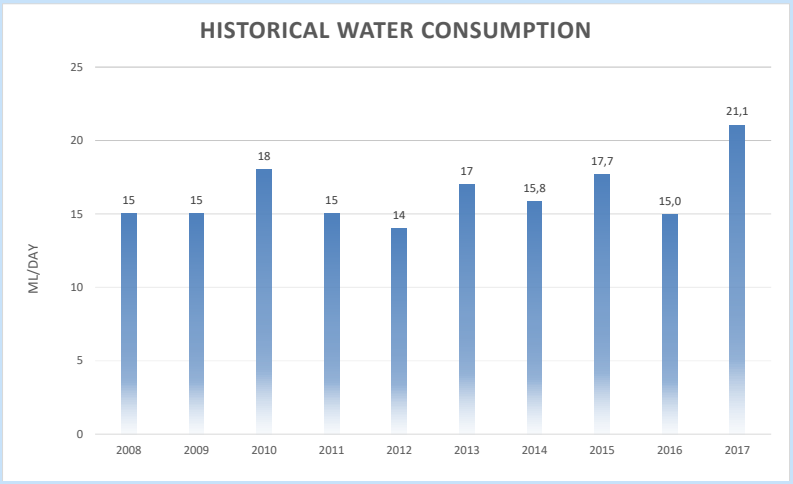
Palabora employs experienced environmentalists, and uses expert consultants, to assist with identifying the potential impact on the environment, quantifying these impacts and then implementing control measures to minimise these impacts.

Water Management Strategies

The Lepelle Water Board supplies industrial and potable water to users in the Phalaborwa Region. The water is pumped from the Phalaborwa Barrage in the Olifants River, purified and distributed to the various users. The Olifants River is already under stress, especially during the dry winter and spring months, and it is essential for industries reliant on the river to participate in the management of its catchment.
Palabora is actively involved in local water management meetings, held to discuss management strategies for the region.
A computerised water balance (GoldSim) has been developed to model water quantity. This tool assists in quantifying the impact of a new installation on the water management system.

Process Water Containment

Palabora Copper imports approximately 14 mega-litres of industrial water and three mega-litres of potable water per day from the Lepelle Water Board.
The industrial water is used in the various processing plants, mainly as a transport medium for the mining residues (tailings) to the tailings storage facilities. Tailings storage facility water decants into the return water tailings dam, from where it is recycled back into the processes.



This system is called Palabora's '*Closed Water Circuit*'. All water is contained and recycled to various plants for re-use. Over the years, a number of water management systems have been installed to prevent effluent flowing into the natural environment. The following are the most important installations:




Loole Weir

A weir was built in the Loole Creek drainage system before it enters the Selati River. This prevents mine affected water from flowing into the river. From the weir, water is re-directed to the return water tailings dam. A telemetry system was installed at Loole Weir to constantly monitor the water. levels and to warn of overflows to the river. A containment dam was also built upstream to control surge flows into the weir and thus prevent overflows into the Selati.

Seepage Pumps

A number of sump and pump systems have been installed below the wall of the return water tailings dam and at the toe of the tailings dam to capture seepage and pump it back to the return water tailings dam.

Process Water Pumps

A number of sump and pump systems were also installed at various plants to capture effluent and pump it back into the plant. This is essential to prevent soil and water contamination outside the plant areas.

Monitoring Programmes

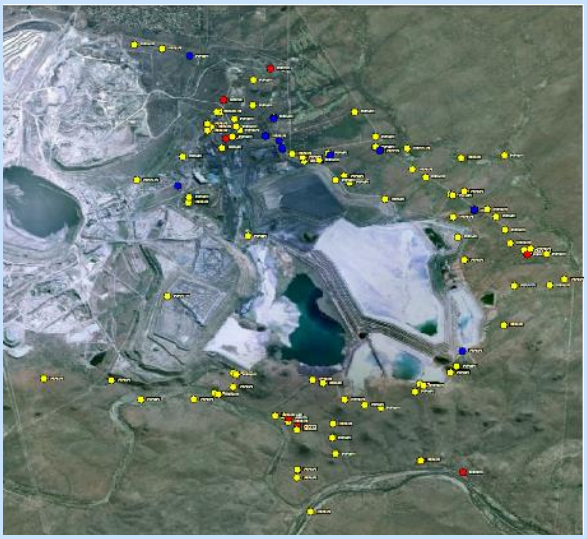
Palabora has implemented routine monitoring programmes to determine the water quality of the various process streams, seepage from the tailings storage facilities, ground water and natural streams. This information is used for impact assessment studies, management decisions and ground water modelling studies.

Surface Water

A monitoring system was developed to monitor impacts and potential impacts from the various plants, dams and streams, as well as the water quality of the natural rivers and streams outside the mining area. More than forty five monitoring sites have been identified, and routine water samples are collected and analysed according to approved procedures.

Ground Water

More than one hundred and forty boreholes have been drilled on the mine and a ground water modelling and monitoring system has been developed for Palabora. This system is used to model the impact on the ground water system, and to implement remedial measures. Some of the boreholes are pumped to prevent contamination of the natural environment and a seepage trench has been installed along the toe of the tailings storage facilities to capture seepage and pump it back to the return water tailings dam.



Groundwater monitoring points at Palabora

For more Information contact:

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Legal Requirements

As required by the National Water Act, Act 56 of 1998, Palabora Copper holds several Water Use Licences for all water uses across site. These Water Use Licences are audited annually by an external party and the Mine is subject to inspections and audits from the Department of Water and Sanitation, at their discretion.