TR 97/D14 - Income tax: miscellaneous trading stock issues affecting the general mining, petroleum mining and quarrying industries

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Draft Taxation Ruling

Income tax: miscellaneous trading stock issues affecting the general mining, petroleum mining and quarrying industries

other Rulings on this topic

TR 92/16; TR 93/3; TR 93/33

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What this Ruling is about

Class of person/arrangement

1. This Ruling deals with a variety of taxation issues involving trading stock, with its main focus being on the calculation of 'cost' of trading stock on hand for the purposes of section 70-45 of the *Income Tax Assessment Act 1997* (the new Act). It is directed specifically to the general mining, petroleum mining and quarrying industries. In particular, the Ruling deals with:

(a) the meaning of trading stock;

(b) the stage in the extractive process when ore or quarried material first becomes trading stock;

(c) the end of the production process and the obtaining of saleable product;

(d) the measurement of the quantity of trading stock;

(e) the value of trading stock;

(f) the calculation of 'cost' of trading stock using the absorption costing method;

(g) the Commissioner's view on the correct treatment of certain costs;

(h) the allocation, accumulation and apportionment of costs; and

(i) the valuation of joint products and by-products.

Ruling

2. Trading stock includes raw materials and work in progress. For a mining or quarrying business, raw materials include those materials that are expected to be converted by further processing into the saleable product, e.g., broken ore, natural gas.

3. Ore or quarried material that is to be converted by further processing to a saleable product first becomes trading stock on hand when it is severed from the land and its quantity can be reliably measured.

4. The production process ends when saleable product is first stockpiled. Saleable product is product that is in a saleable condition having regard to the product sold in the ordinary course of the taxpayer's business.

5. The quantity of trading stock on hand is to be accurately measured and all trading stock and work in progress accounted for.

6. The 'cost' of trading stock on hand is to be calculated having regard to absorption costing accounting principles but excluding any costs which have not been incurred and any costs which are too remote from the production process.

7. The rate of absorption is calculated by dividing the fixed production overhead costs for the period by the number of units produced, having regard to a taxpayer's normal operating capacity.

8. The three major cost elements that have to be absorbed into the calculation of 'cost' are direct material costs, direct labour costs and production costs. The following specific costs have to be absorbed:

- supplies, e.g., explosives;
- health and safety costs relating to mine workers;
- mine amortisation charges;
- depreciation charges on assets used in production;
- some general and administrative costs;
- production royalties;
- transport costs incurred during the course of production;
- certain payroll fringe benefits.

9. The following costs do not have to be absorbed into the 'cost' of trading stock:

- exploration and evaluation costs;
- indirect general and administrative costs;

- restoration costs;
- petroleum resource rent tax;
- transport costs incurred in transporting the finished product;
- waste disposal costs.

10. Mine amortisation and depreciation charges are absorbed using rates calculated in accordance with accounting standards rather than rates allowed for taxation purposes.

11. Joint capital and/or revenue costs relating to different phases of operation, areas of interest or various products are to be allocated, accumulated and apportioned on a logical and reasonable basis.

12. Production costs relating to joint products and by-products are to be apportioned based on the ability of each product to contribute to sales revenue.

Date of effect

13. This Ruling applies only from and including the 1997-98 income year unless a taxpayer chooses to apply it to earlier income years. However, the Ruling does not apply to taxpayers to the extent that it conflicts with the terms of a settlement of a dispute agreed to before the date of issue of the Ruling (see paragraphs 21 and 22 of Taxation Ruling TR 92/20).

Explanations

Meaning of trading stock

14. The term trading stock is defined in section 70-10 of the new Act to include 'anything produced, manufactured or acquired for purposes of manufacture, sale or exchange'. Trading stock of a mining business comprises those tangible assets that are held for sale in the ordinary course of that business.

15. The High Court of Australia explained in *FC of T v. St Hubert's Island Pty Ltd* 78 ATC 4104; (1978) 8 ATR 452 that the purpose of the definition of 'trading stock' in the *Income Tax Assessment Act 1936* (the old Act) was to ensure that not only finished goods but also property (at any rate moveable property) which is intended to be worked on or even used up in the process of manufacture will fall within the meaning of the words 'trading stock'.

16. The High Court's decision makes it clear that raw materials and work in progress are to be regarded as trading stock. For a mining or quarrying business, raw materials include those materials that are expected to be converted by further processing into the saleable product, e.g., broken ore, natural gas.

The stage in the extractive process when ore first becomes trading stock

17. Taxation Ruling TR 93/3 discusses the stage when ore first becomes trading stock on hand of a gold miner. The Ruling states that the trading stock of a taxpayer in the business of gold mining includes not only the refined gold ultimately produced but also any partly refined products or concentrates, and any stockpiles and dumps of mined ore on hand or in transit. The ore is to be treated as trading stock on hand as soon as it is severed from the land.

18. The Ruling says that the approach it adopts is consistent with Approved Accounting Standard ASRB 1022: 'Accounting for the Extractive Industries' (ASRB 1022). This Standard requires inventories to be brought to account at the earliest stage at which materials that are to be converted by further processing to saleable product can be measured with reliability. This requires the quantities of such materials to be able to be determined by physical measurement or reliable estimate.

19. Therefore, by saying that ore is to be treated as trading stock on hand as soon as it is severed from the land, TR 93/3 is assuming that the ore is entirely made up of ore that is expected to be converted by further processing into the saleable product, i.e., gold, and furthermore, the quantity of that ore that has been severed from the land by, say, blasting, can be reliably measured. In these circumstances the ore first becomes trading stock immediately upon blasting.

20. Whether ore that is blasted is trading stock immediately upon blasting is a question to be determined in the light of the facts of each case. The quality and future use of the ore, as well as the ability to accurately measure its quantity, are relevant factors.

21. Care has to be exercised in drawing any firm conclusions from *Case No B71* 2 TBRD 323; 2 CTBR (NS) *Case 36*. In this case the Taxation Board of Review held that coal did not become trading stock prior to its being loosened by explosive charges. However, the Board did not say that mere blasting caused the coal to become trading stock.

22. In *Case No B71/Case 36*, the taxpayer operated an open cut coal mine and had removed overburden and exposed a thick seam or undivided mass of coal. Before the coal could be removed by steam-

shovel, it had to be blasted by explosives. The object was to crack the coal face to loosen it but not to let the whole of the coal face fall with the blast. The steam-shovel worked more efficiently where the major portion of the coal face was allowed to 'hang up'. While not deciding the exact time the coal became trading stock, the Board of Review held that the coal did not become trading stock until severed from the land, and such severance did not occur prior to its being loosened by explosive charges.

23. However, in some mining situations, mere blasting loosens both ore and waste product and more work is needed before the ore that will be further processed can be reliably measured. For example, in an open pit mine, the cuttings produced when blastholes are drilled are often sampled to give an accurate picture of the ore in a particular area to be blasted. Once the ore is blasted, the mine geologist or a technician will sample the muck pile. These results are then used to direct the shovel or loader operator in loading trucks. The muck will be designated either as high or low grade ore or waste and the truck driver will take the muck to the appropriate place.

24. In the above example, if the taxpayer decided to process further only high grade ore, that ore is not trading stock on hand until it is picked up and separated from the low grade ore and waste product. This separation would occur at the time the high grade ore is shovelled onto a haulage truck. Only at this point in time can it be said that materials that are to be converted by further processing to a saleable product are capable of being reliably measured.

25. The facts of each case need to be considered in determining the stage when ore first becomes trading stock. A sensible commonsense approach should be taken, similar to that taken by Sir Raymond Evershed MR in respect of the time sand and gravel first became trading stock of a merchant, in *Stow Bardolph Gravel Co Ltd v. Poole (HM Inspector of Taxes)* (1954) 35 TC 459. At 473, Sir Raymond said:

> ' ... the sand and gravel, part of the earth itself, which was the subject of the contract here in question and which I think only could sensibly become part of the stock-in-trade of this gravel merchants' business **when it had in the true sense been won, had been excavated and been taken into their possession**.' (emphasis added)

The end of the production process and the obtaining of saleable product

26. It is usual for the production process to end when saleable product is first stockpiled. The trading stock is then 'on hand' in the

relevant sense and the value of that trading stock on hand can be ascertained. In valuing trading stock, Approved Accounting Standard ASRB 1019: 'Measurement and Presentation of Inventories in the Context of the Historical Cost System' (ASRB 1019) recommends the inclusion of other production costs ascertained in accordance with the absorption costing method, but excluding costs which relate to 'selling and distribution to customers'.

27. Saleable product is that product which is in a saleable condition having regard to the type of product sold in the ordinary course of the taxpayer's business. The point in time at which trading stock becomes saleable product varies depending on factors such as the type of product involved, the type of market in which the product is sold and any further production processing required.

28. However, within the mining industry it is not uncommon for goods to be transported by road or rail from the mine site to a port hundreds of kilometres away. Sometimes, further processing is conducted at the port such that the goods only become saleable product once that further processing has taken place.

29. If no further processing occurs at the port it means that the goods were saleable product at the time they left the mine. The goods could have been first stockpiled at or near the mine site for considerably less expense than that involved in transporting them to a port several hundred kilometres away. This suggests that the predominate purpose for incurring the transport costs is to facilitate their sale or distribution to customers. In these circumstances, the production process ceases at the mine site immediately prior to loading the saleable product onto the road or rail transport facility.

30. This accords with the taxation treatment of costs incurred in transporting trading stock to a new location which was held by the Full High Court in *Lister Blackstone Pty Ltd v. FC of T* 76 ATC 4285; (1976) 6 ATR 499 to be revenue costs because the removal was for the purpose of the more economical utilisation and distribution of that stock.

31. However, where further processing takes place at the port to bring the goods into a state in which they are to be sold, the production process is continuing at the port. Cost incurred at the port together with any transport cost in getting the goods to the port are part of the cost of production incurred in getting goods into the condition and location where they first become saleable product.

32. Using coal as an example, the normal production process includes crushing, screening, blending, separation, froth flotation and dewatering to get raw coal to the stage where it is a saleable product. If any of these processes are carried out at the port, the production

process is continuing at the port and the coal is not saleable product until such processing is complete. However, where the coal is already saleable product and it is washed to maintain that form, the production process is considered to have already ceased and the costs associated with washing the coal would not have to be absorbed.

33. The question whether blending at a port is part of the production process is a question of some difficulty and requires a careful analysis of the particular facts of each case. Two cases with different factual situations illustrate the type of inquiry that is required. The cases are *FC of T v. Hamersley Iron Pty Ltd* 81 ATC 4582; (1981) 12 ATR 429 and *Re Abbot Point Bulkcoal Pty Ltd and Another and Collector of Customs* (1991) 14 AAR 384.

34. In *Hamersley Iron* the taxpayer extracted different grades of iron ore from two mines, one at Mount Tom Price and the other at Paraburdoo, and railed the ore to the port at Parker Point. Ores from the two mines were blended at Parker Point to produce ore with a standard level of iron content. It was this blended ore that was the saleable product.

35. Of particular relevance in *Hamersley Iron* was the part played by the boom type stacker at Parker Point. The stacker was a large machine mounted on rails beside the stockpile area. Its boom carried a conveyor belt, and by means of it, the stacker could drop materials from the end of the conveyor belt onto the top of a pile constructed in the stacking area.

36. Upon arrival by rail at the port, ore from each mine was amalgamated into one large stockpile. By moving along the rails, the stacker was able to distribute a batch of materials evenly over the stockpile. This method of blending was done with the obvious aim of distributing materials of different characteristics as evenly as possible throughout the stockpile, so that *in toto* the proportions of the various minerals in the stockpile would be as close as possible to those aimed at.

37. For trading stock purposes the production process ended after the ore was stockpiled by the stacker at Parker Point. The blending operation performed by the stacker was an integral part of the production process to obtain saleable product, i.e., product which the taxpayer sold in the ordinary course of its business.

38. It is true that in *Hamersley Iron* further blending was performed by the use of a bucket wheel reclaimer when the iron ore was being loaded onto ships for sale to customers. However, for trading stock purposes, the cost of loading trading stock onto a ship as part of its sale to a customer is a selling or distribution expense rather than a production cost.

39. In the *Re Abbot Point Bulkcoal* case, coal from two mines, one at Collinsville and the other at Newlands, was transported to the Abbot Point coal export facility. However, upon arrival at the port at Abbot Point, the coal from each mine was stockpiled separately, i.e., not amalgamated into one large stockpile as in *Hamersley Iron*. In fact, coal from different areas of each mine, having different ash content, was stockpiled separately.

40. Blending did take place at Abbot Point but this only occurred at the time of loading the coal onto ships for sale to customers. Examples were given of taking Newlands coal from different stockpiles which had varying ash contents to produce a product whose overall ash content met customer specifications.

41. The cost of blending which takes place at the time of loading trading stock onto a ship as part of a sale to a customer is, for trading stock purposes, a selling or distribution expense. It would follow that a taxpayer in the same situation which existed in the *Re Abbot Point Bulkcoal* case would have saleable product on hand prior to it being loaded onto the ship. In fact, the product would be saleable product when it left the mine site and the production process would have ceased at the time it was first stockpiled at the mine site or, if not stockpiled, then at the time it was loaded onto the train for transport to the port.

Measurement of trading stock

42. It is important that all trading stock is accounted for. In a typical integrated mining operation this would include:

(a) all severed ore that is to be converted by further processing to saleable product provided it can be measured with reliability. Such severed ore may be either underground or in an open pit;

(b) ore or metal in circuit during the extraction process, e.g., gold in the carbon pulp plant, mineral sands during the separation process, etc.;

(c) crushed ore after it has been through the crushing plant or mill;

(d) concentrate and matte in the process of being smelted or refined;

(e) materials in transit between production processes; and

(f) stockpiles of saleable product.

43. The methodology adopted by taxpayers to measure physically the quantity of trading stock must recognise such factors as the

compaction factor that affects large stockpiles, the moisture content of many materials, the presence of trading stock in enclosed vessels or pipes (often with varying degrees of density) or assay factors, etc.

Valuation of trading stock

44. Section 70-45 of the new Act states that a taxpayer must elect to value each item of trading stock on hand at the end of an income year at its cost or its market selling value or its replacement price.

45. When determining 'cost' of trading stock under section 70-45, the exercise is not concerned with obtaining the true reflex of the profit or gains of the taxpayer; what is required to be determined is a true reflex of its cost, its market selling value or its replacement price.

Phillip Morris - the case

46. The leading case on valuing trading stock where a taxpayer is using 'cost' is *Phillip Morris Ltd v. FC of T* 79 ATC 4352; (1979) 10 ATR 44. This case involved a cigarette manufacturer and the court had to determine the 'cost' of finished and partly finished goods on hand at the end of the year of income.

47. The taxpayer had valued its trading stock using the true direct cost method. Under this method, the costs ascribed to the trading stock consisted only of the costs of materials and the wages of those employees who moved or performed operations on those materials in the course of the manufacturing process.

48. At the hearing there was no argument about variable production overheads. These are costs of production which vary directly, or nearly directly, with the volume of production, e.g., factory light and power, the taxpayer having conceded these costs prior to the hearing.

Phillip Morris - the decision

49. In its decision, the court focused on the treatment of fixed factory overhead costs, i.e., costs of production that remain relatively constant from financial period to financial period irrespective of variations, within normal operating limits, in the volume of production. Examples are rent, insurance, property taxes, depreciation and supervisory salaries.

50. The court decided that a proportion of fixed factory overhead costs also had to be included as part of the 'cost' of trading stock.

Phillip Morris - the court's reasons

51. The court decided that a proportion of fixed factory overhead costs had to be included as part of the 'cost' of trading stock because the statutory meaning of 'cost price' in subsection 31(1) of the old Act meant its actual or true cost.

52. The court rejected the direct costing method because it regarded it as producing a value for 'cost' that was a measure of the gains of the business rather than a value that accurately reflected what the article of trading cost had cost the manufacturer to make.

53. The court was not concerned with identifying costs that would be useful for decision-making by managers, investors and other interested parties. Rather, it favoured the approach that inventories should carry a fixed cost component because both variable and fixed costs are necessary to produce goods.

Phillip Morris - relevance of accounting principles and practice

54. Jenkinson J quoted with approval from the judgment of Mason J in the *St. Hubert's Island* case, where his Honour pointed out that because of the express statutory provisions contained in sections 28 to 36 of the old Act (the same ideas are expressed in Subdivision 70-C of the new Act), accounting principles and practice cannot prevail over them. However, he then went on to say, at ATC 4357; ATR 48:

> 'I shall assume, without deciding, that the legal conception of what is required, or permitted, by sec. 31(1) when a manufacturer exercises his option to value an article of trading stock at cost may be enlarged or varied by proof of relevant changes in accounting principle or practice.'

55. This means that while the meaning of 'cost price' in subsection 31(1) of the old Act and 'cost' in the new Act is a legal concept, the law will be guided by accounting principles and practice in determining how 'cost' is to be calculated.

Phillip Morris - meaning of cost

56. In some quarters, it has been suggested that the calculation of the cost of trading stock is part of ascertaining the true reflex of a taxpayer's assessable income for a particular year of income. This is not so and such a proposition was rejected in *Phillip Morris*, with Jenkinson J saying, at ATC 4360; ATR 51:

> ' ... in my opinion the conception which is expressed in sec. 31(1) by the words "cost price" is not in itself any such a measure of gain or loss. The statutory conception of "cost price"

> or, in the case of a manufacturer's stock, "cost" is merely a measure of a value at a particular time which does not purport itself to measure any gain. The gain or loss is to find expression only in the amount by which the aggregate of closing stock exceeds or falls below the aggregate of opening stock values.'

Further, at ATC 4360; ATR 52, Jenkinson J said:

> 'The concept expressed by the words "cost price" in sec. 31(1) in my opinion is, in its application to an article of trading stock manufactured by a taxpayer, directed to ascertainment of the expenditure which has been incurred by the taxpayer, in the course of his materials purchasing and manufacturing activities, to bring the article to the state in which it was when it became part of his trading stock on hand.'

57. His Honour referred to 'cost price' in subsection 31(1) of the old Act as being calculated by ascertaining 'the expenditure which has been incurred by the taxpayer'. He repeated this requirement in relation to amounts of sick pay, tea money and holiday pay when he specifically said only **payments made** to an employee in the year of income should be taken into account (ATC 4362; ATR 54).

58. Thus, the meaning of 'cost price' in subsection 31(1) of the old Act and 'cost' in section 70-45 of the new Act, is directed towards ascertaining the actual historical cost of an article of trading stock. In this respect, it can differ from the value of trading stock for accounting purposes which can take into account items that have not been incurred, such as: provisions for restoration costs, depreciation based on upward asset revaluation figures, etc.

Absorption costing - degree of absorption

59. The identification of the actual costs that go to make up the 'cost' of trading stock for the purposes of section 70-45 of the new Act involve questions of degree. At what point should the line be drawn between those costs which are allocated (absorbed) and those which are expensed outright (i.e., treated as period costs)?

60. A critical issue in deciding what costs should be absorbed into the value of trading stock is that of 'remoteness'. Some costs are too remote in time to be absorbed, e.g., provisions for restoration costs. Likewise some costs are too geographically remote, for example, only amortisation charges that relate to the particular area of interest form part of the cost of production.

61. It is also important to understand that only production costs are absorbed. Costs which relate to general administration, finance,

marketing, selling and distribution to customers are too remote from the production of the saleable trading stock to be absorbed.

62. Manufacturing costs to be taken into account are limited to those costs incurred in the course of manufacturing activities associated with changing the state or condition of the article to be traded.

Absorption costing - rate of absorption for fixed production costs

63. As fixed production costs have to absorbed as part of 'cost' for the purposes of section 70-45, it is necessary to have some means by which the fixed production costs relating to that period can be attached on a reasonable basis to the trading stock on hand at the end of the period. This is done by using a fixed production absorption (hence the name absorption costing) rate:

$$\frac{\text{Fixed production overhead costs for the period}}{\text{Number of units produced.}}$$

64. As 'cost' for the purposes of section 70-45 means historical cost, only fixed production overhead costs that have actually been incurred are included in the numerator. The reference to 'for the period' is a reference to the accounting concept of allocating costs incurred to the particular period to which they relate. Thus, the relevant proportion of a production overhead cost that had been prepaid in a previous year of income would be absorbed into the 'cost' of an item of trading stock still on hand at the end of a subsequent period.

65. The denominator, i.e., the number of units produced, is calculated having regard to the taxpayer's normal operating capacity. This is in accordance with accounting standards and ensures that the absorption costing method does not produce distorted results where there is idle capacity in any particular year of income. Thus, costs attributable to strikes, business turndown, etc., are not absorbed.

Absorption costing - 'cost' of trading stock

66. There are three major cost elements that have to be absorbed when calculating the 'cost' of trading stock for the purposes of section 70-45 of the new Act. They are:

> **(1) Direct Material**. This includes the cost of all raw material which is an integral part of the finished product and which may be conveniently assigned to specific products.
>
> Most mining businesses do not purchase raw material to sell; rather, they process their own ore into the finished product. However, some taxpayers may purchase ore or minerals to blend

with their own products to form the finished product. In these circumstances the cost of purchasing that ore or minerals would be taken into account in calculating the 'cost' of trading stock. Such costs would include, not only the actual invoice costs but other costs including any duties and taxes, inward transport costs, etc.

(2) Direct Labour. This is the cost of remuneration paid to employees and sub-contractors that can be identified in an economically feasible way with the finished products. As long as the employee or sub-contractor performs tasks that can be identified specifically with obtaining ore, petroleum or quarry materials and converting it into the finished product to be sold, the cost of remuneration is a direct cost. The word 'direct' as it is used in absorption costing, embraces all those cost items that can be conveniently identified with the production of saleable product.

The costs to be absorbed are those direct costs which relate to the remuneration paid for the performance of work done in producing the trading stock.

Examples of direct labour costs are remuneration paid to miners involved in extracting ore, petroleum and quarry materials including operators of drills, mucking machines, continuous miners, bulldozers, loaders, haulage trucks, giant shovels, conveyor belts, hoists, etc. In addition, remuneration paid to those involved in processing such as crusher operators, ball mill operators, flotation and solution tank operators, furnace operators and refinery operators would also be direct labour costs.

(3) Production Costs. These are all production costs other than direct material and direct labour. Other terms to describe this category include production burden, indirect production costs, production overhead and production expenses. The term 'production' is defined in ASRB 1022 to mean 'the day to day activities directed to obtaining saleable product from the deposit or field on a commercial scale and includes extraction and any processing prior to sale'. There are two major types of production costs:

> **(a) Variable Production Costs**. These are costs of production which vary directly, or nearly directly, with the volume of production. Examples include supplies, health and safety costs relating to mine workers, mine amortisation charge, depreciation (if based on output), some administration expenses, production royalties,

relevant transport costs. Also included are indirect labour costs.

Indirect labour costs are any other labour costs associated with production other than direct labour. They are labour costs that are impossible or impracticable to trace to a specific product. Examples are remuneration relating to employees and sub-contractors who are engaged in a host of service trades such as blasters and rock bolters, pipe fitters who string pipes that supply water and compressed air to the drills, electricians, carpenters, tramming crews, maintenance crews, and so on.

Other indirect labour costs would involve technical and professional staff whose duties encompass such things as sampling, surveying, drafting and planning. This would include mining, chemical, industrial and metallurgical engineers, assayers, physicists and geologists who are involved in such duties as mapping, assaying and analysing samples for the control of the mining and milling operations. Also included would be production supervisors and the security guards at the mine or quarry gate.

Payments actually made for on-costs such as holiday pay, sick pay, tea money, long service pay, workers' compensation, superannuation, payroll tax and certain fringe benefits for both direct and indirect labour personnel are also variable production costs.

(b) Fixed Production Costs. These are costs of production which remain relatively constant from financial period to financial period irrespective of variations, within normal operating limits, in the volume of production. Examples are rent, insurance, property taxes and depreciation (if on a time basis).

Absorption costing - treatment of certain costs

67. The Commissioner's views on the need to absorb certain costs that are specific to taxpayers carrying on mining, petroleum or quarrying businesses are set out in the following paragraphs.

Exploration and evaluation costs

68. Costs incurred on exploration are directed towards the discovery of reserves while costs incurred during the evaluation stage are related

to proving the technical feasibility and commercial viability of the reserves.

69. As these costs are incurred before any decision to mine is taken, they are not related to actual production and do not have to be absorbed into the calculation of 'cost' of trading stock.

Mine amortisation charges

70. Capital expenditure which has a direct nexus with the production process is to be amortised on a production output basis having regard to economically recoverable reserves. These amortisation charges form part of the cost of production and have to be included in the calculation of 'cost' of trading stock.

71. The capital expenditure that has a direct nexus with production is 'development' expenditure that relates to the 'area of interest' from which the trading stock was extracted. The terms 'development' and 'area of interest' are defined in ASRB 1022.

72. 'Development' means the establishment of access to the deposit or field and other preparation for commercial production and includes shafts, underground drives and permanent excavations, roads and tunnels, advance removal of overburden and waste rock, and drilling of oil or natural gas wells. Also included would be costs of acquiring a mining or quarrying right or production licence in respect of the area of interest, as well as costs of acquiring mining or prospecting information relating to an operating mine, quarry or oil field.

73. 'Area of interest' means an individual geological area which is considered to constitute a favourable environment for the presence of a mineral deposit or an oil or natural gas field, or has been proven to contain such a deposit or field. Once a decision to mine is taken, the area of interest is usually defined as the mineral deposit or the oil or natural gas field constituting the economically recoverable reserves.

74. Therefore, the cost of developing the particular mine or deposit, or separate oil or gas field which produces the trading stock, must be amortised and included in the calculation of 'cost' of trading stock.

Mine amortisation charge - tax or accounting rates

75. The calculation of 'cost' of trading stock for the purposes of section 70-45 is about ascertaining the actual historical cost of each item of trading stock. It is not about calculating a true reflex of income nor is it about offsetting tax deductions. The tax deductibility or otherwise of a particular cost is not a relevant consideration in

determining whether or not it should be included in the calculation of 'cost' of trading stock.

76. The mine amortisation charge applicable to exploration, evaluation, development and construction costs calculated in accordance with ASRB 1022 is the rate which should be used in calculating 'cost' of trading stock. This rate more accurately reflects the actual historical cost of the trading stock than the write-off periods allowed for allowable capital expenditure under the taxation laws.

77. Under ASRB 1022, the amortisation rate is determined on a production output basis unless, in the particular circumstances, a time basis is more appropriate. The basis of amortisation adopted by a taxpayer must be applied consistently from year to year.

78. The circumstances where it would be appropriate to determine an amortisation rate on a time basis is where production is limited by time, as it would be under a fixed-period tenure. However, in most cases, use of the production output basis is more appropriate because it takes into account variations in the production rate.

79. Under the production output basis, production costs are written-off by the proportion that the ore extracted during the year bears to the total economically recoverable reserves. An acceptable refinement of this method uses units of recoverable metal rather than ore. While the ore extracted during the year is known, this method requires an estimation to be made of the economically recoverable reserves.

80. It is appropriate for taxpayers to limit ore reserve figures to proven and probable ore reserves and, for the purposes of determining the existence of economically recoverable reserves, to take into account future costs that will be necessary to develop all the reserves in the proven and probable category.

81. Proven ore reserves are those reserves where the geological limits of the ore body are definitely known and the chances of failure of the ore to reach those limits is so remote as not to be an element in the practical planning of mine operations. Probable ore includes extensions near at hand to 'proven ore', where conditions are such that ore will probably be found but the extent and limiting conditions cannot be defined as precisely as for 'proven ore'. For example, 'probable ore' may include ore that has been cut and identified by drill holes too widely spaced to ensure continuity.

82. Estimates of ore reserves are normally made at least annually by qualified staff members of mining entities. Information about the characteristics of an ore body tends to expand as the deposit is developed. Expectations in relation to future metal prices and productions costs also vary as a result of changes in economic and

technological factors. Consequently, estimates of economically recoverable reserves may fluctuate from time to time during the life of a mine.

Township costs

83. Infrastructure costs relating to the construction of housing and amenities for the workforce are too remote from the manufacturing process to be absorbed into the calculation of 'cost' of trading stock. They are not costs which are incurred in the course of manufacturing activities and associated with changing the state or condition of the article being produced.

84. These township costs are incurred for the purpose of attracting personnel to the mine rather than in the manufacturing activity. Moreover, there is a practical difficulty in apportioning their cost to the output from a particular mine, quarry or field. At the time the township is constructed the full extent of the deposit, the number of mines to be developed or the expansion of mining into adjoining areas is usually not known. The case of *Mount Isa Mines Limited v. FC of T* (1955) 10 ATD 423 well illustrates the point - in that case, township costs were incurred in 1926-27 to provide accommodation and amenities for a workforce to establish a new mine, a mine which is still in operation today.

85. However, to the extent that water, gas or electricity facilities are consumed in the mining or quarrying manufacturing activities, a relevant proportion of their costs has to be recognised in calculating the 'cost' of trading stock.

Treatment of depreciable assets

86. ASRB 1022 states that construction costs that represent the costs of facilities in the nature of depreciable assets are to be accounted for in accordance with Approved Accounting Standard ASRB 1021: 'Depreciation of Non-Current Assets'. Construction costs are costs associated with the establishment and commissioning of facilities including infrastructure, buildings, machinery and equipment for the extraction, treatment and transportation of product from the deposit or field.

87. There is nothing in ASRB 1022 that requires all construction costs represented by facilities in the nature of depreciated assets to be treated as production costs. The question of the treatment of depreciable assets when calculating 'cost' of trading stock using the absorption costing method therefore depends upon their nexus to the production process.

88. ASRB 1019 provides some assistance when it says in the commentary that production costs can be segregated into variable costs and fixed costs. Depreciation charges made on a time basis are fixed production costs, whereas depreciation computed on an output basis is a variable production cost. It is a variable production cost because wear and tear is the prime factor in setting the charge and, being based on output, the charge varies in direct relationship with the volume of production.

89. ASRB 1019 goes on to say that it is necessary for all fixed production costs included in the cost of inventories (including depreciation charges which are fixed production costs) to be based on the company's normal operating capacity. In determining what constitutes normal capacity, the following factors need to be considered:

(a) the volume of production which the production facilities are intended by their designers and by management to yield under the working conditions normally prevailing;

(b) the budgeted level of activity for the current financial period and for the ensuing financial period; and

(c) the level of activity achieved both in the current financial period and in previous financial periods.

90. From the above analysis, it can be seen that only depreciable assets directly involved with the production process are taken into account as production costs and absorbed into the calculation of 'cost' of trading stock. Only in respect to these assets can it be said that their effective life varies in direct relationship to actual or estimated volumes of production.

91. The depreciable assets that should be absorbed into the calculation of 'cost' of trading stock include assets such as buildings integral with plant and machinery and equipment used directly in the extraction, treatment and transportation of product during the production phase. The production phase covers those day to day activities directed to obtaining saleable products from the deposit or field on a commercial scale and includes extraction and any processing prior to the stockpiling of saleable product.

92. Depreciation charges in respect of assets used in the production process should be included in the 'cost' of trading stock. However, depreciation charges based on amounts that have not been actually incurred would not be absorbed into the 'cost'; this would apply to amounts arising from an upward revaluation of a depreciated assets.

Depreciation rates - tax or accounting rates

93. In the commentary to ASRB 1021, guidelines are provided for the determination of depreciation charges in respect of depreciable assets. The determination of a depreciation charge is to be based on the useful life of the asset taking into account:

(i) its potential physical life;

(ii) the period of time over which the asset can be expected to remain efficient having regard to technical obsolescence; and

(iii) its expected commercial life, which for mining assets would not normally exceed the expected life of the area of interest for which they are acquired.

94. While recognising that useful life is often estimated on a time basis, the Accounting Standard also recognises that an alternative basis for determining the useful life of an asset is the overall output or service which the asset is expected to yield, for example, estimated production units, operating hours or distance travelled. Whatever basis is selected, it must be applied consistently from year to year.

95. Given its greater emphasis on the actual conditions existing in the particular business, a depreciation charge determined in accordance with the Accounting Standard should be used in calculating 'cost' of trading stock for taxation purposes.

General and administrative costs

96. Only general and administrative costs that relate directly to the mining and processing areas should be absorbed into the calculation of 'cost' of trading stock. These would include costs relating to accounting and audit, payroll preparation, vehicle fleet maintenance, etc., provided they were directly related to mining and production activities.

97. However, general and administrative cost that relate only indirectly to operational activities, such as directors' fees, secretarial and share registry expenses, and salaries and other expenses of general management, should be treated as expenses of the financial period in which they are incurred and not absorbed into the calculation of 'cost' of trading stock.

Restoration costs

98. ASRB 1022 states that the cost of restoration work expected to be incurred and necessitated by any activity arising after the

commencement of production, is to be provided for during production and treated as a cost of production.

99. This treatment for statutory reporting purposes differs from the taxation treatment. The meaning of 'cost' of trading stock for the purposes of section 70-45 of the new Act is concerned with ascertaining the actual historical cost of the trading stock. An amount such as a provision for restoration would not be included because it is not represented by expenditure that has been actually incurred. Being a provision it relates to anticipated future expenses and is not included in the calculation of 'cost' of trading stock.

100. Actual expenditure that has been incurred on rehabilitation and restoration of mining, quarrying and petroleum sites that is deductible under section 330-435 of the new Act is also not absorbed into the calculation of 'cost ' of trading stock. Such expenditure would be too remote from the production process because it would relate to an area in which extraction has been completed.

Royalties and petroleum resources rent tax

101. Royalties that are output based, i.e., based on tonnes of ore extracted, are a direct cost of obtaining materials and are absorbed into the calculation of 'cost price' of trading stock.

102. Royalties based on sales and the petroleum resource rent tax do not have to absorbed. Both costs are too remote from the production process. Petroleum resource rent tax is a profit based tax which only becomes payable after the petroleum project has recouped certain expenditure; it is not a cost arising from the day to day production activities.

Transport costs

103. ASRB 1019 specifically provides for the inclusion of inwards transport costs of raw materials to be absorbed into the 'cost' of trading stock but excludes transport costs which relate to 'selling and distribution to customers'.

104. Transport costs incurred in transporting partly completed goods through the various stages of the production process are absorbed into the 'cost' of trading stock. Therefore, if the production process is not complete, any transport costs in getting trading stock from one process to another must be taken into account in the calculation of 'cost' of trading stock. Selling and distribution to customer expenses, incurred after the trading stock becomes a saleable product, do not have to be absorbed.

Payroll fringe benefits

105. Direct and indirect labour costs have to be absorbed into the calculation of 'cost' of trading stock. In addition, certain on-costs and costs of providing direct fringe benefits to those employees or sub-contractors who make up the direct and indirect labour workforce must also be absorbed into the 'cost' of trading stock.

106. On-costs such as actual payments of sick pay, tea money and holiday pay were identified in *Phillip Morris* as being costs that had to be absorbed. Jenkinson J said that they ought to be treated, for the purposes of calculating the cost of trading stock, as if the payments had been made on account of wages earned by that employee in that year of income. To these on-costs can be added payroll tax, workers' compensation and superannuation costs.

107. Other direct fringe benefits that are part of a 'salary package' paid to those employees and sub-contractors who are part of the direct and indirect labour workforce have to be absorbed. These benefits include such things as cost of providing employee cars, payment of expenses on behalf of employees (i.e., children's education expenses or health insurance), rent and holiday assistance, costs associated with home purchase schemes, etc.

108. Other costs closely connected with the direct and indirect labour workforce costs that have to be absorbed include costs associated with fly-in / fly-out arrangements, work travel costs and costs of providing meals during working hours.

109. For the purpose of absorption costing, we are not calculating the value of the benefit to the employee but rather examining the cost of providing the benefit and determining its nexus to the production process. While costs relating to township infrastructure are considered too remote to be absorbed, annual costs associated with providing accommodation and recreation facilities to employee or subcontractors (but not their dependants) who make up the direct and indirect labour workforce have to be absorbed.

Waste disposal

110. In Taxation Ruling TR 92/16 it is stated that facilities such as mudlakes, initial containment areas, tailings dams or other industrial residue or waste storage or disposal facilities, are items of plant.

111. The Ruling also acknowledges the Commissioner's acceptance of the decision in *FC of T v. Mount Isa Mines Ltd; Mount Isa Mines Ltd v. FC of T* 91 ATC 4154; (1991) 21 ATR 1294 that the construction of a new retaining wall for a tailings dam was

expenditure on an improvement for use in connection with the storage of minerals. The majority of the Full Federal Court had held in that case that the word 'minerals' could be taken to describe all the various products of the treatment of ore, even those with no commercial value.

112. In accordance with the *Mount Isa Mines* decision, the costs associated with mudlakes, initial containment areas, tailings dams and other industrial residue, waste storage and disposal facilities are storage costs and not part of the production process. These costs do not have to be absorbed as part of 'cost' of trading stock (refer Taxation Ruling TR 93/33).

113. The actual 'minerals' contained within the storage facilities do not have to be valued as part of trading stock where they have no commercial value or their value is insignificant.

Allocation, accumulation and apportionment of costs

114. In the mining and quarrying industry it is necessary for costs to be allocated, accumulated and/or apportioned for the purposes of calculating the 'cost' of trading stock for taxation purposes. The reasons for this may involve distinctions between:

- phases of operations, such as exploration and development;
- areas of interest;
- various products arising from operations; or
- capital and revenue expenses.

115. While many costs are capable of direct allocation, joint costs need to be apportioned on a logical and reasonable basis. The basis of apportionment should be properly founded and, wherever possible, based on physical or measurable units of activity, for example, labour hours, machine hours, tonnes of material, metres of drilling, units of power, etc.

116. Instances of the application of the various methods include:

- hoisting costs being apportioned between production and development based on tonnes hoisted of ore and mullock respectively - with measurements based on actual weights or skip counts;
- power being apportioned on a metered usage basis; and
- drilling costs being apportioned between exploration and development and production based on metres drilled or on hours of drill use.

117. The methods by which such allocations, accumulations and apportionment's are made should be consistently applied from year to year.

Joint products and by-products

118. Joint products are two or more products produced simultaneously from a common raw material source, with each product having a significant relative sales value. One joint product cannot be produced without the other, and the products are not identifiable as distinct until a certain production stage, often called the 'split-off point', is reached.

119. By-products are secondary products obtained during the course of production or manufacture, having relatively small importance when compared with the principal product or products.

120. The apportionment of production costs between joint products and by-products should be done at the split-off point and based on the ability of each product to contribute to the sales revenue of the business. The apportionment should be done using either historical or estimated production and revenue data relevant to the period under review. Costs of production after separation should be charged directly to the product or by-product to which they relate.

121. Alternatively, by-products may be valued at market selling value with a corresponding credit to the cost of production of the main product or products. Market selling value for the purposes of section 70-45 of the new Act is the current value of the article in the taxpayer's selling market without any reduction for expenses that may be incurred in effecting the sale.

Cross references of provisions

122. Sections 70-10, 70-45 and 330-435 and Subdivision 70-C of the new Act, to which this Ruling refers, express the same ideas as subsection 6(1) (in relation to the definition of 'trading stock'), subsection 31(1) and section 124BA and sections 28 to 36, respectively, of the old Act.

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Your comments

124 If you wish to comment on this Draft Ruling, please send your comments by: 3 October 1997

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- Mount Isa Mines v. FC of T (1955) 10 ATD 423
- Phillip Morris Ltd v. FC of T 79 ATC 4352; (1979) 10 ATR 44
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