Kalgoorlie Super Pit – Tailings Storage Facility Monitoring Review

Kalgoorlie Consolidated Gold Mines Pty Ltd

CLIENT:

Kalgoorlie Consolidated Gold Mines Pty Ltd

LOCATION:

Kalgoorlie Super Pit

SERVICES:

- Review of TSF vegetation methods and data

KEY ACHIEVEMENTS:

- Undertook a comprehensive review of monitoring programme frequency and appropriateness, in particular of LFA methods
- Recommended abandonment of inappropriate LFA monitoring, which is not designed to impact vegetation health
- Determined from photographic monitoring that no evidence of declines in vegetation health were apparent
- Vegetation data suggested structure has been impacted in a small number of locations and that other factors may need to be considered.

Kalgoorlie Consolidated Gold Mines (KCGM) is committed to undertaking annual monitoring of vegetation health around its tailings storage facilities (TSFs). Phoenix has been assisting KCGM to improve and streamline its environmental management practices at this economically vital and iconic WA mine site.

Phoenix undertook a review of the monitoring programmes for three TSFs to assess the frequency and appropriateness of the monitoring methods to identify potential declines in tree health due to rising saline groundwater levels, and review monitoring data to identify any long-term changes in vegetation health.

Assessment of the long-term trends in plant health entailed comparative photographic monitoring, review of trends in landscape function analysis (LFA) indices and analyses of data from vegetation quadrats to determine whether any impacts to vegetation health were evident.

Compilation and review of photographs from the monitoring locations surrounding each TSF identified no evident impacts to vegetation health at any location. In contrast, trends in vegetation data at a small number of monitoring locations indicated some form of impact on vegetation structure, e.g. reduced plant cover.

Accordingly, Phoenix recommended that retrospective evaluation of the potential cause of the decline in the vegetation indices be conducted and, include assessment of other factors, such as whether a rise in groundwater has been recorded in monitoring bores located within close proximity to the evidence of impact or whether the reduced plant cover can be correlated with climatic factors, such as prolonged drought or waterlogging.

PHOENIX
ENVIRONMENTAL SCIENCES