

# ACCOUNTING FOR MINING ENTERPRISES

## Objectives

When you are competent in the work covered by this chapter you should be able to:

- define the main terms associated with accounting for mining enterprises
- distinguish between no-liability and limited liability companies
- describe the books and records kept for a mining enterprise
- prepare the final accounts and reports for a mining enterprise
- account for mining royalties
- describe the procedure for accounting for restoration costs.

## Accounting for mining enterprises

Definition of a mining enterprise

Capital structure of mining companies

Pre-production costs

Books and records of mining enterprises

- Books of record
- Books of account

Preparation of final accounts and reports

Accounting for mining royalties

Accounting for restoration costs

Review questions and activities

## Definition of a mining enterprise

Mining is a significant activity in Australia. It is therefore important to examine accounting for **mining enterprises**.

A mining enterprise is a business that has been established with the object of prospecting for, and obtaining and selling, ores, metals, minerals, oil or gas.

Mining is one of those industries known as **extractive industries**. The accounting principles explained in this chapter also have some relevance to quarrying and other means of winning sand, clay and stone and to harvesting salt. They do not apply to resources of a regenerative nature such as forests.

Mining enterprises differ in some ways from other types of enterprises. These differences occur in four main areas which affect accounting:

- the capital structure of mining enterprises
- pre-production costs of a new venture
- profit determination in the final accounts and reports
- payment of royalties.

The GST is applicable to mining companies and, as such, GST payable and receivable accounts apply where applicable. GST concepts are applicable but we will not be emphasising this in this chapter.

## Capital structure of mining companies

A mining enterprise can be established as a sole trader, a partnership or a company. There is no difference between a mining enterprise and any other enterprise if it is set up as a sole trader, a partnership or a limited liability company.

However, many mining enterprises, because of their speculative nature, are set up as **no-liability companies**. Only a mining company may be incorporated as a no-liability company. It must then have the words 'No Liability' or the abbreviation 'NL' as part of its name. A no-liability company cannot be a private company.

A no-liability company is a company in which the acceptance of a share does not constitute a contract to pay calls.

**Limited liability** means that the liability of members is limited, to the extent of the difference between the amount paid so far on the shares, and the issue price of the shares. The company then has the right to recover any unpaid calls from the shareholder.

**No liability** means that shareholders are not legally obligated to pay calls if the shares are not fully paid. If the shareholder considers that the company will not succeed and that the risk of losing more money is too great, he or she does not have to contribute any more towards paying any of the debts or liabilities of the company, and cannot be sued for any calls outstanding. Of course, the shareholder is not entitled to a dividend on shares that have calls outstanding. The Share Capital and Reserves accounts, however, do not change in any way.

The **Corporations Act** provides that any shares in a no-liability company on which calls are unpaid are automatically forfeited (after a set period of time). The shareholder loses these shares and they must be advertised for sale at a public auction. Proceeds of such a sale are used to:

- pay advertising and other necessary expenses of sale
- pay expenses of the forfeiture
- pay the outstanding calls
- pay the original shareholder any amount remaining.

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## 20.1

Define the term 'mining enterprise'.

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## 20.2

a Define the term 'no-liability'.

b Describe the differences between a limited liability company and a no-liability company.

# Pre-production costs

Before a mine reaches the stage of production, a great deal of work involving considerable cost may be necessary. A mine may have to go through the following stages:

- **exploration**—searching for a mineral deposit or an oil or gas field, investigative studies and exploratory drilling
- **evaluation**—determining technical feasibility and assessing the commercial viability of a prospect
- **development**—establishing access to and basic preparation of the deposit or field in readiness for commercial production
- **construction**—establishing all the facilities, buildings and so on needed for the extraction, treatment and transportation of the product from the deposit or field
- **production**—operating the mine on a commercial basis to extract, process and sell the product.

Some further development work may also be necessary after production begins. If the costs of this work are material, they would be treated in the same way as pre-production costs, described below. If not, they would be charged to the Profit and Loss account.

It is the usual practice in accounting for mining enterprises to carry forward or **capitalise pre-production expenditure** incurred on exploration, evaluation, development and construction in a specific area of mining interest. This is done to the extent that such expenditures are expected to be recouped in future accounting periods. The same applies to any general expenditures directly related to mining operations incurred prior to production. However, if such pre-production costs are not expected to be recouped through successful development and exploitation of the mining area of interest, or by sale, they should be written off to the Profit and Loss account immediately.

A great deal of expenditure could be incurred on prospecting, payment for a mining lease or partially developed mine, exploratory drilling installing equipment such as power plants, ore treatment plants, motor vehicles, locomotives and tracks, constructing roads and buildings, advance clearing of overburden and sinking of shafts. Mining enterprises would generally capitalise all of these expenditures. They would also usually capitalise general mine expenditures paid before production commenced, such as mine office wages and administration costs and rental payments to the landowner. (They would not capitalise financial expenses or general and administrative costs related only indirectly to operational activities, such as directors' fees, share registry expenses, and salaries and expenses of general management.)

Pre-production and other development expenditures would be capitalised by transferring them at balance date from their individual accounts to the debit side of a non-current asset account titled **Mine account** (or sometimes Mine Development account).<sup>1</sup> In the more conventional types of activity so far examined, some of these outlays are regarded as normal expenses and charged to the Profit and Loss account. In mining ventures there is less distinction between 'capital' expenditures and 'revenue' expenditures at the pre-production stage.

A Mine or Mine Development account is recorded like any other non-current asset account, but includes some of the more unusual items mentioned above.

Mine			No 3207
2008			2008
June 30	Mine Buildings	350 000	June 30 Balance c/d
	Mine Equipment	230 000	
	Surveyors' Fees	7 000	
	General Expenses (pre-production)	18 000	
	Mine Office Wages (pre-production)	29 000	
		<u>\$634 000</u>	<u>634 000</u>
July 1	Balance b/d	634 000	

A mine is depleted as the product is removed. As such natural resources cannot be replenished, mines are often referred to as 'wasting assets'. Depletion refers to the using up of the physical quantities of natural resources, whereas the writing off of the costs representing this depletion is known as **amortisation**. After production begins, the Mine account is amortised over the estimated life of the mine or the mining area of interest on a time or production basis.

Using a production basis, amortisation would be calculated by relating production for the period to the estimated economically recoverable reserves in the mine. The following formula would be used:

$$\text{Amortisation} = \text{Mine pre-production costs} \times \frac{\text{Production for current period}}{\text{Production for current period} + \text{Estimated reserves at end of period}}$$

This is similar to any other non-current asset that is depreciated over its useful life.

Note that different amounts of amortisation may be arrived at depending on the method chosen.

The General journal entry each year would be:

Amortisation of Mine	Dr	xxx
Accumulated Amortisation of Mine	Cr	xxx

Amortisation is debited because it is an expense account that is increasing. It is used in the determination of profit for each period. Accumulated amortisation is credited because it is a negative asset account that is increasing. It will be deducted from the Mine account in the non-current assets section of the Statement of Financial Position.

From the Mine account provided, assuming that no more development work has been undertaken, production is 5 million barrels, and estimated recoverable reserves at the end of the period are 45 million barrels, amortisation would equal

$$\$634\,000 \times \frac{5}{5 + 45} \text{ or } \$63\,400.$$

This would be recorded in the following General journal entry:

General Journal				
Date	Particulars	Folio	Dr \$	Cr \$
June 30	Amortisation of Mine Accumulated Amortisation of Mine (Amortisation of pre-production expenditure.)		63 400	63 400

Such an approach is adopted in order to achieve proper matching of revenue and expenses. It may be months or even years before revenues are earned. Until this time, the balance in the Mine account keeps increasing. Once production begins, the pre-production and development expenditure in the Mine account is charged against revenues over the productive life of the mine.

It should be noted that **some facilities installed during the construction phase** may have to be treated a little differently. Often these facilities depreciate at a different rate from the mine as a whole. In addition, their nature may be quite different, and they may be able to be sold separately from the mine or moved to another area. For these reasons, facilities such as movable equipment, motor vehicles, bulldozers and draglines would usually be recorded in a separate asset account and depreciated in the normal way. This may be at quite a different rate from the amortisation of the Mine account. It may also be decided that the depreciation should begin from the time of installation rather than the date on which production begins, if this is appropriate.

### **Illustrative example 1**

The first year of production for this mine was 30 June 2009. Assume that the movable equipment was installed and the construction stage was reached on 30 June 2008.

From the information given you are required to:

- Prepare a Mine account and a Movable Equipment account to record the following information for Red Seal Mine NL for the year ended 30 June 2008.
- Show any necessary accounts for accumulated amortisation and/or depreciation after the first year of production ended 30 June 2009. No further pre-production development costs were incurred during that year. Production for the year amounted to 1 million tonnes, and it is estimated that recoverable reserves at the end of the year will be 19 million tones.
- Prepare extracts to show how the accounts prepared in a and b would appear in the Statements of Financial Position at 30 June 2008 and 2009.

Balances as at 30 June 2008	\$
Purchase of mine lease	100 000
Removal of overburden	50 000
Construction of shafts	65 000
Fixed mine equipment	130 000
Movable mine equipment (life 10 years)	55 000
Mine administrative expenses	10 000

### **Working**

Depreciation of movable equipment:  $\frac{55\,000}{10} = \$5\,500$

Amortisation of mine:  $\frac{1}{1 + 19} \times 355\,000 = \$17\,750$

## Solution

a		Movable Mine Equipment		No 3204	
2008					
June 30	Accounts Payable/Cash	55 000			
		Mine		No 3207	
2008			2008		
June 30	Purchase of Mine Lease	100 000	June 30	Balance c/d	355 000
	Removal of Overburden	50 000			
	Construction of Shafts	65 000			
	Fixed Mine Equipment	130 000			
	Mine Administrative Expenses	10 000			
		<u>\$355 000</u>			<u>\$355 000</u>
July 1	Balance b/d	355 000			
b		Accumulated Depreciation of Movable Equipment		No 3204A	
			2009		
			June 30	Depreciation of Movable Equipment	5 500
		Accumulated Amortisation of Mine		No 3207A	
			2009		
			June 30	Amortisation of Mine	17 750

Red Seal Mine NL				
Balance Sheet				
	30 June 2009		30 June 2008	
	\$	\$	\$	\$
Non-current assets				
Property, plant and equipment				
Mine	355 000		355 000	
Less Accumulated amortisation	<u>17 750</u>	337 250	<u>—</u>	355 000
Movable mine equipment	55 000		55 000	
Less Accumulated depreciation	<u>5 500</u>	49 500	<u>—</u>	55 000

### 20.3

List and briefly describe the five main stages of mine development.

### 20.4

Prepare a Mine account for Eastern Mining Co NL, a mining enterprise that has not yet reached the stage of production. Its books at 30 June 2008 include the following items:

	\$
Surveyors' fees	12 000
Construction of shafts	213 000
Mine buildings and fixed equipment	170 000
Rolling stock and tracks	380 000
Mine administrative expenses	25 000
Movable equipment (estimated life 10 years)	105 000

## 20.5

- a Prepare a Mine account and a Movable Equipment account to record the following information for Gold Diggers NL at 30 June 2008:

	\$
Mine purchase	300 000
Construction of shafts	250 000
Fixed mine equipment	500 000
Movable mine equipment (life 10 years)	200 000
Head office administrative expenses	30 000

- b Show General journal entries to record amortisation and depreciation relevant to the above accounts for the year ended 30 June 2009, beginning from the commencement of production on 1 July 2008 and assuming that no more development expenditure is incurred. Production for the year amounted to 2 million tonnes, and it is estimated that recoverable reserves at the end of the year will be 48 million tonnes.
- c Prepare an extract to show how the information in parts a and b would appear in the Balance Sheets at 30 June 2008 and 2009.

## Books and records of mining enterprises

Only large mines would maintain a complete accounting facility at the mine site. Usually records are kept by the mine manager and forwarded to the head office for inclusion in the accounts.

The books and records of mining enterprises are of two types—books of record and books of account.

### Books of record

Books of record include:

- **wages book** or **payroll register** to record the earnings of each employee
- **cash book** or **petty cash book** to record small expenses paid on the mine site
- **plant and equipment register** to record purchases, sales, repairs and depreciation on each piece of property, plant and equipment
- **stores counter book** or some similar record to record all stores (food, clothing) received and issued or sold to employees
- **mine supplies book** or some similar record to record issues of explosives, loose tools and so on used on the mining site
- **ore-handling records** to show details of mining, treatment and movement of ores, metals and minerals
- **land rehabilitation records** to record areas replanted and rehabilitated.

These records would almost certainly be maintained at the mine site and regular returns including figures from these would be forwarded to head office to form the bases for journal entries in the books of account. Detailed ore-handling records highlighting all labour and material costs, as well as plant operation, are necessary for costing purposes.

Many mining enterprises have to provide assurances and guarantees to government concerning environmental protection and rehabilitation of the area mined and sensitive areas nearby. This is often quite costly, and detailed records are required to keep track of work carried out.

## Books of account

Books of account include:

- cash journal(s) and a Sales journal (if specialised journals are used)
- the General journal
- the ledger or ledgers.

These books are maintained in the same way as for any other type of enterprise. Most mining enterprises would use computerised accounting packages or systems.

Despite the fact that a no-liability company is different from other companies in respect of the liability for outstanding calls, accounts affecting the share capital are recorded in the same way as for a limited liability company. Only the preparation of the profit-determining final accounts for mining enterprises changes slightly, and a few accounts need to be added to handle accounting for mining royalties.

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### 20.6

Describe the books of record kept by mining enterprises.

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### 20.7

- Prepare all appropriate journal and ledger entries, including the Mine account, to record the following information for B Jones, who is developing a small mine to operate as a sole trader.
- Show the Balance Sheet as at 30 June 2008.

#### 2007

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July	1	Paid \$250 000 into a business bank account as capital.
		Purchased a 20-year mining lease from A Bourke for \$100 000, payable in 30 days.
Aug	19	Paid surveyors' fees, \$20 000.
Sept	30	Paid \$50 000 for mine buildings and equipment expected to last until expiry of the mining lease.

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#### 2008

Jan	1	Purchased motor vehicle from Astra Machinery for \$24 000, payable in three equal monthly instalments beginning today. The vehicle is expected to last six years but to have no residual value.
Apr	4	Completed construction of mine shafts at a total cost of \$100 000, paid in cash.
June	30	Received interest on bank account for year, \$15 000.
		Provided for depreciation on motor vehicle.

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# Preparation of final accounts and reports

Usually, little or no revenue will be received prior to production. Amounts such as subsidies, which reimburse or recoup previously incurred costs, or immaterial amounts of sales, should be offset against pre-production costs. Some items may still appear in a Profit and Loss account at this time. They would be any costs not capitalised in any way.

Once production is commenced on a commercial basis or sales become material, profit-determining accounts must certainly be used. In a mining enterprise, a Mine Working account takes the place of a normal Trading account. Although in most cases a Profit and Loss account is also prepared, in some instances the **Mine Working account** may become the only profit-determining account prepared and no separate Profit and Loss account is prepared.

The *Mine Working account* records the revenue from mining a particular area and the expenses associated with operating that mine to determine profit or loss on mining in a particular accounting period.

Revenue from sales is transferred by General Journal entry to the credit side of the Mine Working account. Expenses such as mine wages, depreciation of mine equipment, amortisation of the mine, power, royalties paid, ore treatment costs, and stores used which are directly associated with mine production, are transferred to the debit side of the Mine Working account. Unless the product of the mine is sold immediately it is mined, opening and closing inventories ready for sale are also usually transferred to this account, as is the case with a normal Trading account. You should notice that this is the procedure followed when the periodic system of accounting for inventories is employed. Because of the nature of the product, it would be normal for most mining enterprises to use the periodic system to account for inventories. If you would like to see more details on the periodic system of accounting for inventories, refer back to Chapter 8 on page 305.

The difference between the two sides of the Mine Working account represents a profit or loss from mining operations. Post-production general and selling, financial and extraordinary expenses are normally recorded in a Profit and Loss account.

Remember that pre-production general expenses would have been capitalised in a Mine account if they were directly associated with mining operations.

## Illustrative example 2

<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: center;"><b>Sale of Ore</b></td> <td style="width: 40%; text-align: center;"><b>No. 1101</b></td> </tr> <tr> <td style="text-align: center;">\$69 000</td> <td></td> </tr> </table>	<b>Sale of Ore</b>	<b>No. 1101</b>	\$69 000		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: center;"><b>Mine Wages</b></td> <td style="width: 40%; text-align: center;"><b>No. 2120</b></td> </tr> <tr> <td style="text-align: center;">\$27 000</td> <td></td> </tr> </table>	<b>Mine Wages</b>	<b>No. 2120</b>	\$27 000	
<b>Sale of Ore</b>	<b>No. 1101</b>								
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<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: center;"><b>Amortisation of Mine</b></td> <td style="width: 40%; text-align: center;"><b>No. 2107</b></td> </tr> <tr> <td style="text-align: center;">\$2 000</td> <td></td> </tr> </table>	<b>Amortisation of Mine</b>	<b>No. 2107</b>	\$2 000		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: center;"><b>Stores Working</b></td> <td style="width: 40%; text-align: center;"><b>No. 2122</b></td> </tr> <tr> <td style="text-align: center;">\$1 500</td> <td></td> </tr> </table>	<b>Stores Working</b>	<b>No. 2122</b>	\$1 500	
<b>Amortisation of Mine</b>	<b>No. 2107</b>								
\$2 000									
<b>Stores Working</b>	<b>No. 2122</b>								
\$1 500									
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: center;"><b>Ore Treatment</b></td> <td style="width: 40%; text-align: center;"><b>No. 2108</b></td> </tr> <tr> <td style="text-align: center;">\$22 700</td> <td></td> </tr> </table>	<b>Ore Treatment</b>	<b>No. 2108</b>	\$22 700		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: center;"><b>Inventories of Ore</b></td> <td style="width: 40%; text-align: center;"><b>No. 3106</b></td> </tr> <tr> <td style="text-align: center;">\$10 000</td> <td></td> </tr> </table>	<b>Inventories of Ore</b>	<b>No. 3106</b>	\$10 000	
<b>Ore Treatment</b>	<b>No. 2108</b>								
\$22 700									
<b>Inventories of Ore</b>	<b>No. 3106</b>								
\$10 000									
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: center;"><b>Royalties</b></td> <td style="width: 40%; text-align: center;"><b>No. 2110</b></td> </tr> <tr> <td style="text-align: center;">\$5 000</td> <td></td> </tr> </table>	<b>Royalties</b>	<b>No. 2110</b>	\$5 000						
<b>Royalties</b>	<b>No. 2110</b>								
\$5 000									

Ore-handling records showed that opening inventories were composed of 100 tonnes at \$100 per tonne. Some 520 tonnes were mined and 400 tonnes were sold, leaving 220 tonnes as inventories at the end of the year. There was no inventory of stores at the end of the year. A B Mining Co uses the period system of accounting for inventories.

General journal entries at balance date relating to the Mine Working account are:

General Journal				
Date	Particulars	Folio	Dr \$	Cr \$
June 30	Mine Working Inventories of Ore (Transfer of opening inventories to Mine Working account.)		10 000	10 000
	Inventories of Ore Mine Working (Transfer of closing inventories to Mine Working account—see working below.)		24 200	24 200
	Mine Working Amortisation of Mine Ore Treatment Royalties Mine Wages Stores Working (Transfer of expenses to Mine Working account.)		58 200	2 000 22 700 5 000 27 000 1 500
	Sales of Ore Mine Working (Transfer of sales to Mine Working account.)		69 000	69 000

Mine Working			No 5102		
2008			2008		
June 30	Inventories of Ore (opening)	10 000	June 30	Inventories of Ore (closing)	24 200
	Wages	27 000		Sales of Ore	69 000
	Royalties	5 000			
	Amortisation	2 000			
	Stores Working	1 500			
	Ore Treatment	22 700			
	Profit and Loss (profit on mining)	25 000			
		<u>\$93 200</u>			<u>\$93 200</u>

The **value of closing inventories** can be calculated by using information from the debit side of the Mine Working account to determine a weighted average cost. To do this, production costs are added to the opening inventories in terms of both quantities and values. Dividing the total value by the quantity will give the weighted average cost.

	Quantity (tonnes)	Value \$
Opening inventories	100	10 000
Mine production:	520	
Wages		27 000
Royalties		5 000
Amortisation		2 000
Stores		1 500
Ore treatment		22 700
	<u>620</u>	<u>\$68 200</u>
Cost per tonne = $\frac{\$68\,200}{620}$		
		= \$110
Closing inventories = 220 tonnes × \$110 per tonne		
		= \$24 200

Remember that, if all quantities are not readily available, you can determine one missing figure if the others are available in the equation:

$$\text{Sales} = \text{Opening Inventories} + \text{Production} - \text{Closing Inventories}$$

The figures for the illustration above would be:

$$400 = 100 + 520 - 220$$

If the mining enterprise has mines in a number of areas, or mines that mine different ores or minerals, a number of Working accounts may be appropriate.

A Profit and Loss account could then be prepared, with the profit on mining taking the place of the normal gross profit. It would, of course, include all general and administrative expenses, as well as finance and selling expenses.

An Income Statement could also be prepared combining the information from the Working accounts and the Profit and Loss account.

## 20.8

From the following information, prepare a Mine Working account for the year ended 31 December 2007 as it would appear in the ledger of J Albert and T Ross trading as Albatross Mining:

	\$
Mining wages paid	80 000
Royalties paid	17 000
Sales of ore (1000 tones)	192 000
Stores used	5 200
Mine operating expenses	117 000
Amortisation of Mine account	25 000

There was no ore on hand at the beginning of the year, but on 31 December the stock of ore on hand was 100 tonnes.

## 20.9

North-western Bauxite NL completed all developmental work and commenced mining on 1 July 2007. At this time, the balance in the Mine (Development) account was \$5 124 000. This was made up of exploration expenditure, building of access roads, and some equipment that could not be economically removed at the end of the mine's life.

Other equipment, which could be removed, was bought in the early months of 2007, and cost \$1 300 000. It was thought that at the end of its life in 10 years it would have a scrap value of \$40 000.

Total economically recoverable reserves at the commencement of mining were estimated to be 15 million tonnes. Production in the first year amounted to one million tonnes. Other results for this year ended 30 June 2008 were:

	\$
Production costs (excluding depreciation and amortisation)	15 000 000
Sales 900 000 tonnes @ \$20 per tonne	18 000 000
Royalties 10c per tonne produced	100 000
Selling expenses	350 000
Administrative expenses	1 250 000

Calculate the value of closing inventories, and prepare the Mine Working and Profit and Loss accounts for the year ended 30 June 2008.

### *Illustrative example 3*

State Mining was formed on 1 July 2007 to undertake the mining of iron ore.

By 1 January 2008, the firm had commenced mining, and on 30 June 2008 the following trial balance was extracted from the books:

<b>State Mining</b>		
<b>Trial Balance as at 30 June 2008</b>		
<b>Account</b>	<b>Debit</b>	<b>Credit</b>
	\$	\$
Capital		750 000
Rolling stock and tracks	795 000	
Mortgage payable		500 000
Mine buildings and equipment	198 000	
Surveyors' fees	30 000	
General and administrative expenses	74 000	
Accounts payable		18 000
Accounts receivable	27 000	
Mining wages	183 000	
Purchases of stores	17 000	
Ore raised and sold		150 000
Interest on mortgage	25 000	
Cash at bank	69 000	
	\$1 418 000	\$1 418 000

#### ***Additional information***

- It was determined that half of the general and administrative expenses and stores used were to be regarded as pre-production expenditures.
- Stores on hand at 30 June 2008 were \$3000.
- Inventories of ore on hand at 30 June 2008 were \$60 000.
- Based on production and estimated reserves, \$15 000 was to be provided for amortisation of the mine.

On the basis of this information, write up the:

- a Stores Working account
- b Mine account
- c Mine Working account as it would appear in the ledger for the year ended 30 June 2008
- d Profit and Loss account as it would appear in the ledger for the year ended 30 June 2008
- e Income Statement for year ended 30 June 2008
- f Balance Sheet as at 30 June 2008.

**Solution**

Dr		State Mining Ledger		Cr
<b>Stores Working</b>				<b>No 2124</b>
2008			2008	
During year	Purchase of Stores	17 000	June 30	Stores Inventories
				3 000
				Mine
				7 000
				Mine Working
				7 000
		<u>\$17 000</u>		<u>\$17 000</u>
<b>Mine</b>				<b>No. 3207</b>
2008			2008	
June 30	Rolling Stock	795 000	June 30	Balance c/d
	Buildings and Equipment	198 000		1 067 000
	Surveyors' Fees	30 000		
	General and Administrative Expenses	37 000		
	Stores Workings	7 000		
		<u>\$1 067 000</u>		<u>\$1 067 000</u>
July 1	Balance b/d	1 067 000		
<b>Mine Working</b>				<b>No. 5102</b>
2008			2008	
June 30	Mining Wages	183 000	June 30	Inventories of Ore
	Stores Working	7 000		60 000
	Amortisation of Mine	15 000		Sales of Ore
	Profit and Loss (profit on mining)	5 000		150 000
		<u>\$210 000</u>		<u>\$210 000</u>
<b>Profit and Loss</b>				<b>No. 5103</b>
2008			2008	
June 30	General and Administrative Expenses	37 000	June 30	Mine Working (profit on mining)
	Interest on Mortgage	25 000		5 000
		<u>\$62 000</u>		Capital (loss transferred)
				57 000
				<u>\$62 000</u>

**State Mining**  
**Income Statement for year ended 30 June 2008**

	\$	\$
Sales		150 000
Less Cost of sales		
Mine wages	183 000	
Stores used	7 000	
Amortisation of mine	15 000	
	205 000	
Less inventories of ore	60 000	145 000
Profit on mining		5 000
Less General and administrative expenses	37 000	
Interest on mortgage	25 000	62 000
Net loss		\$57 000

**State Mining Co NL**  
**Balance Sheet as at 30 June 2008**

	\$	\$		\$	\$
<b>Current assets</b>			<b>Current liabilities</b>		
Cash at bank	69 000		Accounts payable		18 000
Accounts receivable	27 000		<b>Non-current liabilities</b>		
Stores on hand	3 000		Mortgage payable		500 000
Inventories of ore on hand	60 000	159 000	<b>Owner's equity</b>		
<b>Non-current assets</b>			Capital	750 000	
Property, plant and equipment			Less Net loss	57 000	693 000
Mine	1 067 000				
Less Accumulated amortisation	15 000	1 052 000			
		\$1 211 000			\$1 211 000

**Notes**

- 1 If there had been any inventories or stores on hand at the beginning of the period, they would have appeared on the debit side of their respective Working accounts.
- 2 All pre-production expenses are charged to the Mine account. Stores and general and administration expenses are treated in this way.
- 3 The Mine Working account is a profit-determining account and, as such, is a ledger account. However, the same information can be presented as a statement, set out in either narrative or account form.
- 4 Rolling stock and mine building equipment have the same life expectancy as the whole mine. They are therefore included in the Mine account.

## 20.10

Consider the following two situations:

- a a mine which has reached the stage of production
- b a mine which has not yet reached the stage of production.

Indicate how the following items are treated in each of the above situations:

Head office wages
Motor vehicles
Construction of shafts
Surveyors' fees
Mine buildings
Mine wages
Mine office wages

## 20.11

CD Jones has been operating a small mine that was purchased on 1 June as a going concern. A total purchase consideration of \$48 000 to cover the mine and \$4000 worth of ore inventories was paid in cash 24 hours later.

From the information provided, prepare a Mine Working account a Profit and Loss account, an Income Statement and a Balance Sheet at 30 June 2008.

Cash receipts		\$
June 1	Capital	50 000
14	Sales of ore	5 000
28	Sales of ore	6 000
Cash payments		
June 2	Vendor (purchase consideration)	48 000
4	Mine supplies expense	200
13	Mine shaft extension	2 000
	Office wages	400
14	Cartage outwards	500
27	Mine wages	2 100
	Office wages	400
28	Cartage outwards	500
29	Royalties paid	1 100

General Journal				
Date	Particulars	Folio	Dr \$	Cr \$
June 1	Mine Inventories Vendor (Purchase of mine and inventories.)		44 000 4 000	48 000

**Additional information**

- Amortisation of the mine account for the month was \$400.
- Inventories on hand at 30 June 2008, \$6000.

### 20.12

T Blackwood began a small mining operation on 1 August 2007. Development work was completed on 31 December 2007.

The following trial balance was extracted from the books on 30 June 2008. Prepare the Mine, Mine Working and Profit and Loss accounts and the Balance Sheet at 30 June 2008.

T Blackwood Trial Balance as at 30 June 2008		
Account	Debit \$	Credit \$
Capital		200 000
Clearing of mine site	40 000	
Mine buildings	80 000	
Mine shafts	75 000	
Mine wages	42 000	
Ore treatment costs	25 000	
Administrative expenses	15 000	
Selling expenses	5 000	
Sales of mine product		105 000
Accounts receivable	8 000	
Cash at bank	15 000	
	<u>\$305 000</u>	<u>\$305 000</u>

**Additional information**

- Inventories of ore on hand at 30 June 2008 were \$5000.
- Mine wages owing at 30 June 2008 were \$1000.
- Amortisation of Mine account based on production and estimated reserves was to be 10 per cent per annum.
- Administrative expenses amounting to \$5000 were regarded as pre-production expenditure.

### 20.13

The Red Hill Gold Mining Company Ltd was registered as a limited liability company on 1 July 2007. Its paid up capital is \$500 000 consisting of one million ordinary shares paid to 50c. The company took over an existing mine, paying the vendors \$150 000 in cash. On 30 June 2008, the books showed the following balances:

	\$
Ore treatment costs	29 600
Mine wages	82 575
Head office salaries	29 710
Insurance	2 140
Stores and explosives used	3 827
Sales of gold	237 040
Cash at bank	439 188

**Additional information**

- At 30 June 2008, wages owing amounted to \$770 and the value of gold on hand amounted to \$10 500.
- Amortisation of the mine based on production and estimated reserves was to be charged at 10 per cent per annum.
- A dividend of 4c per share on paid-up capital was to be provided for on 30 June 2008.
- Income tax of \$35 000 was to be provided for on 30 June 2008.

On the basis of this information, prepare:

- Mine Working, Profit and Loss and Retained Profits accounts for year ended 30 June 2008
- Balance Sheet as at 30 June 2008.

## Accounting for mining royalties

A **royalty** is a payment to the owner of an asset to allow that asset to be used by someone else to earn income. Royalties are paid to inventors and authors among others.

*A mining royalty is a payment to the owner of mineral rights to allow a mining enterprise to use an area of land for the purpose of mining.*

Usually mining royalties are paid to the government, as in most cases mineral rights are owned by the Crown. They may also be paid to private owners of the rights, such as indigenous peoples who hold land rights.

A royalty is normally calculated on the basis of production, for example, as a number of dollars per tonne of ore or mineral produced. Generally, it is paid on a regular basis (commonly yearly or half-yearly).

A typical General journal entry to record royalties would be:

General Journal				
Date	Particulars	Folio	Dr \$	Cr \$
Mar 31	Royalties State Government (Being royalties paid to the government on 20 000 tonnes at the rate of 5c per tonne.)		1 000	1 000

When the royalty is paid, the following entry is made:

General Journal				
Date	Particulars	Folio	Dr \$	Cr \$
June 30	State Government Cash at Bank (Payment of royalties.)		1 000	1 000

If royalties are brought to account and paid at the same time, it is possible to record this directly as a cash entry. This eliminates the need to both debit and credit the liability account for the state government.

Each year royalties are transferred to the Mine Working account as an expense by the following General journal entry:

General Journal				
Date	Particulars	Folio	Dr \$	Cr \$
June 30	Mine Working Account Royalties (Being balance of royalties expense transferred.)		1 000	1 000

In addition to paying royalties to the government or other owners of mineral rights, mining companies may have to make other payments to landowners, leaseholders or people who have discovered the mineral deposit. These payments usually take the form of royalties or rent based on production, or rent based on hectares used.

Realising that production may be rather small in the early years of a mine's life, the person or group receiving the royalty or rent may not be satisfied with the amount due in those years. In these circumstances, the **lease agreement** often provides for special conditions such as:

- **ground rent**—a regular fixed payment for the right to mine the land instead of, or in addition to, the royalty or rent payable based on production
- **minimum royalty or minimum rent**—a minimum amount of royalty or rent payable irrespective of tonnage produced. The owner of the land or mineral rights can never receive less than this minimum
- **short-workings**—the amount by which the royalties or rent calculated in the normal manner (according to production) fall short of the minimum royalty or rent payable under the agreement
- **recoupment**—the right of the mine operator to recover the short-workings of past years in subsequent years when royalties payable exceed the minimum royalty or rent. There is usually a time limit in the agreement as to how long this right of recoupment will last.

### Illustrative example 4

Brown Coal NL Co has obtained a mining lease from the state government for the purpose of mining coal. The company agreed to pay 2 cents per tonne, subject to a minimum royalty payment of \$20 000 per year.

Production for the first five years was as follows:

Year	Tonnes
1	600 000
2	800 000
3	1 000 000
4	1 500 000
5	2 000 000

Prepare journal entries to show the situation if a right of recoupment of short-workings is included in the agreement (for a period of four years).

The General Journal will appear as follows:

General Journal				
Date	Particulars	Folio	Dr \$	Cr \$
Year 1	Royalties State Government (Being royalty payable on 600 000 tones at 2 cents per tonne).		12 000	12 000
	Short-workings State Government (Being amount needed to make up maximum royalty).		8 000	8 000
	State Government Cash (Payment of royalties.)		20 000	20 000
	Mine Working Royalties (Being balance of expense account closed to Mine Working account.)		12 000	12 000
Year 2	Royalties State Government (Being royalty payable on 800 000 tonnes at 2c per tonne.)		16 000	16 000
	Short-workings State Government (Being amount needed to make up minimum royalty)		4 000	4 000

General Journal (continued)				
Date	Particulars	Folio	Dr \$	Cr \$
Year 3	State Government Cash (Payment of royalties.)		20 000	20 000
	Mine Working Royalties (Being balance of expense account closed to Mine Working account.)		16 000	16 000
	Royalties State Government (Being royalty payable on 1 million tonnes at 2c per tonne.)		20 000	20 000
	State Government Cash (Payment of royalties.)		20 000	20 000
Year 4	Mine Working Royalties (Being balance of expense account closed to Mine Working account.)		20 000	20 000
	Royalties State Government Short-workings (Being royalty payable on 1.5 million tonnes at 2c per tonne less short-workings recouped from excess above minimum royalty.)		30 000	20 000 10 000
	State Government Cash (Payment of royalties.)		20 000	20 000
	Mine Working Royalties (Being balance of expense account closed to Mine Working account.)		30 000	30 000
Year 5	Mine Working Short-workings (Being balance of short-workings unable to be recouped closed to Mine Working account)		2 000	2 000
	Royalties State Government (Being royalty payable on 2 million tonnes at 2c per tonne.)		40 000	40 000
	State Government Cash (Payment of royalties.)		40 000	40 000
	Mine Working Royalties (Being balance of expense account closed to Mine Working account.)		40 000	40 000

Note that the government can never receive less than the minimum royalty set out in the agreement. As productivity is small in the first two years, short-workings result. After the first year, the balance in the Short-workings account is \$8000. This is shown in the Balance Sheet, usually as an intangible asset. After years 2 and 3, the balance is \$12 000. In year 4, \$10 000 is recouped so \$2000 remains. This cannot be reduced any further as there is only a right of recoupment, in this case, for four years. This final \$2000 can never be recouped by the mine operator, so it is written off to the profit-determining (Mine Working) account by means of the final entry shown in the General journal in year 4. To help work this out, it might be advisable to prepare a Short-workings account.

Royalties in year 5 and subsequent years would be calculated according to production or the minimum royalty, whichever is the greater. No further entries regarding recoupment would be recorded.

If **no right of recoupment** of short-workings had been included in the agreement, there would have been no Short-workings account, and royalties payable for each of the years would have been:

Year	\$
1	20 000
2	20 000
3	20 000
4	30 000
5	40 000

Each of these amounts is simply calculated according to the tonnage produced that year or, where tonnages are insufficient, according to the minimum rent payable. The General journal entries each year are:

General Journal				
Date	Particulars	Folio	Dr \$	Cr \$
	Royalties State Government (For the royalty payable.)		xxx	xxx
	Mine Working Royalties (For the transfer of the expense to the Mine Working account.)		xxx	xxx

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### 20.14

Briefly define the terms:

- a mining royalty
- b short-workings
- c recoupment
- d minimum royalties

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### 20.15

Calculate the amount of royalty payable to the state government in the following situations and show the General journal entries necessary to record the royalties in the accounting records of the mining enterprises concerned:

Situation	Production (tonnes)	Rate (cents per tonne)	Minimum
A	500 000	2	Nil
B	2 000 000	2	\$20 000
C	1 500 000	5	Nil
D	1 500 000	5	\$100 000

Assume that no right of recoupment of short-workings is included in the agreements.

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### 20.16

E-Z Mines NL has signed an agreement to lease land from the traditional owners, the Robina people, for the purpose of mining. The Robina people are to be paid royalties of 1 cent per tonne of ore raised, subject to a minimum royalty or rent payment of \$50 000 per annum.

Production for the first four years was as follows:

Year	Tonnes
1	2 000 000
2	4 000 000
3	6 000 000
4	8 000 000

Prepare journal entries to show the situation if a right of recoupment of short-workings is included in the agreement for the first three years.

### 20.17

Using the information supplied in Question 20.16, but assuming that no right of recoupment of short-workings existed, prepare journal entries to show the situation each year.

### 20.18

A C Barry trading as Acbar Mining started 2007 with the following Balance Sheet. Show how this and the additional information would be recorded in the business's journals and ledgers, and how the information would be reported to the owner on 31 December 2007.

#### Acbar Mining Balance Sheet as at 1 January 2007

	\$	\$		\$	\$
<b>Assets</b>			<b>Liabilities</b>		
Inventories of ore on hand		95 000	State government (royalties payable)		20 000
Cash at bank		15 000	<b>Owner's equity</b>		
Mine	500 00		Capital		600 000
Less Accumulated amortisation	<u>80 000</u>	420 000			
Motor vehicles	100 000				
Less Accumulated depreciation	<u>20 000</u>	80 000			
Short-workings		10 000			
		<u>\$620 000</u>			<u>\$620 000</u>

#### *Additional information*

- Royalties on ore sold the previous year are paid each January.
- During the year, the business received \$580 000 from the sale of 290 000 tonnes of ore, and paid the following amounts:

	\$
Ore treatment costs	85 000
Mine wages	205 000
Administrative expenses	49 000
Stores purchased	16 000
Selling expenses	20 000
Mine development costs	50 000
State government (royalties)	20 000

- At the end of the year, stores on hand amounted to \$3000, ore on hand was valued at \$50 000 and wages of \$5000 were owing.
- After reassessing the impact of the additional mine development expenditure, it was decided that amortisation is to be allowed at 5 per cent per annum on all mine expenditure to date, and depreciation at 10 per cent per annum on motor vehicles is to be provided for.
- Royalties of 10 cents per tonne on ore sold are also to be provided for. The minimum royalty payable is \$20 000. This is the final year in which a right of recoupment exists.

## Accounting for restoration costs

Entities may incur restoration costs because these are imposed by contractual obligations or by legislation, or because an entity wishes to conform with best industry practice. AASB 6 Exploration for and Evaluation of Mineral Resources does not cover the situation with restoration costs, however, guidance can be obtained from AASB 137 Provisions, Contingent Liabilities and Contingent Assets.

In accounting terms there is a difference between recognising items in the accounts and disclosure. Recognition concerns what is to be accounted for in the accounts. Disclosure concerns what is to be reported in the financial reports. You should remember that there is a difference between recognition and disclosure. Items that are recognised do not necessarily have to be disclosed.

The following general points can be made:

- If restoration costs are imposed by contractual obligations or by legislation, that is, there is a liability that exists but it is of uncertain timing or amount, then a provision should be raised. This provision should be made for the best estimate of the expenditure required to settle the obligation. This would be accounted for in the books by raising a provision account.
- If there is an obligation that arises from past events and it is uncertain at this time whether it will eventuate or not, or if the amount of the obligation cannot be measured reliably, then a contingent liability should be disclosed. Contingent liabilities are not recognised in the accounts, because of their uncertainty, but they are disclosed.

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### 20.19 Financial reporting case

Obtain a copy of the financial report of Rio Tinto Ltd and write a brief report to management on the policies governing the accounting and reporting for restoration costs by the company.

# Review questions and activities

This chapter discussed the establishment of a mining enterprise (which prospects for, mines and sells minerals) as a sole trader, a partnership, a limited liability company or a no-liability company. It explained how a mine may go through a number of stages of development before the production stage is reached. The main books of record and account were described and the preparation of the final accounts and reports were illustrated. Particular attention was given to the Mine Working account in which profit or loss on mining is determined, and the payment of mining royalties to the government or other owners of mineral rights to allow the mining enterprise to mine the area.

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## 20.20 Chapter summary

Complete the following and you will have constructed a brief summary of the work on mining enterprises covered in this chapter:

- a In what way can the capital structure of a mining enterprise differ from other enterprises?
- b List the five stages through which a mine may have to go before it can sell its ores, minerals or metals.
- c What type of account is a Mine account?
- d As the mine is depleted when product is removed, through what account is its cost written off each year of its useful life?
- e List four possible books of record which may be kept by a mining enterprise.
- f To whom are mining royalties usually paid?
- g To what account would royalties expenses be transferred at the end of the accounting period?
- h What should be disclosed in the financial statements for restoration costs?

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## 20.21

To prepare the Mine and Mine Working accounts, it is necessary to understand the various stages of mine development. List and briefly describe the stages and state in which of the two accounts you would show these.

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## 20.22 Research assignment

The concept of Triple Bottom Line Reporting is one that has been embraced by many enterprises around the world, in particular many of the mining companies.

- a What does Triple Bottom Line Reporting mean?
- b Find two companies that present a Triple Bottom Line Report.
- c Print out the report.
- d Compare the information contained in each of these reports. List the similarities and differences.
- e Are these reports audited?
- f Do these reports complement the three traditional financial statements, or are they competitors to the three traditional reports?
- g Scan the Internet and find at least two articles on Triple Bottom Line reporting. Summarise the arguments contained in these articles.

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## 20.23 Research and communication

Excell Limited, a large overseas mining company, wishes to establish a new subsidiary in your state to undertake mining exploration over a wide area. Investigate the major costs that will be involved in obtaining a right to prospect for minerals, and the royalties that will be payable by the mining company if they do develop a mine to the production stage. Write a brief report on your findings to Excell.

## 20.24 Research and communication

Read the newspaper article 'Digging deep uncovers success' and answer the following questions:

### Digging deep uncovers success

Ken Talbot, the mining engineer who became a millionaire coal company owner, is now working to boost the value of Macarthur Coal three-fold, putting it in the ASX top 150. Stephen Wisenthal reports.

Coal entrepreneur Ken Talbot says few mine managers become mine owners because they are too comfortable staying where they are.

But the Brisbane-based mining engineer was different, choosing to put his safe job on the line after more than a decade of running coal mines for other people, and take charge of his own project.

He started his first mine in 1988, and in 1996 moved to another project, Coppabella, which formed the basis of the public float of his company, Macarthur Coal.

Now, a year after the float, he has a second mine set to start construction in a few months, and a third project well on the way to a go-ahead.

"There's very few people who make the transition from being a manager in the coal industry to being an owner," Talbot says.

"Mine managers and indeed everyone in my industry is fairly well paid, so the question is, are they too comfortable? The answer is that it's very easy when you're on \$200,000 or \$300,000 a year not to want to risk those things to make a start."

Talbot says that if those managers can, like him, brave the discomfort, their hands-on experience is great preparation for successfully starting on their own.

When he began working on the Jellinbah East mine in 1998, the Bank of America helped him find a joint-venture partner.

"The reason the joint-venture partner was prepared to support me was that I had a track record as a manager in the industry, not as an

entrepreneur or anything else, but primarily as a manager."

That direct experience, much of it originally gained at the Westcliff mine near Wollongong in NSW, remains important to him.

"I have an operational background, so that helps. When I go to the minesite, I hop in the machines and play with the toys, which is always a bit of fun."

He also credits his education, including bachelor and masters degrees in engineering from University of NSW, and, more recently, the owner-presidents' program at Harvard Business School.

Talbot floated Macarthur in July last year, retaining a 49 per cent stake while raising \$39 million. The shares have traded above the \$1 issue price ever since, peaking at \$1.78, and remaining in the black even after mining problems in the fourth quarter meant it would not meet its prospectus forecasts.

They rose 1c on Friday to \$1.30, valuing the company at \$167 million. Talbot says the production shortfall, which should be made up in the current year, was a rare blot on his record. "That's the first time I haven't made budget since 1988," he says.

He embarked on Coppabella at a time when the coal business was becoming deeply unfashionable.

Now, thanks to sweeping costcuts across the industry, the black stuff is back in favour.

"In the coal industry in the past year, there have been a number of capital raisings, Talbot says.

"All of those capital raisings have been done very successfully. The worm has turned."

He says that retaining almost half the shares in the company helped him when he talked to potential investors.

"When you go and raise capital, the first thing people say is 'have you got any hurt money in there?'"

Talbot has a salary of \$265,000 a year—matching the smallest pay cheque he could find at any other listed coal company in Australia but aims to gain his main reward from capital growth of his shareholding.

He said his mines have succeeded because of a new approach, which is now being used by bigger rivals from BHP Billiton on down.

"We have certainly taken an entrepreneurial approach against a traditional background," Talbot says. "There's a lot of people that have invested a great deal of money and had a very bad result."

New generation mines, including the Jellinbah project, the Burton mine started by Portman, and since sold to RAG, and more recently Coppabella, use capital more efficiently, he says.

"We look to get mines into operation quickly," he says. "It's better off stage by stage."

This means that Macarthur expects to build new mines for \$20 per annual tonne of production, compared with typical levels of \$100 two decades ago.

"To start a 4 to 5 million tonne or 10 million tonne project straight away requires a large customer commitment," Talbot says. "Back in the 1980s, when Oaky Creek was built [by MIM and Curragh mine was built [by Arco] that was the norm."

Talbot will have to more than triple Macarthur's market capitalisation to achieve the \$600 million required to get into the ASX top 150. If he can get the two new mines up and running, he'll be well on his way.

Source: Stephen Wisenthal, *Australian Financial Review*, 3-4 August 2002

- a How did Ken Talbot begin business?
- b At the time the article was written, Macarthur was trading above the share issue price of \$1. Go to the stock exchange pages in your local newspaper to complete the following:
  - i What type of company is Macarthur?
  - ii Is it currently still trading?
  - iii What is its current share price?
  - iv Is the company in the ASX's top 150 companies?
  - v List other mining companies which are in the top 150.
- c Outline the different approach to mining that Talbot adopts.

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### 20.25 Research and communication

CD Brown has discovered what appears to be a large gold deposit in the north of the state. CD approaches you as an accounting consultant in the mining area for advice on setting up a company to develop the mine. In particular, CD is unsure whether the company should be established as a limited liability company or a no-liability company. Investigate the situation and write a report giving your opinion.

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### 20.26 Communication

You work in an accounting firm dealing with many clients in the mining industry. A new accountant from an overseas country has recently taken up employment in your office. It is part of your task to train this person to assist you in dealing with such clients. In a role-play situation, discuss with this person why they will need to become aware of environmental issues and aboriginal land rights as matters of great importance in the mining industry.

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### 20.27

From the following information for The Ore Inspired Mining Co NL, you are required to prepare at 30 June 2008 the:

- a Mine Working account
- b Profit and Loss account
- c Balance Sheet.

The Ore Inspired Company was formed as a no-liability company in the 1990s. It is relatively small mining venture that in 1997 obtained control of a potential vanadium mining project at a very reasonable price. (Vanadium is a strategic metal used principally as an alloy to add strength to structural steel and steel used in pressure vessels such as pipes and tanks.) Exploration has now delineated a much larger ore body than originally expected, so the mine will now last much longer than the original five or six year estimate. Open-cut production methods mean that costs are low, and high profits can be expected from this year on.

**The Ore Inspired Mining Co NL**  
**Balance Sheet at 30 June 2007**

	\$	\$		\$
<b>Assets</b>			<b>Liabilities</b>	
Cash at bank		10 000	State government (royalties payable)	50 000
Inventories of ore		20 000	Mortgage	48 000
Mine	500 000			
Less Accumulated Amortisation	<u>100 000</u>	400 000	<b>Owner's equity</b>	
Vehicle	<u>10 000</u>		Capital	380 000
Less Accumulated Depreciation	<u>2 000</u>	8 000		
Short-workings		<u>40 000</u>		
		<u>\$478 000</u>		<u>\$478 000</u>

**Additional information**

- On 1 July 2007, \$100 000 was received as additional capital.
- Production began on 1 July 2005.
- The following amounts were paid for during the year:

	\$
B Ogden	50 000
Ore treatment costs	80 000
Selling expenses	10 000
Administration expenses	5 000
Mine wages	4 000
Rehabilitation expenses	2 000

- The royalty agreement provided for a minimum payment of \$50 000 per year. Production year 1: 1 000 000 tonnes; year 2: 2 000 000 tonnes; year 3: 3 000 000 tonnes. Royalties are paid at 2c per tonne. There is a right of recoupment for four years. Royalties are recorded at 30 June every year but the state government is not paid until August of that year.
- Inventories of ore at 30 June 2008 are \$30 000.
- The vehicle is written off over 10 years, the mine is amortised on a production basis and has estimated reserves of 27 million tonnes at 30 June 2008.
- Accruals at 30 June 2008; mine wages \$2000, administration expenses \$2000.
- Prepayments at 30 June 2008; selling expenses \$1000.
- Sales of ore \$1 000 000—50 per cent was for cash and 50 per cent on credit, and was owing on balance day.
- Interest is charged on the mortgage at 20 per cent.

## 20.28

Prepare a Mine Working account, a Profit and Loss account and a Balance Sheet at 30 June 2008 from the following information:

<b>Tento Ltd</b>		
<b>Trial Balance as at 30 June 2008</b>		
<b>Account</b>	<b>Debit</b>	<b>Credit</b>
	<b>\$</b>	<b>\$</b>
Capital		1 725 000
Inventories of ore 1.7.2007	205 000	
Cash at bank	515 000	
Accounts payable		110 000
Mine development	2 000 000	
Accumulated amortisation		200 000
Sales of ore		3 500 000
Selling Expenses	280 000	
Mine wages	1 750 000	
Administrative expenses	350 000	
Stores working	45 000	
Ore treatment	390 000	
	<u>\$5 535 000</u>	<u>\$5 535 000</u>

### ***Additional information***

- Inventories of ore at 30 June 2008 are \$370 000.
- Amortisation of mine development is to be 10 per cent of cost.
- Royalties are payable on the basis of 2 per cent of sales.

## 20.29

After developing a mine, C L Willard began commercial mining operations on 1 October 2007, and the following trial balance was extracted from the books on 30 June 2008. On the basis of this information, prepare the:

- a Mine account
- b Mine Working account
- c Profit and Loss account
- d Balance Sheet as at 30 June 2008.

**C L Willard**  
**Trial Balance as at 30 June 2008**

Account	Debit \$	Credit \$
Capital		190 000
Construction of access to mine	15 000	
Mine buildings	50 000	
Mine shafts	45 000	
Mine machinery	25 000	
Fuels and oils (used during mining)	1 500	
Mine wages	48 000	
Royalties paid	1 000	
Ore treatment costs	10 500	
Administrative expenses	22 000	
Subsidies received (1 July 2007)		20 000
Sales of ore		120 000
Surveying of mine site	1 800	
Explosives (used during mining)	500	
Transport costs (to market)	7 000	
Cash at bank	102 700	
	\$330 000	\$330 000

***Additional information***

- Inventories of ore on hand at 30 June 2008 are \$4000.
- Mine wages owing are \$1500.
- Provide for amortisation of Mine account, given that production for the nine months was 7.5 million tonnes and that there are estimated reserves at the end of this period of 92.5 million tones.
- Administrative expenses of \$10 000 are considered pre-production expenses..

**Extra Questions and Activities**

*Refer to the Companion Website for extra questions on Chapter 20. These questions will include multiple choice, true/false and a selection of other questions and activities.*

## Endnote

- 1 In practice, the names and numbers of these accounts vary considerably. Other common account titles in this category include: Mine Property, Plant and Equipment; Mine Leases or Tenements; and Exploration, Evaluation and Development Expenditure.