

# QMM – High level incident summary report

Mine process water overflow into adjacent wetland incident  
17 February 2022

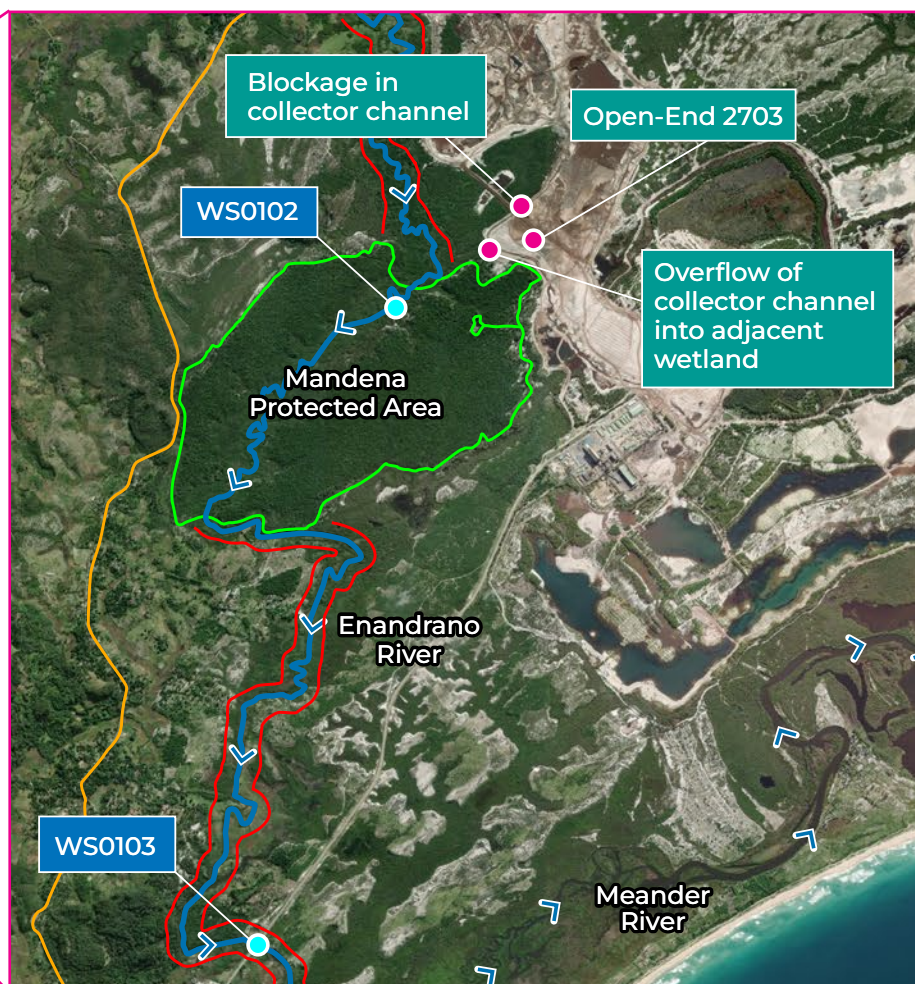
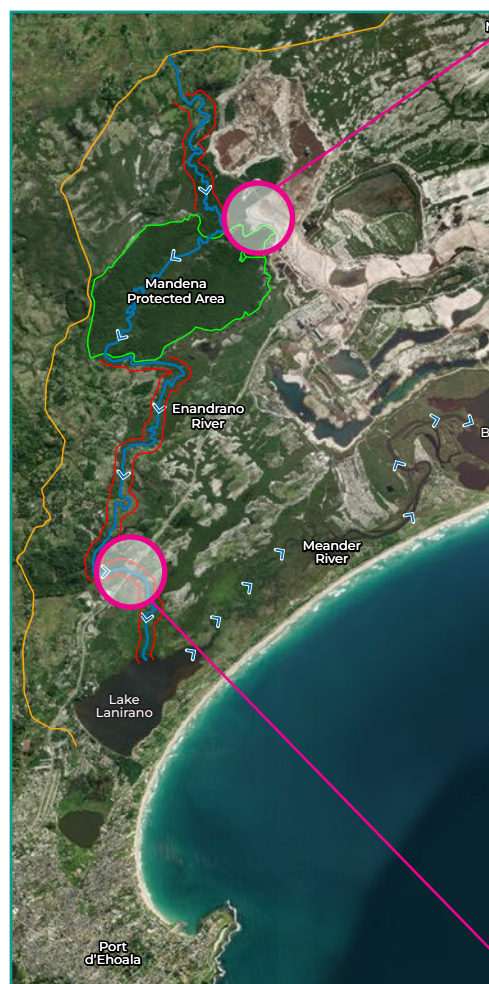
## Incident overview

On 17 February, a water flow incident occurred from a mine canal, called collector channel, into the wetland adjacent to the mine leading to the Enandrano river. Investigations established that a slurry from a pipe outlet at the back of the mining pond (Open End 2703) accumulated in the collector channel until it was completely obstructed. The blockage raised the water level of the collector channel causing an overflow of an estimated 7650m<sup>3</sup> lasting less than six hours. As soon as detected, the overflow was immediately rectified by the QMM team.

It is important to note that this occurred during a series of cyclones and extreme rainfalls in the Fort-Dauphin region.

## Timeline of events

- **17 Feb 17:00** Shift handover - nothing abnormal observed or reported
- **17 Feb 20:45** Heavy Mining Equipment operators trucking in this area observed water on the road to High Grade area
- **17 Feb 21:35** Excavator used to stop the overflow
- **17 Feb 22:40** Overflow ceases
- **20 Feb** QMM discovers traces of water flows on adjacent wetland
- **21 Feb** QMM on duty team confirms an overflow took place on 17 Feb, and that it was rectified 'immediately'
- **22 Feb** QMM identifies suitable external firm to support with investigation
- **28 Feb** QMM commences investigation into the incident with support of external firm Intersafe





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## Investigation results

To ensure objectivity of the investigation, QMM engaged Intersafe, independent experts in incident analysis, to ensure the essential factors of investigations steps were completed thoroughly.

### Incident root cause

Inspection of open end was not frequent enough to alert QMM that slurry was being discharged to the collector channel and not into the mining pond.

Health Safety & Environment risk analysis for the change in infrastructure configuration was not undertaken.

## Impact analysis finding

- Water monitoring results confirmed there were no measurable and observable environmental impacts as a result of the overflow event.
- No significant impact on pH from upstream to downstream.
- The river color was becoming clearer from upstream to downstream.
- There was a temporary increase in aluminum levels from upstream to downstream in the 17 February samples, potentially due to water coming back from flooded area caused by cyclone activity. However, the measured aluminium content on the drinking water was less than 0.9mg per litre, which is below the WHO guideline.

## Recommendations

### Inspection

The inspection procedure of the Open-End discharge/channel area to be reviewed with respect to frequency, accessibility for inspection purposes and reporting of non-conformances.

### Environmental incident reporting

Environmental incident reporting training to be provided to both the management and operational teams of the mine operations. The training will specifically highlight the critical community issues associated with environmental incidents and the need for early reporting.

### Change management

Change management training to be provided to both the management and the operational team.

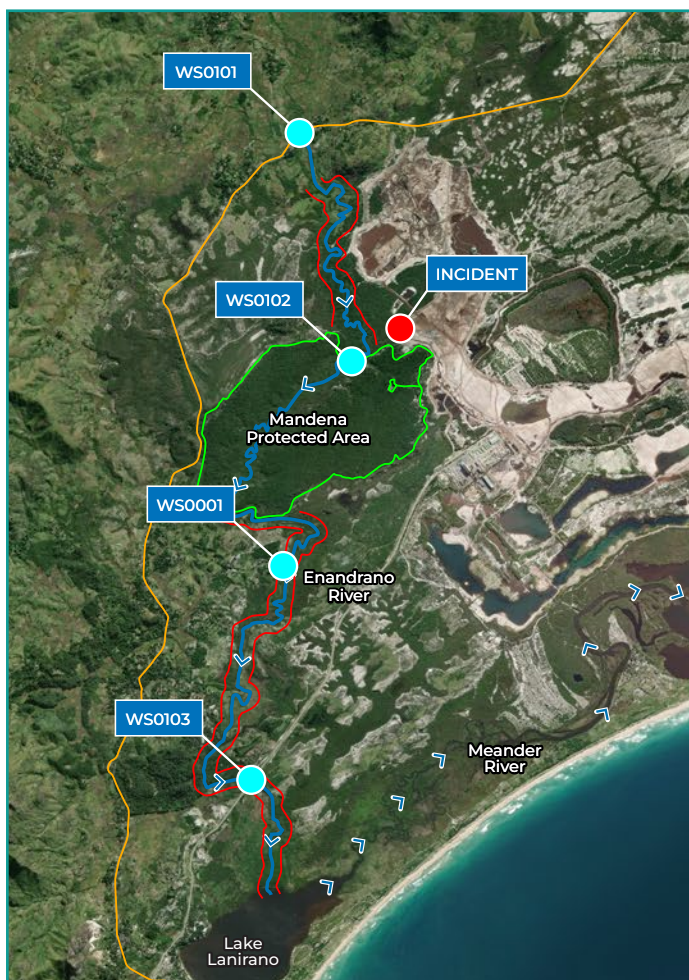
### Design process

The preliminary design and risk assessment for any new infrastructure is to identify environmentally sensitive areas and detail potential mitigation in the event of any future overflow incidents.

## Potential impact analysis

Water quality monitoring was undertaken at several sampling points:

- WS0101: Upstream sampling point, reference station not impacted by QMM operation
- WS0102: Incident sampling point (Enandrano river vs wetland)
- WS0001: Community bridge
- WS0103: Downstream sampling point



## Actions

Guideline and rules for construction of berms, pile and stockpiles has been reviewed in May 2022.

Training for Environmental Incident reporting will be completed in December 2022.

Standard work procedure for inspection of Open End discharge has been updated for this activity.