

Strategy — The rehabilitation of abandoned mining lands

Introduction

Abandoned mining lands, for the purposes of this strategy, refer to areas or sites of former mining activity for which no individual, company, or organisation are responsible. Such sites have also been called 'derelict' or 'orphan' mines.

These sites may contain hazards to human and animal life in the form of accessible adits, shafts and workings, and there may be associated pollution (such as acid drainage) from old workings and stockpiles. Visual degradation is an issue in some areas, even if the site is not actively eroding. In some places, ongoing erosion can affect land stability, revegetation efforts and water quality.

These problems have arisen because government requirements and operational standards were previously of a lower standard than are in use today. Modern mines are operated in accordance with 'best practice' techniques and government regulation of both exploration and mining is strict. Bonds are held against both exploration and mining titles and these funds can be used for any rehabilitation which is left outstanding by the operator.

This was not the case in the past, when mines and many industrial developments operated without the care and attention to the impact on the environment which we expect today.

In recent years the mining industry agreed to an increase in royalties, a portion of which was to be allocated to a Trust Fund, for the sole purpose of the repair of abandoned mining lands.

Establishment of Trust Fund

A Trust Fund was established to fund rehabilitation of land affected by former mining or exploration activities. This is defined in the *Mineral Resources Development Act 1995* as:

- (a) any money appropriated by Parliament for the purposes of this Part; and
- (b) any money received from the sale of any building, machinery or property vested in the Crown under section 105(4); and
- (c) any security deposit or part of a security forfeited by the Minister under section 198; and
- (d) any other money received for the purpose of this Part; and
- (e) any money the Treasurer directs to be paid into the Rehabilitation Trust Fund.

The Minister for Mines may (*Mineral Resources Development Act 1995*, Section 180):

- (a) cause any abandoned mining land or land affected by former exploration activities to be rehabilitated; and
- (b) enter into any contract relating to the environmental rehabilitation of any abandoned mining land or land affected by former exploration activities.

Trust Fund Committee

A Committee has been established to provide advice to the Minister on the management of the Trust Fund. The committee comprises representatives from:

- Mineral Resources Tasmania (MRT);
- Department of Primary Industries, Water and Environment (Environment and Planning);
- Department of Primary Industries, Water and Environment (Parks and Wildlife Service);
- Forestry Tasmania;
- Crushed Stone Association; and
- Tasmanian Minerals Council.

Aim of Rehabilitation

The Trust Fund has set priorities for sites to be rehabilitated. These are:

- remove risks to health and safety;
- stabilise the site and reduce or remove the impact of erosion and mass movement;
- where feasible maintain or increase the biological diversity of species in the vicinity to pre-mining levels;
- remove or ameliorate sources of site contamination;
- remove features limiting the beneficial use of the site and its surroundings;
- improve the visual amenity of the site and its surroundings.

Selection of Sites

Sites which are to be considered for rehabilitation must fit the following selection criteria:

1. the site is to be on Crown land. Sites on private property will not be considered;
2. the site is to have been worked by private enterprise and not by government or by government instrumentality. Gravel pits previously worked by the Hydro-Electric Corporation, Forestry Tasmania, the Department of Main Roads etc. will not be considered;
3. the site must be abandoned, with the responsibility for rehabilitation resting with the Crown. Current liabilities of existing tenement holders will not be considered. However, work may be done on tenements where the tenement holder has been absolved of responsibility for pre-existing degradation.

Other factors to be considered include:

4. threats to the safety or health of the public, stock or native flora/fauna;
5. pollution impacts on adjoining properties or catchments;
6. erosion or land degradation on/off site;
7. loss of visual amenity;
8. public concerns/complaints.

The selection of sites will always be based on the criteria previously mentioned.

Priorities for Rehabilitation

To set priorities for rehabilitation, a means for determining the degree of risk presented by a given site (environmental and safety) is required. Where practicable, this should be quantitative or

semi-quantitative while still allowing for other factors to be used in final consideration of the eligibility of a site for remediation. Such a method may entail an assessment of the likelihood of risks and the consequences of utilising a risk assessment matrix to determine priority sites.

A summary sheet is to be filled out for each site under consideration (Appendix 1).

Determining Rehabilitation Priorities

The Committee has previously agreed that the sites selected for rehabilitation should be prioritised in accordance with the following criteria, which are listed in order of importance. A guide to using these criteria is given in Appendix 2.

- (a) The nature of public risk posed by hazards on the site, assessed by risk analysis:
 - risk, depth of shafts;
 - extent of stoping and excavations;
 - ease of access;
 - population exposed.
- (b) Scope of impacts – off-site: the extent of the impact and the consequences of impacts on surrounding lands, such as:
 - natural areas/National Park;
 - forested land or productive forest;
 - agricultural land;
 - derelict farmland;
 - acid drainage;
 - siltation; and
 - potential for weed infestation to spread.
- (c) Extent of and potential for further degradation on site: factors such as the following will be considered:
 - area of degradation;
 - contamination;
 - erosion, stable or actively degrading;
 - loss of soil and vegetation;
 - weed infestation.
- (d) Visual amenity and social impact
 - The visual impact of the site is also a factor to be considered. This need not necessarily be related

to the size of the site; small sites may be more visually intrusive in sensitive areas than larger sites elsewhere; and

- Social impact refers to public interest in the site or its off-site effects.

The committee has agreed to a list of sites which are to be rehabilitated. A preliminary three year rolling plan has been prepared which lists sites to be repaired as funds permit. This list will be reviewed from time to time and will be amended as new information comes to hand (see Appendix 2).

Development of a Rehabilitation Plan

The objectives and extent of rehabilitation should be agreed to as early as possible to provide discipline for discussion with stakeholders and bodies who grant approvals. Rehabilitation plans must be developed to guide site-specific remediation.

Process for Rehabilitation

The process to be followed for the implementation of rehabilitation projects is outlined below.

Following the approval of a particular project by the Committee a number of steps are required before on-ground work can commence. These are:

The Land Use Planning and Approvals Act 1993 (LUPAA) as it applies to rehabilitation on Crown land

As all rehabilitation projects include on-ground work they will fall under the LUPAA and therefore require a permit from the Local Government. By following the requirements of this Act a transparent process is followed which includes notification in the local press and public consultation.

The following information is included in the Planning Application:

- description of the proposed development:
 - background;
 - stakeholder consultation;
 - proposed works;
 - current and proposed land use;
 - staging of the proposed works;
 - hours/days of operation;
 - heavy traffic movements;
 - potentially hazardous operations and/or movements;

- disposal of wastes;
- control of emissions;
- employment.

- supporting information:

- maps;
- scientific and cultural information.

In some cases rehabilitation on a minor scale may be exempt from these requirements, for example spraying an incipient weed infestation. If this is the case the work will either be approved by using the Project Proposal Form for lands managed by the Parks and Wildlife Service (discussed below) or if it is conducted on tracks or related to other exploration activities the usual MRT exploration work approvals process will be used.

Inter-departmental Consultation

All projects will be circulated to Forestry Tasmania, the Parks and Wildlife Service, Department of Primary Industries, Water and Environment, and Property Services at an early stage to determine their requirements and develop rehabilitation objectives.

Public Consultation

Selection of sites and plans will be discussed with community and stakeholder groups early in the process to develop interest and support, assist in site selection, develop rehabilitation objectives and to avoid future conflicts.

Approval for work to commence on Crown land

Crown land managed by the Parks and Wildlife Service

Any works on land managed by the Parks and Wildlife Service can be approved but a Project Proposal Form (PPF) must be completed. The PPF is an integral part of any rehabilitation project and must be factored into the budgeting and planning process. Information required for the PPF includes details of the type and scale of work proposed and prescriptions for the particular site. Natural resource information is also required.

The PPF is assessed by the Parks and Wildlife Service, with assessment taking approximately five weeks. Information assessed includes known natural and cultural values which may occur in the vicinity and how they may be influenced by on-ground works. Consideration is also given to the prescriptions or treatments being proposed and whether they are consistent with conservation and land management requirements, and in particular, to satisfy the Crown's

responsibilities under the *Threatened Species Protection Act 1995* and the *Historic Cultural Heritage Act 1995*.

Parks and Wildlife Service staff are not available, unless adequately resourced, to do detailed environmental assessments outside the agency, it being the proponent's responsibility to provide information necessary for an adequate assessment.

In some cases further on-ground assessments may be required, if for example there is a high likelihood that the works could impact on important conservation values or that they may have adverse environmental impacts due to site conditions or the nature of the disturbance being treated.

Crown land managed by Forestry Tasmania

The majority of identified abandoned mine sites occur on Crown land managed by the Parks and Wildlife Service. In a situation where a site occurred on land administered by Forestry Tasmania and major works were required, a Level 1 permit would be applied for under LUPAA. Forestry Tasmania would be consulted and involved in prior planning and approvals would need to be obtained through the relevant District Forester. Natural and cultural heritage considerations would also need to be reported on to satisfy the Crown's responsibilities under the *Threatened Species Protection Act 1995* and the *Historic Cultural Heritage Act 1995*.

The Management Decision Classification System (MDCS) of Forestry Tasmania will be a useful mechanism for identifying special values in areas prioritised for rehabilitation.

Appointment of Consultants

As MRT does not have the resources to project manage large rehabilitation works consultants will need to be appointed to manage these tasks.

To ensure fairness and transparency the best practice model advocated by the New South Wales Independent Commission Against Corruption (ICAC) will be used to select consultants.

By following the principles of probity set out by ICAC and the Association of Consulting Engineers Australia in the booklet *Qualification Based Selection*, the

appointment of consultants will be seen to be ethical and maintain the integrity of the selection process.

Awarding of Tenders and/or Contracts

In most cases the appointed project managers will be responsible for the preparation and dissemination of works tenders.

MRT will approve the preferred tenderer after perusal of the applications and discussion with the project manager, and the award of the tender will be ratified by the Trust Committee.

The project manager will use an Australian Standards approved tendering process such as the AS 4301 system.

Project Management

After sites have been selected and prioritised, a project brief for work will be drawn up by MRT and circulated to committee members. The agreed project brief will be the basis for invitation of tenders. This will include rehabilitation objectives, safety requirements, and environmental management.

Regular inspections will be made by MRT staff as work progresses, in conjunction with the consultant and other members of the Trust Committee or representatives of the land manager as required.

Reporting

The Trust Committee will meet quarterly. Progress reports on individual projects will be made quarterly and an annual report of Trust Fund activities will be produced. A list of projects, both current and completed, is given in Appendix 3.

Acknowledgements

This strategy was compiled by Carol Bacon with assistance from John Pemberton, Wojciech Grun and David Gatehouse.

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APPENDIX 1

Trust Fund Assessment

Locality/Site Name:

Land status: Grid Reference:

Past Lease/Licence Holder (if known):

Approximate date last worked:

Description of previous operation (exploration site/mine site/alluvial mine/quarry/gravel pit/tailings):
.....
.....
.....

Previous reports:

.....

Public safety hazards:

Access (vehicle/bike/foot):

Vegetation type:

Topsoil availability:

Off-site impacts, acid drainage/erosion, etc.:

Adjacent land:

Visibility of site:

Duration of site impacts:

Historical significance (water races, tailings dumps, structures, adits, town sites etc.):
.....
.....

Restoration measures required (seeding/fertilising/earthworks, ripping, re-contouring, spreading topsoil, drainage, erection of bund):
.....
.....

Maintenance:

.....

Hazard reduction required:

.....

.....

Previous rehabilitation:

Public safety (high/medium/low):

Off-site impacts (high/medium/low):

Extent of degradation and potential for further on-site degradation (high/medium/low):

Visibility and social impacts (high/medium/low):

Priority for restoration (high/medium/low):

.....

APPENDIX 2

Rehabilitation Criteria

1. Public Safety

Risk:	Depth of shaft/s Extent of excavation Stopes
Exposure:	Proximity to population, access

Risk	H	L	M	H
	M		L	M
	L			L
		L	M	H
	<i>Exposure</i>			

2. Off Site Impacts

Severity/Potential	Weeds – potential to spread Siltation activity Severity/potential Acid drainage
Extent:	Exposure to wind Catchment Dispersion/confluence

Severity/potential	H	L	M	H
	M		L	M
	L			L
		L	M	H
	<i>Extent</i>			

3. Extent of degradation and potential for further on-site degradation

Degradation:	Weeds Erosion/activity Soil loss Vegetation Contamination
Extent:	Area

Degradation	H	L	M	H
	M		L	M
	L			L
		L	M	H
	<i>Area</i>			

4. Visibility and social impacts

Intrusion:	Visibility
Exposure:	Population/traffic Perception Complaints

Visibility	H	L	M	H
	M		L	M
	L			L
		L	M	H
	<i>Exposure</i>			

APPENDIX 3

Current and Completed Rehabilitation Projects

Endurance Mine

- | | |
|---|------------------|
| <input type="checkbox"/> Repair of erosion gullies which are consuming approximately 2 ha per year of land previously rehabilitated by Greening Australia | partly completed |
| <input type="checkbox"/> Water monitoring and design of water treatment on Ruby Creek | planned |
| <input type="checkbox"/> Honours study on biota in successive alkalinity producing (SAPs) systems | planned |
| <input type="checkbox"/> Honours study on acid drainage, Ruby Creek | planned |

Star Hill Workings

- | | |
|---|-----------|
| <input type="checkbox"/> Recontouring of alluvial tinfield; improvement to drainage | completed |
| <input type="checkbox"/> Seeding and fertilising | completed |
| <input type="checkbox"/> Repair of tailings dam; stability work | completed |
| <input type="checkbox"/> Repair of dam overflow and erosion channel | completed |
| <input type="checkbox"/> Monitoring and maintenance required | |

Monarch Workings

- | | |
|--|-----------|
| <input type="checkbox"/> Stabilisation of gully and creek. | completed |
| <input type="checkbox"/> Successive alkalinity producing system trial on Vicarys Creek | completed |
| <input type="checkbox"/> Planting of seedlings (by Scottsdale High School pupils) | completed |
| <input type="checkbox"/> Joint revegetation effort with Scottsdale High School (contribution to NHT funds) | planned |

Rossarden

- | | |
|---|-----------|
| <input type="checkbox"/> Tailings dam maintenance (further spreading of seed and topsoil) | planned |
| <input type="checkbox"/> Water treatment investigation (pump trial \$25,000)
(pipe investigation \$10,000) | \$35,000 |
| <input type="checkbox"/> Pumping installation | \$50,000 |
| <input type="checkbox"/> Piping installation | \$525,000 |
| <input type="checkbox"/> Wetland construction | \$50,000 |

Storys Creek (RiverWorks)

- | | |
|---|-----------|
| <input type="checkbox"/> Alkalinity addition to Storys Creek | \$12,000* |
| <input type="checkbox"/> Alkalinity addition to jig tailings and lysimeter evaluation | \$12,000* |
| <input type="checkbox"/> Limestone addition to stream banks; laboratory trial | \$5,000* |
| <input type="checkbox"/> Water diversion works | \$22,000 |
| <input type="checkbox"/> Anoxic limestone drain above mine | \$10,000* |
| <input type="checkbox"/> Drill precipitate dam | \$10,500* |
| <input type="checkbox"/> Relocate precipitate dam (contribution to RiverWorks) | \$100,000 |
| <input type="checkbox"/> Seal eastern adits (contribution to RiverWorks) | \$20,000 |
| <input type="checkbox"/> Limestone addition to streambanks | \$10,000* |

Biological monitoring under consideration

Zeehan

- Successive alkalinity producing system trial near Queen Hill No. 4 workings planned
- Honours study on seepages from Oceana smelter site planned
- Honours study on natural remediation of Zeehan wetlands planned
- Honours study on regional acid drainage survey, Zeehan district completed
- Honours study on completed rehabilitation of mine sites in the Zeehan district completed
- Consultant's assessment of Tim Parr's honours work and recommendations for water quality improvement work planned
- Revegetation of parts of Queen Hill planned

Queensberry Mine

- Eradication of gorse infestation planned

Shaft Capping

- Grids over shafts at Mt Victoria and near Rossarden (three shafts in total) completed

Acid Drainage Study

- Dependant on NHT funding; Trust Fund to contribute if NHT funds are acquired planned
- Project management by MRT
- Two chemists for two years to undertake study of acid drainage

Gloziers

- Rubbish removal completed
- Weed control completed
- Asbestos removal completed

Montana

- Capping shaft completed
- Filling collapsed slopes completed

Balfour

- Revegetation planned

* partly or wholly funded by RiverWorks. Some works in conjunction with Trust funding.

APPENDIX 4
Inventory of Abandoned Mine Sites

ABANDONED SITES

Site No	Ref No	Name	Land status	Commodity	Current Lease	Years of operation	Site elements	Issues
5	48001	ABERFOYLE @ Rossarden	SF	Sn	NO	1926-1982	Shaft capped, mullock, tailings dams, adits	Tailings, discharge, public interest
6	24020	ABERFOYLE (Hill) tinfield Ringarooma River	CL	Sn	YES		Alluvial	
15	31002	ALL NATIONS	CL	Au	YES	1869-84	Shaft	Open shaft, adit, stopes
22	33009	AMBER HILL	CL	Sn	NO	1880s+	Sluiced area	High faces, erosion, safety, revegetation
30	50326	ARGENT #1		Pb, Ag	YES		Shafts, adits, history	Safety, weeds, acid drainage, heritage
51	32027	BALD HILL		Sn			Adit, exploration tracks, costeans, mullock	Track erosion
53	50236	BALSTRUPS Manganese Hill	SF	Pb, Ag	YES	1885-92, 1924-41	Adits, quarry	Visibility
54	32134	BANCA	CL/SF	Sn	NO		Alluvial race	Erosion gullies, some revegetation, dam
55	31084	BANGOR	PP	Slate	YES		Slate quarry	Safety, heritage tramway
161	44026	CHESTER (KERSHAW'S IRON BLOW)	CL	Pb, Zn	NO	1908-20	Open cuts, dam, old townsite	Public safety, acid drainage
188	50080	COLEBROOK HILL (Prospecting area)	CL	Cu	NO		Old smelter, tramway, shaft, adits	
198	50023	COMSTOCK	CL	Pb, Ag, Zn	YES		Adits, open cut, shafts, townsite	Mining heritage, public safety, acid drainage
224	28029	CUPRONA COPPER KING		Cu			Shafts, adit	Public safety
226	50037	CURTIN DAVIS MINE	CL	Ag, Cu, Pb	NO		Adits, tailings	
250	45003	DEVON	SF	Ag	NO	1899-1912	Adits, "Flying Fox"	
297	32020	ENDURANCE	CL	Sn	NO	1922-82	Alluvial, tailings, excavations, Blue Lake	Extensive degradation, soil loss, erosion, public interest
335	25047	FLY BY NIGHT	CL	Sn	NO		Alluvial, dams, shafts	Eroded areas, shafts, dams
416	58226	HARRIS REWARD	SF	Au		1895-1905	Shafts, Battery site	Possible tourist site
515	50195	LEAD BLOCKS	CL	An, Pb, Ag	YES	1909-16, 1935-36	Shaft, mullock	Mining heritage, potential acid drainage
544	35039	LORD BRASSEY	CL	Ni	NO		Adit, mullock	Rare Zaratite occurrence
548	43035	LUCY CREEK WORKINGS - A	CL	Au	YES	1890s	Sluiced area	
566	50507	MAESTRIES BROKEN HILL; Concert Creek	PP	Pb	YES	1891+	Open cuts, shaft, adit, machinery site	Previous rehabilitation needs monitoring, access track required
568	35040	MAGNET	CL	Ag, Pb		1894-1940	Shafts, adit, mullock, mill site, townsite, tramway	Public safety, Fossicking Area access, mining heritage
586	50117	MAYNE Cumberland area	SF	Sn	NO	1902-06, 1935-43	Open cuts, adits, tramway	Mining heritage
603	24028	MONARCH; SHALLAMAR	CL	Sn			Sluicewd areas, dams, tailings, erosion	Erosion, revegetation, contamination, public interest
610	50018	MONTANA SILVER LEAD	CL	Pb, Ag		1899-1958	Adits, Shafts, mill site, mullock, tailings	Public safety, possible interpretation site, acid drainage
624	26001	MT BALFOUR CU MINE (THE CLUMP)	SR	Cu		1908-12	Adits, shaft mullock	Public safety, acid mine drainage
629	44061	MT FARRELL MINE (NORTH)	CL	Pb			Rehabilitated by Pasminco	
634	43141	MT LINDSAY	SF (RAP)	Sn			Adits, mullock, hand-dug costeans (1910)	Current lease
639	32035	MT PARIS	SF	Sn		1882-1939	Old adits, open cut, sluiced area	Mining heritage
644	40079	MT VICTORIA	SF	Au	YES	1882+	Large mullock, 4 adits, 3 shafts, waterwheel site	Active exploration
646	36006	MT BISCHOFF	SF	Sn	YES	1871-1947	Complex of adits & shafts, open cuts, costeans	Public safety, drainage, mining heritage
718	50251	OCEANA	CL	Pb, Zn, Ag		1887-1960	3 Shafts, mill site, tailings, trenches	Public safety, weed infestation, headframe at Zeehan Museum
730	50016	OONAH ? No.1, No.2, Queen Hill stage 1	CL	Pb, Ag, Sn		1888-1954	Main shaft, adits, mullock, mill site	Mining heritage, acid mine drainage
771	32022	PIONEER	CL	Sn	NO	1877-1982	Large open cut (lake)	Held under Retention Licence, public interest
782	28018	PREOLENNA - 8 MILE	SF	Coal	NO	1901-24	Adits	
800	57005	QUEENSBERRY	CL	Zn, Pb,	NO		Adits, shafts, machinery	Mining heritage, gorse infestation
808	50021	RAZORBACK	CL	Sn		1909+	Adits, open cuts, high faces, mill site, mullock	Drainage, weed infestation, public safety
835	43051	ROCKY RIVER MINE; Whyte River		Au, Fe, Ag				
842	37039	ROUND HILL CENTRAL (A)		Ag				
883	50073	SERPENTINE HILL (ARGENT TUNNEL)	CL	Asbestos	NO	1940-45	Open cut, adits	
931	35005	SPECIMEN REEF	CL	Au		1883-90s	Adits, dams, Stamper, waterwheel	Acid mine drainage, mining heritage
956	25042	STAR HILL; LAWRY	CL	Sn	NO	1941-83	Sluiced areas, tailings, dams, Mt Cameron water race	Eroded areas, visual impact, (?)degradation, dam repairs
964	48010	STOREYS CREEK Storys Creek	SF	W	NO	1916-81	Adits, shafts, tailings, machinery	Machinery site clean up, degradation, acid drainage, public interest
1041	50210	VauDEAu	CL	Ni, Cu	NO	1909-14, 1938, 1948	Shaft, stopes, trenches	Acid drainage
1117	50227	ZEEHAN QUEEN No.4 Zeehan stage 1	CL	Pb, Ag	YES	1895-1929	Shaft	Part of Queen Hill Complex, acid drainage
1140	99999	CORONELLA	SF	Au	NO	1880'S	Deep shaft	Connects a long tunnel
1141	99998	GODKIN (VICTORIAN MAGNET)	CL	Pb, Ag, Zn	NO	1888-1920s	Main shaft, adits, machinery	Mining heritage
1146	40209	JEROMES (BRITANNIA)	SF	Au	NO	1880s	Adit, Shafts, open cut	
1147	41004	TRAFALGAR (NEW CARTHAGE)	SF		NO	1900s	Shaft. Adit, battery site	Public safety
KI 1		WHALEBONE BEACH	CL	Shingle	NO	1970s	Potholes, small face	Visibility, erosion

ABANDONED SITES

Site No	Sheet	Work required	Assessed	Date	Safety	Off-Site	Degradation	Visibility	Priority	Program
5	84141	Rehabilitation underway, assessment, earthworks, revegetation, a drain	Miedecke	1998	l	h	h	h		p
6	84162		Bacon		l	l	m	l		
15	83154	Assessment, capability	Halfacre		m	l	l	l		
22	85154	Cut access, regrade, revegetation	R103, Singline	1990, 1985	m	l	m	l	l	
30	79142	Assessed	rez?, parr, oos		m	h	h	h	Queen Hill Stage 2	
51	84151	Repairs	Halfacre		l	l	m	l		
53	79142		Halfacre		l	l	l	l		
54	84151	Needs assessment	Required		m	m	m	l		
55		Capping			h	l	l	l		
161	80144	Assessment	Required		m	m	m	m		
188	79142				m	l	l	m		
198	79142	Assessment	Required		h	h	h	m		
224	80151		Halfacre		m	l	l	l		
226	79142	Interpretation/assessment	Halfacre		l	m	m	h		
250	81144		Halfacre		l	l	l	l		
297	84151	Erosion control, revegetation, acid drainage, dam repairs	R104, Singline, SEMF	1990, 1985, 1997	l	l	h	h		p
335	85163	Assess, fill shafts, regrade	R102, Singline, Council	1990, 1985, 1996	m	l	l	l		
416	80134				m	l	l	m		
515	79142		Pemberton		l	l	l	l		
544	79152				l	l	l	l		
548	79144		Halfacre		l	l	l	l		
566	79142	Gorse removal, track maintenance	Halfacre		m	l	l	m		
568	79152	Assessment	Halfacre		h	l	l	m		
586	79143	Assessment if access is improved.	Halfacre		l	l	l	l		
603	84162	Erosion control, reveg, acid drainage	SEMF	1997	l	l	h	h		p
610	79142	Filling, capping, rehabilitation	ZE20, Oosting,	1990, 1998	h	l	l	h		p
624	78151	Fence main shaft collar	Halfacre		m	m	l	l		
629	80144	Check the shaft cap			l	l	l	h		
634	79141	Maintain access track	Halfacre		l	m	l	l		
639	84151				l	l	l	l		
644	84152	Gate for main adit			m	l	l	l		
646	80153	Assessment	Committee		h	h	h	h		
718	79142	Assessment, collapsed stope, weed control	Halfacre		m	l	l	m		
730	79142	Assessment and remediation	Parr, Oosting	1997, 1998	m	h	h	h		p
771	84151	Rehabilitation assessment, revegetation	R106	1990	m	l	h	h		
782	80154		Halfacre		l	l	l	l		
800	79131	Gorse removal, site assessment			l	l	l	l		p
808	79142	Remedy drainage, remove weeds, cap tailings dams, close adits and shafts	Halfacre		l	l	l	m		
835	79144		Halfacre		l	l	l	m		
842	81153		Halfacre		h	l	l	l		
883	79142		Halfacre		m	l	l	m		
931	79153	Assessment	Halfacre		l	l	l	l		
956	85163	Assessment, revegetation, dam repairs	R101, Singline, SEMF	1990, 1985, 1997	m	m	h	l		p
964	84144	Assessment, remediation, rehabilitation	F103, Miedecke	1990	m	h	h	h		p
1041	79142	Capping	Dickens		m	m	m	m		
1117	79142	Remediation, rehabilitation	ZE21, Parr, Oosting	1990, 1997, 1998	m	h	h	h		p
1140	84154	Fence shaft collar	Dickens		m	l	l	l		
1141	79152	Interpretation, assessment, fencing	Halfacre		l	h	l	m		
1146	84152		Dickens		l	l	l	l		
1147	85153	Fence shaft collar	Dickens		h	l	l	l		
KI 1	7618	Recontouring, grading	Halfacre	1999	l	l	h	h		