

# ENVIRONMENTAL SUMMARY SHEET

## Ginkgo, Crayfish & Snapper

### ENVIRONMENTAL MANAGEMENT SYSTEM

Cristal Mining Australia Limited (Cristal Mining) is committed to supply of titanium and zircon minerals in a manner that protects its workers, the natural and social environments it operates in. Cristal also operates in accordance with the ISO14001 environmental standards. In 2018 the mines will achieve the internationally recognised ISO 14001:2015 environmental certification. The Cristal SHE policy also outlines the company's commitment to environmental management.

### SETTING

The Ginkgo (GK), Crayfish (CR) and Snapper (SN) mines are located on Mining Leases 1504, 1735 and 1621 respectively. The sites are located on land previously used for light intensity grazing by sheep and goats. Today the sites are surrounded by working sheep and grain properties on all boundaries. After mining ceases, the **land must be returned to this former purpose and the sites made safe, stable and non-polluting.**

### APPROVALS

- GK, CR Development Consent DA 251-09-01
- GK, CR Environment Protection Licence 12264
- Water Access Licence WAL27918 (14000 ML)
- SN Water Works Approval 60WA582837 (3 Bores)
- GK, CR & SN Aboriginal Heritage Impact Permit (Permit to move artifacts)
- SN Development Consent 06\_0168
- SN Environment Protection Licence 12799
- GK Water Works Approval 60WA582833 (6 Bores)
- Landholder agreements with Aston, Carstairs, Woodlands, Manilla, Roo Roo, Barkandji Ancillary Deed

### VEGETATION MANAGEMENT

Clearing of native vegetation on site must follow the approved protocols and can only be authorised and conducted by the Environmental team. All locations have a clearing window from late summer through to autumn, outside of this time, no clearing can occur. This ensures the survival of fauna during the clearing process.

As part of all NSW mine site clearing, Cristal must maintain conservation offset areas to counteract the loss of habitat through clearing. **Cristal manages 9,743ha of offset conservation areas** in the local area.

The area contains many complex vegetation communities' the common types are Belah, Rosewood woodland, Mallee Spinifex woodlands and Mallee Chenopod woodlands.

### ANIMAL MANAGEMENT

The projects sites and conservation offsets are expected to house up to **32 threatened animal species**. These include Little Pied Bat, Inland Forest Bat, Little Eagle, Major Mitchell's Cockatoo, Black Breasted Buzzard, Ringed Brown Snake and Western Blue-tongue Lizard. The full list can be found in the Biodiversity Management Plan.

- Cristal has clearing protocols to protect species (fauna specialist present during clearing, pre-clearing fauna surveys)
- Cristal conducts ongoing feral animal control on goats, foxes, rabbits.

An annual fauna monitoring program is undertaken to monitor threatened species populations, pest animals and the success of management actions.



## AIR QUALITY MANAGEMENT

Dust Total Insoluble Solids (TIS) are monitored using static **dust gauges at 18 locations** and are limited to **4g/m<sup>2</sup>/month**.

Dust mitigation includes; water cart, ceasing operations when dust generation is excessive, revegetation, limited topsoil stripping, speed limits and dust monitoring.

## CULTURAL MANAGEMENT

The sites all fall within **Barkandji traditional lands**, however, native title does not exist over the mining leases. Cristal entered into an Ancillary Deed with the Barkandji traditional owners to provide employment, training and financial opportunities.

Heritage surveys are conducted prior to clearing being approved by the NSW government. These surveys are conducted by archeologists and Barkandji elders to locate artifacts of value. Cristal is license at all three sites to move these artifacts and store in the 'keeping place'. At the completion of rehabilitation these artifacts are put back where they were found.

## WASTE and SPILL MANAGEMENT

No waste other than MSP rejects can be received at the mine sites.

- All solid household waste is to be deposited at the Ginkgo landfill.
- All recyclable materials are to be recycled.
- All waste must be correctly separated and stored.
- All waste not treatable onsite must be removed via a licensed operator.

MSP rejects which have low radiation levels have strict EPA protocols to return to the pit. **MSP rejects must be returned to the mine pit via one of two methods:**

1. Blended through the MORT system back to the tails area, or
2. If radiation levels are below 0.7 microGrays per hour measured 1 metre vertically above the surface of the material being deposited, an option to tip using a truck can occur. Contact environmental team to measure radiation for this option.

**All Hydrocarbon spills greater then 10L must be reported to the Environmental team** and remediated as per their direction or the Pollution Incident Response Management Plan.

## COMMUNITY

Community engagement is important to maintain our relationships with stakeholders including neighbors and regulators.

If a community complaint is received, it must be documented on the external complaints form and forwarded to the environmental team.

## ENVIRONMENTAL MANAGEMENT PLANS

Located on G: Drive, Smart solve and Cristal Mining website.

- Environmental Management Strategy
- Waste & Landfill Management Plan
- Air Quality Management Plan
- Noise Management Plan
- Biodiversity Management Plan
- Pollution Incident Response Management Plan
- Cultural Heritage Management Plan
- Offset Management Plan
- Water Management Plan
- Community Consultation Management Plan
- Traffic Management Plan
- Mining Operations Plan
- Land Management Plan

