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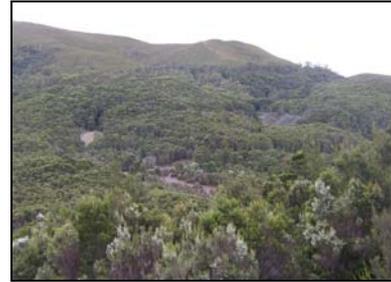
# REHABILITATION OF ABANDONED MINING LANDS TRUST FUND

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## **OONAH MINE AND QUEEN HILL Zeehan, Western Tasmania**

### **REHABILITATION PROGRAM**

### **PROGRESS REPORT JUNE 2006**



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#### **Background/Summary**

The Silver Lead Creek Catchment (Oonah/Queen Hill) is immediately west of Zeehan. The catchment has a high density of abandoned mine workings, a relatively small geographic area (approximately 3.3 km<sup>2</sup>), and studies identifying specific sources of acid and metal pollution have recommended it as a priority for remediation works (Earth Systems, 1999; Oosting, 1998; Parr, 1997).

Work carried out during the 2005/06 period implemented recommendations from a report prepared by Pitt and Sherry Consulting Engineers (Lockley, 2005). This involved redirecting water flows, installing a settling pond, and modifying an existing wetland to promote the retention of metal precipitates (Map 1).

Some safety work (capping or closing shafts and stopes) was undertaken in the course of this year's program. An area of gorse was also cleared from the Oonah Mine track.

Further water quality monitoring is recommended to assess the effectiveness of work done to date and gain more detailed information about the sources of contamination in the Silver Lead Creek catchment.

#### **Aims**

- Improve water quality of flow discharging from Silver Lead Creek to the Zeehan Rivulet, particularly in terms of acidity and metal contamination.
- Undertake safety works where hazards are identified.

The works program also aims to:

- Preserve heritage values.
- Preserve or improve natural values.

#### **Procedures**

All on-ground works were carried out by Gaspersic Contracting of Queenstown, using a 20 tonne excavator for drainage diversion works and gorse clearing.

Metal safety fencing was used to enclose the Queen #4 shaft (beside Trial Harbour Road), while a smaller adjacent shaft was sealed with a pre-cast concrete panel.

Water samples were taken by MRT officers when earthworks were complete and assessed for acid and metal levels by Analytical Services Tasmania (report attached).

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## Activities/Outcomes

Activities are listed below in point form and shown on Map 1.

### Oonah Mine:

- Create diversion channel for Oonah Creek (Fig. 1) to prevent flow entering underground workings via Oonah Main Shaft. Backfill shaft opening.
- Construct dam, with 5 x 100 mm overflow pipes and spillway, to create new wetland for retention of mineralised water flow from Bell's Adit and the catchment above this point (Fig. 2).
- Excavate tramway and install 2 x 225 mm flumes to increase retention capability of Sven's Swamp. Reinstall tramway (Fig. 3).

### Queen Hill:

- Backfill four open stopes on the northern face of Queen Hill to reduce the amount of surface water feeding into mine workings.
- Divert surface water flow away from abandoned open-cut and stopes (Fig. 4).
- Form clay bund around Queen #4 shaft and install 100 mm pipe to direct shaft outflow under Trial Harbour Road and discharge directly to Sven's Swamp.
- Armour 10 m section of Silver Lead Creek adjacent to Queen #4 shaft with  $\geq 150$  mm limestone.
- Install metal safety fencing around Queen #4 shaft.
- Seal minor shaft, 20 metres south of Queen #4, with pre-cast concrete panel.



**Figure 1.** Water diversion around Oonah workings.



**Figure 2.** Dam forming new wetland/settling pond.



**Figure 3.** Sven's Swamp with tramway in foreground.



**Figure 4.** Surface water diversion on Queen Hill.

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The opportunity was also taken to clear approximately 1.5 hectares of gorse from the access track into the Oonah Mine (Fig. 5).



**Figure 5.** Gorse clearing at entry to Oonah Mine viewed from Queen Hill.

### **Recommendations**

- Implement a water quality monitoring program with the following aims:
  - Assess the effectiveness of works carried out to date.
  - Identify and prioritise sources of acid drainage in the Silver Lead catchment.
- On Queen Hill:
  - Weed previously revegetated open-cut area.
  - Slash and seed areas disturbed during current works campaign.
- On Oonah Mine site:
  - Follow up treatment for area where gorse removed.

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## Reference Documents

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**Oonah/Queen Hill Drainage Diversion Works 2005/06**

