1.0 TITLE PAGE

Client: **Lundin Mining**

Technical Report on the Neves Corvo Mine, Southern Portugal

Prepared by:

Wardell Armstrong International Limited

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2.0 TABLE OF CONTENTS

1.0 TITLE PAGE **1**
2.0 TABLE OF CONTENTS **2**
3.0 SUMMARY **7**
4.0 INTRODUCTION **12**
4.1 Study Strategy 14
5.0 RELIANCE ON OTHER EXPERTS **15**
6.0 PROPERTY DESCRIPTION AND LOCATION **16**
7.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY **21**
8.0 HISTORY **22**
9.0 GEOLOGICAL SETTING **23**
9.1 Regional Geology 23
9.2 Mine Geology 24
10.0 DEPOSIT TYPES **25**
11.0 MINERALISATION **27**
11.1 Corvo 27
11.2 Graça 27
11.3 Neves 28
11.4 Zambujal 28
11.5 Lombador 28
12.0 EXPLORATION **29**
12.1 Introduction 29
12.2 Mining Licence 29
13.0 DRILLING **30**
13.1 Introduction 30
13.2 Drilling & Sampling 30
13.2.1 Exploration Drilling 30
13.2.2 Grade Control Drilling & Sampling 30
14.0 SAMPLING METHOD AND APPROACH **32**
14.1 Background 32
14.1.1 Drilling 33
14.1.2 Sampling Method and Approach 34
15.0 SAMPLE PREPARATION, ANALYSES AND SECURITY **35**
15.1.1 Sampling Preparation, Analyses and Security 35
16.0 DATA VERIFICATION **37**
17.0 ADJACENT PROPERTIES **38**
18.0 MINERAL PROCESSING AND METALLURGICAL TESTING **39**
18.1 Introduction 39
18.2 Copper Ore Processing 39
18.2.1 Ore Types 39
18.2.2 Previous Plant Performance 39
18.2.3 Copper Plant Flowsheet Description 43
18.2.4 Plant Consumables 46
18.3 Zinc Ore Processing 47

18.3.1 Zinc Plant Flowsheet Description 47
18.3.2 Zinc Plant Consumables 52
18.4 Concentrate Marketing 52
18.5 Mill Labour 53
18.6 Laboratory 53
18.7 Operating Costs 54
18.7.1 Plant Process Operating Costs 54
18.7.2 Zinc Plant Operating Costs 54
19.0 MINERAL REOURCE AND MINERAL RESERVE ESTIMATES 55
19.1 Database 55
19.2 Software 55
19.3 Population Statistics 55
19.4 Domain Modelling 56
19.4.1 Vulcan Domain Interpretation 57
19.4.2 Gemcom Domain Interpretation 57
19.5 Compositing 57
19.6 Volumetric Block Modelling 58
19.6.1 Vulcan Block Model 58
19.6.2 Gemcom Block Model 59
19.7 Variography 59
19.8 Grade Interpolation 60
19.9 Density 60
19.10 Mineral Resource Classification 61
19.11 Resource Statement 61
19.12 Mineral Reserve Estimation 62
19.12.1 Introduction 62
19.12.2 Cut-Off Grade 62
19.13 Wire Frame and Solid Modelling 64
19.14 Recovery and Dilution 67
19.15 Reserve Reporting 68
19.16 Reconciliation 68
19.16.1 Introduction 68
19.16.2 Methodology and Results 69
20.0 OTHER RELEVANT DATA AND INFORMATION 71
21.0 INTERPRETATION AND CONCLUSIONS 72
22.0 RECOMMENDATIONS 75
23.0 REFERENCES 76
24.0 DATE AND SIGNATURE PAGE 78
25.0 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES 80
25.1 MINING OPERATIONS 80
25.1.1 Introduction 80
25.1.2 Stoping Methods 81
25.1.3 Backfill 85
25.1.4 Ore and Waste Handling System 87
25.1.5 Ventilation 90
25.2 PRODUCTION AND DEVELOPMENT SCHEDULES 92

25.2.1 Future plans ... 93
25.3 MINING COSTS ... 93
25.3.1 Operating Costs ... 93
25.3.2 Capital Costs ... 94
25.4 G&A INFRASTRUCTURE ... 95
25.4.1 Human Resources ... 95
25.4.2 Safety Department ... 95
25.4.3 Maintenance Departments ... 96
25.4.4 Power Supply ... 97
25.4.5 Water supply ... 97
25.5 ENVIRONMENT ... 98
25.5.1 Introduction ... 98
25.5.2 Key Environmental Issues ... 98
25.5.3 Environmental Management & Reporting ... 98
25.5.4 Water Management ... 100
25.5.5 Tailings Management ... 105
25.5.6 Waste Rock Management ... 109
25.5.7 Monitoring & Compliance ... 110
25.5.8 Mine Closure and Reclamation ... 113
25.6 Financial Analysis ... 115
25.6.1 Mining Operating Costs ... 115
25.6.2 Plant Operating Costs ... 115
25.6.3 Total Mine Operating Costs ... 115
25.7 SOMINCOR 10 YEAR PLAN ... 117
25.7.1 Future Production Estimates ... 117
25.7.2 Copper Plant Issues ... 118
25.7.3 SOMINCOR Operating Cost estimates ... 119
25.7.4 SOMINCOR Capital Cost Estimates ... 120
25.7.5 SOMINCOR 10 Year 2.4Mtpa Copper/Zinc Ore, Base Case Financial Model ... 120

LIST OF FIGURES

Figure 6.1: Location of Neves Corvo in Southern Portugal 16
Figure 6.2: Co-ordinates For Mining Concessions 19
Figure 6.3: Neves Corvo Site Plan 20
Figure 9.1: Iberian Pyrite Belt and Principal Deposits 23
Figure 9.2: Schematic Section through the Stratigraphy 24
Figure 10.1: 3D Illustration of Orebody Geometry and Mine Development (SOMINCOR) 25
Figure 10.2: Typical Cross-Section through the Graça-Corvo Mineralization (SOMINCOR) 26
Figure 18.1: Copper Plant Throughput ,000t 40
Figure 18.2: Copper Plant Head Grades and Recoveries 41
Figure 18.3: Copper Plant Silver Head and Concentrate Grades 42
Figure 18.4: Copper Plant Silver recovery 42
Figure 18.5: Copper Plant Flowsheet (SOMINCOR) 43
Figure 18.6: Zinc Plant Flowsheet (SOMINCOR) 48

Figure 19.1: Massive Sulphide Samples Length Histogram (WAI) 58
Figure 19.2: Stockwork Samples Length Histogram (WAI) 58
Figure 19.3: Copper semi-variogram, FC domain, Zambujal deposit (SOMINCOR) 59
Figure 19.4: Zinc semi-variogram, MZ domain, Zambujal deposit (SOMINCOR) 60
Figure 19.5: Plan of Orebody at 2% Cu COG with Wireframe (SOMINCOR) 64
Figure 19.6: Wireframes at 5m Intervals through Zambujal Orebody (SOMINCOR) 65
Figure 19.7: Solid Model of Zambujal Orebody (SOMINCOR) 66
Figure 19.8: Mined-out Area Solids Imported into Vulcan (SOMINCOR) 67
Figure 19.9: Results of 2006 Reconciliation (SOMINCOR) 70
Figure 25.1: Bench & Fill Mining Method (Schematic) 82
Figure 25.2: Drift & Fill (Schematic) 83
Figure 25.3: Mini Bench & Fill Mining Method (Schematic) 84
Figure 25.4: Sill Pillar Mining Method (Schematic) 85
Figure 25.5: Ore and Waste Handling System (Schematic) 89
Figure 25.6: Mine Ventilation System (SOMINCOR) 91
Figure 25.7: Mine Water Balance (SOMINCOR) 101

LIST OF TABLES

Table 18.1: Neves Corvo Copper Plant Production Data 40
Table 18.2: Copper Plant Grinding Capacity 44
Table 18.3: Copper Plant Installed Flotation Cell Capacity 45
Table 18.4: Copper Plant Consumables 46
Table 18.5: Zinc Plant Zinc Concentrate Production 49
Table 18.6: Zinc Plant Bulk Cu/Pb concentrate production 50
Table 18.7: Typical locked cycle flotation test results from G&T Metallurgical Services 50
Table 18.8: Zinc Plant Installed Flotation Cell Capacity (0.4Mtpa) 51
Table 18.9: Zinc Plant Consumables 52
Table 18.10: Concentrate Shipment 52
Table 18.11: Plant Process Operating Costs 54
Table 18.12: Zinc Plant Process Operating Costs 54
Table 19.1: Neves Corvo Density Determinations 61
Table 19.2: Summary of Audited Resources at Neves Corvo Mine (31 December 2006) 62
Table 19.3: Summary of Audited Reserves of Neves Corvo Mine (31 December 2006) 68
Table 25.1: Ventilation Districts (SOMINCOR) 91
Table 25.2: Production and Development Schedules 2007-1016 92
Table 25.3: Mine Operating Costs 94
Table 25.4: Mine Water Management System 102
Table 25.5: Environmental Monitoring Areas 110
Table 25.6: Operating and Capital Costs Actual and Estimated 1997-2006 116
Table 25.7: Summary of Audited Copper and Zinc Reserves at Neves Corvo Mine 117
Table 25.8: Neves Corvo Production Schedule 118
Table 25.9: Annual Fixed and Variable Operating Costs (€/t unless stated otherwise) 119
Table 25.10: Annual Capital Expenditure (€M) 120
Table 25.11: Metal Prices and Exchange Rate Used by WAI. 121

Table 25.12: Results of the Financial Modelling ... 123
Table 25.13: SOMINCOR Base Case Financial Model, Neves Corvo NPV ... 124
Table 25.14: NPV Sensitivity Analysis ... 124

3.0 SUMMARY

Background

The Neves Corvo Mine is located some 220km southeast of Lisbon in the Alentejo district of southern Portugal. In June 2004 the Portuguese company, Sociedade Mineira de Neves Corvo SA (SOMINCOR), which owns and operates the mine was acquired by EuroZinc Mining Corporation (EuroZinc).

Following the acquisition by EuroZinc of Neves Corvo in June 2004, management has focused on improving the mine's operating performance and exploring for new resources and reserves in the immediate vicinity. Since November 2006, SOMINCOR has been fully consolidated into Lundin Mining (Lundin).

In June 2007 Silverstone Resources Corporation (Silverstone) agreed to acquire 100% of the life of mine payable silver production from Lundin. The mill at Neves Corvo produces approximately 0.5Moz of payable silver annually in the copper concentrate.

History

The Neves Corvo orebodies were discovered in 1977 after a period of exploration drilling which was planned to test a number of favourable gravity anomalies. Following discovery, SOMINCOR was formed to exploit the deposits, and by 1983, the Corvo, Graça, Neves and Zambujal sulphide deposits had been partially outlined covering an area of some 1.5km x 2km.

Rio Tinto became involved in the project in 1985 effectively forming a 49:51% joint venture with the Portuguese government (EDM). This change in shareholding led to a reappraisal of the project with eventual first production commencing from the Upper Corvo and Graça orebodies on 1 January 1989, achieving 1Mt in that year. Total capital cost for the mine was approximately $350M.

During the development of the mine, significant tonnages of high grade tin ores were discovered, associated with the copper mineralisation, which led to the rapid construction of a tin plant at a cost of some $70M. The plant was commissioned in 1990 and in that year some 270,000t of tin-bearing ore was treated. This was followed between 1992-1994 by a major mine deepening exercise, at a cost of $33M, to access the Lower Corvo orebody through the installation of an inclined conveyor ramp linking the 700 and 550 levels.

The mine has operated continuously since 1989 and annual production of copper metal in concentrate since 1997 has ranged between 76.3-114kt with an additional 0.35-3.5kt of tin metal in concentrate.

In recent years the copper ores have been treated at a rate of approximately 2.0Mtpa compared with an installed capacity of 2.2Mtpa. A summary of the recent performance of the Copper Plant is given below.

Copper Plant Production Data 1997-2006										
Year	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
kt treated	1,459	1,806	1,801	1,342	1,672	1,739	1,700	1,881	2,040	1,946
Feed Cu %	5.49	4.62	4.45	4.79	4.74	5.08	5.33	5.74	4.96	4.56
Recovery %	86.9	85.6	86.2	86.0	85.3	87.0	85.7	88.4	88.1	88.4

Maximum production was achieved in 2005 (2.040Mtpa). The copper head grade fell below 5% Cu in the years 1998 to 2001, but this figure was exceeded from 2002 to 2004 whence it has declined to below 5%. However, Cu recovery has steadily improved over the last 3 years (2004 – 2006 inclusive) to over 88%. Since 1997, copper recovery has ranged from 85.3% to 88.4%.

Historical operating and capital costs are shown in the Table below.

Operating and Capital Costs 1997-2006											
Parameter	**Unit**	**1997**	**1998**	**1999**	**2000(1)**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Tonnage Milled	kt	1,757	2,176	2,07	1,515	1,784	1,739	1,707	1,902	2,042	2,095
Operating Costs	€M	63.85	70.33	65.2	62.4	65.7	58.42	57.56	66.05	70.99	82.49
Unit Costs	€/t	36.34	32.32	31.49	41.19	36.82	33.59	33.9	34.7	34.8	39.2
Capital Costs	€M	15.7	14.5	14.0	15.0	20.6	14.0	14.49	19.90	22.80	35.67

(1) Note: Year 2000 costs affected by industrial action

Production of copper metal in concentrate over more than 16 years of operation has been within 0.6% of the annual plan with an average annual variance against plan of less than 460 tonnes of copper metal.

Geology and Resources

Neves Corvo is located in the western part of the Iberian Pyrite Belt (IPB) which stretches through southern Spain into Portugal and which has historically hosted numerous major stratiform volcano-sedimentary massive sulphide (VMS) deposits. Five massive sulphide lenses have been defined at Neves Corvo comprising Neves (divided into North and South), Corvo, Graça, Zambujal and Lombador. The base metal grades are segregated by the strong metal zoning into copper, tin and zinc zones, as well as barren massive pyrite.

Mining

The mine access is provided by one vertical 5m diameter shaft, hoisting ore from the 700m level, and a ramp from surface at a gradient of 17%. A number of shaft 'incidents' from July through to October 2003 adversely affected mine production, however, the cause has been identified and remedial measures are now in place to prevent any reoccurrence.

A number of different stoping methods are employed on the mine but the most prominent being Bench and Fill and Drift and Fill which account for 41.5% and 38% of production tonnages respectively. Dilution has been highlighted as being a major concern in the Drift and Fill Stopes (19%) and the mine is progressively moving towards increasing production from the Bench and Fill (5-7.5%) method. The mine works a 3 shift per day pattern 6 days per week, but effective time at the work face can be considered low by normal mining standards.

Mill

The processing operations at Neves Corvo are divided between the Copper Plant, which treats copper ores, and the Zinc Plant which treats a polymetallic ore.

The processing of copper ores at Neves Corvo is well established, with over 18 years of production. By world standards, the copper ores are exceptionally high-grade although processing is made more difficult by the fine grained nature of the mineralisation and high levels of pyrite present. The plant has treated a maximum of 2.04Mtpa of ore and the plant is being modified to treat up to 2.2Mtpa.

In 2006 the Company commenced treating zinc ores. These massive pyrite ores are essentially polymetallic, containing minor levels of copper, lead, and silver although these minerals are not recovered. The ores are treated at a rate of 400,000tpa in the former Tin Plant which has been converted for this purpose.

Infrastructure

The mine and mill are well served by a functional Maintenance Department with surface and underground workshops. All mobile and fixed plant is maintained on site although engine rebuilds are contracted out. Generally mobile plant availability is reasonable although the utilization of the equipment can be considered lower than would be expected on a mine of this size and nature. Power is supplied from the National Grid at 150kV, 50MVA rated, through a 22.5km line; sufficient for the mines present and future needs. Potable water is supplied from the Santa Clara reservoir some 40km from the mine site; however, there has been recent investment to install a supernatant water treatment plant close to the tailings facility to reduce the dependence on Santa Clara.

Tailings Management

The Cerro do Lobo tailings dam is a water retaining embankment dam; tailings are deposited into the impoundment by sub-aqueous means to prevent oxidation of the mainly sulphide (pyrite) waste. Since 1998, the mine has commissioned independent feasibility studies and has carried out trials so that deposition at the dam site can be changed from sub-aqueous deposition to using paste tailings.

In 1999, a paste plant commenced operation to provide paste backfill for stopes and since that time, tailings from the mill have either been used to produce paste backfill or have been sent to the tailings dam. Tailings from both the copper and zinc plants are cycloned; the coarser fraction being used for paste fill underground. The finer fraction is disposed of in the TMF. To date, tailings are delivered to the facility via pipeline as a suspension, with a pulp density of approximately 35%.

Environmental Issues

The Neves Corvo mine inherently has a number of significant potential environmental impacts, due to its size and scale, location (close to the Oeiras River) and the nature of the mineral deposit (pyritic, with heavy metals). Environmentally, it is a challenging operation. Notwithstanding the occasional environmental problems and incidents, the mine is operated and managed to a very high standard, largely in accordance with best international practice, and the potential impacts are well understood and mitigated.

The mine has a good environmental record and has a good relationship with the environmental regulatory authorities.

The only significant area of concern that is not, in WAI's opinion, being dealt with adequately by SOMINCOR, is the provision for mine closure and the closure funding arrangements (currently at 18M€).

Financial Summary

In the opinion of WAI, SOMINCOR has prepared an achievable 10 year plan to mine a portion of the remaining known copper and zinc ores at Neves Corvo. It should be noted that this 10 year schedule exploits only a portion of the current *Indicated* resource. There remain substantial additional zinc reserves and also a significant *Inferred* resource which has not been considered here. SOMINCOR is currently reviewing options to improve the utilization of this resource base.

The annual production rate of up to 2.4Mtpa is greater than that proposed in SOMINCOR's 2005 Life of Mine plan. WAI concur that the reserve should be able to sustain such production levels.

The mine has the capability in terms of hoisting capacity and mobile equipment to produce 2.4Mtpa. The plants have sufficient capacity to process this tonnage and to achieve copper recoveries of between 86% and 88%.

The SOMINCOR model provides an indication of the likely pre-tax operating returns, however, there can be no assurances that the assumptions made in preparing these cashflow projections will prove accurate, and actual results may be materially greater or less than those contained in such projections.

The SOMINCOR financial model indicates the Net Present Value of the Neves Corvo Mine at a discount rate of 10% as $US 755M. This is based on an average copper price $US 1.78/lb and a zinc price of $US 0.895/lb. WAI considers that the project is robust.

4.0 INTRODUCTION

Wardell Armstrong International Ltd (WAI) was commissioned by Lundin Mining (Lundin) in July 2007, to prepare a Technical Report on the Neves Corvo Copper Mine, Portugal, using December 31st 2006 reserves and resources.

The Neves Corvo Mine is located some 220km southeast of Lisbon in the Alentejo district of southern Portugal. In June 2004 the Portuguese company, Sociedade Mineira de Neves Corvo SA (SOMINCOR), which owns and operates the mine was acquired by EuroZinc Mining Corporation (EuroZinc).

Since November 2006, SOMINCOR has been fully consolidated into Lundin Mining (Lundin). Following the acquisition by EuroZinc of Neves Corvo in June 2004, management has focused on improving the mines operating performance and exploring for new resources and reserves in the immediate vicinity.

In June 2007 Silverstone Resources Corporation (Silverstone) agreed to acquire 100% of the life of mine payable silver production from Lundin. The mill at Neves Corvo produces approximately 0.5Moz of payable silver annually in the copper concentrate.

This Technical Report has been prepared for Lundin for use in connection with the proposed financing by Lundin and its subsidiaries of the purchase price for SOMINCOR and related regulatory filings and approvals.

Wardell Armstrong International Limited (“WAI”) is an internationally recognised, independent minerals industry consultancy. Most consultants used in the preparation of this report have over 20 years of relevant professional experience. WAI staff, that are authors to this report have visited the Neves Corvo Mine site over the last 6 months.

Details of the principal consultants involved in the preparation of this document are as follows:

P Newall, BSc PhD FIMMM CEng, is Senior Consulting Geologist with WAI and has practised his profession as a mine and exploration geologist for over twenty years for both base and precious metals.

M Owen, BSc MSc (MCSM) FGS CGeol EurGeol, is an Associate Director with WAI and has over 25 years experience as a Mining Geologist in areas of gold and base metals evaluation in a number of deposits and countries around the world.

P King, BSc (Hons), is a Technical Director and Senior Minerals Engineer with WAI and has over twenty years experience within the minerals industry in both process testwork and design for metallic and industrial minerals worldwide.

N Coppin, BSc MSc CBiol MIEnvSci MIEEM MLI, Partner with Wardell Armstrong is an Environmental Scientist and Managing Director of WAI and has over twenty five years experience of environmental assessment and management in the mining industry.

A Kornitskiy, MSc PhD, is a Senior Resource Geologist with WAI and has almost 10 years experience in the evaluation of a wide range of minerals, specialising in the assessment of gold deposits and in the use of Datamine® geological modelling software.

O Mihalop, BSc MSc (MCSM) is a Senior Mining Engineer with WAI and has over 11 years experience from project geologist through to mine and quarry management including the design and implementation of mine backfill systems and development of paste technology.

M Hooper, BSc MSc FIMMM CEng, is an Associate Consultant with WAI specialising in Financial Analysis and has over 40 years mining experience including production mining and more recently specialising in the financial analysis of mineral projects with emphasis on Monte Carlo simulation techniques associated with financial risk assessment.

D Chillcott, (ACSM) FIMMM CEng, is an Associate Consultant Mining Engineer with WAI and has some 47 years experience predominantly in the underground operation of Zambia Consolidated Copper Mines (ZCCM) becoming General Manager of the Mufulira Division and eventually becoming Consulting Mining Engineer for the whole of ZCCM.

T Richards, BEng (Hons) is an Associate Consultant Mining Engineer with WAI and has gained operational experience in several mines and now specialises in the application of Mine2-4D computer mine modelling as well as in enhanced production schedules.

Four of the consultants, Messrs Newall, Owen, Hooper and Chillcott, are considered as Qualified Persons under NI 43-101, being Members or Fellows of the Institute of Materials, Minerals and Mining, UK and/or Fellows of the Geological Society and Chartered Geologists (see Certificate of Author).

Neither WAI, its directors, employees or company associates hold any securities in Lundin, its subsidiaries or affiliates, nor have:

- Any rights to subscribe for any Lundin securities either now or in the future;
- Any vested interest or any rights to subscribe to any interest in any properties or, concessions, or in any adjacent properties and concessions held by Lundin; and

- The only commercial interest WAI has in relation to Lundin is the right to charge professional fees to Lundin at normal commercial rates, plus normal overhead costs, for work carried out in connection with the investigations reported herein.

4.1 Study Strategy

The basic strategy for this Technical Study has been to examine and report on the existing mine resources/reserves, infrastructure, equipment, costs, mining methods, mill, tailings facility and environmental issues of the Neves Corvo Mine. In addition WAI has provided comment on SOMINCOR's ability to achieve their Life of Mine Plan for the next 10 years.

5.0 RELIANCE ON OTHER EXPERTS

Wardell Armstrong International (WAI) has reviewed and evaluated data provided by SOMINCOR and their consultants (see Section 23 References) of the Neves Corvo mine property, and has drawn its own conclusions therefrom, augmented by its direct field examination. WAI has not carried out any independent exploration work, drilled any holes nor carried out any sampling and assaying.

WAI has audited the estimation of resources and reserves at Neves Corvo, and has reviewed the estimates performed by mine personnel, examined the procedures used and reviewed in-house procedures in arriving at statements. While exercising all reasonable diligence in checking and confirming it, WAI has relied upon the data presented by SOMINCOR in formulating its opinion.

The metallurgical, geological, mineralisation, exploration technique and certain procedural descriptions, figures and tables used in this report are taken from reports prepared for and provided by SOMINCOR.

SOMINCOR report their mineral resources and mineral reserves using the 2004 version of the Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC Code). For this reason, and because of the use of extracts from SOMINCOR reports, WAI will generally use JORC terminology throughout the report.

6.0 PROPERTY DESCRIPTION AND LOCATION

The Neves Corvo polymetallic base metal deposit is located within the western part of the world-class Iberian Pyrite Belt of southern Spain and Portugal. The mine is situated in the Alentejo province of southern Portugal, some 15km to the southeast of the town of Castro Verde. The area has an excellent transport network with international airports at Faro some 80km to the south and Lisbon 150km to the northwest (Figure 6.1).

Figure 6.1: Location of Neves Corvo in Southern Portugal
(Base Map from www.lib.utexas.edu)

The Neves Corvo operations consist of the following facilities:

- Underground mine, processing facilities and central administration offices at the mine site;
- Private harbour and loading facility at Setúbal;
- Sand extraction facilities; and
- Lisbon offices.

The mining operations at Neves Corvo are contained within a Mining Concession Contract between the State and SOMINCOR covering 13.5km^2, located in the parishes of Santa Bárbara de Padrões and Senhora da Graça de Padrões, counties of Castro Verde and Almodôvar, district of Beja. The concession provides the rights to exploit the Neves Corvo deposits for copper, zinc, lead, silver, gold, tin and cobalt for an initial period of fifty years (from 24 November 1994) with two further extensions of twenty years each.

Under the concession agreement, SOMINCOR is obliged to:

- Advise the government of any changes contemplated in the share ownership of the company;
- Submit annual operating plans to the State's technical advisor for approval;
- undertake the investigations and reconnaissance necessary to complete the evaluation of the mineral resources occurring in the concession and to proceed to their exploitation, subject to a technical, economic and financial Feasibility Study;
- Use Portuguese metallurgical refineries/smelters, if such should come into existence in the country and provided they offer competitive international terms, and
- Pay either a profit-related royalty of 10%, or a revenue-based royalty of 1% (at the State's discretion). The payment may be reduced by 0.25% of the profit related royalty or of the revenue provided that the corresponding amount of such percentage is spent on mining development investment. SOMINCOR have used a rate of 0.75% in their financial model being the rate presently applied.

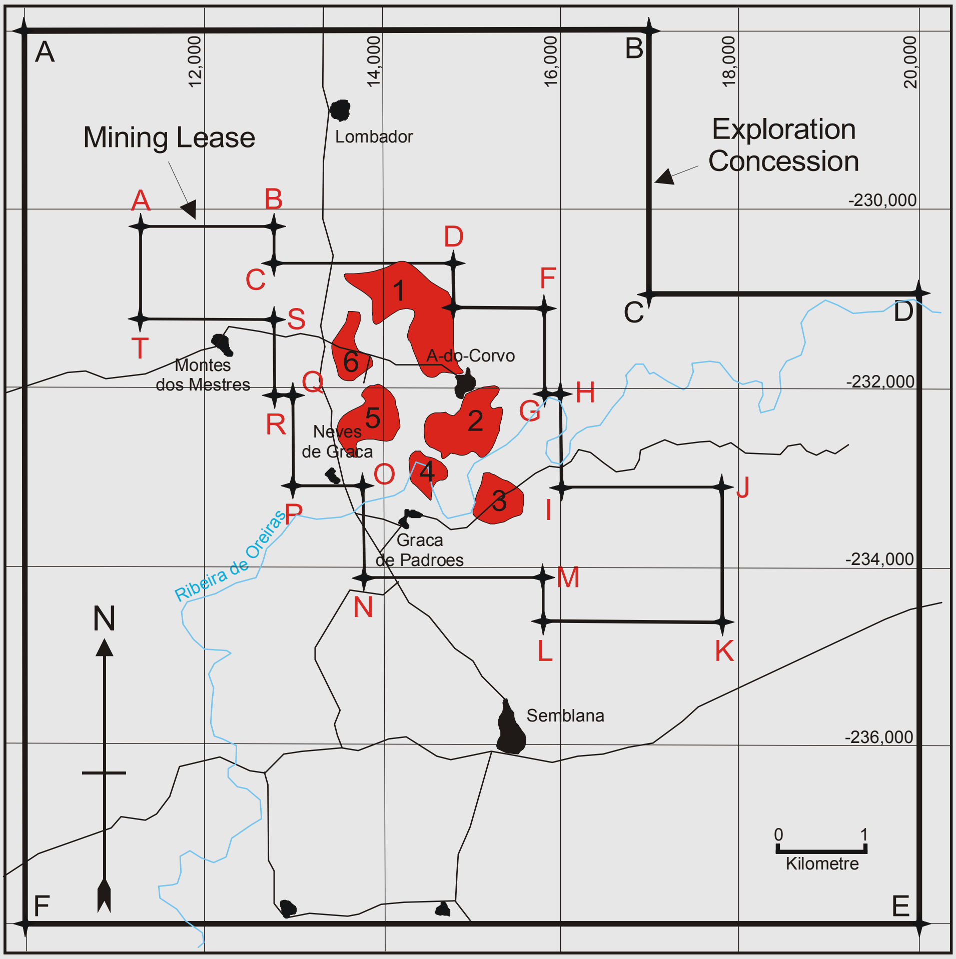
This Mining Concession is in turn surrounded by Exploration Concession, signed in 2006, covering an area of 549km^2. The Exploration Concession has an initial period of 5 years, with a provision for 3 one year extensions subject to a 50% reduction in area each time. SOMINCOR also holds several other concessions in the area, totalling 2,700km^2.

Figure 6.2 shows the present coordinate boundaries for the Mining Concession as well as the plan position of the main orebodies defined by a 10m isopach.

Neves Corvo has been developed as an underground operation, exploiting a number of polymetallic sulphide orebodies. The mine hoists approximately 2.4Mt of ore per year via a 5m diameter shaft from the 700m level, whilst a further access is provided by a decline to the

550m elevation. Ore from the deeper levels is transported to the 700m level via an incline conveyor. Mining methods have been dictated by geology and geotechnical considerations and at the present time, both drift and fill and bench and fill are utilised with the fill comprising either hydraulic fill or more recently, paste fill.

The mine produces a variety of copper-rich ores (chalcopyrite is the only commercially significant copper mineral) as well as a limited amount of tin-rich ores which have been historically treated by a separate tin plant (currently inactive). The copper ores are treated in a conventional crushing, grinding and flotation circuit with the tailings pumped to the Cerro do Lobo tailings facility some 3km from the plant. The Zinc Plant has only been in operation since June 2006 and treats some 0.4Mtpa of zinc ore, predominantly from the Corvo South deposit. The plant achieves a zinc concentrate grade of 49% Zn at a recovery of approximately 80%.



Orebodies

1 - Lombador
2 - Corvo
3 - Zambujal
4 - Graca
5 - Neves Sul
6 - Neves Norte

Mining Lease (13.5km²)					
Points	**Eastings (m)**	**Northings (m)**	**Points**	**Eastings (m)**	**Northings (m)**
A	11,300	-230,200	**K**	17,800	-234,600
B	12,800	-230,200	**L**	15,800	-234,600
C	12,800	-230,600	**M**	15,800	-234,100
D	14,800	-230,600	**N**	13,800	-234,100
E	14,800	-231,100	**O**	13,800	-233,100
F	15,800	-231,100	**P**	13,000	-233,100
G	15,800	-232,100	**Q**	13,000	-232,100
H	16,000	-232,100	**R**	12,800	-232,100
I	16,000	-233,100	**S**	12,800	-231,200
J	17,800	-233,100	**T**	11,300	-231,200
Exploration Concession (77.5km²)					
A	10,000	-228,000	**D**	20,000	-231,000
B	17,000	-228,000	**E**	20,000	-238,000
C	17,000	-231,000	**F**	10,000	-238,000
Note: Coordinates in Hayfor-Gauss system with reference to the Central Point					

Figure 6.2: Co-ordinates For Mining Concessions
(from SOMINCOR and adapted by WAI)

The general mine site buildings and infrastructure layout is shown in Figure 6.3.

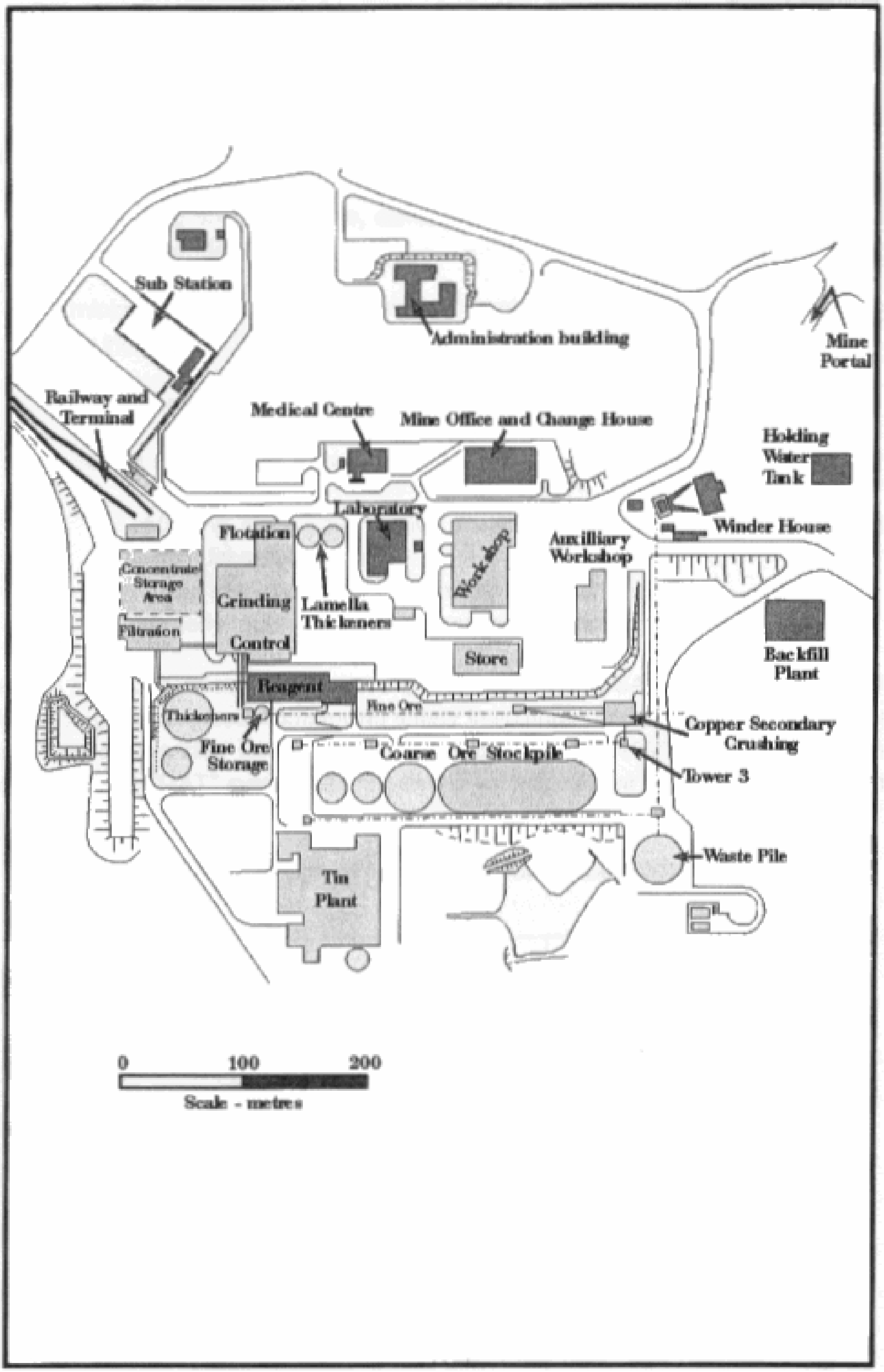


Figure 6.3: Neves Corvo Site Plan

(from SOMINCOR)

7.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

Neves Corvo is connected by a good road into the national road network and is approximately a one-and-a-half hour drive from either Faro to the south or Lisbon to the north. In addition, the mine has a dedicated rail link into the Portuguese rail network and on to the port of Setúbal where the mine has a private harbour facility for concentrate shipments.

There are no major centres of population close to the mine, although a number of small villages with populations numbered in the hundreds do lie within the Mining Concession. WAI does not believe that mining activities have a direct impact on any of these small settlements.

The topography around the mine is relatively subdued, comprising low hills with minimal rock outcrop. The mine collar is 210m above sea level. The area supports low intensity agriculture confined to stock rearing and the production of cork and olives.

The climate of the region is semi-arid with an average July temperature of 23°C (maximum 40°C) and an average minimum temperature in winter of 3.8°C. Rainfall averages 426mm, falling mainly in the winter months.

Mine site infrastructure includes a main headframe, two process plants, paste plant, rail facility, offices, surface workshops, mine store, laboratory, change house, medical building, restaurant, weighbridge and gatehouse.

Fresh water is supplied to the mine via a 400mm diameter pipeline from the Santa Clara reservoir, approximately 40km west of the mine. Supply capacity is 600m^3/hr whilst storage facilities close to the mine hold thirty days' requirements. The total water requirement for the mine and plant is estimated at over 350m^3/hr with as much as 75% of the volume being re-used.

The mine is connected to the national grid by a single 150kV, 50MVA rated, overhead power line 22.5km long.

The Mining Concession (see Figure 6.2) provides sufficient surface rights to accommodate the existing mine infrastructure and allow expansion if required.

8.0 HISTORY

The Neves Corvo orebodies were discovered in 1977 following a joint exploration venture comprising exploration drilling to test a number of favourable gravity anomalies. The companies in the venture were Sociedade Miniera de Santiago (legally succeeded by EMMA – subsequently renamed EDM), Societe d'Etudes de Recherches et d'Exploitations Minieres (SEREM) and Sociedade Miniera e Metalurgica de Peñarroya Portuguesa (SMMPP). Following discovery, SOMINCOR was formed to exploit the deposits. The shareholders were EDM 51%, SMMPP 24.5% and Coframines 24.5%.

Rio Tinto became involved in the project in 1985 effectively forming a 49:51% joint venture with the Portuguese government (EDM). This change in shareholding led to a reappraisal of the project with eventual first production commencing from the Upper Corvo and Graça orebodies on 1 January 1989, achieving 1Mt in that year. Total capital cost for the mine was approximately $350M.

During the development of the mine, significant tonnages of high grade tin ores were discovered, associated with the copper mineralisation, which led to the rapid construction of a tin plant at a cost of some $70M. The plant was commissioned in 1990 and in that year some 270,000t of tin-bearing ore was treated.

The railway link through to Setúbal was constructed between 1990-1992 to allow shipment of concentrates and the back-haul of sand for fill. This was followed between 1992-1994 by a major mine deepening exercise, at a cost of $33M, to access the Lower Corvo orebody through the installation of an inclined conveyor ramp linking the 700 and 550 levels. Access to the orebody of North Neves was also completed in 1994 and significant production tonnage has since come from this area.

Throughout the history of the mine, it is significant that the total copper resources held in inventory have remained relatively static indicating that exploration discovery has kept up with annual production on a year by year basis.

However, as with many mature mines, head grade over the same period has declined from between 7-9% Cu to its present level of around 5% Cu.

9.0 GEOLOGICAL SETTING

9.1 Regional Geology

Neves Corvo is located in the western part of the Iberian Pyrite Belt (IPB) that stretches through southern Spain into Portugal and which has historically hosted numerous major stratiform volcano-sedimentary massive sulphide (VMS) deposits including the famous Rio Tinto mine, worked for gold and copper since Roman times (Figure 9.1).

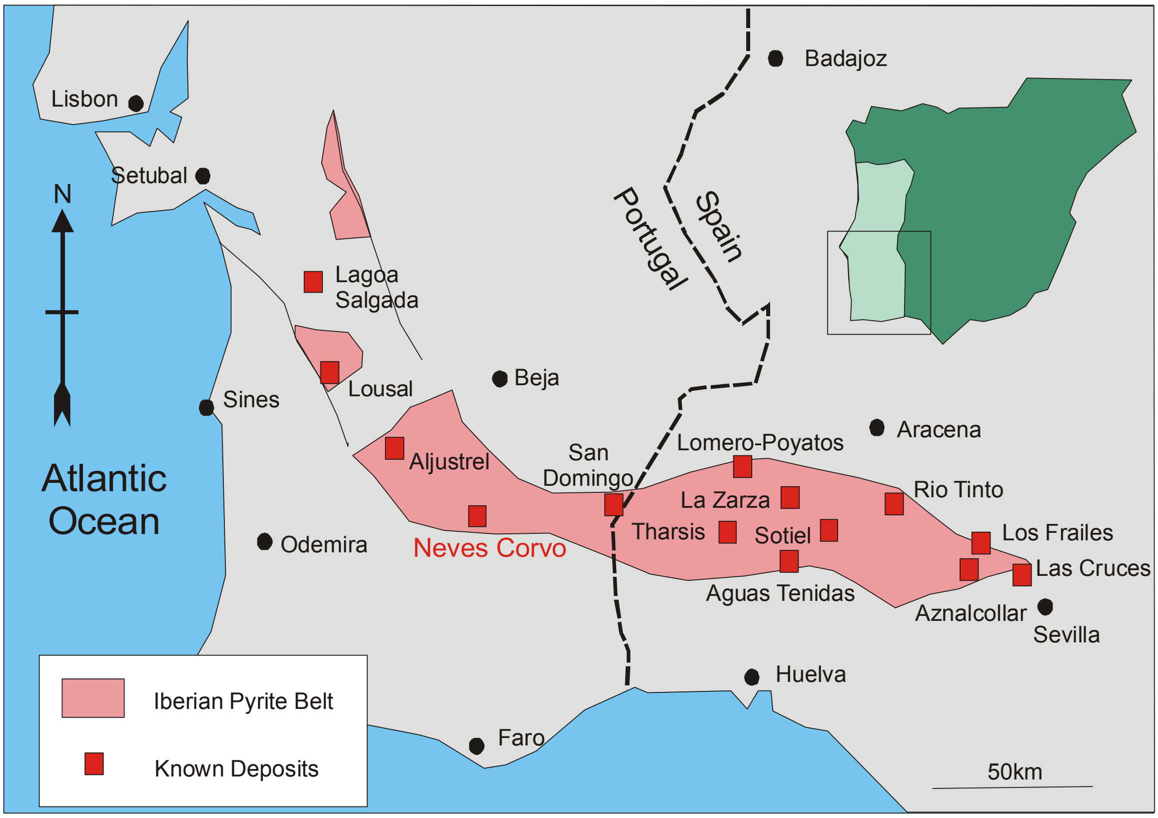


Figure 9.1: Iberian Pyrite Belt and Principal Deposits

Deposits within the IPB vary in size from a few hundred thousand tonnes to >200Mt, and also vary mineralogically from massive pyrite, through complex sulphides to gold-rich ores. They occur at different levels and different settings within the Volcanic Siliceous Complex (VSC) which has been dated at Upper Devonian to Lower Carboniferous in age. The VSC comprises fine grained clastic sediments and felsic to mafic volcanics, underlain by the Phyllite-Quartzite Group of Lower Devonian age and overlain conformably by Upper Visean Flysch Group rocks characterised by a thick clastic succession of greywackes and shales.

The massive sulphide deposits are generally interpreted as syngenetic in origin, ranging from sulphide precipitates to re-worked sulphide/silicate sediments, lying close to acid submarine volcanic centres.

9.2 Mine Geology

The Neves Corvo deposits are located at the top of a dominantly volcanic sequence of the VSC which consists of three piles of acid volcanics separated by shale units, with a discontinuous black shale horizon immediately below the lenses. Above the mineralisation, there is a repetition of volcano-sedimentary and flysch units. The whole assemblage has been folded into a gentle anticline orientated NW-SE which plunges to the southeast, resulting in orebodies distributed on both limbs of the fold. All the deposits have been affected by both sub-vertical and low angle thrust faults, causing repetition in some areas.

Mineralisation is also concentrated within the footwall and hangingwall rocks, and although the deposits are similar to others found in the IPB, the high copper, tin and zinc grades are unique and the strong metal zonation patterns are well developed.

Figure 9.2 below shows a schematic section through the stratigraphy.

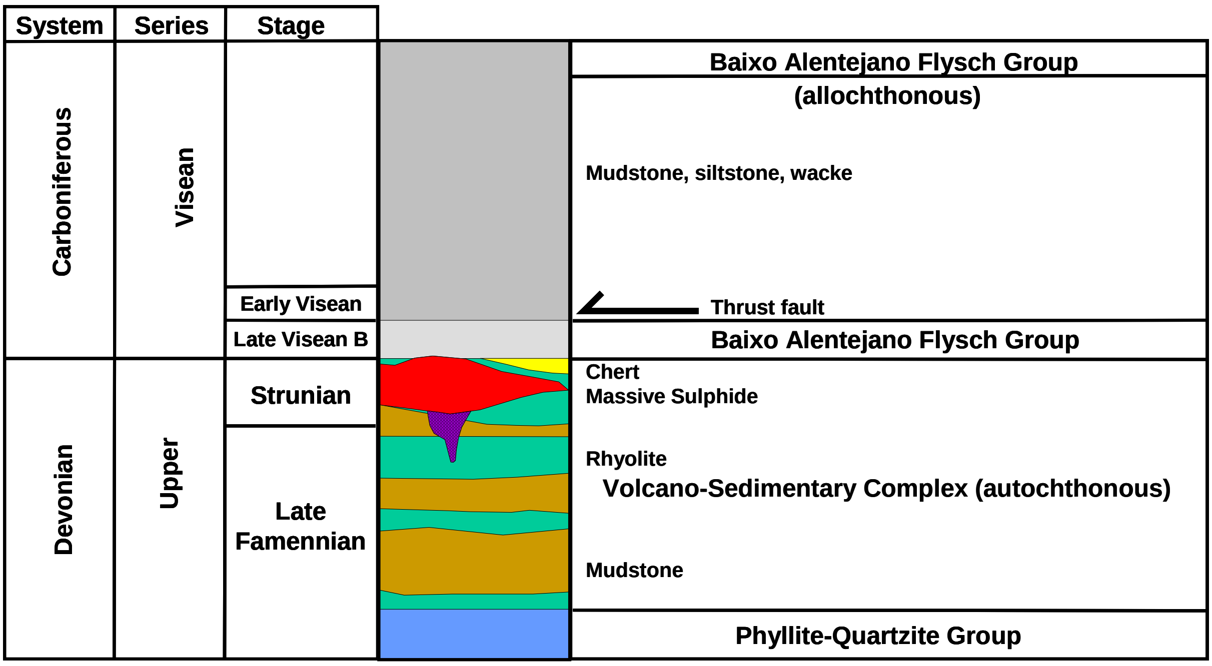


Figure 9.2: Schematic Section through the Stratigraphy

10.0 DEPOSIT TYPES

Five massive sulphide lenses have been defined at Neves Corvo comprising Neves (divided into North and South), Corvo, Graça, Zambujal and Lombador (Figure 10.1).

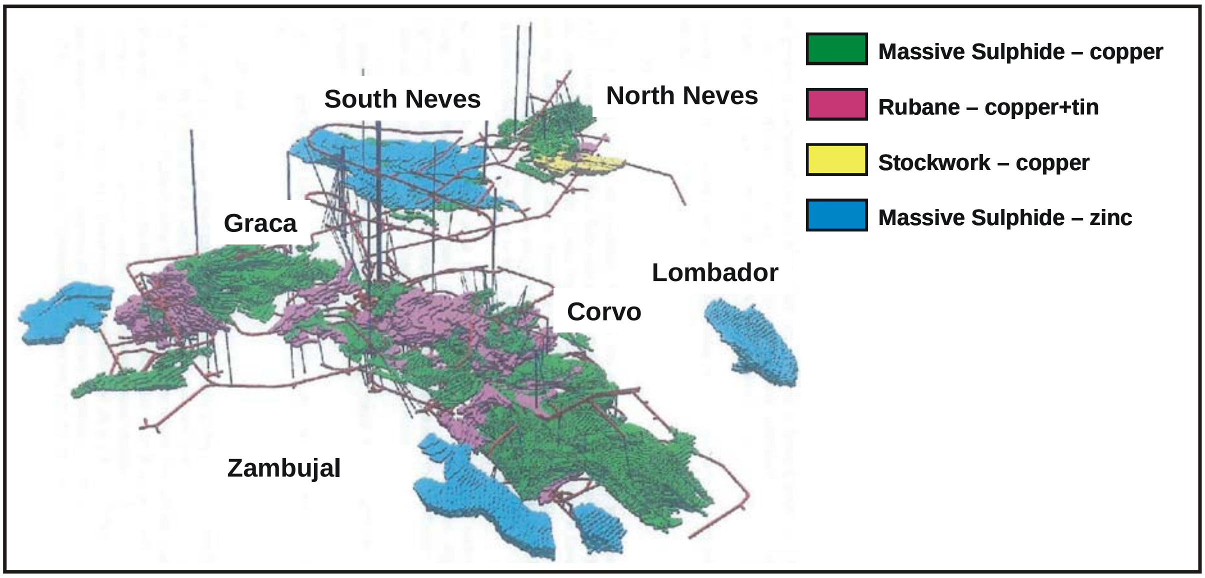


Figure 10.1: 3D Illustration of Orebody Geometry and Mine Development (SOMINCOR)

The base metal grades are segregated by the strong metal zoning into copper, tin and zinc zones, as well as barren massive pyrite. From this, the different ore types have been classified into the following:

MC	Massive sulphide copper, typically 6% Cu
MS	Massive sulphide, typically 10-12% Cu and 1% Sn
MCZ	Massive copper zinc, typically 5% Cu, 4-5% Zn
MZ	Massive zinc, typically 6-8% Zn, 2-3% Pb
RT	Rubané tin, typically (now) 1-2% Sn, 3% Cu
FC	Fissural or stockwork copper

In addition to the ore types, barren and low grade sulphide mineralisation is classified as follows:

ME	Massive pyrite <2.0%Cu and <3%Zn
FE	Stockwork mineralisation with <2%Cu and <3%Zn

Due to the structural complexity of the orebodies, different ore types are often juxtaposed, even over short distances both vertically and laterally. However, much of the high grade tin ore is now depleted, as is a large proportion of the very high grade copper ores. A typical cross section through the Graça-Corvo orebodies is shown in Figure 10.2.

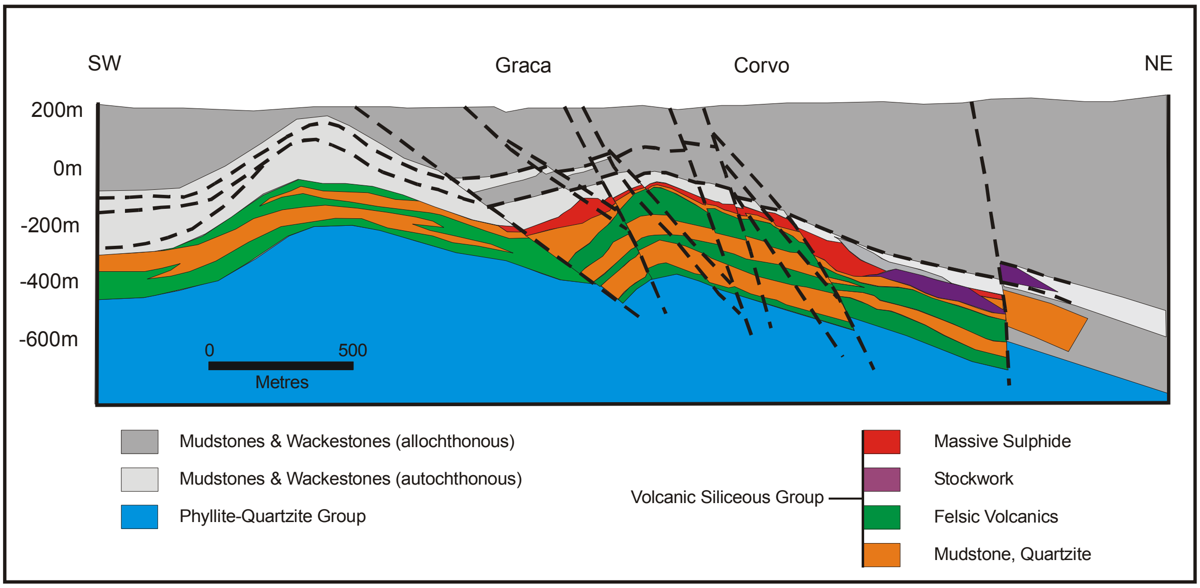


Figure 10.2: Typical Cross-Section through the Graça-Corvo Mineralization (SOMINCOR)

WAI has inspected the different styles of mineralisation underground and considers the divisions of the various ore types as defined above to be a fair reflection of the distribution and style of mineralisation seen at Neves Corvo.

11.0 MINERALISATION

The following descriptions relate to the deposits in their original state, prior to mining.

11.1 Corvo

The Corvo orebody lies between 280-800m below surface, dips to the northeast at 10-40° and has dimensions in plan of approximately 1,100m down dip and 600m along strike. The orebody attains a maximum thickness of 95m and consists of a basal layer of copper ore up to 30m thick, overlain by barren pyrite containing intermittent lenses of copper mineralisation.

The main massive sulphide orebody is predominantly overlain by a complex mineralised sequence known as "Rubané" which comprises an assemblage of chloritic shales, siltstones and chert-carbonate breccias that are all mineralised with cross-cutting and bedding-parallel sulphide veinlets and occasional thin lenses of massive sulphides. The sulphides are predominantly copper-rich and Rubané ore constitutes over 15% of the total copper content of Corvo. Rubané mineralisation is interpreted as a stockwork emplaced in the hanging wall of the massive sulphide by low angle reverse faults (thrust faults).

Cupriferous sulphide stockwork zones (fissural mineralisation), consisting of veinlet sulphides cutting footwall shales and acid volcanics, underlie the massive sulphide lens over part of its area. Tin-rich ores occur closely associated with the copper ores, principally in the massive sulphide material and Rubané. Massive sulphide tin ore, also containing high copper values, is distributed throughout the copper mineralisation at Corvo defining a north-south trend. At the north end, near the edge of the massive sulphides, the Rubané has high grades of tin and the underlying stockwork also contains tin ores.

Zinc mineralisation develops laterally to the southeast of the copper and tin ores within the massive sulphide.

11.2 Graça

The Graça orebody, which is now mostly worked out with the exception of a small extension to the southeast, lies on the southern flank of the anticline and dips to the south at 10-70°. The lens is up to 80m thick extends for 700m along strike, 500m down dip and ranges in depth below surface from 230-450m. The orebody is linked to Corvo by a bridge of thin continuous sulphide mineralisation. As with Corvo, much of the copper ore occurs as a basal layer overlain by barren pyrite in which there are also intercalations of copper ore.

Massive sulphide tin ores occur as a trend through the copper ores from northeast to southwest, similar to that seen at Corvo. However, there is no significant development of Rubané, although stockwork copper ore is being exploited in the southeast section of the orebody and extensions to this mineralisation are being investigated. In the massive sulphide there is again strong lateral metal zoning and zinc occurs preferentially in the southwest limit of Graça.

11.3 Neves

The Neves deposit consists of two lenses of mineralisation, joined by a thin bridge, which dip to north at 5-25°. The maximum true thickness is 55m with a strike length of 1,200m and 700m down dip. The southern lens, Neves South, contains mostly zinc ore with significant lead, silver and copper grades and minor barren pyrite, underlain by copper ore which is locally tin-bearing. Zinc mineralisation tends to be very fine grained (<25µm) and does contain deleterious elements such as As, Sb, Hg and Sn. In addition, silver is present within tennantite-tetrahedrite, typically freibergite ($(CuAgFe)_{12}Sb_4S_{13}$).

In contrast, Neves North is copper-rich and occurs mainly as a basal massive sulphide and as stockwork in the underlying shale and volcanic rocks. The stockwork is well developed and extends well beyond the limits of the massive sulphide lens.

11.4 Zambujal

This area comprises a series of zinc-rich lenses (with similar mineralogy to the zinc mineralisation at Neves South) with copper mineralisation. SOMINCOR is now undertaking an underground exploration drilling programme in order to upgrade the majority of the Zambujal resources to *Measured* and *Indicated* categories. Recent exploration has identified additional MC and MCZ mineralisation.

Furthermore, on-going exploration has discovered bridge mineralisation linking it to Lower Corvo which is likely to increase the resource base.

11.5 Lombador

This deposit comprises continuous lenses of sphalerite mineralisation with lead and copper which has been defined at an *Inferred* category from surface drilling. The mineralisation dips to the north at 20-40°, has a thickness up to 100m and extends for 1,350m down dip and 600m along strike.

Earlier exploration intersected a second lens north of Lombador that has the potential to extend the zinc resource. Copper mineralisation is also present at Lombador, but in minor quantities, although some *Indicated* and *Inferred* MC resources have been identified recently in the bridges with Corvo and Neves.

12.0 EXPLORATION

12.1 Introduction

Throughout the life of mine, the main focus of exploration has been the continued search for mineralisation within the mining licence area. To-date, this process has been undoubtedly successful in that the mine commenced production with a resource of approximately 30Mt, and although approximately 22Mt have been mined since then, there is still a copper resource base of around 19.4Mt in the *Measured* and *Indicated* categories and 3Mt in the *Inferred* category, with a significant zinc resource in addition.

In addition, exploration drilling by SOMINCOR has also been conducted in the surrounding exploration licence through the follow-up of numerous gravity anomalies. It is understood that the 2007 drilling programme has been very successful and is likely to improve the resource position at the end of the year.

WAI has reviewed the exploration data and is satisfied that it has been undertaken in a systematic and proficient manner both within the mine area and surrounding exploration concession.

12.2 Mining Licence

Exploration work within the Mining Licence has concentrated primarily on the extension of known orebodies by both underground and surface drilling, and in particular, areas that are relatively close to surface. Some of the Neves Corvo orebodies remain open and the potential to increase the current mineral resource is possible.

Moreover, recent underground drilling has identified some very important bridge Fissural Copper mineralisation, originally identified from surface drilling, between the Lower Corvo and Lombador orebodies. This area provided an addition to the resource base during 2006.

Surface drilling since 2005 has defined the western edge of the Neves deposit, and tested the internal continuity and lateral extent of the Lombador South zonc zone. This zone appears to be much larger that initially considered and has the potential to provide significant addition to the mine's zinc resource.

As a general rule, the most prospective areas now appear to be to the north, east and northeast, lateral to currently defined mineralisation, although this mineralisation is commonly deeper. However, WAI is of the opinion that considerable potential exists to define additional copper and zinc mineralisation that can be brought into the Neves Corvo resource base.

13.0 DRILLING

13.1 Introduction

Neves Corvo is a mature mining operation having been in production for nearly 18 years. Commensurate with this is the vast database of sample data that has been accumulated, and through time, reconciled against actual production data. To this end, only brief mention will be made here of some of the points of interest, as sampling reconciliation will be dealt with further under Resources.

13.2 Drilling & Sampling

13.2.1 Exploration Drilling

As mentioned in the previous section, surface and underground exploration drilling is an on-going operation at the mine.

The mine has consistently undertaken approximately 11-19,000m of underground exploration drilling per year, by contractors and in-house drill rigs. Typically, underground fan drilling would produce intersections on approximately 35m spacing.

In addition, surface drilling, often on a spacing of 75-100m, has successfully outlined a number of new exploration targets such as Zambujal and Lombador, the latter by surface holes only.

As standard procedure, drillholes are surveyed with an Eastman Single Shot or Reflex EZ-Shot tool at 30m intervals, which provides an accurate location of the drill intersections.

13.2.2 Grade Control Drilling & Sampling

The mine utilises two main forms of stope development, notably drift and fill where the orebodies are thin and high grade and dip at between 15-45°, and bench and fill where the ore must be >16m thick, be of a single ore type, and dip at >45° or <15° (mini bench and fill is used where the ore is <10m thick).

For drift and fill, current grade control involves face sampling to a particular pattern dependent on the ore type being sampled. For massive ores, 6 panel samples are collected from a 5x5m face (originally, 9 samples were collected, but budget cut-backs and a general overall agreement of sampling results led to the reduction). For fissural ores, 6 chip samples are collected across each face.

For bench and fill, grade control requires the drilling of up to 12 core holes in any one bench (more typically 6-8 holes) as blast holes cannot be used due to the fact that chalcopyrite is washed out of the holes. These results are then used for stope definition and resource input.

As a general conclusion, WAI believes that much of this grade control effort may be unnecessary (particularly the bench and fill drilling) as a considerable volume of historical data points to a consistent trend that the grade control samples give grades approximately 10% higher than the defined reserve grade for that particular block. Thus, it may be more beneficial and cost effective to undertake additional fan drilling at the resource definition stage, rather than considerable volume of grade control drilling now undertaken.

14.0 SAMPLING METHOD AND APPROACH

14.1 Background

In terms of resource modelling and reporting, SOMINCOR consider Neves Corvo Mine as 11 deposits, comprising:

- Lower Corvo;
- Middle Corvo;
- Upper Corvo;
- South-East Corvo;
- Corvo Bridge (connection between Corvo and Neves Sectors);
- North Neves;
- South Neves;
- South-East Graça;
- Zambujal Lombador Bridge (connection between Corvo and Lombador Sectors); and
- Lombador.

Three resource modelling methods are used by SOMINCOR. Resources for Neves, Corvo, Graca and Zambujal are evaluated using Vulcan Software. Resources for Lombador and Lombador/ Corvo Bridge have been prepared in Gemcom. Zinc resources for North Neves, South Neves, South-East Graça and South-East Corvo and also copper resources for South East Corvo were estimated in SUMP system (in-house Rio-Tinto software, developed in the mid 1980's). Sump system estimates were last updated in 1997.

WAI has audited the resource evaluation methodologies and has inspected Zambujal, Lower Corvo and Lombador resource models. WAI also reviewed AMEC's report entitled 'Neves Corvo Project: Data and Resource Reviews Report' prepared for EuroZinc Mining Corporation (EuroZinc) in January 2005 along with WAI's report entitled 'Technical Report on the Neves Corvo Mine' prepared for EuroZinc in 2004.

SOMINCOR classifies resources according to the Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves (2006), generally known as the JORC Code. WAI is of the opinion that the JORC Code resource and reserve categories are in all material respects equivalent to the resource and reserve categories as defined by CIM (2005) in Canada and, therefore, the mineral resources identified by SOMINCOR are directly equivalent to the *Measured*, *Indicated* and *Inferred* mineral resource as specified in National Instrument (NI) 43-101, and the authors hereby do so certify.

Overall, Vulcan and Gemcom resource estimation methods used and resource classification is based on the generation of block models that are controlled by 3D wireframes of geological contacts. Neves, Corvo, Graca and Zambujal block models were originally imported to Vulcan from SUMP and subsequently updated with new exploration and production data. The resource model for Lombador was generated separately using Gemcom. Grades are usually estimated by ordinary kriging techniques, although the anisotropic Inverse Power Distance method is used when it is not possible to obtain reliable semi-variograms.

For the Vulcan models block sizes are 2m cubes for production areas and 4m cubes for exploration areas with minimum sub-blocks of 0.5m. The Gemcom resource model utilizes a 10×10×5m cell size with percent models to preserve wireframe volumes.

The resources are defined according to the dominant value metal present. The grade boundaries used are as follows:

- Tin ore - >1% Sn;
- Copper ore - >2% Cu;
- Zinc ore - >3.0% Zn; and
- Complex MCZ material has >2.0%Cu and >3.0%Zn.

In the case of ambiguity, tin takes priority over copper content, which in turn overrides zinc.

14.1.1 Drilling

Surface and underground exploration drilling are ongoing operations at the mine. Drilling is performed using both in-house drill rigs and contractors. Underground fan drilling produces 17-35m spaced intersections whereas intersections from surface are spaced 70–100m apart. Surface drill holes can deviate significantly, especially at the Lombador deposit were some holes are more than 1,000m.

NQ drilling equipment is used for both underground and surface exploration drilling. Occasionally holes are reduced to BQ when difficult drilling conditions require. Underground drill holes are surveyed with an Eastman Single Shot tool every 15-40m as were the historic surface holes. Surface holes since 2005 are surveyed with Reflex EZ-Shot instruments on 30m intervals.

Grade control drilling is done vertically from the top access of 'Bench and Fill' stopes on a 10m spacing using 10-30m long NQ and BQ holes.

14.1.2 Sampling Method and Approach

Specific gravity measurements are done on exploration drill hole intervals with visible massive sulphide or stockwork mineralisation using the traditional water displacement method prior to sampling.

The core is halved by diamond saw with one half sent for assay and the other half archived. Prior to 1999, ¼ core was used for sampling with ¾ archived, but it was considered that ¼ core was not representative, especially for FC type mineralisation. As most of the copper resources originally evaluated on ¼ samples have already been mined or re-evaluated using ½ core, any bias resulting from differences in sample volumes is considered minimal and unlikely to have any impact to the current resource estimates. Grade control drill core is whole core sampled.

Sample length is normally controlled by lithology with 1m lengths for most of the massive sulphide samples and 2m for stockwork.

Underground development faces in ore are normally sampled by chip sampling. The 5x5m faces are divided equally into six 1.5x1.5m areas, with each area constituting one sample. Each face is sampled every second or third advance, which equals a sampling interval of 6-9m. In the past, 9 to 12 chip samples were taken from the face and side walls were also sampled every 3–4m.

15.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

15.1.1 Sampling Preparation, Analyses and Security

SOMINCOR Lab is accredited by the Instituto Portugues Qualidade (IPQ), certificate 93/L.106, renewed each 3 years and submitted annually to quality audits by the same Institute, and also to internal audits.

The laboratory has been accredited for ISO NP EN 450001, changed in 2002 to the new ISO/IEC 17025, for 47 analytical methods and around 100 determinations. Of these methods, 17 are for operational and commercial purposes and 30 are needed for environmental controls. The laboratory is also responsible for sampling the concentrate leaving the mine by train and at Setúbal.

Lab activity is ruled by written contracts signed by the client, stating for example:

- Number and frequency of samples to be delivered to the Lab;
- Analytical methods;
- Period to report the results, and
- Security of data and samples.

The laboratories regularly deal with three types of sample: underground production samples, production drill core and exploration drill core. Initial preparation of these samples is common with drying at 105°C, crushing to ≤6.3mm, riffle splitting, then milling to ≤1mm.

From here, the underground production samples are bagged and a sample taken for XRF analysis. Similarly, the production and exploration drill core samples are also analysed by XRF, but are also subject to further analysis after pulverisation to ≤150μm which includes Cu by Electrogravimetric methods, Ag by Flame Atomic Absorption and Hg by Hydride Atomic Absorption.

WAI has inspected these facilities and protocols and is satisfied with the current set up.

QA/QC systems are in place and appear to work satisfactorily. In detail, these include:

- precautions are taken to prevent cross contamination;
- traceability records prevent errors in identification and insure the sample history can be followed as part of the analytical chain of custody;
- repeatability is evaluated by assaying duplicates every 20 samples and comparing them according to IS0 5725, and

- accuracy data is provided by using international reference materials (for example from CANMET, BCS and BAS).

With regard to security of samples and data, SOMINCOR state that:

- all records and reports are kept for 5 years (for underground production samples) and permanently for evaluation drill core samples;
- the samples are kept for a fixed period to perform new analysis if needed, and
- all personnel must follow rules of confidentiality as stated by the general working law, and complemented by individual signed Confidentiality Declarations.

In summary, Neves Corvo operates stringent sample preparation and analytical procedures in full accordance with international standards.

16.0 DATA VERIFICATION

WAI has not undertaken a data verification exercise at Neves Corvo as the original brief for the Due Diligence study did not require such an investigation. Moreover, in a mature mine such as Neves Corvo, there has been a constant data verification process from sample data through to resource model and as such, WAI is satisfied that any significant problems have been dealt with as part of the on-going process.

However, as part of this current study, WAI has inspected a selection of drillhole sections, plans and assay data, and can conclude that no problems have been identified.

In addition, WAI has examined the orebody models with respect to the data input, statistical analysis and variography, and again can conclude that no errors were identified.

17.0 ADJACENT PROPERTIES

No information on adjacent properties is relevant to this report.

18.0 MINERAL PROCESSING AND METALLURGICAL TESTING

18.1 Introduction

The processing operations at Neves Corvo are divided between the Copper Plant, which treats copper ores, and the Zinc Plant which treats a polymetallic ore.

The processing of copper ores at Neves Corvo is well established, with over 18 years of production. By world standards, the copper ores are exceptionally high-grade although processing is made more difficult by the fine grained nature of the mineralisation and high levels of pyrite present. The plant has treated a maximum of 2.04Mtpa of ore and the plant is being modified to treat up to 2.2Mtpa.

In 2006 the Company commenced treating zinc ores. These massive pyrite ores are essentially polymetallic, containing minor levels of copper, lead, and silver although these minerals are not recovered. The ores are treated at a rate of 400,000tpa in the former Tin Plant which has been converted for this purpose.

18.2 Copper Ore Processing

18.2.1 Ore Types

For the purposes of processing, the ores are categorised into several different Ore Types:

MC Massive Copper Ore;
MCZ Ore containing both copper and zinc; and
MH Massive Copper ores with elevated levels of penalty elements (As, Sb and Hg).

These ores are blended to give a consistent feed to the plant. No attempt is made to produce a zinc concentrate from the MCZ ore. A preliminary treatment campaign was initiated in August 2006 and metallurgical investigations are ongoing.

18.2.2 Previous Plant Performance

The performance of the Copper Plant since 1997 is given in Table 18.1, Figure 18.1 and Figure 18.2 below.

Table 18.1: Neves Corvo Copper Plant Production Data			
Year	**Tonnes treated ,000t**	**Head Grade Cu %**	**Cu Recovery %**
1997	1,459	5.49	86.9
1998	1,806	4.62	85.6
1999	1,801	4.45	86.2
2000	1,342	4.79	86.0
2001	1,672	4.74	85.3
2002	1,739	5.08	87.0
2003	1,679	5.35	85.7
2004	1,881	5.74	88.4
2005	2,040	4.96	88.1
2006	1,946	4.56	88.4

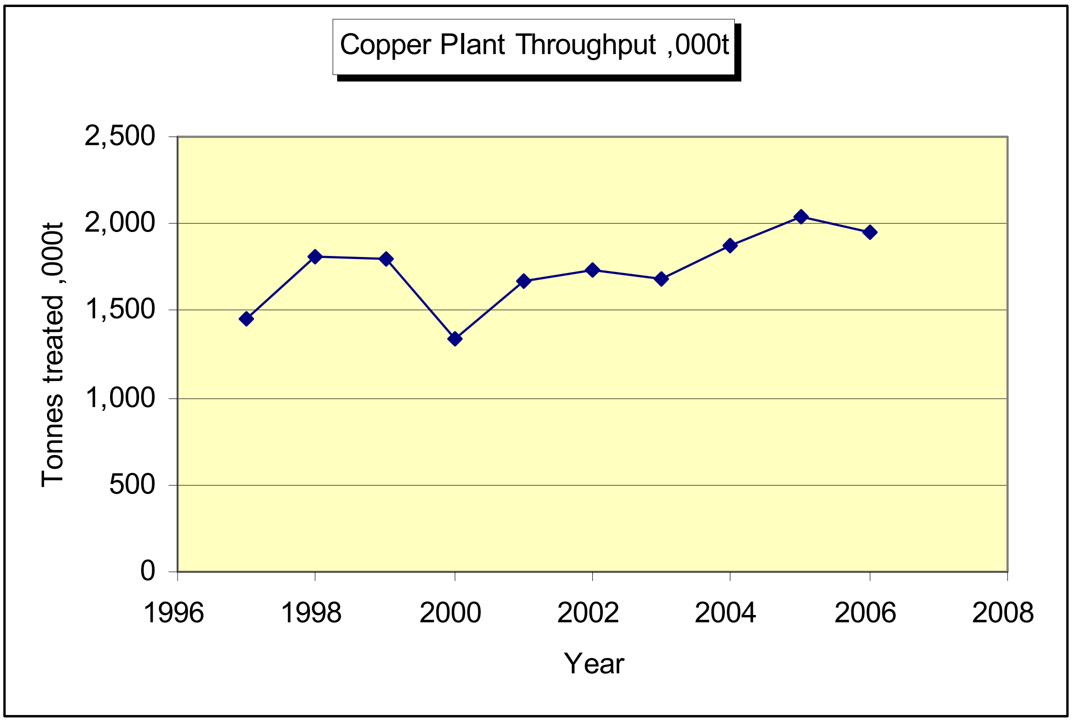


Figure 18.1: Copper Plant Throughput ,000t

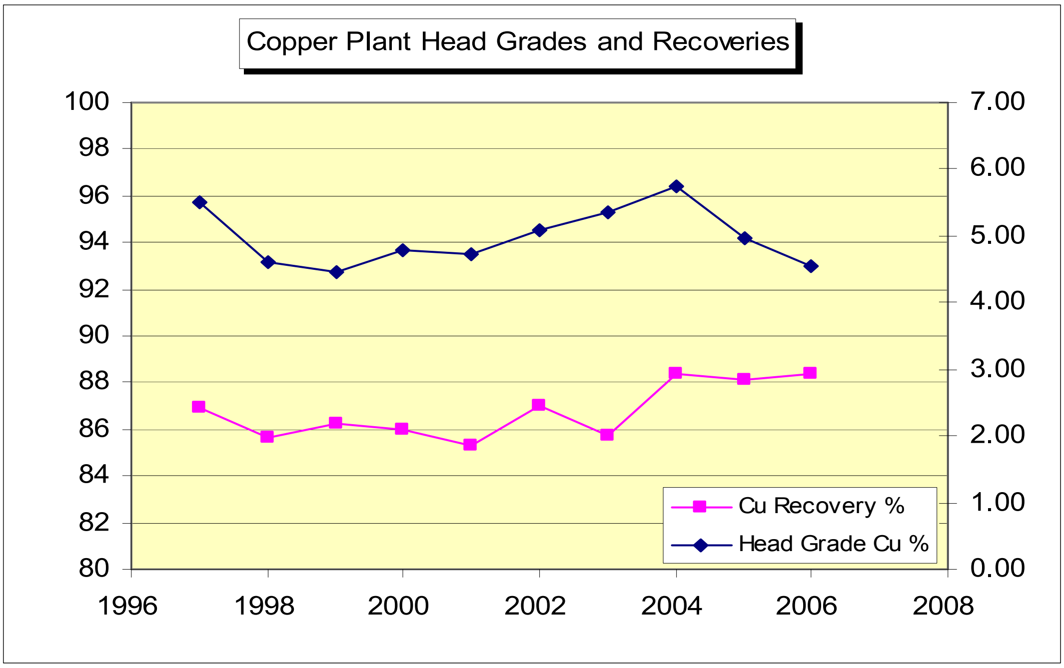


Figure 18.2: Copper Plant Head Grades and Recoveries

The plant throughput has increased since 2003, reaching a maximum of 2.04Mtpa in 2005. Copper recovery has also increased and stabilised over the last three years and is now in excess of 88%. The plant head grade has fallen over the same period from 5.74% Cu (2004) to 4.56% Cu (2006). The daily silver grade in the copper plant feed and concentrate from December, 2000 is shown in Figure 18.3**Error! Reference source not found.**. The actual silver recovered to copper concentrate from the daily production data is given in Figure 18.4 showing consistent performance.

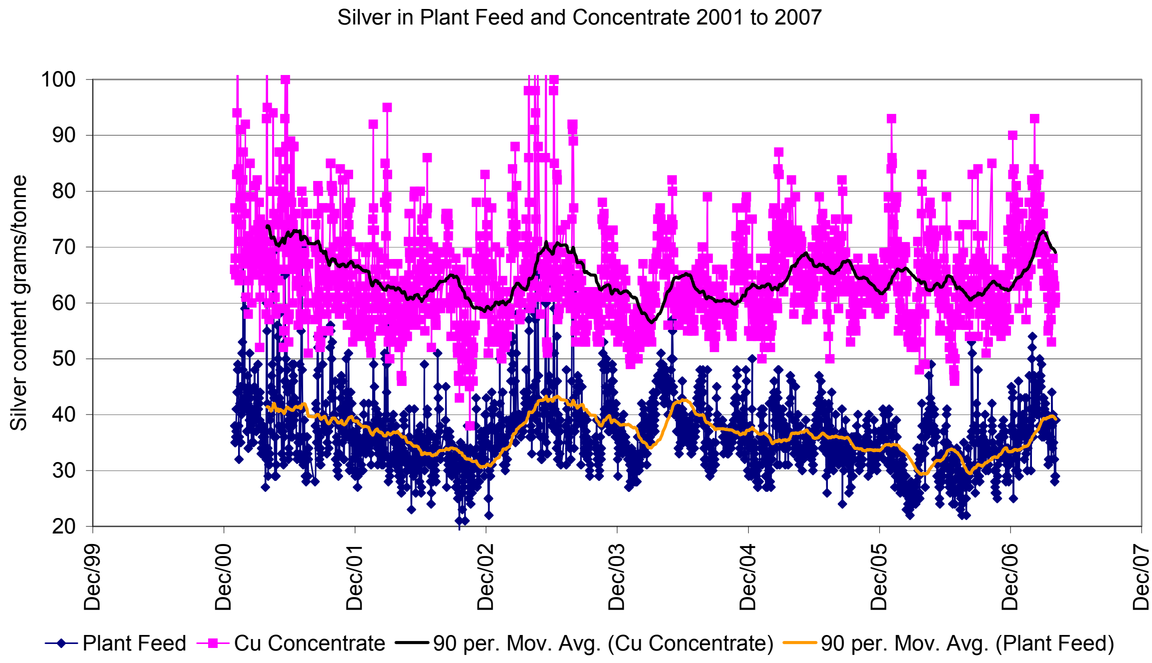


Figure 18.3: Copper Plant Silver Head and Concentrate Grades

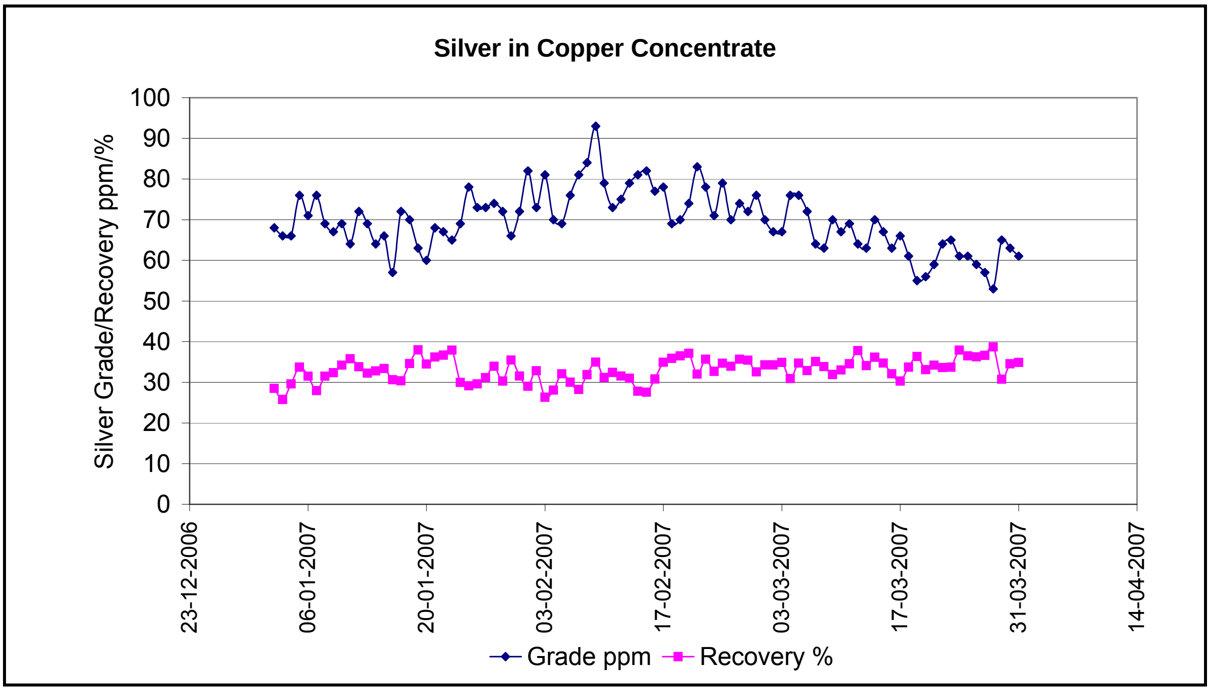


Figure 18.4: Copper Plant Silver recovery

18.2.3 Copper Plant Flowsheet Description

A flowsheet for the Copper Plant is presented as below.

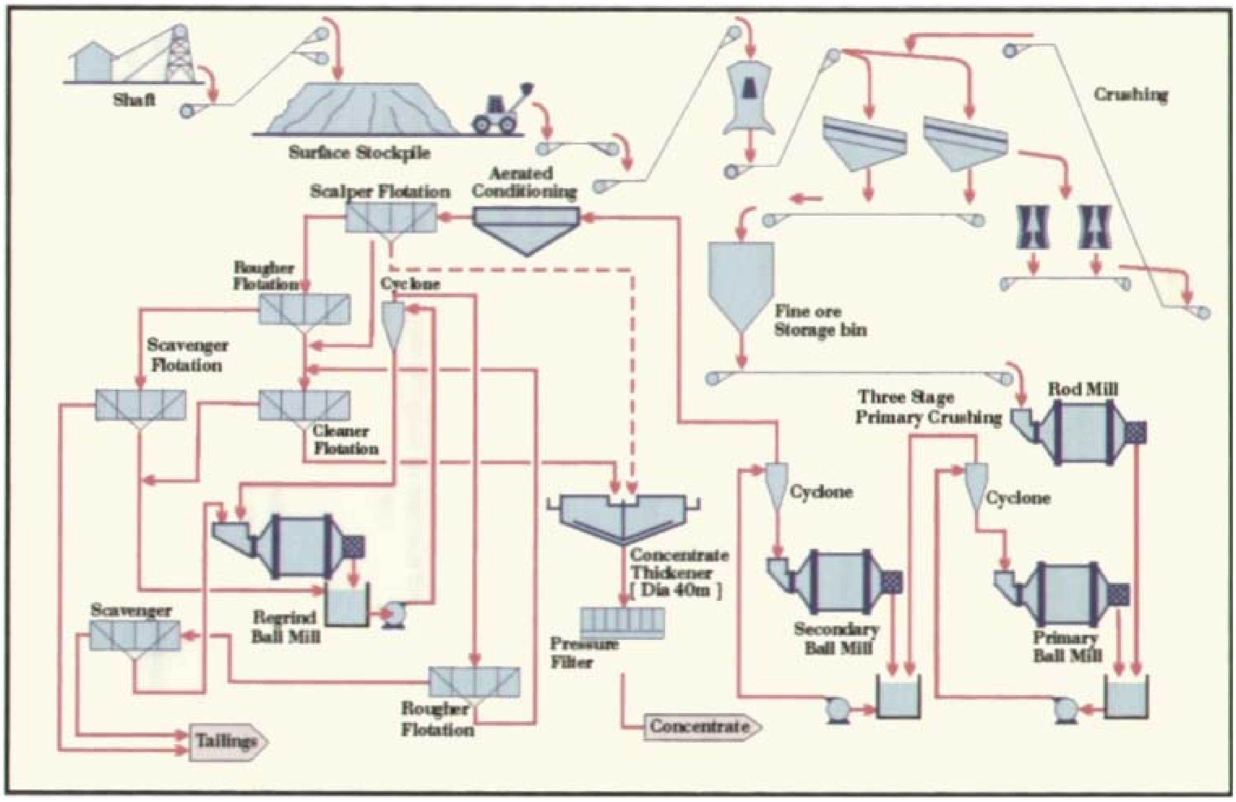


Figure 18.5: Copper Plant Flowsheet (SOMINCOR)

18.2.3.1 Crushing

After the primary underground crushing stage, where ore is crushed to approximately 0.25m, the ore is delivered to the surface and discharges via a stacker conveyor to a coarse ore stockpile of 50,000t capacity. The ore stockpiles are blended to ensure a constant copper head grade and that the levels of penalty elements are kept within certain limits. The MH ores contain higher levels of arsenic (>5,000ppm) and are blended, typically at a ratio of three MC to one MH in order to reduce the overall grade of the plant feed to less than 5,000ppm As. Mercury levels do not require blending.

Ore is fed to the secondary crushing plant via a front end loader. The Copper Plant has experienced difficulty in crushing wet ore and a triple deck screen (35, 25 and 19mm) was installed to remove fine material ahead of the crushing plant. This has significantly improved crushing rates and now the crushing plant typically operates for 10 hours per day at a rate of 600t/h.

The screen oversize passes to a Svedala gyratory crusher. The crushed product is transferred to two vibrating screens fitted with 19mm decks. Screen undersize is conveyed to the fine ore bin and the oversize passes to two Hydrocone H-60 crushers in parallel. The crushed product is returned to the 19mm screens.

The crushed ore passes to a fine ore bin of approximately 10 hours capacity and then via a feed conveyor fitted with a belt weightometer to the grinding section.

18.2.3.2 Grinding

The grinding section uses three stages of conventional grinding, namely rod milling, primary ball milling and secondary ball milling where the ore is ground to 80% passing 40-45µm.

The grinding capacity of the Copper Plant is summarised in Table 18.2:

Table 18.2: Copper Plant Grinding Capacity

Stage	Mill Size	No.	Power kW
Rod Mill	5.5 x 3.8m	1	1,000
Primary Ball Milling	5.2 x 4.2m	1	1,600
Secondary Ball Milling	5.2 x 4.2m	1	1,600
Regrind Milling	5.5 x 4.1m	2	1,200

The rod mill discharge joins the primary ball mill discharge and is cycloned in a bank of 500mm cyclones. The secondary mill discharge is cycloned in a bank of 250mm cyclones with the cyclone overflow passing to the flotation section.
The regrind mill circuit utilises only one of the two installed mills. Classification is achieved with 150mm cyclones reducing the material from a d80 of 35µm to a d80 of 25µm.

18.2.3.3 Flotation

The flotation circuit uses conventional cells of $38m^3$ and $17m^3$ capacities. The flowsheet is summarised as follows:

- The secondary ball mill cyclone overflow passes via a bank of aeration cells to rougher and scavenger flotation. A ‘scalping’ bank of cells was used in the past to recover high-grade concentrate from the first stages of roughing to the final concentrate;
- Three stages of conventional cleaning cells are used to produce a final concentrate assaying between 23-24% Cu;

- The scavenger concentrate is combined with the first and second cleaner tailings and reground in the 1,200kW regrind mill; and
- The reground product is re-floated with the first stage concentrate passing to the first cleaning stage and the second stage concentrate passing back to the regrind.

The reagent system in the copper plant is very straightforward and consists essentially of lime to increase the pH, the collectors D-527 (a blend of dithiophosphates and thionocarbamates) and xanthate, the latter being used in scavenger flotation to increase recovery. Frother is not used and it was noticed that the froth appeared very heavy on many of the cells during the site visit.

Lime is added within the grinding circuit to increase the pH of the pulp in the rougher cells to between 10.8 and 11.0 and between 10.6 and 11.4 in the scavengers. Flotation cell capacity is given in Table 18.3.

Table 18.3: Copper Plant Installed Flotation Cell Capacity

Stage	No.	m^3	Total m^3
Roughing			
Desbaste 1	7	17	119
Desbaste 2	7	17	119
Coarse scavengers	6	38	228
			466
Cleaning			
DPR	7	17	119
Clean 1	9	17	153
Clean 2	7	17	119
Clean 3	4	17	68
			459
Spare cells			
	6	38	228
	7	17	119
	7	17	119
			466

18.2.3.4 Copper Concentrate Dewatering

The final copper concentrate is pumped to a 40m diameter thickener. The thickener underflow is pumped via a 270m^3 holding tank to one of five Sala VPA Pressure filters. Due to the lower head grades now being treated, compared with earlier years, the filtration capacity significantly exceeds the current requirement.

The concentrates, with a moisture content of approximately 9% and grading 80% passing 18µm, are trucked by contractors from the concentrate discharge bay to the rail link at the mine gates. The transportable moisture content (TML) of the concentrate is 13%.

The empty containers are used to transport the quarried sand back to the mine for use as backfill.

The loss of concentrate during shipping is reported to be 0.35%

18.2.3.5 Sampling and On-stream Analysis (OSA)

Automatic samplers are used to produce daily composites of the mill feed (copper rougher conditioner feed), plant tailings (lamella feed) and final copper concentrate. The sample collection and preparation is undertaken by the laboratory staff, are under control of the Commercial Department.

The plant is equipped with three Amdel OSA probes which are located on the plant feed, concentrate and tailings streams. These multi-element probes can determine Cu, As, Zn, Sb, Sn and Pb. Five intermediate process streams are analysed using an Outukumpu Courier 30 OSA. These are the first rougher tailings, second rougher tailings, scavenger tailings, first cleaner tailings and regrind rougher cleaner 2 tailings streams. The analysis systems communicate with a Bailey Network 90 DCS that is used for stabilising control in the crushing, grinding, flotation and filtration sections.

18.2.4 Plant Consumables

The Copper Plant consumable are summarised in Table 18.4.

Table 18.4: Copper Plant Consumables

Item	Consumption	Unit
Rods	0.348	Kg/t
Balls 30mm	0.844	Kg/t
Balls 40mm	0.486	Kg/t
Lime	3.389	Kg/t
Dithiophosphate	0.079	Kg/t
Xanthate	0.014	Kg/t
Electricity	38.880	Kwhr/t
Filter Cloths	0.0002	Per kt.
Diesel	0.124	l/t

The consumption figures are typical for the tre4atment of a moderately hard, massive pyrite, copper ore.

18.3 Zinc Ore Processing

The Zinc Plant has only been in operation since June 2006 and treats some 0.40Mtpa of zinc ore, predominantly from the Corvo South deposit. The plant achieves a zinc concentrate grade of 49% Zn at a recovery of approximately 80%.

18.3.1 Zinc Plant Flowsheet Description

The Zinc Plant uses the conventional processes of crushing, grinding and flotation to produce a moderately low grade zinc concentrate. The zinc minerals are fine grained and the concentrates require grinding to pass 20µm in order to achieve satisfactory liberation between sphalerite and pyrite.

The flowsheet consists of sequential flotation of copper and lead minerals followed by zinc flotation.

A flowsheet for the Zinc Plant is given in Figure 18.6.

18.3.1.1 Crushing

The crushing section of the Zinc Plant is capable of crushing up to 80tph of zinc ore to -11mm. The plant consists of a 750 x 500mm jaw crusher which is in open circuit followed by two stages of cone crushing. Secondary crushing takes place in a Standard H400 cone crusher, which is in open circuit, followed by a Tertiary crushing stage using a H400 Shorthead cone crusher, which in closed circuit with a screen.

18.3.1.2 Grinding

The current grinding circuit consists of two stage ball milling, each mill with 450kW motors, with regrinding of both copper-lead and zinc rougher concentrates.

The final product size is approximately 80% passing 45µm.

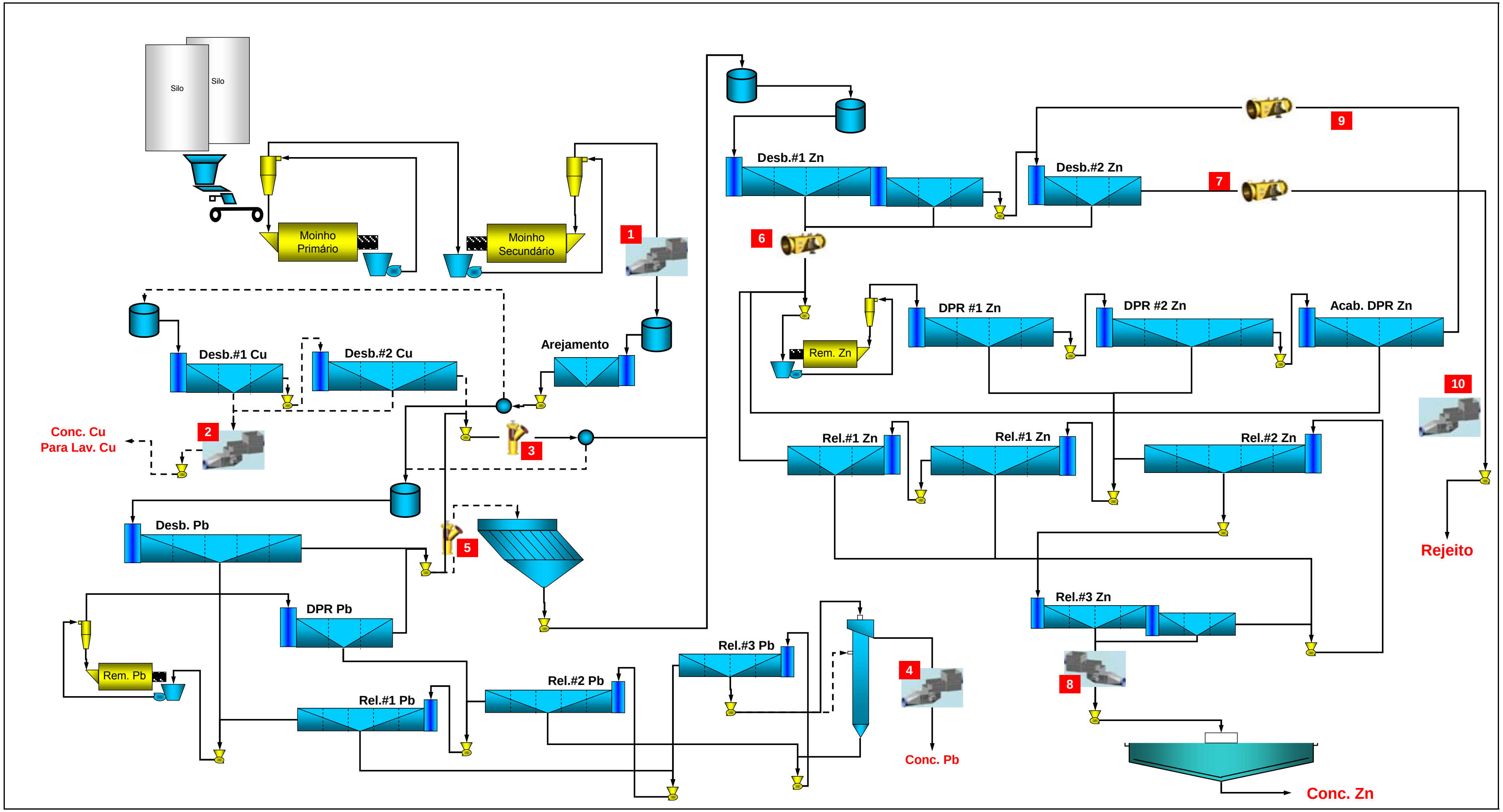


Figure 18.6: Zinc Plant Flowsheet (SOMINCOR)

18.3.1.3 Flotation

The current (August 2007) Zinc Plant circuit involves the bulk flotation of a copper-lead concentrate which is reground and then cleaned in four stages followed by a fifth column cleaning stage. Zinc is then floated from the copper-lead tailings and cleaned four times after regrinding. A summary of the Zinc Concentrate performance for the first 6 months of 2007 is given in Table 18.5.

Table 18.5: Zinc Plant Zinc Concentrate Production

Plant Feed	**Jan 2007**	**Feb 2007**	**Mar 2007**	**Apr 2007**	**May 2007**	**Jun 2007**
Tonnes (dry metric)	30,706	28,651	27,608	33,926	35,370	37,524
Grades						
%Zn Total	9.79	8.54	7.84	6.89	6.85	8.06
%Fe	32.72	33.75	34.44	34.70	34.80	33.63
%Cu	0.55	0.57	0.50	0.52	0.59	0.62
%Pb	1.75	1.49	1.41	1.20	1.23	1.66
Ag ppm	79	71	71	67	65	76
Zinc Concentrate						
Tonnes (dry metric)	4,923	4,018	3,657	3,791	3,758	4,845
Zn Metal	2,431	1,971	1,791	1,831	1,826	2,390
Grades						
%Cu	0.99	1.18	1.08	1.49	1.47	1.33
%Zn	49.38	49.06	48.97	48.30	48.60	49.33
%Pb	1.67	1.75	1.68	2.23	1.77	2.44
Ag ppm	80	82	82	101	99	94
Recovery Zn Total	**80.85**	**80.60**	**82.78**	**78.35**	**75.40**	**79.06**
Recovery Ag Total	**16.23**	**16.20**	**15.30**	**16.85**	**16.18**	**15.97**

A summary of the Copper/Lead bulk concentrate currently produced in the zinc plant is shown in Table 18.6.

Table 18.6: Zinc Plant Bulk Cu/Pb concentrate production

Month	Weight Wt%	Grades				Recovery			
		% Cu	% Pb	% Zn	Ag ppm	% Cu	% Pb	% Zn	Ag ppm
Jan-07	5.6%	4.5	16.0	10.7	640	42.5%	51.8%	6.6%	45.4%
Feb-07	5.4%	4.8	14.1	9.8	527	45.1%	51.2%	6.5%	40.1%
Mar-07	5.2%	4.4	13.8	8.9	513	44.9%	48.9%	6.6%	37.6%
Apr-07	2.2%	8.6	20.7	7.4	379	35.9%	36.5%	2.7%	12.4%
May-07	3.2%	7.4	15.1	8.2	470	40.0%	40.6%	4.1%	23.1%
Jun-07	3.0%	7.6	23.6	8.9		36.3%	41.9%	3.6%	
Average	**4.1%**	**6.2**	**17.2**	**9.0**	**506**	**40.8%**	**45.2%**	**5.0%**	**31.7%**

Separate copper and lead flotation circuits are still to be installed and commissioned in order to remove a copper rich concentrate and produce saleable lead concentrate as demonstrated in previous laboratory and pilot plant studies. Results from typical locked cycle laboratory tests from G&T Metallurgical Services are given in Table 18.7 showing 23 % silver recovery to a lead concentrate of around 45% lead grade.

Table 18.7: Typical locked cycle flotation test results from G&T Metallurgical Services

Somincor/PA	Pb Concentrate				Recovery			
Test No.	**Ag**	**% Cu**	**% Pb**	**% Zn**	**Ag**	**Cu**	**Pb**	**Zn**
KM1543-14	1,009	1.3	46.8	6.8	22.7	8.1	35.9	1.0
KM1543-16	1,355	1.0	57.1	5.3	22.6	4.9	32.2	0.6
KM1543-17	1,182	0.8	49.6	6.2	24.1	4.5	34.8	0.8
KM1543-18	1,135	0.9	52.0	6.7	22.5	4.9	32.4	0.8
KM1543-21	1,108	0.9	51.0	5.6	22.3	4.9	33.2	0.7
KM1543-23	1,360	1.1	50.2	7.6	23.0	5.0	27.6	0.8
KM1858-22		3.9	42.4	5.4		10.8	35.3	1.8
KM1858-23		2.0	52.4	5.4		6.1	42.8	1.7
KM1858-24		4.3	46.0	4.8		9.8	29.6	1.3
KM1858-25		1.4	55.3	5.1		4.1	45.4	1.7
KM1515-13		3.7	34.1	8.2		40.6	59.0	3.9
KM1515-14		3.7	31.6	5.8		39.6	53.2	2.5
KM1515-15		3.8	37.4	7.5		37.2	55.6	3.0
KM1515-17		4.1	36.5	5.5		38.1	52.8	2.2
Average	**1,192**	**2.35**	**45.9**	**6.12**	**22.87**	**15.61**	**40.7**	**1.63**

The installed flotation capacity of the zinc plant is given in Table 18.8.

Table 18.8: Zinc Plant Installed Flotation Cell Capacity (0.4Mtpa)			
Stage	**No**	**Cell volume m^3**	**Total m^3**
Cu-Pb Roughers			
Cu Roughers	7	8	56
Cu-Pb Roughers	5	8	40
Total			**96**
Cu-Pb Clean			
Cu-Pb DPR	4	8	32
Cu-Pb Clean 1	5	5	25
Cu-Pb Clean 2	3	5	15
Cu-Pb Clean 3	3	4	12
Total			**84**
Zinc Flotation			
Zn Rougher	10	8	80
Zinc Clean			
DPR 1+2	9	8	72
DPR Scavengers	4	8	32
Clean 1	7	8	56
Clean 2	5	8	40
Clean 3	7	3	21
Total			**221**

18.3.1.4 Concentrate Dewatering

The final zinc concentrate is pumped to a 12m conventional thickener and the thickener underflow is pumped to a Sala VPA pressure filter.

18.3.2 Zinc Plant Consumables

The Zinc Plant consumable are summarised in Table 18.9.

Table 18.9: Zinc Plant Consumables

Item	Consumption	Unit
Balls 30mm	0.46	kg/t
Balls 40mm	0.70	kg/t
Balls 80mm	0.45	kg/t
Lime	3.6	kg/t
Xanthate	0.190	kg/t
A3418	0.045	kg/t
Copper Sulphate	1.10	kg/t
Sodium metabisulphite	0.50	kg/t

The consumption figures are typical for the treatment of a massive pyrite, polymetallic ore.

18.4 Concentrate Marketing

The concentrates are transferred into 27t containers which are weighed and then transported by rail to Setúbal. On arrival the concentrates are off-loaded into a storage shed of 50,000t capacity. Reclaim for ship loading is by conveyor belt at maximum rate of 800tph.

Concentrates are predominantly sold to six smelters which are listed in Table 18.10.

Table 18.10: Concentrate Shipment

Smelter	Typical Annual Shipment (kt)
Atlantic Copper (Spain)	100
Noranda (Canada)	8.5
Outukumpu (Finland)	60
NAF (Germany)	94
CBM (Brazil)	27
Glencore	15

The copper concentrates incur penalties, predominantly for mercury, and a credit for silver values. The average level of penalties currently incurred is between US$4-5/t.

18.5 Mill Labour

A Production Manager is responsible for both the Copper and Zinc plants operations. The two concentrators are operated with five shift crews each with one supervisor and 14 operators. A day crew is used for routine tasks such as reagent mixing, ball loading, general clean-up etc. The plants are scheduled to operate 24 hours per day, seven days per week.

The total number of personnel employed on operations is 77.

A total of 61 personnel are employed in the plant maintenance department under the control of the mill manager. The department is split into Planning, Instrumentation and Electrics, Mechanical, General and Projects/Drafting. A total of 25 contractors are employed in the Maintenance department for such duties as sand blasting, painting, mechanicals and electrics.

A total of 8 are employed on Process and Systems and a further 8 on Tailings disposal.

18.6 Laboratory

The laboratory operates under the control of the Commercial Department and is responsible for operational, environmental and quality control aspects of the operation. The laboratory is accredited to ISO/IEC 17025 for 47 analytical methods and approximately 100 determinations. For production samples the laboratory uses X-Ray fluorescence (XRF), and atomic absorption spectrophotometry (AAS) for sample analysis as well as an electro-gravimetric method for analysis of the final copper concentrates and a LECO analyser for sulphur determinations.

The laboratory is equipped with two XRF machines with one being used for grade control and geological samples whilst the other is dedicated to plant production.

Approximately 64% of the XRF analyses are undertaken for the mine, 35% are for the plant and 1% is for the Commercial Department. The AAS analyses are split 35% for the mine, 53% for the plant and 12% for the Commercial Department.

The total number of staff employed in the laboratory is 22.

18.7 Operating Costs

18.7.1 Plant Process Operating Costs

The operating costs* for processing 2.0Mtpa of copper ore are summarised in Table 18.1.

Table 18.11: Plant Process Operating Costs	
Area	**€/tonne**
Labour	1.15
Electricity	1.63
Consumables	2.80
Other Services/costs	0.34
Maintenance	1.36
TOTAL	**7.27**

*Note: The costs for ore processing are obtained directly from the SOMINCOR Cost Statements.

18.7.2 Zinc Plant Operating Costs

The operating costs* for processing 0.40Mtpa of zinc ore are summarised in Table 18.12.

Table 18.12: Zinc Plant Process Operating Costs	
Area	**€/tonne**
Labour	1.93
Electricity	3.47
Consumables	4.80
Other Services/costs	0.33
Maintenance	2.25
TOTAL	**12.79**

*Note: The costs for ore processing are obtained directly from the SOMINCOR Cost Statements.

19.0 MINERAL REOURCE AND MINERAL RESERVE ESTIMATES

19.1 Database

All analytical, survey and geological data is kept in a fully functional and secure SQL database.

Geological logging of development faces and underground drill core is done digitally, using handheld computers with data imported directly into the SQL database. Laboratory assay results received are also transferred digitally, eliminating the chance of typographical errors.

Ore lens codes are assigned to each sample interval based on both the geological log and assay results. Ore lens codes are used to identify geological domains in the resource modelling.

19.2 Software

The geology department at Neves Corvo historically used an in-house 2D block modelling system (SUMP) as their primary geological modelling software. This system was designed to create paper plots of ore boundaries from which the mine geologists implemented grade control procedures and updated ore boundaries as it was only possible to consider an individual 2m thick slice plotted onto a paper plan at any given moment.

As development of the orebody progressed, it became apparent a 3D system was required to understand the complex orebody geometry. In 2001, the mine introduced the Vulcan software system.

The Geology Department completed the transfer of SUMP format block models into Vulcan block models in 2004. Since 2004, the mine has been performing the variography and block model updates within Vulcan.

On-going exploration on the Lombador deposit is under the direction of Lundin's Exploration Department who, in 2006, assisted the SOMINCOR geological department by updating the Lombador/Corvo Bridge and Lombador resource models. This update was done using Gemcom.

19.3 Population Statistics

Population statistics are calculated by deposit and mineralogical type to determine estimation parameters.

SOMINCOR does not apply ’top cutting’ is during grade interpolation. WAI has briefly studied statistics for copper and zinc grades, from the database provided by SOMINCOR, and agrees that no special treatment of grade outliers is required.

As discussed in AMEC’s 2005 report, the population statistics suggest that natural thresholds between ME and MC mineralisation may lie at 3-4%Cu. In the case of stockwork mineralisation, the natural boundary most likely lies at 0.5-1.0%Cu.

19.4 Domain Modelling

Resource estimation is constrained by domains interpreted from geological and assay data. The location of lithological contacts is derived from drill core and underground mapping data (if available), to determine domain boundary location. There are 9 main domain types at the deposit as follows:

1. Host volcanic rocks (Footwall) and greywacke (Hangingwall);
2. Massive pyrite (ME);
3. Massive chalcopyrite (MC);
4. Massive chalcopyrite and sphalerite (MCZ);
5. Massive sphalerite (MZ);
6. Stockwork barren sulphide mineralisation (FE);
7. Stockwork chalcopyrite mineralisation in footwall contact (FC);
8. Stockwork chalcopyrite mineralisation in hanging wall contact (RC); and
9. Rubane (tin & copper mineralisation).

Contacts between stockwork and massive sulphide bodies, stockwork and non-mineralised host rocks and between host rocks and massive sulphide are identified using lithology data from core log and underground mapping. Assay COGs are used to distinguish ore types inside the massive sulphide and stockwork structural types as follows:

Neves, Corvo, Graca and Lombador:

- 2.0% Cu COG to distinguish ME from MC and MCZ;
- 2.0% Cu COG to distinguish FE from FC;
- 3.0% Zn and 2.0% Cu COG to identify MCZ domain inside MC, and
- 3.0% Zn COG to distinguish ME from MZ.

Mineral resources for Zambujal reported at following COGs:

- 2.0% Cu COG to distinguish ME from MC and MCZ;
- 1.0% Cu COG to distinguish FE from FC;
- 3.0% Zn and 2% Cu COG to identify MCZ domain inside MC, and

- 0.5% Zn COG to distinguish ME from MZ.

19.4.1 Vulcan Domain Interpretation

Historically, the Neves Corvo resource model was created and evaluated using the SUMP system which was not capable of 3D wireframe modelling. Domains were outlined on 2m horizontal block model slices without linking the outlines together to create true 3D solids.

Since the SUMP block models were imported into Vulcan, domain models are based on sectional interpretation of the drill hole data plus any available face samples and underground mapping information.

Closed vertical perimeters, created in Vulcan, are linked together to produce 3D solids for each domain. Interpretation is performed on vertical cross sections orientated at 057-237°. Despite drill holes normally being spaced either 17.5m or 35m apart, intermediate perimeters are created manually every 2-4m between drill hole profiles in order to produce smoother solids. Solid construction is based upon a minimum mining width of 2m.

Domain solids are used as boundaries for block modelling and grade interpolation.

19.4.2 Gemcom Domain Interpretation

The resource model for the Lombador/Corvo Bridge and the Lombador deposit was created in Gemcom. The MC, MZ and ME domain wireframes were interpreted from available surface and underground drill holes. No assumptions with regards to minimum mining width was made for the Lombador resource model thus the wireframes represent in-situ geological and grade envelopes. Three distinctive massive sulphide lenses have been identified within which two MC and four MZ bodies were modelled.

19.5 Compositing

Histograms of sample length for the massive sulphide (ME+MC+MZ+MCZ) and stockwork mineralisation (FE+FC), for drill hole samples, from all deposits are shown in Figure 19.1 and Figure 19.2.

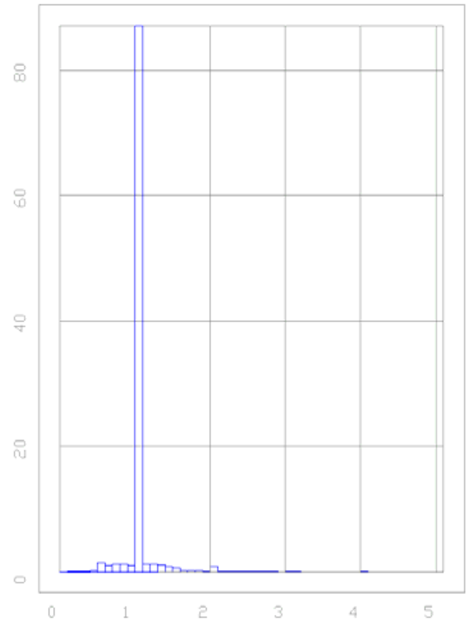


Figure 19.1: Massive Sulphide Samples Length Histogram (WAI)

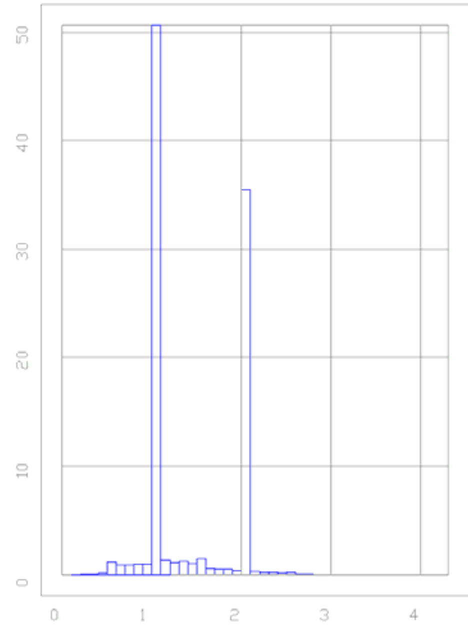


Figure 19.2: Stockwork Samples Length Histogram (WAI)

SOMINCOR does not composite samples prior to grade interpolation since the majority of assaying has been done on the same length. In case of Lombador/Corvo Bridge and Lombador 1m composites were used.

19.6 Volumetric Block Modelling

19.6.1 Vulcan Block Model

SOMINCOR's present Vulcan resource model comprises several individual block models sub-divided by deposit and further sub-divided by elevations within a deposit. The main reason for these subdivisions is Vulcan's limitations on block model size and computing time during interpolation.

The block model was originally created in SUMP using 2x2x2m size cells, with no sub-cells. The SUMP model was imported into Vulcan between 2001 and 2004. The Vulcan system is currently used for maintaining and updating the resource model.

Updating of the block models for massive sulphide and stockwork mineralisation is carried out using 2x2x2m parent cells in production areas and 4x4x4m parent cells in exploration areas. A minimum sub-cell size of 0.5m is used in both cases. Host rocks (volcanics and greywackes) are modelled with 50x50x20m parent cell dimensions. The whole block model structure is rotated 57° around the vertical axis to be parallel to the drill hole profiles. Blocks and sub-blocks are coded according to their mineralogical and structural type.

The mining department evaluates resource block model against mined out surveys solids and flags the mined out cells. The areas, which are permanently or temporary impossible to mine for any reasons (access, ground conditions etc.), are also flagged as “not mineable” and excluded from the mineral resources.

19.6.2 Gemcom Block Model

Standard Gemcom ‘percent’ block modelling technique was used with a cell size of 10×10×5m. Overall model structure is rotated 33° counter clockwise to align with drill hole profiles.

19.7 Variography

Somincor has traditionally modelled each orebody and ore type separately, employing nested two structure spherical semi-variograms. Directional semi-variograms are generated for Cu, Zn, Pb, S, Fe, Ag, Hg, Sn, As, Sb, Bi, Au and specific gravity. There are more than 70 variogram models that require fitting for each deposit. WAI has inspected a number of semi-variograms and found them to be appropriate. Examples of the semi-variograms used in Zambujal resource modelling are shown in the Figure 19.3 and Figure 19.4.

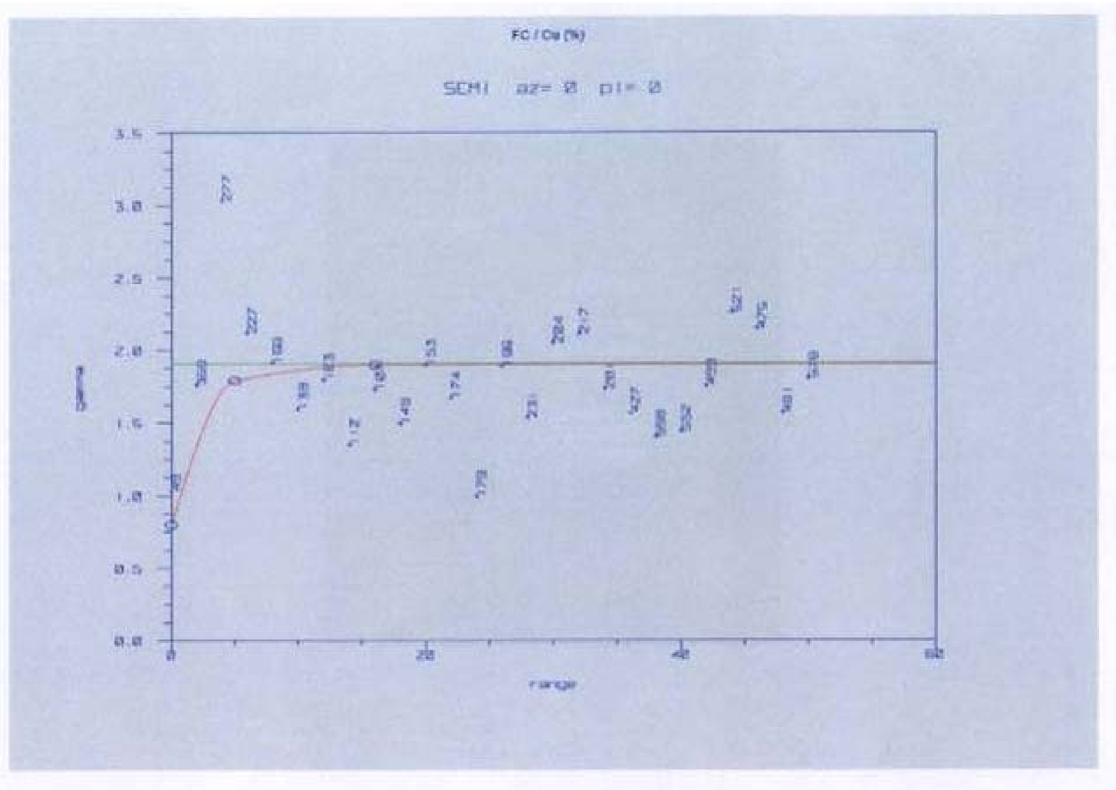


Figure 19.3: Copper semi-variogram, FC domain, Zambujal deposit (SOMINCOR)

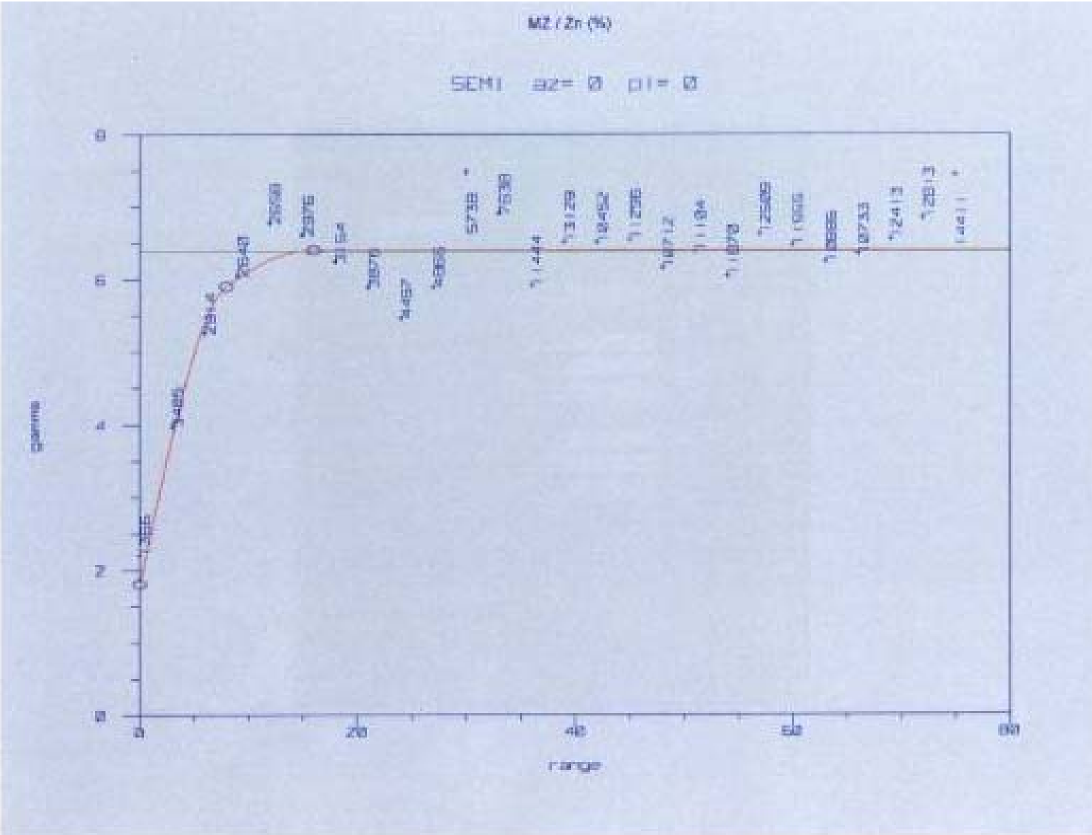


Figure 19.4: Zinc semi-variogram, MZ domain, Zambujal deposit (SOMINCOR)

19.8 Grade Interpolation

Grade interpolation for Cu, Zn, Pb, S, Fe, Ag, Hg, Sn, As, Sb, Bi and Au is performed using ordinary kriging with variogram model parameters derived from geostatistical analysis. A two iteration search method is employed, with the first search ellipsoid dimensions being determined by variogram range and the second search radius being twice the range. A unique search ellipsoid is used for each deposit, domain and metal. A minimum of 4 and a maximum of 32 samples are used to estimate the grade of each cell. Soft boundary conditions are used between lenses.

19.9 Density

SOMINCOR collects specific gravity (SG) measurements for massive sulphide exploration samples using a water displacement method. SG determinations for each sample are subsequently used for SG interpolation in the block model, using an ordinary kriging and the search ellipsoid applied for the grade interpolation.

A summary of the various density values used for the different ore types can be seen in Table 19.1.

Table 19.1: Neves Corvo Density Determinations		
Ore Type	**No. of Values**	**Mean SG**
Copper-rich Massive Sulphide Mineralisation (MC)	3,225	4.43
Zinc-rich Massive Sulphide Mineralisation (MZ)	5,051	4.61
Tin-rich Massive Sulphide Mineralisation (MT)	36	4.33
Low Grade Pyritic Massive Sulphide Mineralisation (ME)	10,568	4.52
Fissural Copper Mineralisation (FC)	4,890	3.50
Fissural Zinc Mineralisation (FZ)	278	3.62
Fissural Tin Mineralisation (FT)	113	3.49
Fissural Low Grade Mineralisation (FE)	14,604	3.14
Rubané Copper Mineralisation (RC)	207	3.38
Rubané Tin Mineralisation (RT)	347	3.19
Rubané Low Grade Mineralisation (RE)	738	3.14

Densities of the waste rock are assumed to be 2.8t/m^3 for both the footwall volcanic rock and the hanging wall greywacke.

19.10 Mineral Resource Classification

SOMINCOR reports its mineral resources under the JORC system of resource classification. During the grade estimation process, the current system classifies each cell into one of three resource categories on the basis of average distance to samples as follows:

- Measured <17.5m
- Indicated 17.5 - 35m
- Inferred 35 - 70m

19.11 Resource Statement

The summary for the current Neves Corvo mineral resources as on 31 December 2006 is provided in Table 19.2 below.

Table 19.2: Summary of Audited Resources at Neves Corvo Mine (31 December 2006)						
Category	**Tonnage**	**Grade**				
		% Cu	**% Zn**	**% Pb**	**g/t Ag**	**% Sn**
Copper Resources						
Measured	6,589,000	6.14	1.49	0.29	52.50	0.24
Indicated	12,830,000	5.34	0.77	0.26	47.08	0.19
Measured and Indicated	**19,420,000**	**5.61**	**1.01**	**0.27**	**48.92**	**0.21**
Inferred	3,000,000	4.54	0.78	0.25	72.86	0.13
Zinc Resources						
Measured	1,234,000	0.39	4.86	1.04	43.00	0.09
Indicated	29,440,000	0.56	6.20	1.23	60.33	0.32
Measured and Indicated	**30,680,000**	**0.55**	**6.15**	**1.22**	**59.63**	**0.31**
Inferred	25,500,000	0.56	5.49	1.46	55.12	0.06
Tin Resources						
Measured	61,000	2.43	0.60	0.11	20.56	3.45
Indicated	127,000	2.20	0.35	0.07	19.25	2.09
Measured and Indicated	**188,000**	**2.28**	**0.43**	**0.09**	**19.67**	**2.53**
Inferred	34,000	2.91	0.48	0.10	26.95	2.19

The above resource estimate is current as of 31 December 2006.

19.12 Mineral Reserve Estimation

19.12.1 Introduction

The definition of reserve envelopes is an integral part of the mine planning activity at Neves Corvo. Stoping volumes are determined according to access, cut-off grade, planned and un-planned dilution and ore loss. An effective minimum mining width of 5m is applied. SOMINCOR prepare their reserve statement annually based on *Measured* and *Indicated* resources only, and the principal tool used is Vulcan® 3D software.

19.12.2 Cut-Off Grade

The mining cut-off grade (COG) applied at Neves Corvo is determined by the senior management and is based on a combination of economic, mining and geological factors. The calculation is made by dividing the sum of the variable operating costs, the development costs and the royalties, per tonne of ore treated, by the net sales revenue per % metal per tonne treated.

The current mine plan has been prepared using cut-off grades of 1.91% Cu and 5.86% Zn, although a COG of 1.7% Cu has been accepted in some larger Bench & Fill stopes.

The economic boundaries of the copper ore bodies at Neves Corvo are largely controlled by structure and ore type. The influence of the COG, therefore, on the tonnage of mineable copper ore in the reserve is limited.

The zinc ore bodies are much more influenced by the COG, and their size and hence mining method is directly affected by the COG used to define the reserve.

Grade, however, is the principal element used to determine stope boundaries for both copper and zinc ore bodies.

The potential economic viability of an ore body or portion of the mining reserves is determined based on one metal, i.e. either copper content or zinc content.

At the present time, there are no treatment facilities to recover zinc from the copper ores, but this capability is planned for commissioning in 2010. Silver values are recovered from copper ores, and SOMINCOR expects to be able to recover lead and silver from zinc ores from 2009 onwards.

19.13 Wire Frame and Solid Modelling

The first stage in the reserve estimation methodology is to produce wire frames of the orebody at the cut-off grade boundary. This is achieved by importing the geological resource block model, prepared by the geology department, into Vulcan and applying the current cut-off grade. All blocks in the model with an average grade below the current cut-off grade are deleted from the model. The resulting economic block model is then viewed in a series of plans at 5m vertical intervals. The mining engineer draws an outline around the economic ore blocks on each level to form a series of wire frames also at 5 m vertical intervals. Figure 19.5 and Figure 19.6 below illustrate wireframes at the 2% Cu COG level in the Zambujal orebody.

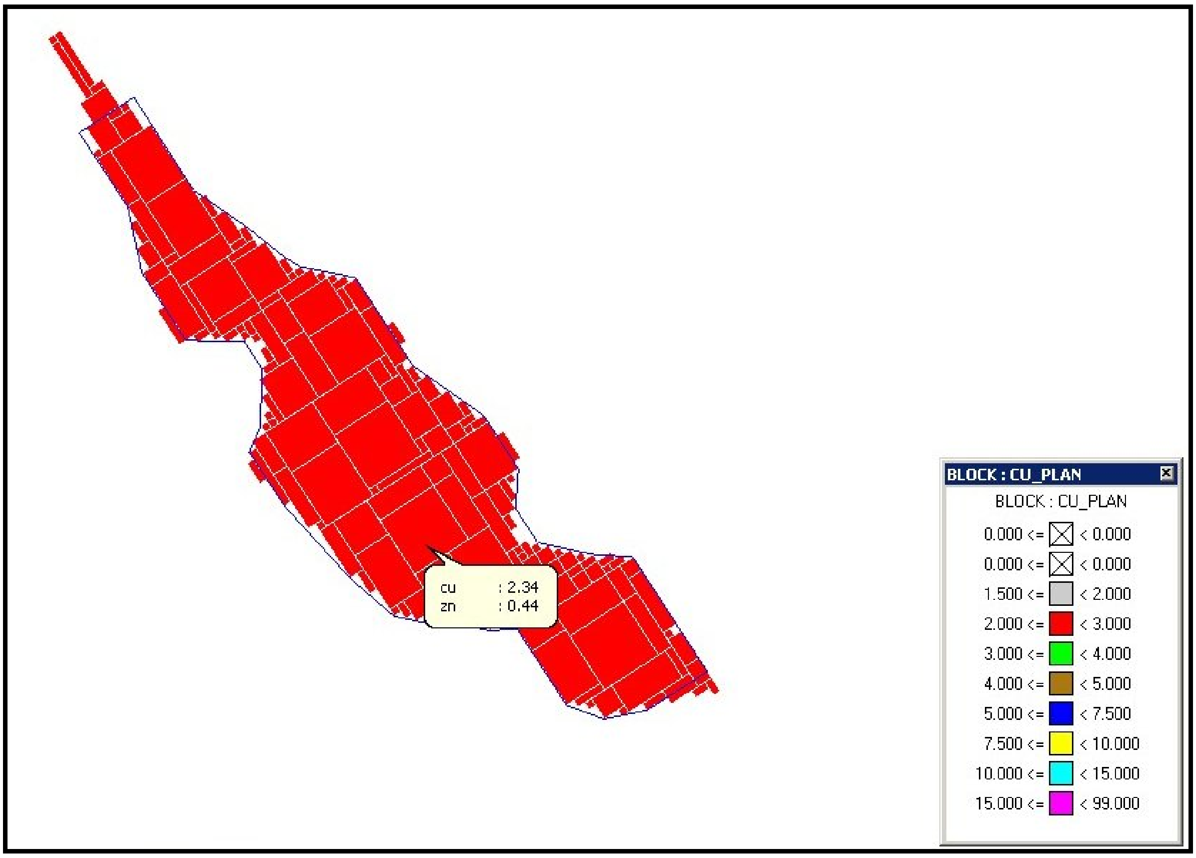


Figure 19.5: Plan of Orebody at 2% Cu COG with Wireframe (SOMINCOR)

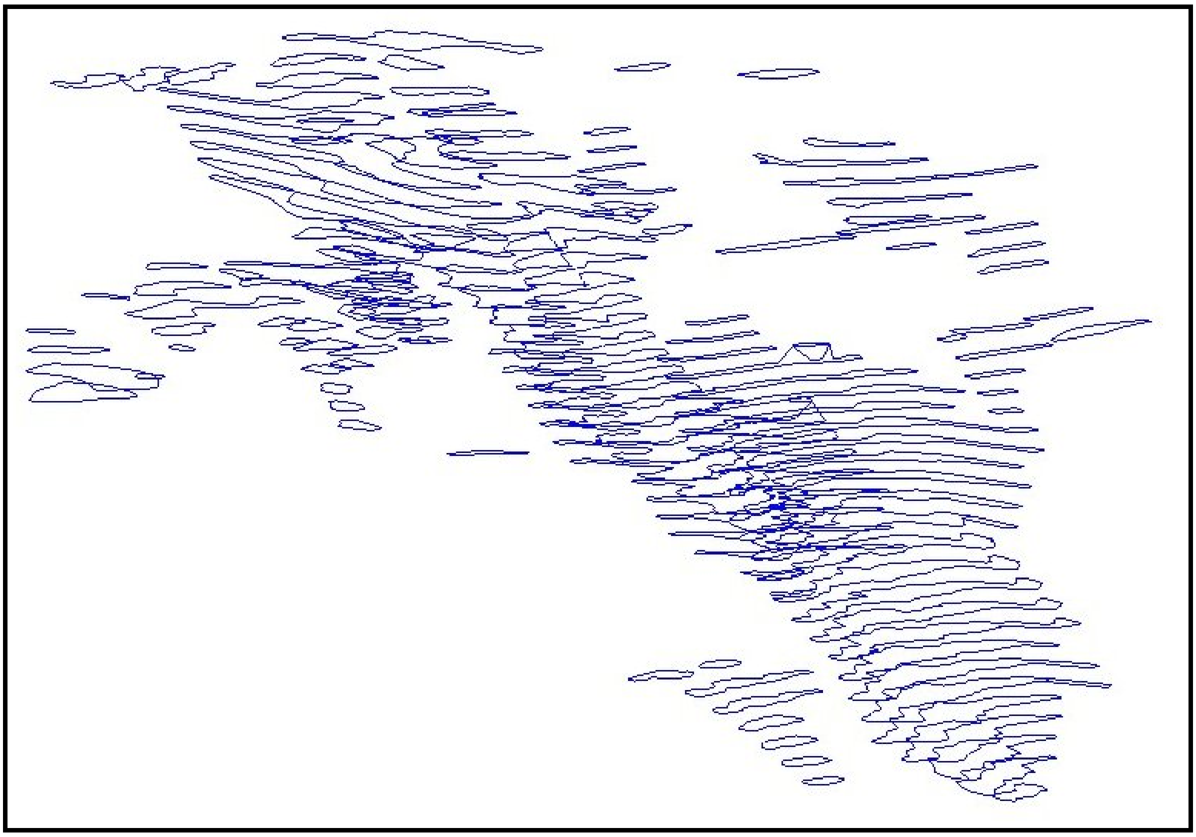


Figure 19.6: Wireframes at 5m Intervals through Zambujal Orebody (SOMINCOR)

Not all the blocks within the economic block model will be included inside the wire frame envelope. A number of factors including stoping method, minimum mining width, amount of development required and grade determine whether or not the block will be included. Conversely, some blocks below the minimum mining width of 5m may be included, if the grade of the block is sufficiently high to justify the cost of extraction and processing.

A series of 5 m thick solids, representing the volume of mineable material on each level, are then created from the wire frame envelopes as seen in Figure 19.7. Wedges are manually inserted between the hangingwall and footwall intersections of solids on each level. These represent slashing of the stope sidewalls in order to fully extract the ore in each stope.

The solid model is re-evaluated against the original geological resource block model to determine the volume, tonnage and grade of the material inside the model along with ore type and any internal dilution.

The geological resource block model used to determine the mining reserves contains *Measured*, *Indicated* and *Inferred* resources. Historically at Neves Corvo, almost all resources in the *Inferred* category have subsequently transferred through to *Indicated* and *Measured* categories. For this reason the creation of the wire frames and solids is performed on the entire block model with *Inferred* resources being deleted from the reserve after evaluation against the original block model.

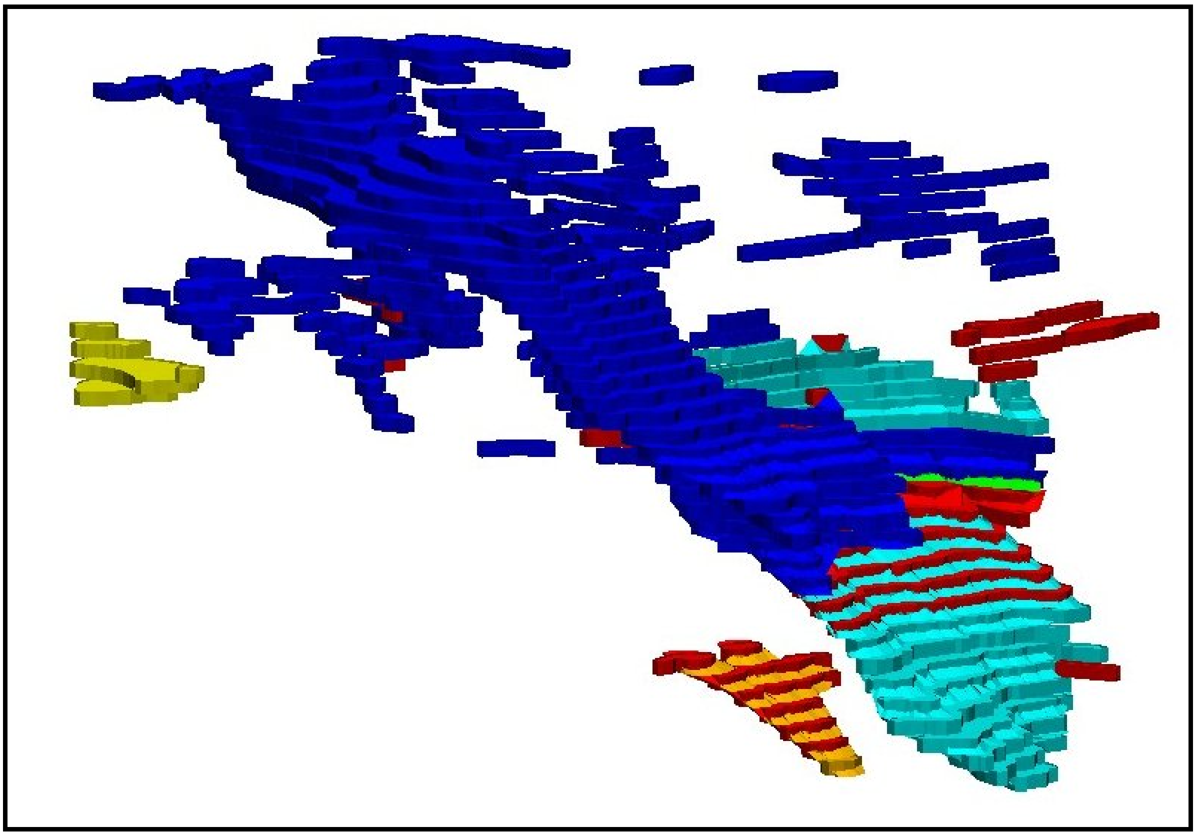


Figure 19.7: Solid Model of Zambujal Orebody (SOMINCOR)

During the reserve estimation, due cognisance is taken of mined-out areas within the mine. Solids created from underground survey data are imported into Vulcan and used to overlay the block model. Figure 19.8 illustrates a large mined-out area (shown in light brown) imported in to Vulcan and used to assist in the drawing of wireframes.

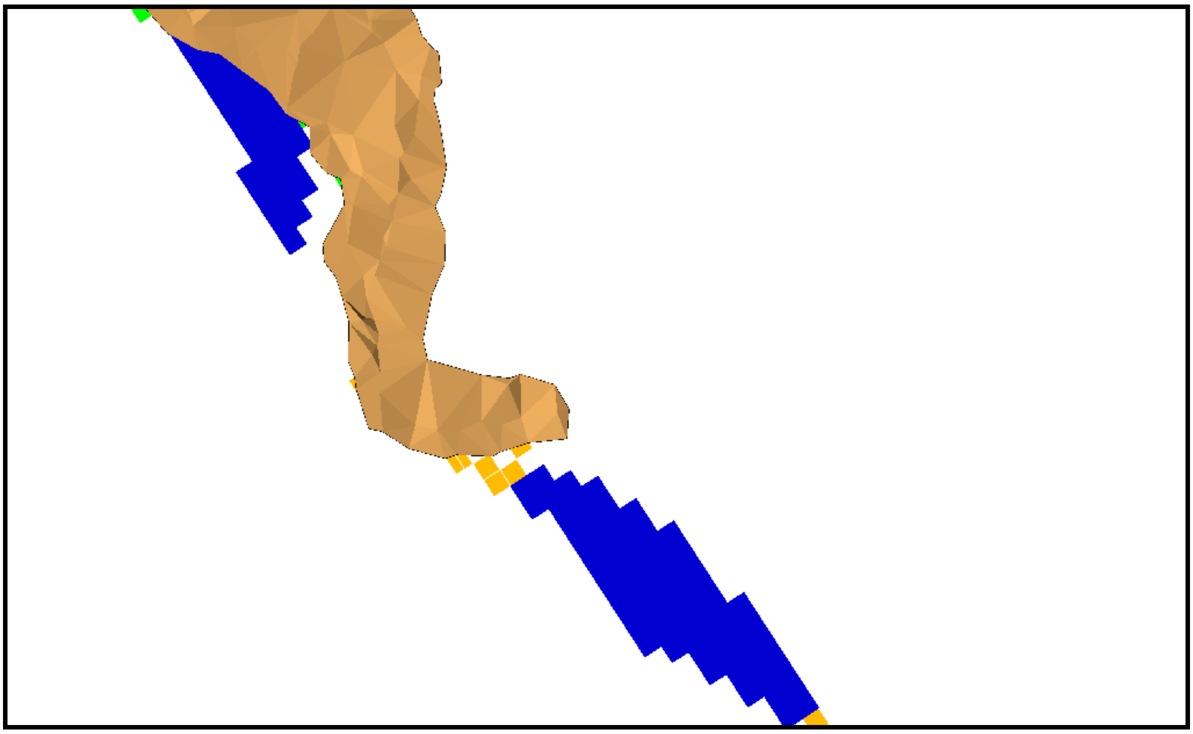


Figure 19.8: Mined-out Area Solids Imported into Vulcan (SOMINCOR)

19.14 Recovery and Dilution

The solid models produced in Vulcan along with associated tonnages, grades, ore-types, resource category and internal dilution are then incorporated into the mining plan. The planning department apply a detailed dilution factor to each stope using a dilution simulator. This dilution simulator takes into account mining losses and dilution introduced through mining next to backfill. The amount of dilution is dependant on stope size, mining method and backfill type.

For the purposes of reserve reporting a dilution factor is applied to each stoping block dependant on the mining methods employed. Typical dilution factors applied are:

- Primary Drift and Fill Stopes 5.1%
- Secondary Drift and Fill Stopes 10.2%
- Bench and Fill Stopes 4%

An overall mining recovery factor of 95% is also applied to the reserve, to allow for losses particularly near contacts and in secondary stopes.

19.15 Reserve Reporting

In order for reserves to be considered Proven or Probable, they must be derived from *Measured* or *Indicated* resources only, and also be supported by mine plans and schedules together with all associated costs, recoveries and dilutions, in order to demonstrate that extraction is economically viable.

In February 2007 WAI audited the reserve estimation methodology employed by SOMINCOR along with the Reserve Statement dated 31 December 2006, and as such believe the reserves to have been prepared in accordance with JORC Code (2004) and CIM Definition Standards on Mineral Resources and Mineral Reserves (CIM 2005) definitions that are referred to in National Instrument (NI) 43-101, Standards of Disclosure for Mineral Projects. Table 19.3 below is a summary of reserves contained within the mine as of 31 December 2006.

Table 19.3: Summary of Audited Reserves of Neves Corvo Mine (31 December 2006)

Category	***Tonnage***	***Grade***			
		% Cu	***% Zn***	***% Pb***	***g/t Ag***
		Copper Ore			
Proven	6,230,129	5.17	1.15	0.24	36.3
Probable	11,008,977	4.74	0.68	0.23	28.8
Total	**17,239,107**	**4.89**	**0.85**	**0.23**	**31.5**
		Zinc Ore			
Proven	144,809	0.29	6.36	1.34	35.8
Probable	10,784,915	0.43	7.89	1.49	62.3
Total	**10,929,725**	**0.43**	**7.87**	**1.49**	**62.0**

Future additions to the mineral inventory are likely to come from Lombador North and Lombador South. Currently, all the resources in these areas are in the *Inferred* category, and therefore have not demonstrated economic viability and thus do not appear in the reported reserve.

19.16 Reconciliation

19.16.1 Introduction

Reconciliation was used in the past by SOMINCOR as an important tool in the verification of the resource block model. A complete reconciliation between the block model, mine head grade and the mill grade took place every six months. These regular reconciliations ceased in 1995 as the results demonstrated that the milled grades were consistent with those predicted by the resource block model.

As part of the operational management of the mine and milling operations, the geology department prepare an estimate of 'broken ore' in the mine. This is an estimate of the tonnage and grade of ore mined with allowances made for dilution and is used to assist in maintaining a feed to the mill consistent with the mine budget.

During 2006 a new reconciliation exercise was undertaken because of discrepancies between the estimated mining grades and the mill feed.

19.16.2 Methodology and Results

The method used to reconcile production concentrated on comparing data provided by the mill for actual ore processed, with underground surveys to ascertain the volume of mined-out voids, in a specific time period (January to June 2006). The surveyed voids were imported into the Vulcan block model of the mine and a calculation of grade and tonnage was obtained for just the void space. A factor was applied to account for sidewall dilution, when mining next to backfill in secondary stopes, and adjustments were made to reflect material stored in surface stockpiles.

The results of this study confirmed that the grade and tonnage calculated for the void space using the Vulcan block model compared well with the actual grade and tonnage of ore processed in the mill. An additional check on the tonnage of ore mined derived from shaft hoist power consumption also reconciles well with the processed tonnage.

A second reconciliation exercise, using the same methodology, was conducted for July to September 2006. Again, the results appear to confirm the validity of the block model when comparing the modelled grade and tonnage of mined-out stopes with actual ore processed in the same period.

The estimated grades for 'broken ore' do not reconcile well with either the block model or the mill, but show a systematic error.

Figure 19.9 shows grade reconciliation for the mill, broken ore and the resource model compared with the annual plan for January to June 2006. There is a strong correlation between the grades of the mill (blue) and resource model (yellow). The 'broken ore' (green) appears to show a systematic error with grades consistently around 12% higher than those for the mill and resource model.

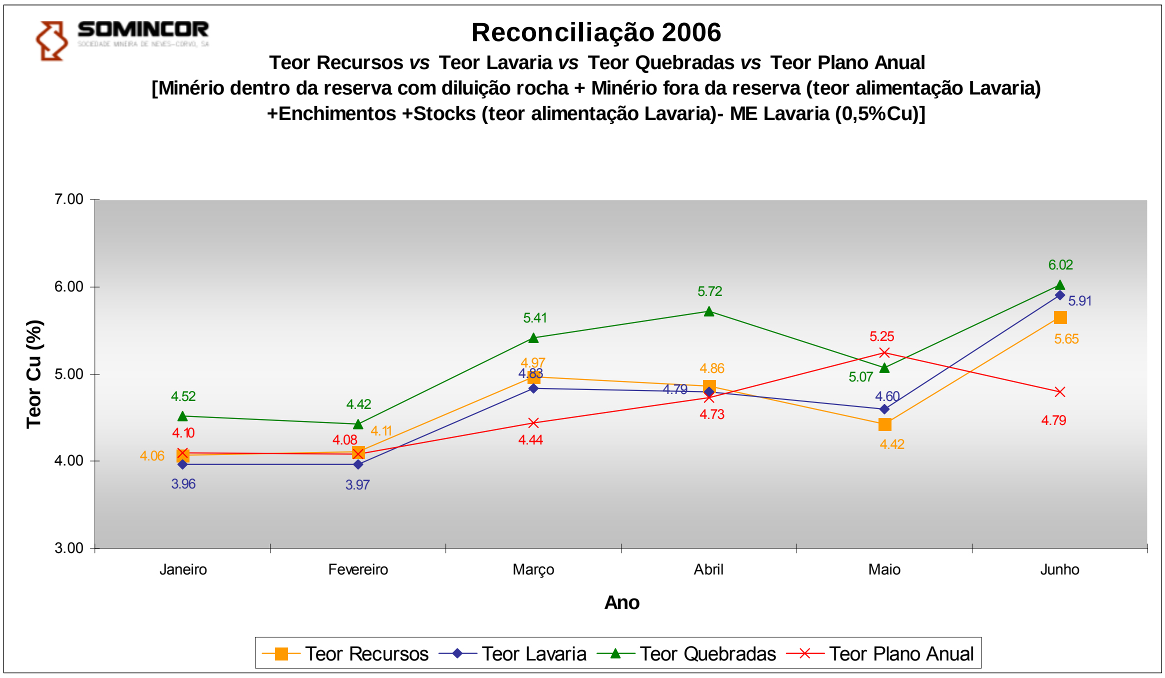


Figure 19.9: Results of 2006 Reconciliation (SOMINCOR)

Translation: Teor Recursos (Yellow) = Resource Grade; Teor Lavaria (Blue) = Mill Grade; Teor Quebradas (Green) = 'Broken Ore' Grade; Teor Plano Anual (Red) = Annual Plan Grade.

SOMINCOR staff are aware that this systematic error exists and apply a correction factor to the 'broken ore' grades. The main reason given for the variation, is the simplified calculation method used to calculate the grade of the 'broken ore'. The calculation is based on face samples taken daily from development headings. Grades are apportioned to areas on the development plan weighted by distance from the face sample. Volume, tonnage and dilution are then calculated from survey data.

Resource grade, mill grade and 'broken ore' grade all vary against the planned grade on a month by month basis. In order for the mine to consistently meet the planned grade requires a complex interaction of many operational factors including detailed resource modelling and accurate daily forecasting.

20.0 OTHER RELEVANT DATA AND INFORMATION

WAI are not aware of any other relevant date and information which is relevant to this project.

21.0 INTERPRETATION AND CONCLUSIONS

The Neves Corvo Mine is located some 220km southeast of Lisbon in the Alentejo district of southern Portugal. Since November 2006, Sociedade Mineira de Neves Corvo SA (SOMINCOR) has been fully consolidated into Lundin Mining (Lundin). In June 2007 Silverstone Resources Corporation (Silverstone) agreed to acquire 100% of the life of mine payable silver production from Lundin. The mill at Neves Corvo produces approximately 0.5Moz of payable silver annually in the copper concentrate.

The mine has operated continuously since 1989 and annual production of copper metal in concentrate since 1997 has ranged between 76.3-114kt with an additional 0.35-3.5kt of tin metal in concentrate. In recent years the copper ores have been treated at a rate of approximately 2.0Mtpa. The copper head grade fell below 5% Cu in the years 1998 to 2001, but this figure was exceeded from 2002 to 2004 whence it has declined to below 5%. However, Cu recovery has steadily improved over the last 3 years (2004 – 2006 inclusive) to over 88%. Since 1997, copper recovery has ranged from 85.3% to 88.4%.

Neves Corvo is located in the western part of the Iberian Pyrite Belt (IPB) which stretches through southern Spain into Portugal and which has historically hosted numerous major stratiform volcano-sedimentary massive sulphide (VMS) deposits. Five massive sulphide lenses have been defined at Neves Corvo comprising Neves (divided into North and South), Corvo, Graça, Zambujal and Lombador. The base metal grades are segregated by the strong metal zoning into copper, tin and zinc zones, as well as barren massive pyrite.

Whilst SOMINCOR's resource estimation methodology is not faultless, WAI believes that in general the resource estimation is prepared in accordance with the JORC Code (2004). However, WAI is of the opinion that the resource modelling methodology can be improved to be in-line with the best industry practice. By doing so, SOMINCOR will achieve greater operational flexibility and save time in both the Geology and Mine Planning departments.

WAI considers that the SOMINCOR database is fully functional and provides easy and secure access to the data upon which resource estimation is based. However, WAI believes that the Neves Corvo resource model is over complicated even though the modelling methodology currently employed delivers an acceptable resource model, it is far too time and labour consuming.

WAI also believes the methodology used to calculate the mining reserve at Neves Corvo to be simple and transparent. The cut-off grade applied takes into account economic, mining and geological factors. Minimum mining widths, development, access, stoping methods and previous mining are considered. Sensible factors for recovery and dilution, derived through extensive operational experience are applied. The use of Vulcan as a mine planning tool is a major improvement over the old SUMP system as it allows the orebody, development and mined-out areas to be viewed in 3-dimensions, enabling basic stope design to be conducted quickly and efficiently.

The mine access is provided by one vertical 5m diameter shaft, hoisting ore from the 700m level, and a ramp from surface at a gradient of 17%. A number of different stoping methods are employed on the mine but the most prominent being Bench and Fill and Drift and Fill which account for 41.5% and 38% of production tonnages respectively. Dilution has been highlighted as being a major concern in the Drift and Fill Stopes (19%) and the mine is progressively moving towards increasing production from the Bench and Fill (5-7.5%) method.

The processing operations at Neves Corvo are divided between the Copper Plant, which treats copper ores, and the Zinc Plant which treats a polymetallic ore. The processing of copper ores is well established, with over 18 years of production. By world standards, the copper ores are exceptionally high-grade although processing is made more difficult by the fine grained nature of the mineralisation and high levels of pyrite present.

In 2006 the Company commenced treating zinc ores. These massive pyrite ores are essentially polymetallic, containing minor levels of copper, lead, and silver although these minerals are not recovered. The ores are treated at a rate of 400,000tpa in the former Tin Plant which has been converted for this purpose.

The Cerro do Lobo tailings dam is a water retaining embankment dam; tailings are deposited into the impoundment by sub-aqueous means to prevent oxidation of the mainly sulphide (pyrite) waste. In 1999, a paste plant commenced operation to provide paste backfill for stopes and since that time, tailings from the mill have either been used to produce paste backfill or have been sent to the tailings dam.

Environmentally the Neves Corvo mine inherently has a number of significant potential environmental impacts, due to its size and scale, location (close to the Oeiras River) and the nature of the mineral deposit (pyritic, with heavy metals). Therefore environmentally it is a challenging operation.

Notwithstanding the occasional environmental problems and incidents, the mine is operated and managed to a very high standard, largely in accordance with best international practice, and the potential impacts are well understood and mitigated. Nevertheless to maintain this standard requires considerable vigilance and continuing attention. If the present environmental management regime and commitment by SOMINCOR were not maintained, then there would be considerable regulatory problems and a much poorer environmental record.

The only significant area of concern that is not, in WAI's opinion, being dealt with adequately by SOMINCOR, is the provision for mine closure and the closure funding arrangements.

On the basis of the information available to WAI from a number of review visits to the mine, there do not appear to be any major actual or potential environmental liabilities that are not already documented and covered by operational procedures.

However, even with adequate closure, in the long term it is likely that the Cerro do Lobo tailings facility and the waste rock dumps will be a long term liability, perhaps in perpetuity. The continuing risk of acid generation and leaching of this acid (with attendant heavy metals), which could threaten water resources, will always be present. The location of the waste rock dumps, and particularly the tailings dam, directly above the Oeiras River, means that maintenance, inspections and monitoring will be required over the very long term. Treatment of the seepage water means that appropriate facilities might need to be maintained for very many years. The financial and management extent of these liabilities need to be examined and updated in a Mine Closure and Future Liabilities Plan.

Current permitting for the mine requires the preparation of updated mine closure plans on a 5 year cycle. Thus far the closure plans have been developed in a somewhat piecemeal fashion. The next review and update is overdue, however SOMINCOR indicate that that this will be undertaken in late 2007 or 2008. The paste tailings proposals will have a major affect on the tailings facility closure plan, and could reduce the costs.

In the opinion of WAI, SOMINCOR has prepared an achievable 10 year plan to mine a portion of the remaining known copper and zinc ores at Neves Corvo. It should be noted that this 10 year schedule exploits only a portion of the current *Indicated* resource. There remain substantial additional zinc reserves and also a significant *Inferred* resource which has not been considered here. SOMINCOR is currently reviewing options to improve the utilization of this resource base.

The annual production rate of up to 2.4Mtpa is greater than that proposed in SOMINCOR's 2005 Life of Mine plan. Though WAI concur that the reserve should be able to sustain such production levels.

The SOMINCOR financial model provides an indication of the likely pre-tax operating returns, however, there can be no assurances that the assumptions made in preparing these cashflow projections will prove accurate, and actual results may be materially greater or less than those contained in such projections.

The SOMINCOR financial model indicates the Net Present Value of the Neves Corvo Mine at a discount rate of 10% as $US 755M. This is based on an average copper price $US 1.78/lb and a zinc price of $US 0.895/lb. WAI considers that the project is robust.

22.0 RECOMMENDATIONS

As a result of the overcomplicated resource model the SOMINCOR Geological Department is unable to update the resource model on time. WAI recommends that solid construction is simplified as this is currently the most time consuming task. Domain solids should correspond with the geological continuity of the orebodies and not be restricted by mining sector or exploration area boundaries. WAI recommends that the current 5m minimum mining width is respected during resource wireframe modelling. This will allow the use of bigger cells within the model and reduce the overall model size significantly.

WAI considers that the approach adopted by SOMINCOR is suitable and meets the requirements for reporting of reserves under JORC and NI 43-101. The only areas where improvements could be made are in the application of COG and through simplification of the block model.

In order for the company to react quickly to changes in economic conditions and have the ability to truly analyse where economic stope boundaries lie, the application of COG at both the resource and reserve stages should be re-considered. In order to achieve this, however, far reaching changes to the whole resource modelling process will need to be implemented.
It should be noted that the methodology adopted for defining mining reserves is somewhat dependant on the methods employed during the resource modelling stage. If wholesale changes are made to the resource model then the reserve estimation methodology may also require changes.

WAI believes that much of the grade control effort may be unnecessary (particularly the bench and fill drilling) as a considerable volume of historical data points to a consistent trend that the grade control samples give grades approximately 10% higher than the defined reserve grade for that particular block. Thus, it may be more beneficial and cost effective to undertake additional fan drilling at the resource definition stage, rather than considerable volume of grade control drilling now undertaken.

Due to the rather piecemeal formulation the mine closure options it is recommended that a comprehensive and updated Mine Closure Plan is prepared, reflecting the proposed changes in the TMF and Life of Mine Plan, and updating the cost projections. The paste tailings proposals will have a major affect on the tailings facility closure plan, and could reduce the costs. Financial provision for the mine closure fund will also need to be reviewed.

23.0 REFERENCES

AMEC Americas Ltd. (January 2005), Data and Resource Review Report, Neves Corvo Project on behalf of EuroZinc Mining Corporation.

Amilcar Soares (Relatório: Novembro de 2006) Análise da Densidade dos Jazigos de Neves Corvo.

Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code) 2004 Edition; Prepared by: The Joint Ore Reserve Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

Biodesign (1998): Prepared a plan, with costs, for rehabilitation of the Areeiro do Formosinho sand quarry.

Burns, N.R. (February 2007): Resource Estimation, Lombador Orebody, Neves-Corvo, Portugal on behalf of Lundin Mining Corporation.

Canadian Institute of Mining, (December 23, 2005): National Instrument 43-101 - Standards of Disclosure for Mineral Projects, Form 43-101F1 and Companion Policy 43-101CP.
Canadian Institute of Mining, (November 14, 2004): CIM Definition Standards on Mineral Resources and Mineral Reserves.

Clarke, N.R., Newall, P., King, P., Coppin, N., Watson, N., Oates, R., (March 2004): Technical Report on the Neves Corvo Mine, Portugal on behalf of EuroZinc Mining Corporation, 43-101F 'Technical Report' filed in Sedar March 16, 2004.

Golder Associates (1992): Closure of the Mine site and the Cerro do Lobo tailings facility, assuming a mine life to 2015.

Golder Associates (May 1992): Neves Corvo Mine Closure Study. 4 Volumes – Executive Summary; Technical Report; Cost Estimates; Appendices. Report to Somincor.

Golder Associates, (March 2007): Feasibility Study of Expansion of Cerro do Lobo Tailings Facility Using Paste / Thickened Tailings Technology. Report to Somincor SA.

Knight Piésold (1998): Mine Closure. Report to Somincor.

Knight Piésold (March 2001): Mine Waste Disposal Requirements. Report to Somincor.

Owen, M.L., Kornitskiy, A. & Mihalop, O. (February 2007): Report on Resource and Reserve Estimation Methodology at Neves Corvo Mine, Portugal. Wardell Armstrong International. Unpublished report commissionerd by Lundin Mining.

Owen, M.L., Kornitskiy, A., (October 2006): Interim Summary Report – Review Of Resource Methodlogy, Neves Corvo Mine, Alentejo Region, Southern Portugal on behalf of EuroZinc Mining Corporation.

Rio Tinto Technical Services Ltd. (August 1999): Neves Corvo Tailings Dam Closure Options Review.

Steffen, Robertson & Kirsten (September 1998): Report on Neves Corvo Mine Closure Study. 4 volumes – Executive Summary; Mine Site and Metallurgical Plant; Cerovo do Lobo Tailings Impoundment; Setubal Port Facility. Report to Somincor.

24.0 DATE AND SIGNATURE PAGE

Technical Report on the Neves Corvo Mine

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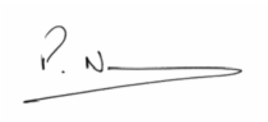

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25.0 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES

25.1 MINING OPERATIONS

25.1.1 Introduction

The mine operates a '3 shifts per day, 6 days per week' system with two crews working Monday to Fridays and Tuesday to Saturday for 37.5hrs per week per employee.

The mining department has a total of 529 staff in Production, Development Services, Engineering, Planning, Geology and Exploration.

The mine produces two types of ore; MC (+MCZ) copper ore and MZ zinc ore. Production of tin ore (RT) ceased in the early part of 2006 with the processing plant subsequently being converted to treat zinc. Production in 2006 totalled 1.95Mt copper ore and 0.15Mt zinc ore. Production for 2007 is budgeted to be 2.0Mt copper ore and 0.4Mt zinc ore.

The mine is accessed by a 5m diameter circular concrete-lined shaft situated to the west of the main Corvo orebody, and a ramp which has been developed from surface to the 700 Level.

Underground levels (elevations) relate to a datum of 1000m below sea level. Mine surface is approx. 220mASL, or 1,210m above datum.

The shaft is 600m deep and extends to just below the 700 Level; it is equipped with rope guides, a 2.4MW double drum winder and two 15t capacity skips. The winder has been installed with an automatic skip loading system and has a rock hoisting capacity in excess of 4Mtpa (for a 24hr and 7 day per week operation).

The upper crusher station is located at the 700 Level and crushes ore and waste from the Upper Corvo, Neves and Graça orebodies. This facility has four 1,500t capacity storage bins and a jaw crusher capable of handling up to 600t/hr. The material for hoisting is fed by a short conveyor from the storage bins for skip hoisting at the loading pocket.

A second crusher at the 550 Level services the lower section of the mine, which extends from the 700 Level to below the 550 Level. This crushes ore from Lower Corvo. Ore or waste reporting to the crusher is fed directly onto a vibrating feeder. The installation has a limited post-crushing storage capacity of 900t, which consists of two rock storage bins of 500t and 400t capacity.

Ore and waste are crushed to <250mm and fed onto the TP12 inclined conveyor, which runs at a gradient of 25% and delivers the crushed material to the 700 Level bins. TP12 runs at a speed of 3.2m/sec and has an installed capacity of 400t/hr. This conveyor has caused production difficulties within the mine and operates below its nominal capacity.
The main access ramp from surface has been developed at an average gradient of 17%, has a cross sectional area of $18m^2$ and provides vehicular access to the 700 Level. This ramp handles all the movement of men and materials in and out of the mine.

There is a small cage in the hoisting shaft which can be used for emergency egress. It is not in a separate bratticed compartment. On day shift there are about 300 persons underground, and about 150 on each of the other shifts. The cage can hoist 8 men at a time with a cycle of about 8mins. Platforms can be installed in the skips, each of which can take 5 or 6 men. The cage cannot operate when the skips are working.

Additional ramps have been developed within the mine to access the orebodies and carry out exploration development.

The mine has three fully equipped underground workshops for mobile and fixed plant repair situated at the 810, 700 and 590 Levels.

25.1.2 Stoping Methods

Neves Corvo is a mature mine, and the mining methods have been tried, tested and developed over the course of the past 18 years.

Three principal stoping methods are employed at Neves Corvo, namely; Bench & Fill, Drift & Fill and Mini Bench & Fill. Sill Pillar mining has also been employed as a pillar recovery technique for mining sill pillars beneath backfill.

Where the geometry is favourable the higher productivity and lower cost Bench & Fill method is favoured. Where the geometry is unsuitable for Bench & Fill and ore grades are sufficient, Mini Bench & Fill and Drift & Fill are used. Currently Bench & Fill and Mini Bench & Fill stopes account for almost two thirds of the mine production with the majority being in the Lower Corvo section of the mine.

25.1.2.1 Bench & Fill

This is the main bulk mining method in use at the mine, being applied where the ore body is of sufficient thickness (greater than 15m) to enable its application. In 2006, this method accounted for over 60% of mine production.

The orebody is accessed via a footwall ramp. Footwall drives are developed off this ramp at 20 metre vertical intervals and run along strike in waste. Each stope is then established by driving a crosscut through the orebody from the footwall drive to the hangingwall contact. Two crosscuts are required in each stope, one forming a top access and one a bottom access. A slot raise is then developed on the hangingwall contact from the bottom access to the top access.

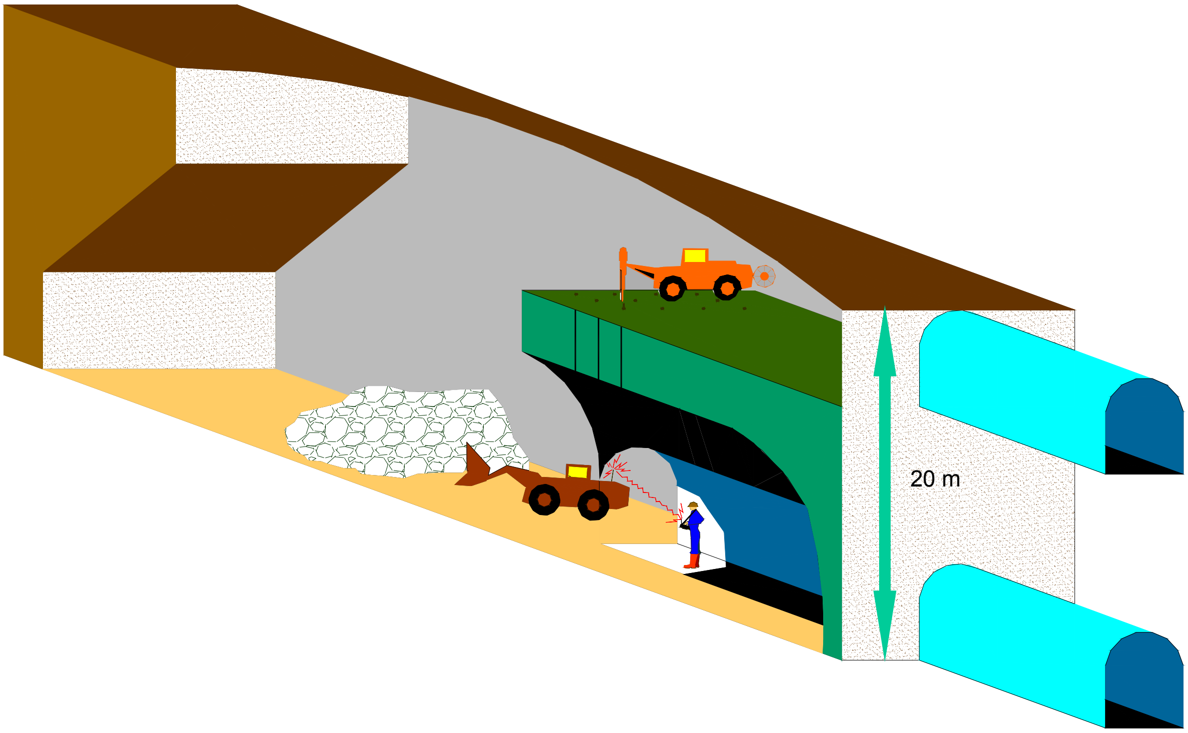

Figure 25.1: Bench & Fill Mining Method (Schematic)

Once this basic stope development has been established, the top access is opened up to the full stope width (usually 12m) and the slot raise also widened to full stope width. The top access is supported with fully-grouted and tensioned cable bolts and 100mm of wet-sprayed concrete. The stope is drilled with rings of 15m long, 105mm diameter vertical blast holes from the top access to the floor level of the bottom access, or breaking through where they intersect the bottom access. Blasting takes place starting at the hangingwall slot raise and retreats toward the footwall. Ore is mucked from the bottom access, using remote-controlled LHD (Load Haul Dump) vehicles, and trammed directly to orepasses located on the footwall drive. Where a convenient orepass is not available, ore is loaded into 40t mine trucks for hauling to the nearest crusher or orepass.

Each stoping panel is divided into alternate primary and secondary stopes. All the primary stopes in a panel are mined and backfilled before the secondary stopes are mined. Bench & Fill stopes can be up to 120m long in some areas of the mine. In large stopes such as these, the excavation is usually split in to 2 or 3 sections of 40 to 60m, with backfilling taking place before extraction of the next section.

Ground control and rock mechanics are important factors in Bench & Fill mining as the excavations are large and mining induced stresses build up around the orebody. WAI engineers visited several Bench & Fill stopes and observed the mining sequence in detail. In general, ground conditions were found to be good, although, in recent years there have been some major failures in the Lower Corvo orebody. The technical staff at the mine understand the causes of these failures and have introduced new ground control methods and sequencing to overcome the past problems.

25.1.2.2 Drift & Fill

Drift & Fill stoping accounts for around 400,000t of ore production each year, mainly in the Upper Corvo, Neves and Graça orebodies. The method is used where the vertical thickness of the orebody is not sufficient to justify Bench & Fill or Mini Bench & Fill mining, generally less than 8m.

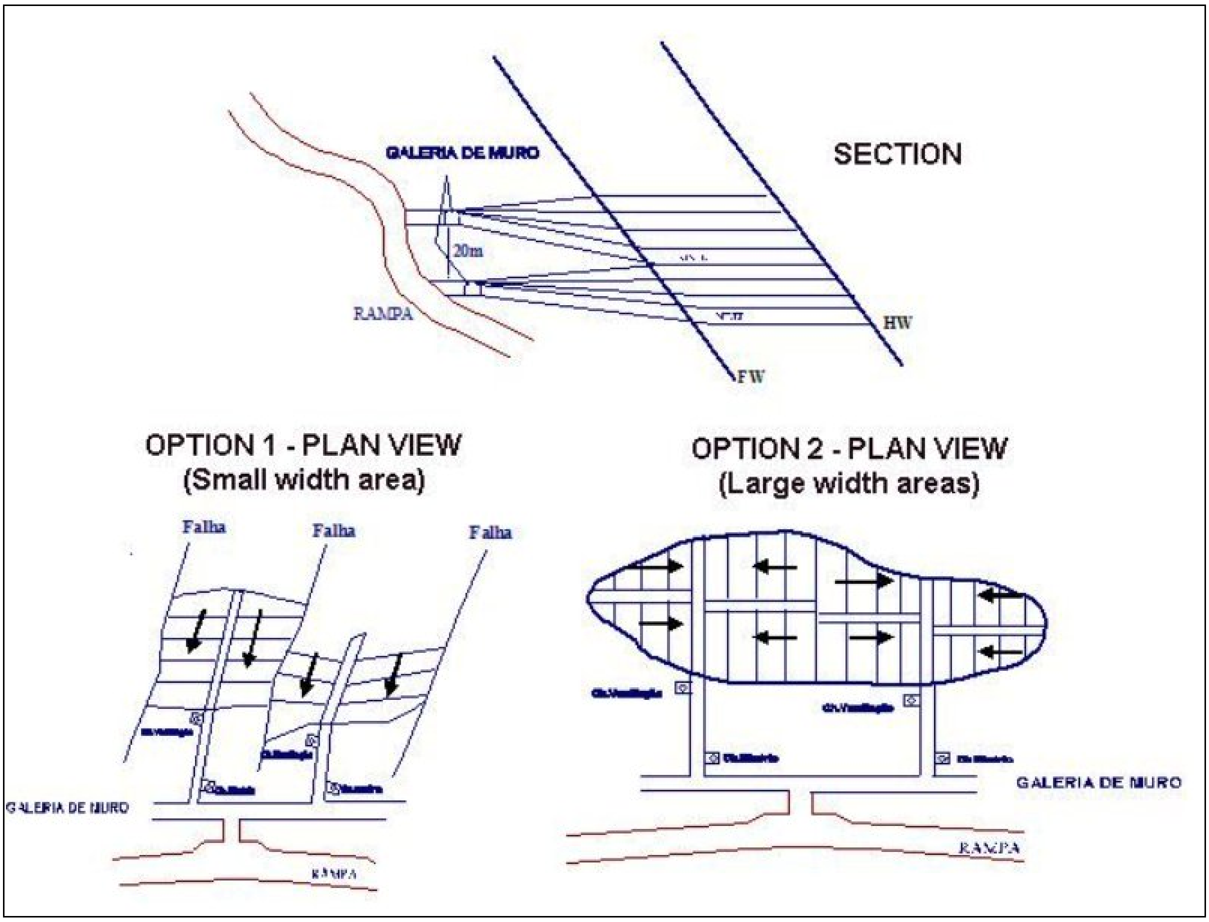

Figure 25.2: Drift & Fill (Schematic)

As with Bench & Fill, the orebody is accessed from a footwall ramp, with footwall access drives along the strike of the orebody. Again, the footwall drives are located at 20m vertical intervals. Cross-cutting ramps are then developed down and up from the footwall drive to the hangingwall of the orebody in order to be able to mine four vertical slices each 5m in height. The actual Drift & Fill stopes are 5 x 5m development drifts driven off the access ramps along the orebody strike. Adjacent drifts are mined and filled with hydraulic fill. Once all the drift stopes have been mined on one level the access ramp is filled with hydraulic fill and the back is slashed to access the overlying panel. Ore is mucked from the drifts using LHD's and transported to orepasses located in the footwall drives.

25.1.2.3 Mini Bench & Fill

Mini Bench & Fill is a modified form of Drift & Fill, but with greater productivity, and is used where the orebody has a vertical thickness of 8-15m but some selectivity is still required. As with the other methods, the orebody is accessed via a footwall ramp and footwall access drives driven along strike at 20m vertical intervals. Crosscuts are mined from the footwall drive to the hangingwall contact.

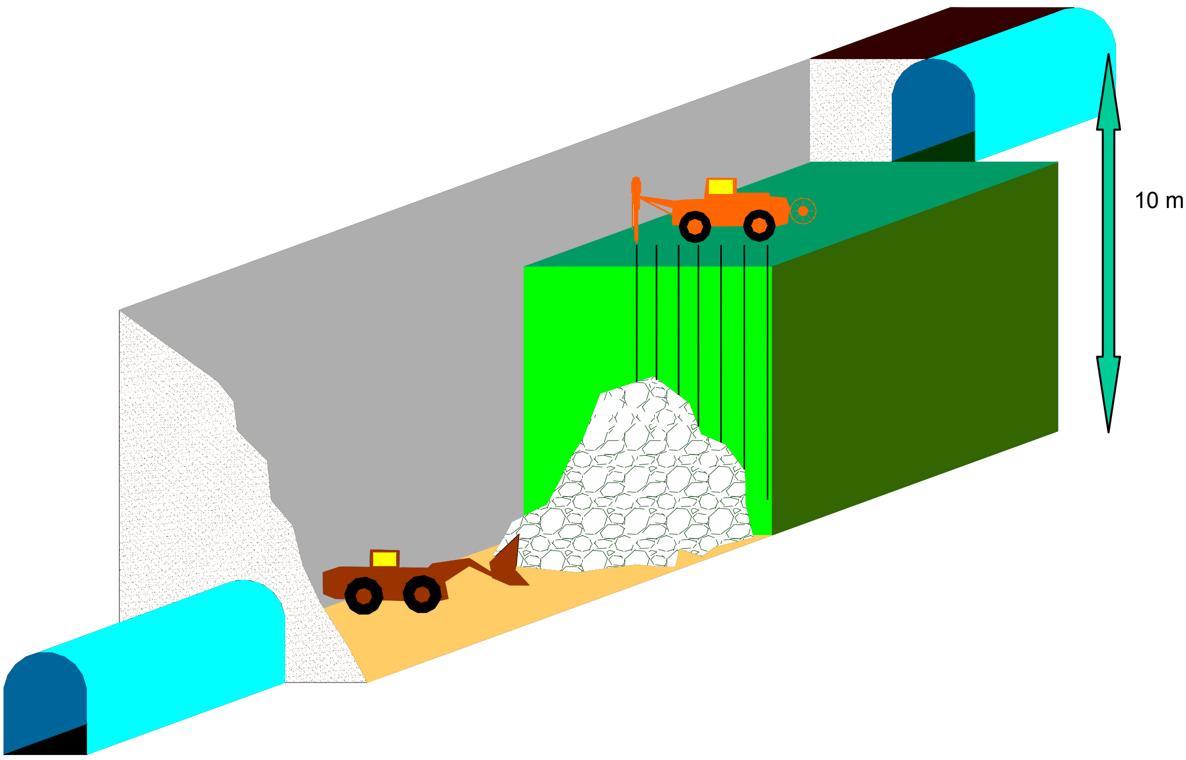

Figure 25.3: Mini Bench & Fill Mining Method (Schematic)

In the Mini Bench method, drilling and mucking take place on different levels in a similar manner to Bench & Fill but on a smaller scale with the two sets of crosscuts only 5-10m apart vertically. Unlike Bench & Fill, however, Mini Bench stopes are sometimes mined along strike. From the upper crosscut, 5m x 5m drifts are mined parallel to the footwall contact, until they reach the back of the lower crosscut (usually 40m) and break through to form a drawpoint. Vertical holes are then drilled and blasted in retreat from the drawpoint back towards the upper crosscut. Mucking takes place from the lower crosscut with ore being transported to orepasses located on the footwall access drive. Primary and secondary stopes are located adjacent to each other and once the primary stopes are mined out they are backfilled prior to mining of the secondaries.

25.1.2.4 Sill Pillar

A modified Room & Pillar method has successfully been used in the extraction of 20m thick sill pillars left between stoping panels and overlying backfill. The first stage is to develop a bottom crosscut through the ore to the hangingwall. This excavation is fully cable bolted through to the overlying backfill, pattern bolted and reinforced with shotcrete. Drifts or rooms are then driven along strike off the access crosscut, in a similar fashion to Drift & Fill mining. The final slice, immediately below the backfill is removed in two stages, one slice of 5m and then a final 3m slice. This final slice is slashed off the back and rapidly backfilled using a slinger truck to fill as tightly as possible beneath the backfill. Up to 95% ore recovery has been achieved using this method.

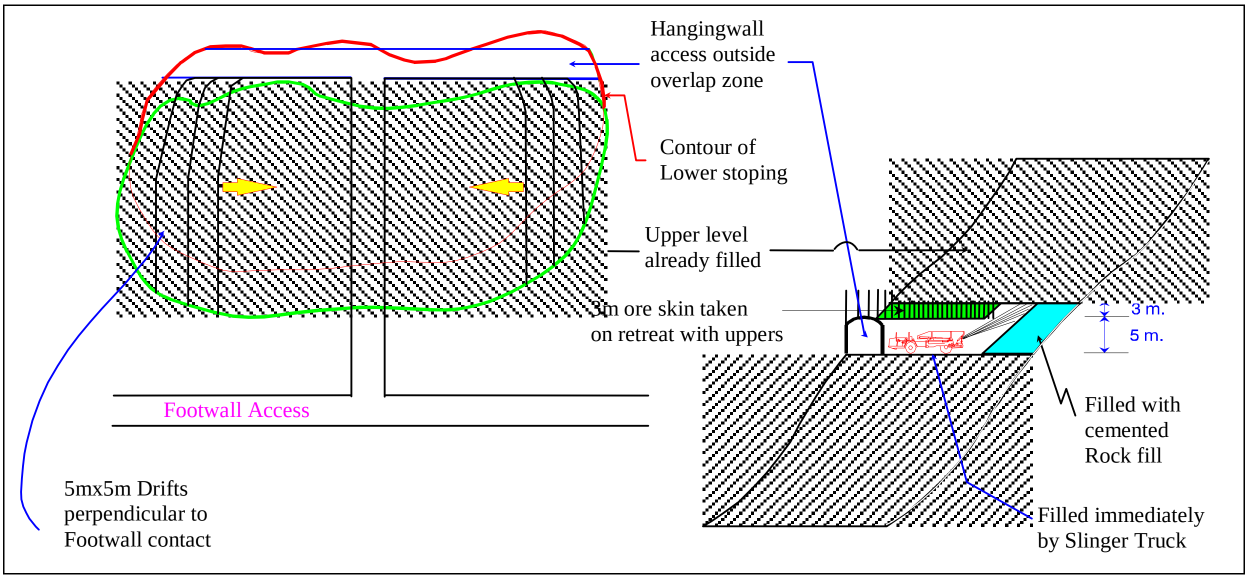

Figure 25.4: Sill Pillar Mining Method (Schematic)

25.1.3 Backfill

The mine produces two main types of backfill, hydraulic fill and paste fill.

25.1.3.1 Hydraulic Fill

The hydraulic fill consists of imported aeolian sand, cycloned tailings and cement. Hydraulic fill was the primary backfill for many years and remains so for Drift & Fill stopes. However, it has been superseded by paste fill in Bench & Fill stopes.

The hydraulic fill is prepared in a surface plant from where it is transported underground by gravity, via a series of boreholes drilled from surface. Distribution from the boreholes to the stopes is by 150 mm diameter steel pipes. The standard fill mix is 96% sand, 1% tailings and 3% cement (by weight solids). Mining adjacent to hydraulic fill can commence as early as 72 hours after the pour. Full strength is achieved 28 days after placement and is usually in the range of 0.5 to 1.0MPa (Unconfined Compressive Strength). This type of backfill is not as efficient as paste fill, in that the uniform grain size of the aeolian sand allows cement to wash out of the fill during placement. As a consequence, the cured fill has a lower cement content than the design mix, resulting in lower strength and additional dilution when exposed through mining adjacent stopes. In addition, the filtrate water that emanates from the fill during the placement and curing process is difficult to manage, getting onto roadways and into the ore stream. It also causes wear to the mine pumps due to the high cement content

The aeolian sand for the fill is sourced from a quarry close to the port facility of Setúbal, owned by SOMINCOR. The sand is transported to the mine by rail some 100km from the site, using (where possible) the same containers that are used to transport concentrate, as a backhaul on the return journey from the port.

25.1.3.2 Paste Fill

The surface paste plant was commissioned in 1999, in order to overcome some of the problems associated with hydraulic fill and make better use of tailings waste. The design capacity of the plant is 350,000m^3 per year but current utilisation is approximately 220,000m^3 per year. Placement rates, when running, can be up to 90m^3 per hour. During a stope filling cycle the plant will operate 24hrs per day, 7 days per week, until completion of the filling operation.

The paste fill mix varies slightly according to its use, with different recipes for primary and secondary stopes and Bench and Mini Bench stopes. In general, paste fill for primary stopes contains 95% cycloned tailings and 5% cement. Those for secondary stopes contain 99% tailings and 1% cement. The paste mix contains around 80% solids and has a slump of 19-22cm.

When filling stopes in the Corvo area of the mine, the paste is transported down a borehole, located in front of the paste plant, to an underground distribution point from where it is transferred to the stopes via 200mm pipes. The paste is not pumped, but relies on gravity for transportation. When filling stopes in the Neves area, the paste is loaded into 8m^3 concrete mixer trucks and transported 1 km on surface to a distribution point directly above the Neves orebody. A new Geho positive displacement pump is, however, in the process of being commissioned in order to pump the paste to the Neves distribution point.

The advantages of paste fill are that it makes better use of tailings waste, has a better cement content/strength ratio, does not use imported sand and has no bleed water during placement. The disadvantage of paste, in terms of the Neves Corvo mining method, is that it cannot be tight filled. This is due to the fact that the paste is transported using gravity. WAI believe that if a positive displacement booster pump was stationed underground at the distribution point, the last 1m of paste could be pumped into the stope in order achieve a tight fill.

25.1.4 Ore and Waste Handling System

Mined ore and development waste from the operations are transferred to primary crushers located on the 700 and 550 Levels using a combined system of LHD's, orepasses, FEL's and truck haulage. A loading pocket is located in the shaft just below the 700 Level. Crushed ore or waste is loaded into 15t skips and hoisted to surface. Ore and waste from the 550 Level crusher are delivered to the 700 Level via the TP12 inclined conveyor, prior to being hoisted.

A schematic drawing of the ore and waste handling system is shown in Figure 25.5 below.

25.1.4.1 Ore and Waste Haulage

There are two truck haulage levels in Neves Corvo on the 700 Level and 550 Level to supply the crushers located there. Internal orepasses feed ore and waste from the various production areas to drawpoints located on the haulage levels. Material is loaded from the drawpoints by Caterpillar 966 and Komatsu 470 FEL's into 40t Toro trucks for hauling to the crushers. Several dumping bays are also located on the haulage levels to provide extra storage capacity.

The system is flexible and well organised with all main haulages in good condition and well maintained. The main problem with the current system is low productivity and poor utilisation of mobile equipment. This is largely the result of the shift system and the number of hours worked rather than any physical constraints.

The mobile plant is maintained in the underground workshops of which there are three situated on the 810, 700 and 590 Levels. The workshops appear to be excellent facilities equipped with overhead cranes and all the required maintenance equipment.

Seven Toro 40D underground trucks are used for haulage, 4 of which are less than 5 years old and 3 between 5 and 10 years old.

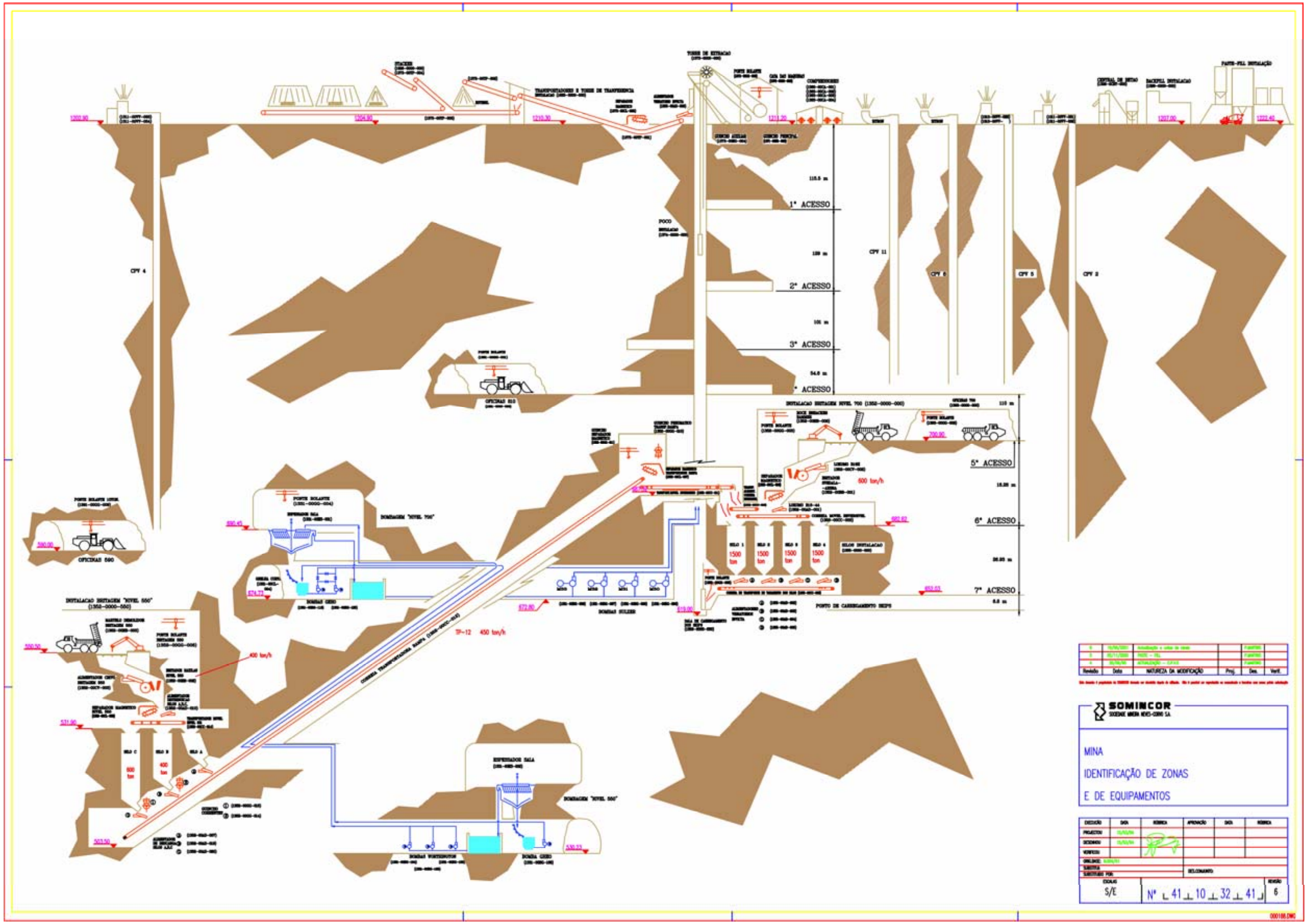

Figure 25.5: Ore and Waste Handling System (Schematic)

25.1.4.2 Crushing and Conveying

The mine has two underground primary crushers located at 700 Level and 550 Level which are fed ore and waste by the fleet of 40t trucks.

The 700 Level crusher station is equipped with a Boliden Allis 1050 x 800mm crusher of 600t/hr capacity that currently crushes ore and waste from the Upper Corvo, Neves and Graça orebodies, and in the future will handle Zambujal and Corvo Southeast. The crusher feeds into four 1,500t capacity storage bins ahead of the Santa Barbara shaft loading pocket. The 550 Level crusher is equipped with a Svedala Arbra 1500 x 1200mm Crusher of 400t/hr capacity that crushes ore from the Lower Corvo orebody. The crusher feeds into two storage bins of 600 and 400t capacity. Material is crushed to <250mm and fed onto conveyor TP12 which is a 742m long inclined conveyor on 25% gradient which delivers the crushed material to the 700 Level bins. The conveyor is suspended from the roof of a 4 x 4m conveyor gallery. It runs at a speed of 3.2m/s, and has an installed capacity of 400t/hr. It is powered by two 225kW motors.

25.1.4.3 Santa Barbara Shaft

The existing Santa Barbara Shaft is a modern hoisting facility which has been well maintained and is in good general condition. It comprises a 5m diameter concrete lined circular shaft situated to the west of the main Corvo orebody, 600 metres deep extending to the 700 Level. It is equipped with counterbalanced skips for rock hoisting and a small "Mary Anne" cage for man access.

Rock hoisting utilises a conventional ground-mounted 2.4MW double drum winder, hoisting opposed 15t capacity bottom dump skips each travelling on four 38mm rope guides. The hoisting speed is 12.5m/s and the cycle time is 82 seconds.

25.1.5 Ventilation

The Neves Corvo mine ventilation network is extensive and complex, comprising six existing ventilation districts and two planned new districts; which are summarised in Table 25.1.

The mine is ventilated by six main intake ventilation raises CPV1, CPV3, CPV6, CPV12, CPV14 and five main exhaust raises CPV2, CPV4, CPVS, CPV8 and CPV11. All exhaust raises are equipped with fans on surface. The shaft and main ramp also provides intake air between surface and the 700 Level.

Table 25.1: Ventilation Districts (SOMINCOR)		
District	**Intake**	**Exhaust**
Graça	Ramp, CPV3	CPV4
Neves South	Ramp, CPV6	CPV11
Neves North	CPV14, CPV9, (CPV20 planned)	CPV5
Corvo (Upper & Lower)	Shaft, Ramp, CPV1, CPV12, (CPV16 planned)	CPV2, CPV8, (CPV17 planned)
Corvo Southeast	CPV15	CPV4, CPV19 (under construction)
Zambujal	CPV18 (under construction)	CPV19 (under construction)
Lombador North	CPV16 (planned)	CPV17 (planned)
Lombador South	CPV20 (planned)	CPV5

Total installed fan capacity at the mine is 1,060m^3/s. Utilised capacity is currently 880m^3/s. The main ventilation in the mine is supplemented in development headings and stopes by auxiliary fans and flexible ducting (850-1000mm) that can be easily extended as and when required.

The primary fans are currently in the process of being fitted with variable speed controls, so the network will have the flexibility to adjust airflows to suit demand thereby becoming more energy efficient.

A schematic diagram of the mine ventilation system is shown in Figure 25.6.

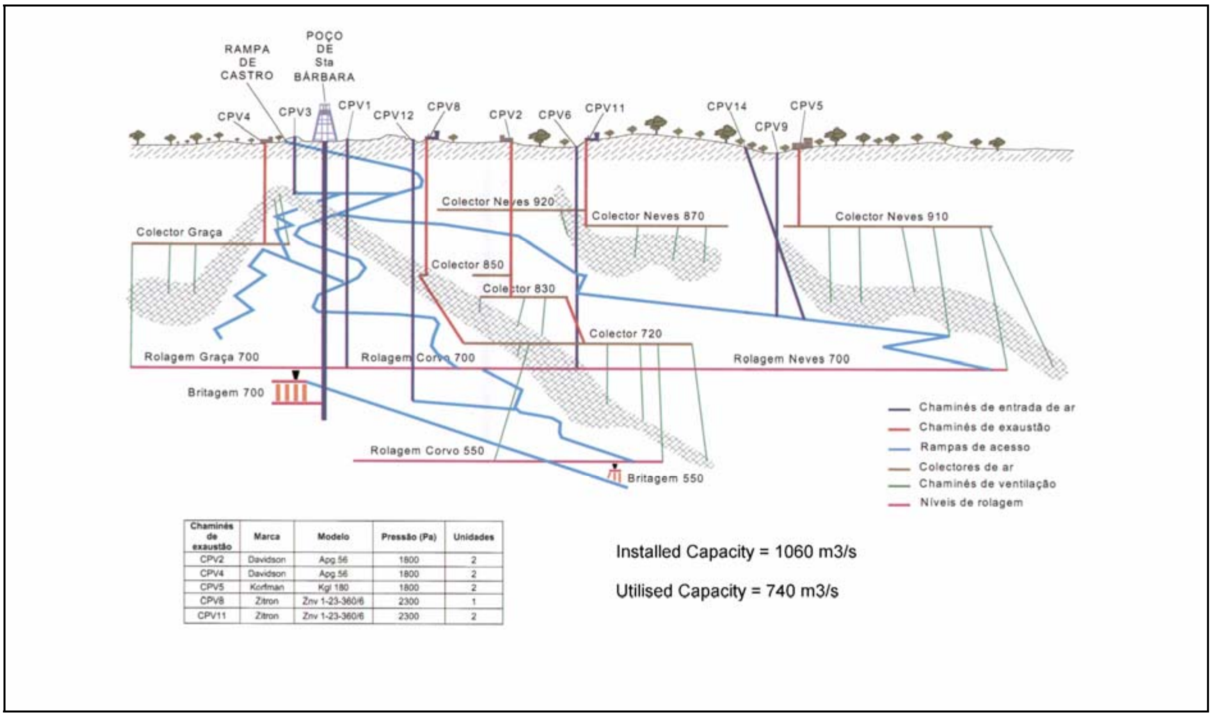

Figure 25.6: Mine Ventilation System (SOMINCOR)

25.2 PRODUCTION AND DEVELOPMENT SCHEDULES

Mine production has been scheduled for the ten year period commencing from 1 January 2007. The schedule is based on the mining reserves outlined in Section 19, using proprietary software Mine 2-4D to schedule the development and stoping sequentially and in detail. The modelling is based on the wire frame models of the reserves for the various ore bodies, as converted into Datamine format.

The schedule has been guided by the following general considerations:

- To sustain 2Mtpa of copper ore for as long as possible; and
- To additionally mine 0.4Mtpa of zinc ore, for which treatment capacity is currently limited to this rate.

A summary of the production and development schedules are shown in Table 25.2 below.

Table 25.2: Production and Development Schedules 2007-1016

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
COPPER ORE												
Ore Mined	Kt	2,041	2,001	1,945	1,784	1,684	1,318	1,280	1,314	898	760	**15,025**
Copper grade	% Cu	4.86	4.98	5.16	4.31	4.67	4.51	5.19	4.94	4.42	5.05	**4.82**
Zinc grade	% Zn	0	0	0	1.08	1.04	1.1	1.07	1.25	0.86	1.12	**0.65**
Silver grade	g/t Ag	37	32	33	32	27	30	36	39	42	34	**34**
ZINC ORE												
Ore Mined	t	357	418	416	416	330	383	381	382	410	418	**3,911**
Zinc grade	% Zn	8.71	8.36	8.77	8.03	9.00	10.25	9.43	9.43	8.81	9.27	**8.99**
Lead grade	% Pb	0	0	0.79	1.08	2.44	2.79	2.69	2.88	2.24	1.95	**1.66**
Silver grade	g/t Ag	0	0	63	61	94	107	102	101	80	78	**68**
TOTAL ORE												
Ore Mined	kt	2,398	2,419	2,361	2,200	2,014	1,701	1,661	1,696	1,308	1,178	**18,936**
DEVELOPMENT												
Capital	m	8,243	8,764	8,229	7,164	6,193	4,947	2,515	219			46,274
Operating	m	2,038	1,322	649	728	675	674	399	106			6,591
Total Development	**m**	**10,281**	**10,086**	**8,878**	**7,892**	**6,868**	**5,621**	**2,914**	**325**			**52,865**

The average zinc grade over the ten years, at 8.99%, is significantly higher than the average of 7.87% quoted in the reserve estimate. This is because only 4Mt of the10.93Mt of zinc reserves are mined during the first ten years, and these are of a higher than average grade.

It is noteworthy that the reserves of copper ore are unable to sustain a production rate of approaching 2Mtpa beyond the first three or four years, and also that almost 90% of the copper reserves are consumed during the ten year period. Conversely, only some 40% of the reserves of zinc ore are exploited during the first ten years.

25.2.1 Future plans

The mine's current hoisting capacity would allow for an enhanced rate of production of zinc ore, but this is currently limited by the treatment capacity of the zinc mill.

Additionally, the present inventory of *Inferred* resources consists mainly of zinc (25Mt) rather than copper (3Mt), suggesting that the bulk of future production is more likely to come from zinc ores than from copper ores. It should be noted that the likely quantity of zinc resources which might translate into reserves would be heavily dependent on the cut off grade to be adopted.

The bulk of *Inferred* resources are contained in the Lombador zone, which is situated below existing exploitation facilities. At the present time, drilling is in progress to further delineate and increase levels of confidence in the North Lombador and South Lombador deposits.

All the above factors are actively and currently being studied and reviewed in the preparation of a new Life of Mine plan, which will assist with decision making regarding future production and mine deepening scenarios. This plan is due for completion later this year.

25.3 MINING COSTS

25.3.1 Operating Costs

The operating cost estimates have been derived from the 2006 year accounts and other historical cost information provided by the SOMINCOR Accounts Department. Where necessary, WAI has factored these costs to reflect the changes in the mining program and/or obtained quotes from manufacturers and contractors.

Neves Corvo is a large scale underground mine employing modern mining methods. As with all operations of this type, the main mining operational costs are labour, materials, maintenance and energy. Table 25.3 below summarises the total underground mining costs for 2006.

Table 25.3: Mine Operating Costs	
Activity	**Cost (€)**
Management	425,230
Geology	855,402
Mine Planning	945,902
Environment & Safety	114,175
Rock Mechanics and Studies	481,488
Others	261,406
Mine Production	18,343,642
General Equipment and Services	4,146,609
Mine Services / Backfill	8,986,052
Haulage, Crushing and Hoisting	5,419,907
Total	**39,979,812**

25.3.2 Capital Costs

Capital development costs have been calculated at €2,000/m for lateral and €1,800/m for raise development. SOMINCOR has assumed that these costs will be adequate to cover either in-house development and/or the use of a contractor.

Replacement and sustaining capital for the mine operations has been estimated at €2M per annum. There is little data available to substantiate this figure; however, WAI is of the opinion that this is a reasonable estimate of annual requirements.

The total capital requirement of SOMINCOR for the period 2007 to 2016 is estimated to be €152.4M. Mining expenditure alone accounts for €102.8M (67.5%) and is divided as follows:

- €1.45M – ramp capital development;
- €89.30M – vertical/horizontal capital development;
- €0.85M – ventilation; and
- €11.16M – mining equipment.

Processing (copper and zinc plants) accounts for €5.7M while tailings, environmental and closure adds a further €24.8M. Other costs and a 15% contingency totals €19M.

25.4 G&A INFRASTRUCTURE

25.4.1 Human Resources

The Human Resources Department numbers 32 staff with the Manager reporting directly to the Managing Director.

As at December 2006 the mine employs 821 direct staff and further contract staff as required.

The majority of the mine labour have been recruited locally and generally live in the nearby villages of Castro Verde, Almodovar and Aljustrel.

Surface labour work an 8 hour shift with Plant personnel working a 7 day week continuous shift system while office and support staff work a standard 5 day week. Underground staff work a 7.5 hour shift for an effective 5.5 shift week i.e. Saturday is a work day for approximately half of the labour.

25.4.2 Safety Department

The mine Safety Department has a staff of 5 including the Head of Safety, who reports to the Production Manager. The department has a proactive approach to the overall mine safety and this demonstrated capability has resulted in a significant drop in the Lost Time Accident Rate from 77.1 in January 2001 to presently some 1.1 per 200,000hrs worked.

There appears to be a good awareness by employees of safe working practices and the recognition that each individual is responsible for his or her own safety. Major contributing factors to this high level of awareness are the visible commitment of managers, introduction of the SMAT system, supervisors and Safety Dept. representatives who encourage employees to conduct written risk assessments of every task and carry out post-incident investigations. The SMAT system relies on motivating the workforce through constant training and education, which is evidenced by the regular publication of daily, weekly and monthly Safety Newsletters to keep the workforce and management, informed of all Safety related matters.

All accidents whether lost time or not are recorded and investigated and the appropriate action taken to prevent reoccurrence. These statistics are sent to the Portuguese Ministry of Economy and Ministry of Mine Services as part of the mines statutory reporting procedures.

A Safety Bonus Scheme is in operation and represents an additional payment on the staff basic pay. This payment is only forthcoming should there be no accidents, whether lost time or not, recorded in a month.

The Dept. maintains and constantly updates the Mine Safety Manual, Operating Procedures Manual and the Emergency Procedure Manual. All employees, on joining SOMINCOR, receive the appropriate safety training for their particular area of work and sign to accept that they have received and understood the training provided.

A well equipped Mines Rescue Station is maintained on the mine site capable of servicing 2 teams. The mine has team members drawn from both surface and underground personnel. All on site fire fighting capability is handled from this facility.

The mine Hospital is staffed by 1 Doctor and 3 qualified nurses to cover the 3 shifts. In addition, a full time Occupational Health Doctor is resident for general medical care and statutory health checks on the mine workforce i.e. assessment of chronic medical conditions, annual health checks etc. Families of the workforce can also avail themselves of a general clinical service from the Hospital and are referred to the appropriate Private Medical Facility should it be necessary. All mine staff are provided with Medical Health Insurance by SOMINCOR.

25.4.3 Maintenance Departments

25.4.3.1 Mine Maintenance

The underground maintenance dept. comprises a total of 129 SOMINCOR employees and a further 43 contract staff.

Mine underground plant comprises 13 haul trucks of various sizes, 12 scooptrams, 12 development jumbos, 7 stope drilling jumbos, 11 ANFO loaders, 7 robolters and ±100 pick up trucks. It is unclear as to the total number of each type of machine that is actually in service without undertaking a full audit.

The mine has a conventional 8 bay surface mobile plant workshop capable of undertaking regular vehicle maintenance inspections through to major rebuilds. There are 3 underground workshops situated at the 810m, 700m and 590m levels for the mine mobile and fixed plant.

The surface workshops include a fabrication shop, tyre bays, small vehicle workshop for pick-ups (run by contract staff), hydraulic shop, drill bit sharpening. All hydraulic rockdrills are maintained by a separate contractor working from premises on site provided by SOMINCOR.

The department has a Planned Maintenance Section with 16 staff monitoring all equipment and report on a daily basis to the Manager. All mobile equipment have daily lubrication and filter checks at which machine hours are logged; this procedure normally occurs at the start of a shift and is done in a flexible manner such that the needs of the production departments are recognised. All underground mobile plant are parked at one of the workshops at shift end and checks are then undertaken before they are released for the next shift.

25.4.4 Power Supply

The mine is connected to the national grid by a single 150kV, 50MVA rated, overhead power line 22.5km long. At the mine site the power line terminates at a transformer and switch yard where a 150kV/15kV sub-station, equipped with 2 off 22MVA transformers, is installed to provide 100% standby transformer capacity.

A switchgear house containing the 15kV site distribution board is located adjacent to the switch yard. Power distribution is at 15kV to other distribution boards at major load centres. The total installed capacity is approximately 25MVA. The mine operates a power management system to ensure peak loads do not exceed levels stipulated in their supply agreement. In addition, the mine maintains standby diesel generating capacity of 3.7MW.

The production departments account for some 90% of the total power consumed on the property with average monthly figures of 3.1MWhrs and 5.8MWhrs for the mine and mill respectively.

25.4.5 Water supply

Process and fresh water is supplied from a number of sources.

Fresh water is supplied from the Santa Clara reservoir, a distance of 40km from the mine, via a 400mm pipeline to a reservoir close to the mine site with 30 days capacity. This source has the capacity to supply up to 600m^3/hr.

Mine total water requirement is estimated at 350m^3/hr. The mine uses 100% recycled water and there is an increasing use of recycled water in the plant areas. Currently the mill uses ±75% recycled water.

In 2001, the mine commissioned a dedicated tailings supernatant water treatment plant (navo filtration plant, see Section 25.5.4), with quoted capacity of 150m^3/hr, at a capital cost of €4.3M. The plant allows for better control of the tailings management facility water levels and reduces the need for fresh water make up from the Santa Clara reservoir, albeit at a higher cost.

25.5 ENVIRONMENT

25.5.1 Introduction

Environmental issues at Neves Corvo have been examined by WAI on a number of occasions, the most recent being in May 2007. This section has been compiled from these previous visits, to give an up-to-date assessment of the environmental performance and potential liabilities of the operation.

25.5.2 Key Environmental Issues

Technically, the key environmental issues for the mine are summarised as follows:

- The orebody has a high pyrite (iron sulphide) content, so waste rock and tailings have the potential to oxidise and produce acid, i.e. they have a high acid production (Acid Rock Drainage, ARD) potential. This potential has been provided for in the design and operation of the mine and has not been a problem to the environment thus far. However, continued vigilance is required and ARD is potentially a long term liability;
- A major river passes close to the mine, separating it from the TMF. Tailings delivery and return water pipelines have to cross the river;
- The available space for tailings disposal is a constraint and there is little opportunity for either lateral or vertical extension to the current facility; and
- The groundwater is a significant aquifer and connects to local water supplies and the river.

Dispersal of dust and noise, together with visual impact are secondary, albeit still important, issues. However, these are well contained for the most part and are not considered contentious problems.

25.5.3 Environmental Management & Reporting

25.5.3.1 Organisation & Staffing

The Environmental function has a dedicated Environmental Manager, together with a separate manager for the Tailings Management Facility (TMF) and water management.

The environmental team is not particularly large for such a complex and extensive mine, but it nevertheless appears to be well qualified and competent. Some external consultancy expertise is brought in as required for specialist tasks and studies, such as design and supervision of construction of the tailings facilities and water treatment plant, mine closure studies, audits and inspections.

The Environmental Management function at SOMINCOR is separate from the Health & Safety functions. Safety is a separate function under the Production Manager, and Occupational Health is a department under the Human Resources Manager.

25.5.3.2 Environmental Management System

SOMINCOR has adopted the essential principles of an EMS and many of the requirements of ISO14000 have been put in place, or are normal practice, such as:

- An Environmental Policy;
- A competent team of qualified staff;
- A register of environmental compliance requirements and licences/permits;
- Clearly identified environmental releases, effects and impacts;
- An extensive environmental monitoring programme;
- Reporting procedures to other Divisional Managers and the Board and authorities on compliance and actions required;
- Operational procedures for activities having environmental;
- Environmental emergency response procedures; and
- Regular internal and external environmental audits.

There are three areas where the company's EMS departs in a major way from compliance with ISO14000:

- Training of supervisory and operational staff in the mine and plant on environmental procedures and requirements;
- Drills and training for environmental emergencies; and
- Fully documented operational procedures and guidelines.

25.5.3.3 Reporting & Audit

Internal audits and reports are prepared as follows:

- Each Department of the mine is audited by the Environment Department 6-monthly, and a report presented to the Departmental Head including compliance and advice on recommendations for improvements;
- The database of environmental records is compiled and available live to the senior management via the company computer network;
- An annual environmental report for the whole company is prepared each year;
- Monitoring and compliance data is sent to the regional environmental authorities (CCDR);
- An annual report of all environmental monitoring and compliance data is prepared for the mining authorities;

- An annual report of all waste residues produced, their transport and deposit or recycling, is prepared for the Environment Agency (APA) for statistical purposes; and
- In addition, reports on environmental monitoring are now required every two years under Integrated Pollution Prevention and Control (IPPC) regulations.

External audits are carried out as follows:

- An independent geotechnical audit of the Cerro do Lobo tailings dam, stream diversion dams, contaminated runoff dams and pollution retention/control dams is undertaken each year, by Mr M Cambridge, Cantab Consulting, of the UK. An annual inspection report is prepared, giving details of the condition and status of the structures and recommendations; and
- An independent environmental audit of the company's activities is undertaken each year by Professor M Johnson and Dr R Leah of the University of Liverpool, UK. Inspection visits are made once per year and cover the full range of environmental management, monitoring and compliance issues.

25.5.3.4 Emergency Response Planning

A general Emergency Plan was published by SOMINCOR in c.1995. This covers mine rescue and general incident control, communications and responsibilities.

Attached to this general Emergency Plan are a series of specific Emergency Plans, covering (amongst other incidents) an incident on the Cerro do Lobo tailings dam or industrial water dam, spillage of concentrate or sand during transport by road or rail, bursting of the reject tailings line or water re-circulation line from Cerro do Lobo, an incident during handling or transport of chemical products, and fire in surface installations.

25.5.4 Water Management

25.5.4.1 Mine Water Balance

A schematic diagram of the overall water balance is shown in Figure 25.7.

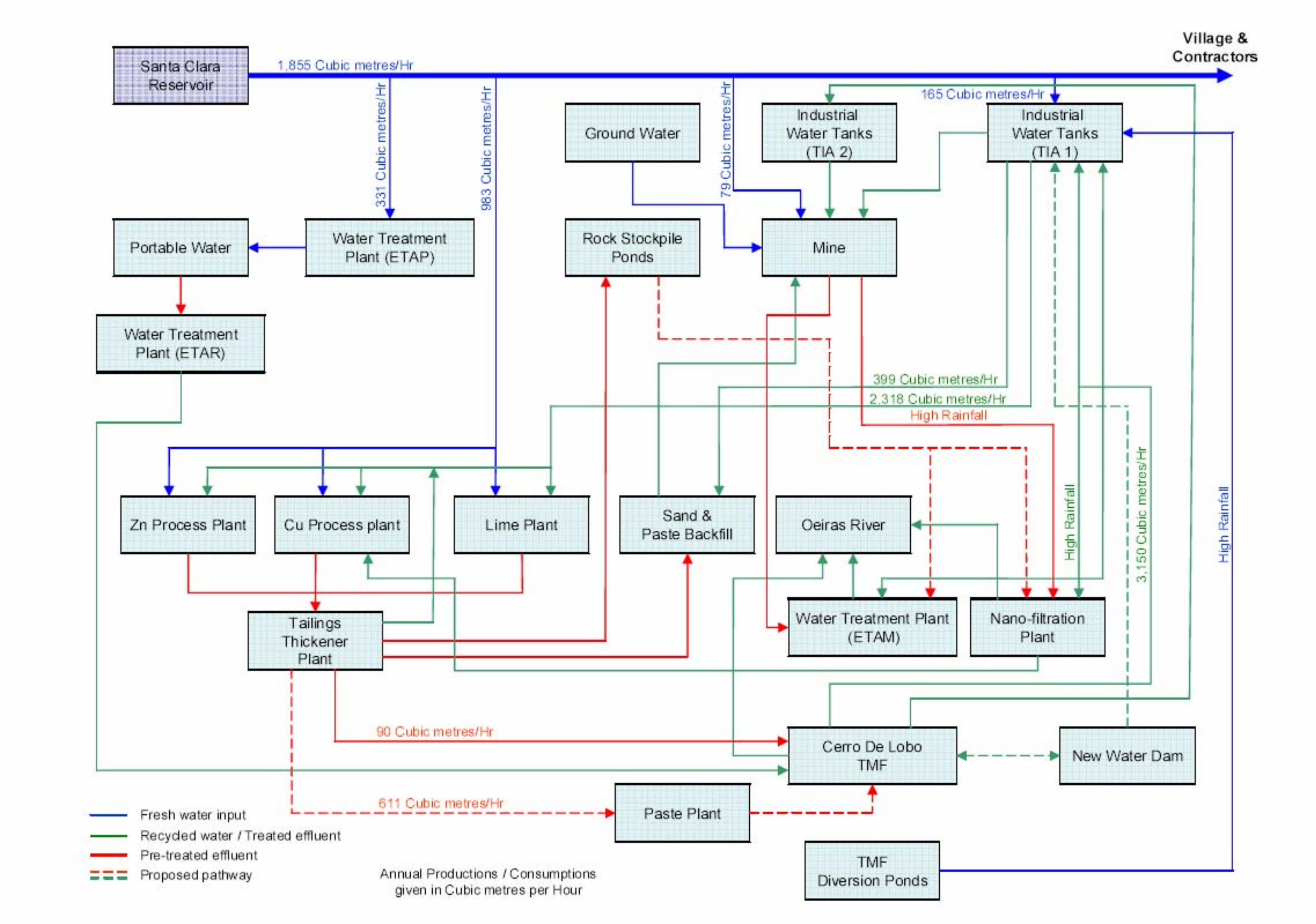

Figure 25.7: Mine Water Balance (SOMINCOR)

The main elements of the current operation are summarised in Table 25.4 below.

Table 25.4: Mine Water Management System

Mine component	Inputs	Outputs
Mine (underground)	Mainly groundwater, together with water draining from the paste and hydraulic backfill, recycled water from TAI and fresh water from the Santa Clara Reservoir, used for dust suppression.	Approximately 200m^3/hr are pumped from the mine. This has a very high pH due to the cement used in the backfill operations. The majority of the water piped to a water treatment area (ETAM), before discharge to the Oeiras River.
Mill & process plants	A combination of: • Internally recycled water from the concentrate thickeners; • Externally recycled industrial water, from the mine and tailings fed from the TAI; and • Fresh make-up water, from both a reservoir (Sta. Clara) and from a tailings water purification plant.	Output from the plant goes mainly to the tailings facility (614m^3/hr), or via the paste tailings backfill underground (6m^3/hr).
Tailings Management Facility (TMF)	Mainly from the plant, mine sewage treatment works and pollution control dams (689m^3/hr in total), but also significant input from direct rainfall (139 – 293m^3/hr). Catchment dams divert rainfall from clean areas around the facility so it doesn't enter the dam.	Most (60% - 70%) is recycled back to the plant (via TAI), but other losses include evaporation (20% - 25%), infiltration (25%), retained water (6% - 7%) and the nano-filtration plant during high rainfall events, for discharge into the Oeiras river.
Mine surface	• Rainfall onto the mine catchment is contained in pollution control dams. • Foul drainage from the mine facilities is treated in the ETAR	Polluted water and treated effluent is pumped to the TMF.

There are a number of water treatment facilities which secure a high water recycling ability and effluent treatment before discharge into the Oerias River. These are described below:

- ETAM – for treating mine water, which consists of an open, S-shaped lagoon, for removal of sediment, aeration and pH control (CO_2 injection to lower the alkalinity). Discharge is direct to the Oeiras River;
- ETAP – water purification for production of potable water for the mine, from the Santa Clara reservoir;
- ETAR – conventional water treatment works for mine facilities drainage; and
- Nano-filtration plant found at the Cerro do Lobo Tailings Management Facility (TMF), constructed in 2001 to treat tailings water to a high standard. This plant was required for three reasons:
    - a) Water management - to treat excess water accumulating on the TMF prior to discharge;

b) To substitute fresh water from the Santa Clara reservoir; the cost of which is escalating and availability is not guaranteed; and

c) As a treatment facility for dam seepage water after closure of the TMF (this would require a life of 75 years or more for the facility using current tailings technology).

It should be noted that emissions from the ETAM to the Oeirus River may not exceed 10% of its base flow; therefore if a higher rate of discharge is necessitated i.e. during high rainfall events when the TMF is full, additional water is processed by the nano-filtration plant prior to release.

The Nano-filtration plant consists of three sequential filtration stages: sand filters, micro-filtration and reverse osmosis. Water used for back-flushing the filters is discharged back to the TMF. The plant has a capacity of $150m^3$/hour of treated water and is currently running intermittently at 90 to $120m^3$/hr. It is understood that, at present, the cost of treatment of water in this facility is higher than that of water obtained from Santa Clara, so its use for substituting fresh water supply is currently limited.

25.5.4.2 Surface Water

The Oerias River passes adjacent to the mine; this flows east into the Rio Guadiana, approximately 16km downstream, and thence south, forming the border between Portugal and Spain. This river catchment is vulnerable to pollution from the mine. Environmental mitigation measures are in place and are discussed in the following sections.

25.5.4.3 Mine Site Surface

The mine site has a high level of catchment management and isolation of potential pollution sources, which include:

- Ore and concentrate containing heavy metals; located in stockpile areas or spread around the site area by spillage and wind blow;
- Rock materials, both waste and rock used in constructing embankments, etc. containing oxidising pyrites, producing acid and iron compounds;
- Fuel, oils, reagents and chemicals in storage areas; and
- Waste oils and contaminated water from maintenance and washing areas.

As with most mine sites, rainfall runoff will potentially be contaminated with suspended solids and dissolved pollutants, including acid, which if uncontrolled would severely contaminate the river.

Prevention of pollution is achieved very well at the mine site, by strict catchment control and interception of all site drainage into a series of pollution prevention dams. All contaminated waters and sediments are pumped to the TMF. Nevertheless, occasional problems have occurred with uncontrolled runoff, particularly from the acid generating waste rock stockpiles. A high level of vigilance and strict environmental management is therefore required at this site.

25.5.4.4 Cerro Do Lobo Tailings Management Facility (TMF)

The TMF lies within a much larger catchment area. Water from the upstream areas of the catchment is prevented from entering the TMF by a series of catchment dams. These divert clean water around the dam to the river.

All tailings discharge is treated with lime, to counter potential acidity from oxidation of pyrite, and to assist precipitation of dissolved metals. Except for emergency discharge (via a siphon, a dam spillway, or via the ETAM water treatment plant) no surface water is discharged from the TMF. The facility itself is contained by low permeability liners. Seepage water and water draining from the embankments is intercepted by a series of wells and pumped back into the TMF.

The pipelines for delivery of tailings to the dam and return water from the dam cross the Oeiras River. A series of interception dams are constructed along the tailings pipeline, designed to contain up to 8 hours tailings discharge. The gantry carrying the pipelines across the River has a 'catch tray' beneath. These measures should prevent any accidental release of tailings reaching the river.

25.5.4.5 Water Quality

High sulphates due to oxidation of pyrite in the underground strata, tailings solids and waste rock are a potential threat to surface water systems through causing highly acidic conditions. The mine water is alkaline as a result of the cement used in hydraulic backfill; the tailings are lime dosed to maintain alkalinity and reduce the soluble metals.

25.5.4.6 Groundwater

The pumping of water from the mine is depressing the water table over a significant area around the mine. It is understood that water supply wells around the mine have dried up as the mine workings deepen; alternative supplies of water have been provided as appropriate.

Any pollution of groundwater from the mine will report to the mine sump and be pumped to the water treatment plant (ETAM). This water is highly alkaline, due to the cement used in the hydraulic backfill, and contains sulphates (from oxidation of sulphides), ammonia and nitrate from blasting. Other contaminants are elevated but do not constitute a significant environmental hazard.

When mine pumping ceases upon mine closure, the groundwater will rebound to its natural level. Initially this will flush or leach any residual dissolved metals, acid or alkalis from within the mine workings. The natural groundwater flow will be towards the Oeiras River, however no information on the extent or impacts of a post-closure plume is available at present.

Shallow wells located around the TMF, near the dam toes, collect and return seepage water from the dam structures. There is no interference with the natural groundwater levels on the Cerro do Lobo (i.e. south) side of the river, apart from monitoring wells.

25.5.5 Tailings Management

25.5.5.1 TMF Introduction

The Cerro do Lobo Tailings Management Facility (TMF), also referred to as Barragem de Cerro do Lobo or BCL, comprises a single 'side-hill' impoundment formed, in its early stages, by damming streams (tributaries to the Oeiras River) and local depressions in the topography. One main embankment dam and three smaller saddle dams (MD, ME1 and ME2) were constructed initially in 1988 to create the impoundment. Subsequently, there have been three embankment raises, the latest (Phase 4, to the 255m above datum level) was constructed in 2004. The TMF currently includes five upstream catchment dams (D1 – D5) connected by a diversion ditch, and an emergency spillway.

It is understood that the TMF design and construction supervision is undertaken by Portuguese engineering consultants, Hidroprojecto. In addition, they perform regular inspections of the dam and also prepared the environmental impact assessment for the 4th phase of the dam raise in 2003. Design audits and annual inspections of the dam structures have been carried out by Knight Piesold of the UK (in 2003 Cantab Consulting of the UK took over the inspection, though the same professional consultant continues to be involved).

The embankment dams are water-retaining structures that comprise rockfill and mine waste shells, a combined clay core and HDPE lining system, and internal filters. The height of the initial embankment for the main dam structure was at most about 30m; the first and second raises were 4m in height, and the third raise is 3m in height. The upstream and downstream shell slopes are formed at around 30° from the horizontal.

The main points to note are the downstream construction methods used to raise the TMF and the change in the lining system from a vertical clay core, used in the first stage, to a sloping HDPE membrane in subsequent stages. Stability is maintained by the use of closely compacted rockfill for density and strength to support the lining system. The filters are essential to control pore pressures and maintain stability of the downstream shell.

The TMF footprint is underlain mainly by weathered rock with colluvium or alluvium possibly left in situ locally. The impoundment area was stripped of vegetation but no ground preparation was carried out or lining system installed.

The construction reports are clear and detailed. Quality control issues are discussed openly and there is no reason to suspect inadequate construction has occurred in areas unavailable for inspection. There are no records of significant changes to the design being made during construction, but remedial measures have been implemented at the time of dam raises to rectify problems or concerns encountered during operation.

The main concerns are related to the use of pyrite-bearing rockfill and mine waste rock in earlier phases of embankment construction. The consequences of using these materials are that coarse rock fragments are degrading and generating acid drainage, which could potentially reduce the strength of the embankment materials and clog up the internal filters. Investigations carried out by SOMINCOR show that the materials remain within the required specification.

The third dam raise has been designed to remedy the acid drainage problems by utilising pyrite-free rockfill materials for the downstream raise. The pyrite-free rockfill is separated from the existing rockfill by a filter so that any acid drainage through the downstream embankment can be intercepted and directed to the drainage control system.

25.5.5.2 TMF operations and general management

Tailings from both the copper and zinc plants are cycloned; the coarser fraction being used for paste fill underground. The finer fraction is disposed of in the TMF. To date, tailings are delivered to the facility via pipeline as a suspension, with a pulp density of approximately 35%.

The total capacity volume of the TMF is 17Mm^3 (accounting for 1m surface water freeboard and the 0.7m spillway buffer zone), equating to 34Mt of tailings. It was reported in May 2007, some 22Mt of tailings had been deposited, with a total estimated volume of 12.5Mm^3. In order to operate until 2029 a total of 37Mm^3 was estimated as the required storage capacity of tailings, a further 20Mm^3 more than available.

The tailings disposed of is mainly <100µm in size, d80 being of the order of 30µm to 40µm. According to bathymetric surveys and deposition records, the average dry density of tailings achieved is 1.65t/m^3.

One of the constituents of the tailings is iron pyrite (FeS_2), resultantly the tailings has a high acid-generating potential. For this reason, the tailings disposal is sub-aqueous, i.e. a cover of water (1m) is maintained over the tailings to exclude air and thus prevent oxidation of the pyrite. Tailings are carried via a perimeter pipeline which distributes to any point around the TMF by pipeline fingers suspended from floating drums and extending up to about 300m into the impoundment. The fingers are periodically moved, using a small boat, in order to obtain an even distribution of tailings over the pond area. Nevertheless, the tailings surface is undulating and occasionally the water cover is less than the minimum 1m.

Water is decanted from the TMF by a floating pipeline and pump. A large buffer/holding tank is located on high ground adjacent to the tailings area, from which tailings water flows back by pipeline to the mine for re-use.

Until the Nano-filtration plant was commissioned in 2001, there had been a progressive accumulation of water on the tailings dam, leading to a reduction of freeboard. It is understood that the nano-filtration plant enables a much greater amount of water to be recycled and has improved the water management.

25.5.5.3 Capacity and Future Development

A comprehensive study undertaken in 2000 by SOMINCOR concluded that in order to meet the storage capacity requirements of an extended mine-life (up to 2029) of sub-aqueous tailings deposition, from copper and zinc extraction and processing, the crest level of the TMF would require lifting from 255m (current level) to 262m (three lifts) to accommodate all the tailings sent to the dam. The cost of raises above 255m crest level were considered to be prohibitive, notwithstanding the difficulties in obtaining additional land and the necessary environmental permitting.

As an alternative to further dam raises, a new TMF was considered. However, the cost and permitting difficulties were likely to be just as prohibitive as the option of raising the current dams. Therefore it was concluded that future mine development should aim to operate within the 255m crest level, involving the use of paste tailings disposal in order to have sufficient capacity within the bounds of the current TMF.

In recent years paste tailings technology has improved and is implemented in several mining operations around the world. Paste has a very low permeability (approximately 10^{-8}m/s) and therefore has the potential to inhibit water ingress, minimise potential oxygen infiltration and therefore mitigates the potential for ARD through the oxidation of reactive sulphides.

The use of paste would have a number of significant benefits:

- Increased TMF capacity; it is predicted by SOMINCOR that the crest elevation would not need to be raised beyond 255m to accommodate the tonnage of tailings produced from copper and zinc processing up to 2029;
- Pyrite oxidation and seepage through the tailings would be much reduced in the long term; and
- It will be possible to develop the tailings area progressively, in a series of paddocks, enabling the facility to be progressively closed, probably at lesser cost.

Paste tailings have been considered as an option for Neves Corvo since around 1988. On behalf of SOMNICOR, Golder Associates have conducted trials and submitted a full report in March 2007. This report demonstrated that the use of the paste method is a technically feasible option for the current TMF. The key points that the report showed are as follows:

- The average 'settled' dry density of the paste is 1.85 t/m^3 verses the average dry density of the current tailings produced of 1.59 t/m^3, giving a 16% gain in storage capacity of the TMF;
- Higher tailings density would be favourable in reducing the potential permeability of the fines in-situ. This would reduce:
  - Seepage of metalliferous water into the groundwater regime; and
  - Retard the oxidation of sulphides, therefore reducing the amount of metals in solution within seepage; whereby tests in field cells have shown oxidation to occur to a maximum of 250mm below the surface of the deposited paste.
- The usage of traditional tailings required the TMF to be restored with a permanent water freeboard of 1m. This would necessitate ongoing water management of the TMF as part of the restoration plan and the continuous production of ARD seepage into the groundwater system for an extensive time period. Paste would allow progressive cell by cell restoration of the TMF and would avoid the need for water management after restoration.
- The TMF would be covered by an impermeable, landscaped cover system, which would reduce oxidation further. Cover systems are still under review to date, however it is anticipated that the use of paste in conjunction with a cover system would bring groundwater quality back into compliance with acceptable standards, which to date has been unachievable.

The Golder Associate Feasibility Study (2007) of use of paste in place of the current tailings method has not proved any incremental high risks to the environment or public health and safety.

The cost estimates for the expansion and closure of the TMF indicate the operating and closure costs of paste are favourable in comparison with alternatives that have been investigated by SOMNICOR.

Notwithstanding the positive outcome of the paste tailings trial undertaken by Golder, certain targets have to be met before the changeover from sub-aqueous to paste tailings deposition can be made:

1. Further hydrogeological/geochemical modelling is required to develop the currently incomplete understanding of the contaminant transport mechanism in the aquifer beneath the impoundment. The modelling would be used to demonstrate the benefits of paste disposal and support the alternative closure plan.
2. Regulatory approval for the new process must be obtained.
3. A paste plant has to be designed and constructed at the dam site, and an effective disposal methodology – including monitoring of performance – should be designed. These operational issues should be reviewed against a deadline of 2008 by which time the current capacity of the tailings facility to accept tailings by sub-aqueous means will be exhausted without further dam raises.

25.5.5.4 Closure

The March 2007 Golder Associates report concluded that paste should be applied using a cell-by-cell approach (14 cells in total); whereby berms (interior TMF walls) are constructed from the waste rock stockpile material (producing cell walls); using the highest pyrite content material. This would remove some stockpile rock and eventually encapsulate their sulphides, retarding ARD production. Paste would be pumped into each cell progressively; enabling the instigation of the TMF rehabilitation during the working life of the mine.

The paste would displace the water into the remainder of the TMF, reducing the storage capacity which will be balanced by a proposed new water dam. On completion of each individual cell, a cover system will be used. The cover system options continue to be under review and field trials are currently being undertaken at Neves Corvo to date.

25.5.6 Waste Rock Management

At present the waste rock is stockpiled on the surface of the mine site in two separate dumps, a high sulphide dump and a low sulphide dump (Escombreira 1). There are also some stocks of low-grade (0.4%-1.8%) copper ore, which is blended with higher grade material in the processing plant.

The most highly sulphidic waste material remains, where possible, underground and is utilised for stope backfilling in conjunction with the hydraulic and paste backfill. In the past, mine waste rock was used for embankment and other construction works but due the pyrite content of the material this led to a number of geotechnical and environmental problems, therefore this has been discontinued.

The current stockpile is approximately 2Mm^3 of waste rock from mine development, including approximately 200,000m^3 of low sulphide and 70,000m^3 of high sulphide waste rock with coarse waste (screened 200mm to 70mm size range), and fine waste (<14mm). Future waste production is predicted to be approximately 400,000 - 800,000m^3. With the addition of the newly permitted space of Escombreira 2, the permitted available space is 2.4Mm^3. However, on closure of the mine the permit states that stockpile material must be removed.

With the proposed paste tailings cells and capping for the TMF, it is anticipated that the waste rock stockpiles will be utilised for this purpose and that in the long term will not require reclamation.

25.5.7 Monitoring & Compliance

25.5.7.1 Environmental Monitoring

SOMINCOR staff advises that environmental monitoring comprises the regime detailed in Table 25.5.

Table 25.5: Environmental Monitoring Areas

Monitoring Area		No.	Frequency
Surface water	Control points in Oeiras River	5	Daily
	Bio-monitoring of Oeiras River (macro-invertebrates & vegetation)	5	1 – 2 yearly
	ETAM (mine water) discharge	1	Daily
	Tailings water	1	Daily
	Catchment/pollution control dams	4	Weekly
Groundwater	Piezometers around dam	25	Quarterly
	Groundwater boreholes upstream & downstream of dam	7	Quarterly
Air quality	Gasses (SO_2, NO_x)	1	Daily
	Dust deposition & TSS	?	Weekly
Noise	Habited locations	6	Monthly
Soils	Surrounding land	32	3-yearly
	Along route of railway	21	3-yearly

Analysis of environmental samples is undertaken both by the mine laboratory and by contract laboratories. In the past, analysis by the mine laboratory was taking too long for the results to have any useful purpose. Regular monitoring is undertaken by SOMINCOR staff, whilst infrequent ‘campaign’ monitoring is undertaken by specialist consultants.

This monitoring regime appears to be comprehensive and in accordance with best practice. Given the nature, size and environmental context of the mine the monitoring regime appears to be appropriate; no major omissions in the regime were noted. A comprehensive database of long-term environmental monitoring, and the impacts of the mine, has been built up over the years, which is of great value.

25.5.7.2 Impact of the Mine and Compliance with Statutory Limits

The mine has a fairly good record of compliance with environmental standards. There appear to be no major issues or problems that are being investigated or otherwise pursued by the environmental authorities, with whom the SOMINCOR has a good relationship. However, the following matters were noted from the annual environmental external audit reports:

(a) Discharge of Mine Water

Over a number of years the mine water discharge from the ETAM water treatment plant was not compliant with water quality limits, regularly having elevated ammonia and nitrate (from the use of ANFO explosives underground) and occasionally high sulphates. However, investigations by the explosive suppliers have subsequently led to improvements in the use of explosive materials and compliance is now largely achieved.

(b) Pollution of the Oeiras Rive

In many years there have been one or more incidents of release of contaminated waters to the river, usually associated with rainfall events washing contaminated material from site areas or roads into the river.

One of the more persistent problems is the presence of waste rock containing pyrite, either used for construction or stockpiled at the surface. Much of this rock material is acid generating

Biomonitoring of the Oeiras River reveals that over the long term the river quality has been adversely affected over the full 16km length to the confluence with the main river. This is mainly as a result of the flow being dominated for much of the year by minewater discharge from the ETAM plant, with high sulphate levels (albeit within statutory discharge limits), compounded by periodic though localised pollution events.

(c) Noise Emissions

Noise levels exceeding the regulatory limits and thus causing a persistent nuisance in nearby residences and villages have been a continuing problem. The main noise sources are the mine ventilation fans and the crusher house.

(d) Dust from Ore Handling

Occasional problems have been noted with dispersal of concentrate dust from the uncovered stockpiling areas and conveyor transfer points, both at the plant and at the Setubal port facility. These are localised and appear to be under control, though the uncovered storage areas will always be a potential source of wind-blown contaminated dust.

25.5.7.3 Groundwater beneath the Tailings

Monitoring of groundwater both upstream and downstream of the tailings facility reveals that there is a contaminated plume dispersing downstream. There are apparently no immediate threats from this, but the long term implications of continued seepage from the tailings are not fully understood.

25.5.7.4 Permits & Licences

The following permits and licences were briefly noted in discussion with SOMINCOR staff:

1. Operation of the mine, including environmental requirements – a permit for 50 years was issued by the Ministry of Industry & Energy in 1994.
2. Water retention structures (catchment and pollution control dams) – 5 year licences for each were issued in 2003.
3. Tailings facility – this requires licensing as both a water retention dam and a waste disposal facility; the new raise currently under construction was permitted for both in January 2003, together with the construction permit.
4. Storage of fuel and oils – licence issued in 1997, valid indefinitely subject to a new licence if there are any changes.
5. Explosive production – 3 year permits are issued by the police.
6. One discharge point to the Oeiras River is licensed for treated mine water. A temporary licence was in force for disposal of tailings water, but this has lapsed.
7. A water licence for supply of water from the Santa Clara reservoir has been in force since 1991.
8. Waste rock dumps – initially these were not licensed, being considered as temporary structures; however a licence was applied for in March 2002 (Institute of Geology & Mining, Ministry of Economics).
9. Integrated Pollution Prevention & Control (PCIP) – the full requirements (and thus licence) under this new legislation (implementation of the EU IPPC Directive) came into force in 2007.

Copies of most of the current licenses and permits are given in the annual Environmental Reports of SOMINCOR.

25.5.8 Mine Closure and Reclamation

25.5.8.1 Mine Closure Studies and Proposals

Current permitting for the mine requires the preparation of updated mine closure plans on a 5 year cycle.

The following mine closure studies have been carried out for SOMINCOR:

1. In 1992, Golders prepared a report on closure of the mine site and the Cerro do Lobo tailings facility, assuming a mine life to 2015:
   - Closure of the mine site involved recovering underground and surface plant, treatment of mine entries, demolition of most buildings, retention of several parts of the infrastructure including power and water supply, retention of usable buildings such as offices, cleanup and removal of contaminated material to the tailings facility and landscaping.
   - A number of options were considered for closure of the tailings facility. The preferred option was 'wet closure', i.e. retaining a water cover on the tailings and managing it as a wetland.
2. In 1998, SRK prepared a second mine closure study, which also assumed a mine life to 2015 and considered:
   - A review of closure options for the tailings facility and a recommendation for a dry closure option including the installation of a hydraulic sand cover (to facilitate drawing down the water) and an impermeable liner over the tailings. The wet closure option was not considered feasible because of the continued requirement for water input.
   - Closure requirements for the Setubal Port facility.
   - Adoption of the previous Golders closure plan for the mine site, with an update of costs.
3. In 1998 Biodesign prepared a plan, with costs, for rehabilitation of the Areeiro do Formosinho sand quarry.
4. In 1999 SOMINCOR reviewed and updated the closure costs for the tailings dam, mine site and Setubal port, based on a mine life to 2029, and projected forward the closure fund provision. The costs for closure of the tailings facility were based on a further variation of the dry closure option. The cost of maintaining water treatment for dam drainage for 50 years was included in this review.
5. In 2001, Knight Piésold considered closure options and costs for the waste rock dumps.
6. In March 2007, the Golder study into the feasibility of paste tailings disposal considered the closure options and costs for this option for the TMF.

The mine closure options and proposals are therefore rather piecemeal and need to be consolidated in a comprehensive update and review. The paste tailings proposals will have a major affect on the tailings facility closure plan, and could reduce the costs.

Current permitting requires that rock stockpiles must be removed and the areas rehabilitated on mine closure. On commencement of paste and progressive cell rehabilitation of the TMF it was proposed in the 2007 Golder's Report that rock stockpile waste will be used for berm construction and as part of the cover system, in order to assist in landscaping and minimisation of water infiltration/sulphide oxidation.

It is recommended that a comprehensive and updated Mine Closure Plan is prepared, reflecting the proposed changes in the TMF and Life of Mine Plan, and updating the cost projections. Somincor have indicated that this will be done in late 2007 or 2008.

25.5.8.2 Closure Costs and Funding

In 1999 SOMINCOR estimated the physical closure costs as follows:

	€M
Cerro do Lobo tailings facility	42.226
Mine site	13.917
Setubal Port	1.678
Total	**57.821**

To which should be added:

	€M
Waste rock dumps*	2.496
Sand quarry	3.192
Total	**5.688**

* based on KP 2001 report, 3.12Mm^3 @ €0.80

Making a total closure cost liability of €63.5M at 1999 costs, assuming that the estimates are correct.

It has not been possible to verify these cost estimates and WAI understands that these figures are still the ones being used. However, it is considered that they may be considerably underestimated. For example, there has been no allowance made for medium or long term post-closure maintenance, monitoring or management of the site, nor for changes to the costs for closure of the TMF if paste tailings is used.

The technical mine closure fund had accumulated €12M to 2002 and a provision of €18,833,246 is reported as at end of 2006. This equates to an accumulation in the fund of €1.7M per year.

In addition to the technical closure costs, social closure costs should are allowed for. In 1995 a social closure study considered various means of mitigating the socio-economic impacts of the mine. The social closure costs are currently estimated as €5.4M, based solely on the redundancy commitments to the anticipated number of workers and a mine life to 2029. The social closure fund was reported as €3,659,023 as of the end of 2006.

It is considered that this provision for social closure is very low and is not based on good current practice (though there is little precedent for good practice). It is likely that in future the Government may require a considerably enhanced provision for social closure costs.

Overall, the mine closure costs appear to be considerably under-funded, and the accumulating funds for both the technical and social closure are not provided for in a way that is consistent with good practice worldwide, for the following reasons:

- They are accumulated on a simple straight-line basis, i.e. not related to the production or output of the mine;
- There is no allowance for inflation in the costs, i.e. the costs are assumed to be the same as the date of estimation and not when they are likely to be incurred; and
- The fund does not accrue interest.

25.6 Financial Analysis

The operating cost estimates used by SOMINCOR in the LOM Plan have been derived from the 2006 year to date and historical costs collected by the Accounts Department and then, where necessary, factored by the technical department to reflect the changes in the mining programme.

25.6.1 Mining Operating Costs

The Mining operating costs are detailed in Section 25.3.

25.6.2 Plant Operating Costs

The Process Plants operating costs are detailed in Section 25.3.

25.6.3 Total Mine Operating Costs

The operating costs used in this report are shown in Table 25.9. Historical costs from 1997 to 2006 are shown in Table 25.6.

Table 25.6: Operating and Capital Costs Actual and Estimated 1997-2006											
Parameter	**Unit**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Milled	Mt	1.757	2.176	2.07	1.515	1.784	1.739	1.70	1.90	2.04	2.09
Operating Costs	€M	63.85	70.33	65.2	62.4	65.7	58.42	57.56	66.05	70.99	82.49
Unit Costs	€/t	36.34	32.32	31.49	41.19	36.82	33.59	33.90	34.7	34.8	39.2
Capital Costs	€M	15.7	14.5	14.0	15.0	20.6	14.0	14.49	19.90	22.80	35.67

25.7 SOMINCOR 10 YEAR PLAN

The 10 Year Plan used in this report assumes that mine production comes from both the copper and zinc orebodies at an annual rate of up to 2.4Mtpa treated in two process plants.

25.7.1 Future Production Estimates

SOMINCOR has prepared a Reserve Statement (Base Case) based on the JORC *Measured* and *Indicated* copper resources. as Table 25.7 below restates the reserves used in the financial model.

Table 25.7: Summary of Audited Copper and Zinc Reserves at Neves Corvo Mine

Category	*Tonnage*	*Grade*			
		% Cu	*% Zn*	*% Pb*	*g/t Ag*
Copper Reserve					
Proven	6,230,000	5.17	1.15	0.24	36.3
Probable	11,009,000	4.74	0.68	0.23	28.8
Total	**17,239,000**	**4.89**	**0.85**	**0.23**	**31.5**
Zinc Reserve					
Proven	145,000	0.29	6.36	1.34	35.8
Probable	10,785,000	0.43	7.89	1.49	62.3
Total	**10,930,000**	**0.43**	**7.87**	**1.49**	**62.0**

Note: Reviewed by Wardell Armstrong International –February 2007

The financial model has investigated the first 10 years of mining from 2007 to 2016 inclusive. During this period 15.0Mt of copper ore and 3.9Mt of zinc ore are mined. Options for increased zinc ore production from the substantial zinc resource are currently being reviewed.

In addition, there is an expectation of increasing the overall mine productivity to levels discussed above and thereby reduce fixed and variable costs.

To achieve the increased stope production rates, SOMINCOR has increased the Capital Development requirements necessary to access the orebodies defined in the revised stoping schedule. SOMINCOR has assumed that ore production of up to 2.4Mtpa can be achieved by a number of means.

SOMINCOR has drawn up a detailed stoping and development schedule that WAI considers will achieve and sustain the planned production.

Table 25.8 shows the ore mined in the SOMINCOR Mine Plan.

Table 25.8: Neves Corvo Production Schedule

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
COPPER ORE												
Ore Mined	kt	2,041	2,001	1,945	1,784	1,684	1,318	1,280	1,314	898	760	**15,025**
Copper	% Cu	4.86	4.98	5.16	4.31	4.67	4.51	5.19	4.94	4.42	5.05	**4.82**
Zinc	% Zn	0	0	0	1.08	1.04	1.1	1.07	1.25	0.86	1.12	**0.65**
Silver	g/t Ag	37	32	33	32	27	30	36	39	42	34	**34**
ZINC ORE												
Ore Mined	kt	357	418	416	416	330	383	381	382	410	418	**3,911**
Zinc	% Zn	8.71	8.36	8.77	8.03	9.00	10.25	9.43	9.43	8.81	9.27	**8.99**
Lead	% Pb	0	0	0.79	1.08	2.44	2.79	2.69	2.88	2.24	1.95	**1.66**
Silver	g/t Ag	0	0	63	61	94	107	102	101	80	78	**68**
TOTAL ORE												
Ore Mined	kt	2,398	2,419	2,361	2,200	2,014	1,701	1,661	1,696	1,308	1,178	**18,936**
Copper	% Cu	4.14	4.12	4.25	3.49	3.91	3.50	4.00	3.82	3.04	3.26	**3.82**
Zinc	% Zn	1.30	1.44	1.55	2.39	2.35	3.16	2.98	3.10	3.35	4.01	**2.37**
Lead	% Pb	0.00	0.00	0.14	0.20	0.40	0.63	0.62	0.65	0.70	0.69	**0.34**
Silver	g/t Ag	31	26	38	38	38	47	51	53	54	49	**41**
DEVELOPMENT												
Capital	m	8,243	8,764	8,229	7,164	6,193	4,947	2,515	219			46,274
Operating	m	2,038	1,322	649	728	675	674	399	106			6,591
Total Development	**m**	**10,281**	**10,086**	**8,878**	**7,892**	**6,868**	**5,621**	**2,914**	**325**			**52,865**

25.7.1.1 Dilution Issues

SOMINCOR believes that the dilution in the Drift and Fill stopes is too high; the mine currently has problems with contamination of the ore with hydraulic fill. The fill when exposed in the mining panels is not standing well due to a lower than designed cement content caused by the sand, which is of uniform grain size and porous, allowing the cement to be washed out when the fill is draining. The current dilution in this type of stoping is given as 19%, much higher than normally expected. In its production schedule SOMINCOR reduced the dilution for the Drift and Fill stopes in the Reserves from 4% to 10%. WAI believes that improvements on these rates of dilution will be achieved with the proposed greater introduction of paste fill.

25.7.2 Copper Plant Issues

The SOMINCOR 10 Year Plan has used a copper recovery figure of between 86.1% and 88.7% compared to the 86.2% recovery figure achieved by the plant since 1997. Similarly, the copper concentrate grade of 22.8% Cu is marginally lower than recent plant performance of over 24%. However, WAI believes that the metallurgical efficiency of the Copper Plant can be increased and that the SOMINCOR figures are achievable.

25.7.3 SOMINCOR Operating Cost estimates

Table 25.9 shows the fixed and variable cost estimates used by SOMINCOR in its projected operating cost estimates for the 2.4Mtpa copper model. WAI considers that these costs are compatible with current costs on similar operations.

Table 25.9: Annual Fixed and Variable Operating Costs (€/t unless stated otherwise)

Year		**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Copper Ore Mined	**kt**	2041	2001	1945	1784	1684	1318	1280	1314	898	760
Zinc Ore Mined	**kt**	357	418	416	416	330	383	381	382	410	418
Total Ore Mined	**kt**	**2,398**	**2,419**	**2,362**	**2,200**	**2,014**	**1,701**	**1,661**	**1,696**	**1,307**	**1,178**
Mining Fixed		9.20	9.12	9.34	10.02	10.95	12.96	13.28	13.00	16.86	18.72
Mining Variable		11.24	12.80	13.37	12.75	11.98	10.90	10.53	10.31	8.84	6.93
Total Mining		**20.44**	**21.91**	**22.70**	**22.78**	**22.93**	**23.86**	**23.80**	**23.31**	**25.70**	**25.65**
Copper Processing Fixed		1.55	1.58	1.62	1.77	1.88	2.40	2.47	1.92	2.82	3.32
Copper Processing Variable		6.19	6.19	6.19	6.19	6.19	6.19	6.19	7.43	7.43	7.43
Total Copper Processing		7.74	7.77	7.82	7.96	8.07	8.59	8.66	9.36	10.25	10.76
Zinc Processing Fixed		2.56	2.19	2.19	2.20	2.77	2.39	2.40	2.39	2.23	2.19
Zinc Processing Variable		10.24	10.24	10.24	10.24	10.24	10.24	10.24	10.24	10.24	10.24
Total Zinc Processing		12.80	12.43	12.44	12.44	13.01	12.63	12.64	12.63	12.47	12.43
Total Processing Fixed		1.70	1.68	1.72	1.85	2.02	2.39	2.45	2.03	2.63	2.92
Total Processing Variable		6.80	6.89	6.91	6.96	6.86	7.10	7.12	8.06	8.31	8.43
Total Processing		**8.49**	**8.58**	**8.63**	**8.81**	**8.88**	**9.50**	**9.57**	**10.09**	**10.94**	**11.35**
Total Overhead Costs Fixed		6.29	6.23	6.38	6.85	7.49	8.86	9.08	7.93	10.28	11.41
Total Overhead Costs Variable		3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.66	3.66	3.66
Total Overhead Costs		**9.73**	**9.68**	**9.83**	**10.30**	**10.93**	**12.31**	**12.52**	**11.59**	**13.95**	**15.08**
TOTAL FIXED COSTS		17.18	17.03	17.44	18.73	20.46	24.21	24.80	22.96	29.78	33.05
TOTAL VARIABLE COSTS		21.48	23.13	23.72	23.16	22.28	21.45	21.09	22.03	20.81	19.02
TOTAL COSTS (€/t)		38.67	40.17	41.16	41.89	42.75	45.67	45.90	44.99	50.59	52.07
Total Operating Cost (€/t)		**92.7**	**97.1**	**97.2**	**92.1**	**86.1**	**77.7**	**76.2**	**76.3**	**66.1**	**92.7**

25.7.4 SOMINCOR Capital Cost Estimates

SOMINCOR has prepared a detailed estimate for annual capital commitments for the 2.4Mtpa production schedule and model as shown in Table 25.10.

Table 25.10: Annual Capital Expenditure (€M)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Mining	17.7	23.2	19.2	15.1	13.1	9.4	4.8	0.4	0.0	0.0	102.8
Processing	4.7	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	5.7
Tailings/Environment/ Closure	0.0	7.5	3.5	3.5	1.1	1.1	1.1	2.3	2.3	2.3	24.8
Other	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4
Contingency (15%)	0.0	4.6	3.4	2.8	2.2	1.6	0.9	0.4	0.3	0.3	16.6
Total	**24.8**	**35.5**	**26.4**	**21.6**	**16.5**	**12.3**	**6.8**	**3.2**	**2.7**	**2.7**	**152.4**

Capital development costs have been calculated at €2,000/m for lateral and €1,800/m for raise development. SOMINCOR has assumed that these costs will be adequate to cover either in-house development and/or the use of a contractor.

Replacement and sustaining capital for the mine operations has been estimated at €2M per annum. There is little data available to substantiate this figure, however, WAI is of the opinion that this is a reasonable estimate of annual requirements.

€4.7M has been provided in 2007 for the process plant according to the 2007 budget and a further €200k for the years 2008 to 2012 inclusive for ongoing plant capital costs. During the years 2008 to 2010 €14.5M has been provided for the water dam and the paste plant.

The total capital requirement of SOMINCOR for the period 2007 to 2016 is estimated to be €152.4M. WAI is of the opinion that this is a reasonable estimate of the ongoing capital requirements for the mine.

25.7.5 SOMINCOR 10 Year 2.4Mtpa Copper/Zinc Ore, Base Case Financial Model

WAI has prepared an Excel® LOM financial model for the Neves Corvo Mine based on data obtained during the due diligence period. The model examines the period 2007 to 2016 inclusive.

WAI has examined the main technical inputs relevant to the model, namely; copper and zinc reserve/resource statements, mine production rate, development requirements, metallurgical recoveries, operating costs, capital expenditures, etc, and has concluded that the parameters used in the calculation of the cashflow assumptions are reasonable.

However, WAI has not been able to audit in detail the assumptions made and has relied in good faith on data provided by SOMINCOR. The cashflow projections are subjective in many respects and thus susceptible to interpretations and periodic revisions based on actual experience and recent developments. Production, cost, recoveries and other technical data have been taken from SOMINCOR's current budget for 2007. While the other cashflow projections are specific they have not been prepared by WAI but are based on upon a variety of estimates and assumptions made by SOMINCOR with respect to general economics, metal market rates, the $:€ rate, interest rates, operating and capital expenditure and working capital requirements. The model provides an indication of the likely pre-tax operating returns, however, there can be no assurances that the assumptions made in preparing these cashflow projections will prove accurate, and actual results may be materially greater or less than those contained in such projections.

The production schedule is based on a mining rate of up to 2.4Mtpa and the appropriate development schedule to achieve this rate. The copper ore will result in a copper concentrate containing 22.8% Cu with credits for silver and a zinc concentrate. The zinc ore will result in a 50% zinc concentrate and a 45% Pb concentrate with a credit for Ag. Operating costs are based on actual costs obtained from SOMINCOR. Capital expenditure has been assessed against SOMINCOR's existing plans and altered to reflect changes in emphasis and timing. The mine closure fund has been accumulated at a rate felt to be appropriate to provide the required mine closure.

WAI has used the metal prices shown in Table 25.11. Net Smelter Returns assume that a Price Participation clause will be in force.

Table 25.11: Metal Prices and Exchange Rate Used by WAI.

		2007	2008 to 2011	2012 to 2016
Copper	**US cents/lb**	285	200	140
Zinc	**US cents/lb**	145	100	70
Lead	**US cents/lb**	42	33	30
Silver	**US cents/oz**	1000	950	850
Exchange Rate	**$US /Euro**	1.30	1.20	1.10

The salient details of the financial model are given in Table 25.12 Silver recovered from the copper ore to the copper concentrate has been assumed at 35% while silver recovered from the zinc ores to the lead concentrate has been assumed at 23% for the Excel® LOM financial model. The model assumes an average net payment of 80% for silver contained in copper concentrate and 90% for silver contained in lead concentrates (although it is possible this may increase to 95% through negotiation). The model assumes no payment for silver in zinc concentrate due to the typical silver deductible applied to zinc concentrates.

The Royalty is calculated as the greater of 10% of the Gross Operating Profit or 0.73% of the Net Revenue (NSR).

IRC Tax has been deducted at 20% of the taxable profit (Gross Operating Profit less depreciation and royalty) and Derrama Tax as 1.5% of the taxable profit.

The Capital costs include a 15% contingency on all expenditures incurred from 2008 onwards.

The 10 Year operating costs for the mine, mill, and administration (excluding exploration drilling) have been estimated at €823M (€43.47/t). Capital costs for the life of mine have been estimated at €152M exclusive of any purchase costs.

Closure provision accumulates at the rate of approximately €0.55/t ore mined for a total fund at the end of 10 years of €10.4M excluding the existing fund (€18M) built up by SOMINCOR in preceding years.

Table 25.12: Results of the Financial Modelling							
						€/t	**%**
PRODUCTION	Copper Ore	Tonnes Processed	kt	15,025			
		Copper Produced	kt	626			
		Zinc Produced	kt	29			
		Lead Produced	kt	0			
		Silver Produced	koz	4,562			
	Zinc Ore	Tonnes Processed	kt	3,910			
		Copper Produced	kt	0			
		Zinc Produced	kt	281			
		Lead Produced	kt	33			
		Silver Produced	Koz	1,578			
	Total Ore	**Tonnes Processed**	**kt**		**18,935**		
		Copper Produced	**kt**		**626**		
		Zinc Produced	**kt**		**310**		
		Lead Produced	**kt**		**33**		
		Silver Produced	**Koz**		**6,140**		
REVENUE	Copper Ore	Copper Gross Revenue	**€M**	2,108		140.30	
		Zinc Gross Revenue	**€M**	39		2.60	
		Lead Gross Revenue	**€M**	0		0.00	
		Silver Gross Revenue	**€M**	36		2.40	
		Gross Revenue Copper Ore	**€M**	**2,183**		**145.29**	
		NRS Copper Ore	**€M**	**1,805**		**120.13**	
	Zinc Ore	Copper Gross Revenue	**€M**	0		0.00	
		Zinc Gross Revenue	**€M**	398		101.79	
		Lead Gross Revenue	**€M**	20		5.12	
		Silver Gross Revenue	**€M**	14		3.58	
		Gross Revenue Zinc Ore	**€M**	**432**		**110.49**	
		NRS Zinc Ore	**€M**	**273**		**67.52**	
	Total Ore	Copper Gross Revenue	**€M**	2,108		**111.33**	80.6%
		Zinc Gross Revenue	**€M**	437		**23.08**	16.7%
		Lead Gross Revenue	**€M**	20		**1.06**	0.8%
		Silver Gross Revenue	**€M**	50		**2.64**	1.9%
		Gross Revenue All Ore	**€M**	**2,615**		**138.10**	**100.0%**
		NRS All Ore	**€M**		**2,078**	**109.74**	
OPERATING COST	Fixed & Variable	General & Administrative Costs	**€M**	32		1.69	3.9%
		Human Resources	**€M**	82		4.34	10.0%
		Finance & Commercial	**€M**	98		5.16	11.9%
		Mining Costs	**€M**	435		22.99	52.9%
		Processing Cost Cu	**€M**	126		6.68	15.4%
		Processing Cost Zn	**€M**	49		2.60	6.0%
		S/T Direct Operating Cost	**€M**	**823**		**43.47**	**100.0%**
		Exploration Drilling	**€M**	37		1.94	
		Total Operating Cost	**€M**		**860**	**45.41**	
GROSS OPERATING PROFIT			**€M**		**1,218**	**64.33**	
TAXES & ROYALTIES		Royalty	**€M**	95		**5.02**	
		IRC Tax (20%)	**€M**	171		**9.03**	
		Derrama Tax (1.5%)	**€M**	13		**0.67**	
		Total Tax & Royalty	**€M**	279	**279**	**14.72**	
NET OPERATING PROFIT			**€M**		**940**	**49.62**	
CAPITAL COST		Mining	**€M**	103		**5.43**	
		Processing	**€M**	6		**0.30**	
		Tailings, Environmental & Closure	**€M**	25		**1.31**	
		Other	**€M**	2		**0.13**	
		Contingency	**€M**	17		**0.88**	
		Total Capital Cost	**€M**		**152**	**8.05**	
POST-TAX, FREE CASHFLOW			**€M**		**787**	**41.57**	

The model has been prepared on an all equity basis. The base case Net Present Value (NPV) at various discount rates is shown in Table 25.13. The model does not discount 2007 costs and revenues. All other cashflows are discounted to the beginning of 2008.

Table 25.13: SOMINCOR Base Case Financial Model, Neves Corvo NPV

Discount Rate	NPV €M	NPV $M
0%	786	946
5%	692	837
7%	661	802
10%	620	755
15%	565	692

25.7.5.1 Sensitivity Analysis

WAI has performed a simplistic sensitivity analysis on the SOMINCOR project Net Present Value (NPV) model presented in their 2.4Mtpa copper production schedule. Table 25.14 shows the likely NPV's at a range of discount rates and changes in the base copper metal price, exchange rate, capital and operating costs of ±10%. These NPV projections should only be regarded as indicative.

Table 25.14: NPV Sensitivity Analysis

Input Parameter	Net Present Value (post acquisition), $M		
Discount rate	0%	10%	15%
Base Case	946	755	692
Base Case Copper, –10%,	768	619	568
Base Case Copper, +10%	1,132	899	822
Exchange Rate, -10% on €	1,031	818	747
Exchange rate, +10% on €	861	693	636
Capital Costs, -10%	964	770	705
Capital Costs, +10%	928	741	678
Operating Costs, -10%	1,017	806	736
Operating Costs, +10%	875	704	647

The sensitivity analysis shows that the project is most sensitive to the copper price and least sensitive to the capital costs. All scenarios result in a substantial NPV.

CERTIFICATE of AUTHOR

I, **Mark L Owen**, BSc, MSc, MCSM, CGeol, EurGeol, FGS do hereby certify that:

- I am an Associate Director of:
  Wardell Armstrong International Ltd
  Wheal Jane
  Baldhu
  Truro
  TR3 6EH
  UK
- I graduated with a degree in Geology from Exeter University, Exeter, Devon, UK in 1980 and thereafter graduated with a Masters degrees in Mining Geology from Camborne School of Mines, Camborne, Cornwall UK in 1981.
- I am a Fellow of the Geological Society of London and am a Chartered and European Geologist.
- I have practised my profession as a Mining Geologist for the past 26 years in areas of gold and base metals evaluation in a number of countries around the world.
- I am a Qualified Person in accordance with the National Instrument 43-101.

I am responsible for the preparation of the technical report titled "**Technical Report on the Neves Corvo Mine, Southern Portugal"** and dated 10 October, 2007, Ref WAI/61-0465 (the "Technical Report"). I last visited the Neves Corvo property on 16 September 2006 for 7 days. As part of a WAI team I have been involved in a full review of the estimation of Mineral Resources and Mineral Reserves at Neves Corvo through 2006 and 2007. I have over 10 years experience in the estimation of Mineral Resources and Mineral Reserves for Base Metals.

- I have not had any prior involvement with the property that is the subject of the Technical Report.
- I am independent of the issuer applying all of the tests in section 1.4 of National Instrument 43-101.
- I have read the Instrument NI-43-101 and Form 43-101F1 revised December 2005 and the Technical Report has been prepared in compliance with Instrument NI-43-101 and Form 43-101F1.
- As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
- I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated 10 October, 2007

Name Mark L Owen BSc, MSc, MCSM, CGeol, EurGeol, FGS

CERTIFICATE of AUTHOR

I, **David L Chilcott**, ACSM, FIMMM, CEng do hereby certify that:

- I am an Associate of:
  Wardell Armstrong International Ltd
  Wheal Jane
  Baldhu
  Truro
  TR3 6EH
  UK
- I graduated with first class honours in Mining Engineering from Camborne School of Mines, Camborne, Cornwall UK in 1959.
- I am a Fellow of the Institution of Materials Mining and Metallurgy and am a Chartered Engineer.
- I have practised my profession as a Mining Engineer for the past 48 years in areas of gold and base metals evaluation in a number of countries around the world.
- I am a Qualified Person in accordance with the National Instrument 43-101.
- I am responsible for the preparation of the technical report titled "**Technical Report on the Neves Corvo Mine, Southern Portugal"** and dated 10 October, 2007, Ref WAI/61-0465 (the "Technical Report"). I have visited the Neves Corvo property several times during 2007 and most recently on 10 April 2007 for 5 days. As part of a WAI team I have been involved in a review of the Mineral Resources and Mineral Reserves at Neves Corvo Mine, together with a detailed review of the Mine Plan.
- I have not had any prior involvement with the property that is the subject of the Technical Report.
- I am independent of the issuer applying all of the tests in section 1.4 of National Instrument 43-101.
- I have read the Instrument NI-43-101 and Form 43-101F1 revised December 2005 and the Technical Report has been prepared in compliance with Instrument NI-43-101 and Form 43-101F1.
- As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
- I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated 10 October, 2007

Name David L Chilcott, BSc, ACSM, IMMM, CEng.