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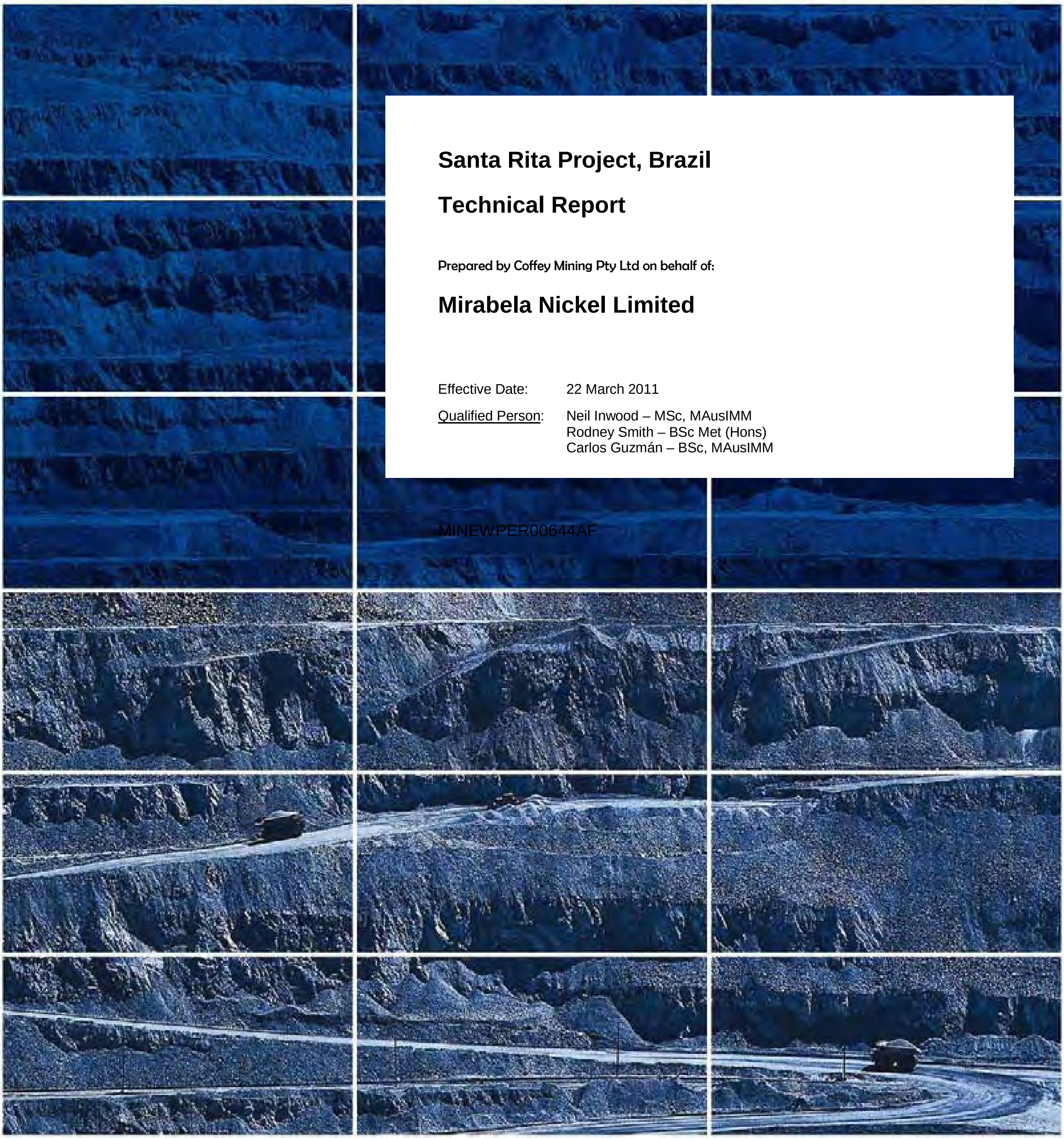

Santa Rita Project, Brazil

Technical Report

Prepared by Coffey Mining Pty Ltd on behalf of:

Mirabela Nickel Limited

Effective Date: 22 March 2011

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1 SUMMARY

1.1 Property Description

Mirabela Nickel Limited (MNL) operates the Santa Rita Project, which is located in south-east Bahia State, Brazil, situated 360km southwest of Salvador and about 6km from the city of Ipiaú (Figure 1.1_1).

Figure 1.1_1
Santa Rita Project Location (yellow)

The project involves the open pit mining of nickel sulphide mineralisation from the Fazenda Mirabela Intrusion, which is host to the Santa Rita nickel orebody. The intrusion is layered and composed of ultramafics at the base and gabbronorites at the top. It has an ovoid exposed area of approximately 7km². The mineralised zone extends from one side of the Fazenda Mirabela Intrusion to the other, with widths up to 140m and averaging 40m over a strike length in excess of 2km. Mineralisation has also been tested down dip to depths exceeding 1,000m.

1.2 Project Status

The Santa Rita project was commissioned in October 2009 and has made the transition to a fully operating mine and plant. The current annualised rate of production (December 2010) is 5.2Mtpa, above the plant nameplate capacity of 4.6Mtpa. The full production rate of 7.2 Mtpa is expected to be reached by the end of 2011.

1.3 Resource and Reserve Summary

Mineral Resources and Mineral Reserves were re-generated for December 2010, using the previously estimated (2009) Resource block model. These have been reported according to the classifications adopted by CIM Council on 11 December 2005. Furthermore, the mineral resource classification is also consistent with the Australasian Code for the Reporting of Mineral Resources and Ore Reserves of December 2004 (the Code) as prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Mineral Council of Australia (JORC).

The December 2010 Mineral Resources and Mineral Reserves are presented in Tables 1.3_1 and 1.3_2 respectively.

Table 1.3_1
Santa Rita Deposit
Classified Mineral Resource Current as per 27 December 2010[1,2] and End of December 2010 [2]
Reported by variable Cutoff Grades defined by Host Rock Type
OK (UC) Estimate - 5mE x 10mN x 5mRL Selective Mining Unit

Category	Mt	Ni %	Cu %	Co %	Pd ppb	Pt ppb	Au ppb
Insitu Resources[12] - Weighted Average Cutoff Grade of 0.25% Ni							
Measured	**16.3**	**0.57**	0.14	0.016	50	101	61
Indicated	**156.0**	**0.51**	0.13	0.014	41	87	56
Inferred	**25.7**	**0.53**	0.14	0.015	35	83	55
ROM Stockpile [3]– Reported at the end of December 2011							
Indicated	**0.3**	**0.34**	0.14	0.16	50	101	61

1. The Resource includes a 95% mining recovery factor. Weighted average Ni cutoff grade approximately 0.25%. Figures have been rounded
2. These figures are for the in-ground or insitu Resources only.
3. ROM stockpile grades have been estimated based upon the average of production reported grades for Ni and Measured grades estimated for the in-situ resource above.

Table 1.3_2
Santa Rita Deposit
Proven & Probable Mineral Reserves [1)] current as at end December 2010

Classification[1]	Tonnes (million)	Nickel Grade (%)	Copper Grade (%)	Cobalt Grade (%)	Recovered Nickel (ktonnes)
Proven	16.7	0.57	0.14	0.016%	64.1
Probable	142.6	0.52	0.13	0.015%	505.7
Total	**159.3**	**0.52**	**0.13**	**0.015%**	**569.8**

1. Contained Ni – 829,800t (1,829 million lb); Strip ratio – 5.0 to 1; Weighted average recovery – 68.7% Ni

The reporting cutoffs used for the Resource in Table 1.3_1 are outlined below:

Host Rock Type	Percentage Composition	Cutoff Grade
Pyroxenite	62	0.20%
Olivine Orthopyroxenite	13	0.25%
Harzburgite	22	0.35%
Dunite	3	0.40%
Weighted average cutoff grade	**100%**	**0.25%**

2 INTRODUCTION

2.1 The Purpose of this Report

This report has been prepared for MNL to summarise the Resource and reserve estimates for the Santa Rita Nickel project as of December 2010. The report has been written to comply with Canadian disclosure and reporting requirements as set forth in NI 43-101, Companion Policy 43-101CP and Form 43-101F1.

No new exploration drilling has been undertaken since 2009. This document will concentrate on the drilling and sampling practices applicable to the resource, which is a re-statement of the previous 2008 resource, with allowance taken into account for mining depletion and updated mining parameters.

Aspects of the geology, mineralisation, exploration, drilling, sampling, QAQC and Resource estimation procedure have been previously discussed in the February 2009 Independent Technical Report titled 'Santa Rita Project, Bahia Brazil' (Gossage et. Al , 2009); and according to Section 3.5 of the NI43-101 Standards of Disclosure for Mineral Project, these aspects are thus discussed in summary detail in this report.

2.2 The Sources of Information

In addition to site visits undertaken to the Mirabela Project in 2010 and 2011, the authors of this report have relied extensively on information provided by MNL, extensive discussion with MNL, and numerous studies completed by other internationally recognised independent consulting and engineering groups. A full listing of the principal sources of information is included in Section 20 of this report and a summary is provided below:

- MNL/Legal – Environmental and Licensing and Agreements
- GRD Minproc – Process design and engineering.
- VOGBR – Tailings dam and slope stability studies.
- MNL – Material agreements, contracts, LOM, various internal reports and procedure manuals, and the exploration database.

The authors have made all reasonable enquiries to establish the completeness and authenticity of the information provided and identified, and a final draft of this report was provided to MNL along with a written request to identify any material errors or omissions prior to lodgement.

2.3 Qualifications and Experience

Mr Neil Inwood, who is a professional geologist with 17 years experience in exploration and mining geology, and the geostatistical estimation of mineral resources. He is a Principal Resource Geologist at Coffey Mining. Mr Inwood is also a Member of the AusIMM and has the appropriate relevant qualifications, experience and independence to be considered a Competent Person as defined in the Australasian Valmin and JORC codes respectively, and as a Qualified Person as defined in Canadian National Instrument 43-101. Mr Inwood has visited the Mirabela Project in May 2010. Mr Inwood , has supervised the compilations of Sections 1 to 15, 17.1 and 17.2, 18 and 19 to 21 of the report.

The metallurgical review provided in this report has been completed by Mr Rod Smith, who is a professional metallurgist with 25 years experience in the exploration and evaluation of mineral properties internationally. Mr Smith is a Principal Consultant with Coffey Mining and a Member of the AusIMM and has the appropriate relevant qualifications, experience and independence to be considered an Expert as defined in the Australasian Valmin Code and a Qualified Person as defined in Canadian National Instrument 43-101. Mr Smith has visited the Mirabela Project in December 2010. Mr Smith has supervised the compilations of Sections 16, 18.2-18.4, and portions of Sections 1, 18.1, 19 to 21 of the report.

Sections in this report that relates to mine scheduling studies, ore reserve and mining costs estimation is based on information compiled by Carlos Guzman who is a professional Mining Engineer and Project Manager with NCL Brasil and a Member of the Australasian Institute of Mining and Metallurgy and is a Qualified Person in accordance with NI 43-101. Carlos Guzman is a consultant to Mirabela Nickel Limited. Mr Guzman consents to the inclusion in the report of the matters based on his information. Mr Guzman last visited the site in November 2010 for 2 days. Mr Guzman has supervised the compilations of Sections 17.3, 18.1, 18.9, 18.10 and 18.11; and parts of Section 1, 18.4 and 18.9 of the report.

2.4 Independence

This report has been compiled under the supervision of Neil Inwood and Rod Smith of Coffey Mining, and Carlos Guzman of NCL Brazil.

Mr Guzman is employed as a consultant by MNL and does not have or previously has had any material interest in MNL or related entities or interests. His relationship with MNL is solely one of professional association between client and independent consultant. This report is prepared in return for fees based upon agreed commercial rates and the payment of these fees is in no way contingent on the results of this report.

Mr Inwood and Mr Smith do not have or have had previously any material interest in Mirabela Nickel Limited or related entities or interests. Our relationship with MNL is solely one of professional association between client and independent consultant. This report is prepared in return for fees based upon agreed commercial rates and the payment of these fees is in no way contingent on the results of this report.

3 RELIANCE ON OTHER EXPERTS

The authors of this report are not experts in matters pertaining to Environmental, Legal and Tax matters.

Information relating to mining tenements and their ownership and has relied upon a legal opinion by Pinheiro Neto Advogados dated February 16, 2011 in respect of the following sections of this report: (i) mineral tenure (Section 4.3); and (ii) land area (Section 4.2) other than Figure 4.4_1.

Information relating to the Agreements and Encumbrances (Section 4.5) is based upon the legal opinion by Pinheiro Neto Advogados dated February 16, 2011, copies of contracts supplied by MML.

Information relating to the Environmental and permitting status (Sections 4.6 and 18.6) of the projects has been based upon reports supplied by Mirabella's technical staff, including the 2010 Sustainability and Environmental Report (December 2010).

Information relating to Taxation, Markets and Contracts is based upon information supplied to Coffey Mining by MML. Coffey Mining has reviewed the Marketing and Contracts information (Sections 18.5 and 18.6) and considers that it is reasonable for a nickel operation of the size of Santa Rita.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Location

The MNL Santa Rita Project is located in south-east Bahia State, Brazil, situated 360km southwest of Salvador and about 6km from the city of Ipiaú (Figure 1.1_1). The project is centred at 14°11’42’’S latitude and 39º 42’11”W longitude.

4.2 Land Area

The Mirabela Project comprises 32 granted Exploration Licences and one Mining Licence covering an aggregate area of 29,998.42ha. The Santa Rita resource is located on mining concession DNPM No. 871369/89, which is the subject of the Mining Licence issued on 2 January 2008 (“Mining Licence”) and now subject to the Mining Lease dated 3 March 2008 (“Mining Lease”) entered into between Mirabela Mineração do Brasil Ltda (“Mirabela Brazil”) and Companhia Bahiana de Pequisa Mineral (“CBPM”). The project tenements are depicted in Figure 4.2_1, and the tenement details are provided in Table 4.2_1.

4.3 Mineral Tenure

Mineral tenements in Brazil comprise Prospecting Licences, Exploration Licences and Mining Licences. The holder of a granted Prospecting Licence, Exploration Licence or Mining Licence is not required to spend a set annual amount per hectare in each tenement on exploration or mining activities. Therefore there is no statutory or other minimum expenditure requirement in Brazil. However, annual rental payments are made to the Departamento National de Produção Mineral (DNPM) and the holder of an Exploration Licence must pay rates and taxes, ranging from US$1.05 to US$1.60 per hectare (1US$ = R$1.80), to the Federal Government.

4.3.1 Prospecting Licences

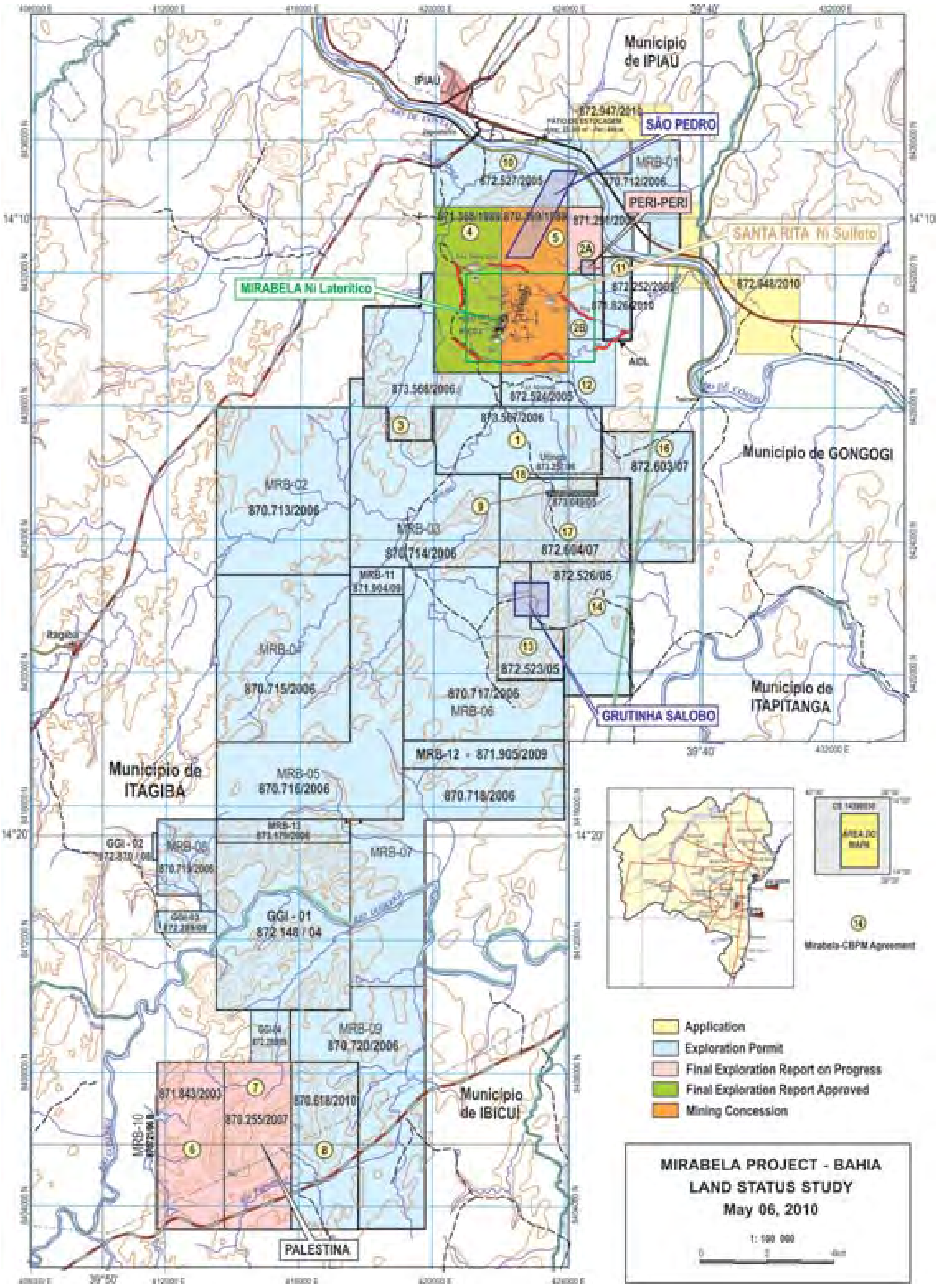
A Prospecting Licence entitles the holder, to the exclusion of all others, to explore for minerals in the area of the licence, but not to conduct commercial mining. A Prospecting Licence may cover a maximum area of 50 hectares and remains in force for up to 5 years. The holder may apply for a renewal of the Prospecting Licence which, is subject to DNPM approval. The period of renewal may be up to a further 5 years.

Table 4.2_1

Tenement Schedule, Santa Rita Project

DNPM Process No.	Registered Holder / Applicant	Stage	Area (Ha)	Expiry Date	Comments
871.369/1989	CBPM	Mining Concession	1,000.0	N/A	The mining concession was leased to MMB until 3 Mar 2028.
871.368/1989	CBPM	Application for Mining Concession	1,000.0	N/A	The application is currently pending review by the DNPM.
871.291/2003	CBPM	Final Exploration Report	208.3	N/A	The report is currently pending review by the DNPM. Once it is approved, CBPM will be allowed to apply for the mining concession.
871.843/2003	CBPM	Final Exploration Report	1,000.0	N/A	The report is currently pending review by the DNPM. Once it is approved, CBPM will be allowed to apply for the mining concession.
870.255/2007	Utinga	Final Exploration Report	1,000.0	N/A	The report is currently pending review by the DNPM. Once it is approved, Utinga will be allowed to apply for the mining concession.
872.148/2004	MMB	Exploration Licence	2,000.0	16-Jul-11	N/A
872.523/2005	CBPM	Exploration Licence	500.0	08-Jun-12	N/A
872.524/2005	CBPM	Exploration Licence	480.0	08-Jun-12	N/A
872.525/2005	CBPM	Exploration Licence	212.7	08-Jun-12	N/A
872.526/2005	CBPM	Exploration Licence	1,000.0	08-Jun-12	N/A
872.527/2005	CBPM	Exploration Licence	1,000.0	08-Jun-12	N/A
873.049/2005	Utinga	Exploration Licence	14.9	17-Sep-12	N/A
870.712/2006	MMB	Exploration Licence	777.9	04-Aug-12	N/A
870.713/2006	MMB	Exploration Licence	2,000.0	04-Aug-12	N/A
870.714/2006	MMB	Exploration Licence	1,620.0	04-Aug-12	N/A
870.715/2006	MMB	Exploration Licence	2,000.0	04-Aug-12	N/A
870.716/2006	MMB	Exploration Licence	2,000.0	04-Aug-12	N/A
870.717/2006	MMB	Exploration Licence	1,821.7	04-Aug-12	N/A
870.718/2006	MMB	Exploration Licence	1,857.2	04-Aug-12	N/A
870.719/2006	MMB	Exploration Licence	423.9	04-Aug-12	N/A
870.720/2006	MMB	Exploration Licence	1,789.0	04-Aug-12	N/A
870.721/2006	MMB	Exploration Licence	17.9	25-Jan-13	N/A
873.179/2006	MMB	Exploration Licence	276.1	23-Apr-13	N/A
873.257/2006	CBPM	Exploration Licence	38.0	25-Jan-13	N/A
873.567/2006	Utinga	Exploration Licence	999.7	03-Aug-13	N/A
873.568/2006	Utinga	Exploration Licence	1,000.0	01-Jul-13	N/A
872.603/2007	Utinga	Exploration Licence	859.4	25-Nov-13	N/A
872.604/2007	Utinga	Exploration Licence	985.1	25-Nov-13	N/A
872.870/2008	MMB	Exploration Licence	11.3	03-Oct-11	N/A
871.904/2009	MMB	Exploration Licence	141.0	18-Nov-12	N/A
871.905/2009	MMB	Exploration Licence	426.9	18-Nov-12	N/A
872.288/2009	MMB	Exploration Licence	182.7	18-Nov-12	N/A
872.289/2009	MMB	Exploration Licence	111.1	18-Nov-12	N/A
870.618/2010	CBPM	Exploration Licence	999.8	07-Jul-13	N/A
871.826/2010	CBPM	Exploration Licence	4.9	15-Dec-13	N/A

Figure 4.2_1
Location Map of Project Tenements



4.3.2 Exploration Licences

An Exploration Licence entitles a holder, to the exclusion of all others, to explore for minerals in the area of the licence, but not to conduct commercial mining. The maximum area of an Exploration Licence is 2,000 hectares outside of the Amazonia region and 10,000 hectares within the Amazonia region (Amazonas, Para, Mato Grosso, Amapa, Rondonia, Roraima states). An Exploration Licence remains in force for a maximum period of 3 years and can be extended by no more than a further 3 year period. Any extension is at DNPM's discretion and will require full compliance with the conditions stipulated by the Mining Code that must be outlined in a report to DNPM applying for the extension of the licence.

If the holder of an exploration licence proves the existence of a commercial ore reserve on the granted exploration licence, the DNPM cannot refuse the grant of a mining licence with respect to that particular tenement if the licence holder has undertaken the following:

- an exploration study to prove the existence of an ore reserve
- a feasibility study on the commercial viability of the reserve
- obtained an environmental licence to mine on the particular tenement.

4.3.3 Mining Licences

A Mining Licence entitles the holder to work, mine and take minerals from the mining lease, subject to obtaining certain approvals.

An application for a Mining Licence may only be granted solely and exclusively to individual firms or companies incorporated under Brazilian law, which will have a head office, management and administration in Brazil, and are authorised to operate as a mining company.

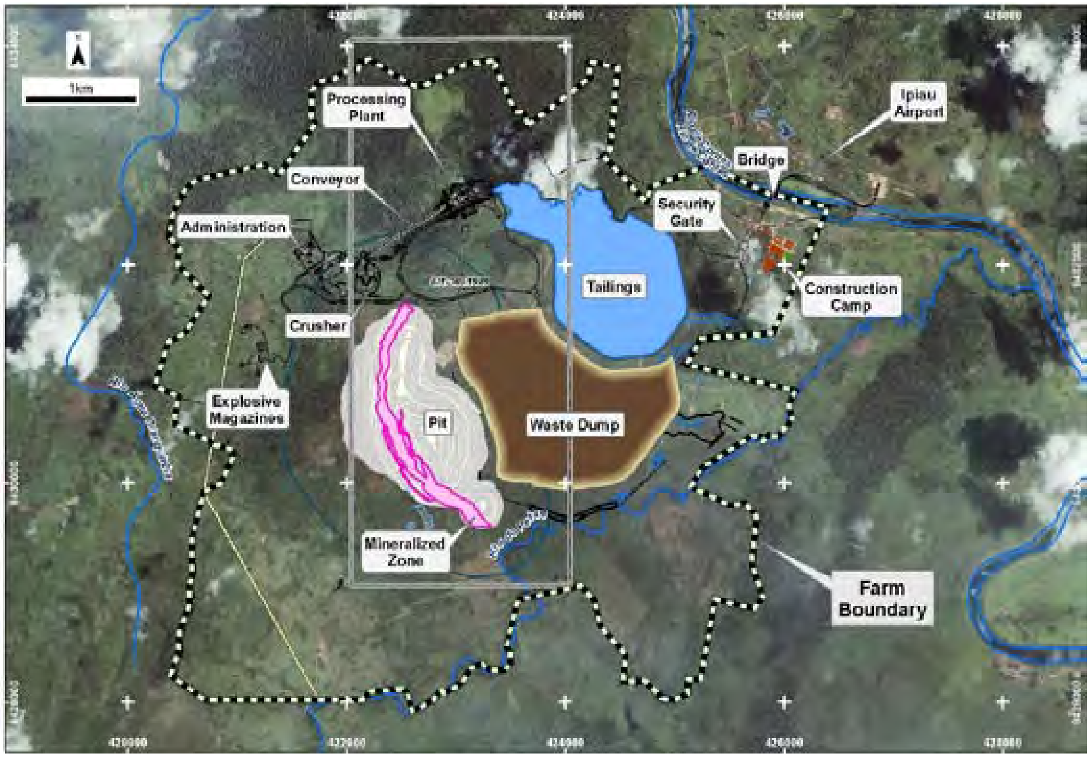
Mining rights can be denied in very occasional circumstances, where a public authority considers that a subsequent public interest exceeds that of the utility of mineral exploration, in which case the Federal Government must compensate the mining concession holder.

A Mining Licence covers a maximum area of between 2,000 hectares and 10,000 hectares, depending on the geographical area in Brazil, as detailed above, and remains in force indefinitely. The holder must report annually on the status and condition of the mine. The holder must pay financial compensation to States and local authorities for exploiting mineral resources by way of a Federal royalty being the Compensação Financeira pela Exploração de Recursos Minerais (CFEM), which is a maximum of 3% of revenue, but is 2% in respect of nickel production.

4.4 Project Plan

The site layout of the Santa Rita project is shown in Figure 4.4_1.

Figure 4.4_1
Santa Rita Project Location Plan



showing the position of project infrastructure in relation to mineral reserves and the Mining Licence boundary

4.5 Agreements and Encumbrances

On 17 October 2003, Mirabela Mineração do Brasil Ltda (Mirabela Brazil) entered into an Exploration and Mining Lease Agreement, as amended (29 June 2004, 17 October 2005, 24 November 2005, 12 April 2007 and 27 February 2008) for the Mirabela Project in Brazil (the "Contract"). The parties to the original Contract are Mirabela Brazil, Rio Salitre Mineração Ltda (Rio Salitre), Companhia Bahiana de Pesquisa Mineral (CBPM) and CBPM's subsidiary Utinga Mineração Ltda. Rio Salitre's Exploration Licences were subsequently transferred to CBPM.

Mirabela Brazil successfully tendered to CBPM, Utinga and Rio Salitre to explore and, if successful with exploration, then mine certain tenements set out in the Contract (the "Contract Tenements") upon the terms of the Contract. Pursuant to the Contract, Mirabela Brazil was granted access to the Contract Tenements to undertake exploration work. Mirabela Brazil completed an Exploration Programme for Exploration Licence 871369/89 and in 2006. The Final Report was approved by the DNPM on 5 December 2006. Subsequently, the Mining Licence 871369/89 was gazetted in CPBM's name on 2 January 2008 and a Mining Lease agreement was signed between Mirabela Brazil and CBPM on 3 March 2008 and gazetted on 9 June 2008.

The Mining Lease has a term of 20 years from the date of publication of registration of the Mining Lease with the DNPM (9 June 2008). Mirabela Brazil, as the lessee, must pay all taxes, development and operational costs and keep the underlying Mining Licence in good standing. CBPM and/or Utinga, as the lessor, will grant to Mirabela Brazil the right of access.

Mirabela Brazil, as the lessee, must pay CBPM and/or Utinga royalties on a monthly basis for the leasing of the mining rights for nickel sulphide ores and nickel laterite ores. The royalties will be paid in Brazilian Reals and will be as follows:

- *Royalty for Sulphide Ore* - The lessee will pay the equivalent of 2.51% of the gross revenue from the sales or conversion of concentrates of nickel produced from sulphide ore, calculated on the basis of 60% of the market value of nickel contained in the concentrate, added to the market value of other metals contained in the concentrate which are economically recoverable and vendible, expressed in nickel-equivalent, including copper, cobalt, gold and metals in the platinum group.
- *Royalty for Laterite Ore* - The royalty for the laterite ore will be based upon each tonne of extracted mineral, converted or sold, according to the scale below:
  - the equivalent to US$2.01/t of laterite ore, when the value of nickel at the London Metal Exchange is higher than US$9,000 per metric tonne
  - the equivalent to US$1.51/t of laterite ore, when the value of nickel at the London Metal Exchange is between US$8,000 and US$9,000 per metric tonne
  - the equivalent to US$1.01/t of laterite ore, when the value of nickel at the London Metal Exchange is lower than US$8,000 per metric tonne.
- *Royalty for Other Metals Contained in Laterite Ore* - The royalty for such other metals economically recoverable including cobalt, gold, and metals of the platinum group will be the equivalent in Brazilian Reals to US$0.31/t of extracted mineral transferred or sold.

The expression 'market value' in respect of the above royalties refers to the rates of nickel and associated metals at the London Metal Exchange. The payment of the various royalties must be made before the 15th day of each month and a late penalty of 10% on the debit balance calculated daily on the basis of fluctuations of the general market price index will apply.

Mirabela Brazil will further pay royalties to CBPM and/or Utinga, according to the royalties in the Mining Lease on any profit or revenue derived from the sale of mineral and nickel concentrates, and related products obtained from the Contract Tenements, under the Exploration Program prior to the execution of the Mining Lease.

As lessor, CBPM, may terminate the Mining Lease if Mirabela Brazil fails to comply with any of its requirements under the Mining Lease, in which case, Mirabela Brazil will pay a penalty of BR$500,000 upon termination of the Mining Lease.

4.6 Environmental Liabilities

4.6.1 Exploration Permits

There are no environmental liabilities associated with the exploration licences. Permits for clearing of vegetation are required where gridlines are opened in forested areas. Drilling operations require appropriate approvals for clearing of vegetation, and licences for pumping and utilisation of surface water. Mirabela Brazil has retained the services of environmental consulting group PROGET Projetos de Geologia e Topografia for all aspects of the environmental management of the tenements.

4.6.2 Mining Licence 390 – Tenement No 871369/89

As a requirement for the environmental licensing of the development project, a comprehensive Environmental Impact Assessment (EIA) has been completed and was submitted to the State environmental authority on 21 September 2006.

The EIA has been approved by the State Environmental Board of Bahia and the Location License ("Licença de Localização") has been granted for a period of 6 years (from 28 September 2007). Notification of the granting of the Location License ("Licença de Localização") has been published in the official gazette of the State government on 23 December 2006. Notification of the granting of the Construction License ("Licença de Implantação") was published in the official gazette of the State government on 28 September 2007.

In October 2008 an amendment to the EIA was submitted to the State government covering the increase in production rate to 6.4Mtpa and other project modifications. This amendment was approved in December 2008 with the approval published in the official gazette of the State government on 17 December 2008 through IMA Ordinance No. 10316.

All permits necessary knowledge for the ongoing project activities were obtained. The application for the license to operate was made to the environmental authority of the State December 18, 2008. The operation license Mirabela was published in the Official Gazette on September 23, 2009.

On December 2008 an application for a Mining Licence was filed with the Institute of Environment (IMA). Since then, environmental and social programs have been completed in compliance with all constraints stipulated by the Implementation Licence. On September 23, 2009 a Mining Licence for Mirabela Mineração do Brasil Ltda was approved and published in the State Official Gazette (DOU) by IMA ordinance N0 11 570 (Ordinance No 2008-019928/ TEC / LO-0149).

Under Mirabela's operating license, the company must perform and agreed set of activities to comply with the environmental commitments. Mirabela defines these activities and assign a cost against them in each annual budget. The budgeted cost associated with the activities for 2011 is US$1.0m (this amount can also be negotiated with the Bahia state environmental authority).

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Access

The Santa Rita Project lies about 2km from the sealed main highway BR330, as shown in Figure 1.1_1. The Palestina prospect lies about 25km to the south of Mirabela, close to highway BR030. Access within the project areas is by unsealed formed municipal roads and farm tracks.

5.2 Climate

The Itagibá region is classified as having a humid tropical climate. Annual rainfall varies between 800mm and 1,800mm and averages approximately 1,300mm. There is no well-defined dry season. Monthly average temperatures are above 18°C.

5.3 Local Resources and Infrastructure

The Mirabela and Palestina project areas respectively lie adjacent to sealed highways BR330 and BR030. High-voltage power supply lines cross the tenement areas. Land in the area is dominantly used for pastoral and agricultural purposes, and farms cover the tenements concerned. The Company has sufficient surface rights for its proposed mining operations.

Water is provided for industrial and pastoral activity by the Rio de Contas, other major watercourses and numerous artesian bores. A water treatment facility is located in Ipiaú to supply potable water to the town.

High voltage power supply lines cross the tenement area. The towns of Ipiaú (having a population of approximately 40,000) and Itagibá, about 6km and 20km respectively from the project, are well endowed with commercial activity and industrial support services, such as transport and earthmoving, construction, commercial and banking. The towns provide an excellent source of skilled and unskilled labour.

5.4 Physiography

The area is characterised by sub-tropical rainforest, although little remains due to deforestation of the area for farming. Local topography is characterised by flat to gently undulating soil-covered terrain at about 150m asl, traversed by a drainage network feeding the Rio de Contas River. The terrain is punctuated with rounded hills rising to 350m to 400m asl comprising resistant lithologies within the metamorphic terrain, such as banded iron formation, and the mafic-ultramafic complexes of Mirabela and Palestina.

6 PROJECT HISTORY

6.1 Prior Ownership and Ownership changes

Exploration for nickel, copper, and cobalt as well as precious metals has been carried out in the Fazenda Mirabela region since the mid 1970s. The owners of the mineral tenements in this area since that time and the changes of ownership are listed in Table 6.1_1.

Table 6.1_1
Santa Rita Deposit
Ownership History

Owner	From	To
Mineração Nhambú Limitada	1979	1981
No ownership	1981	1985
Caraíba Metais SA	1985	1989
Companhia Baiana de Pesquisa Mineral (CBPM)	1989	2002
CBPM/Mirabela Brazil	2003	Present

6.2 Exploration and Development Work

The existence of mafic-ultramafic intrusive complexes was first noted following regional aeromagnetic surveys by the Brazilian Geological Survey (Companhia de Pesquisas de Recursos Minerais – CPRM) in the Itaberaba-Belmonte area in 1976.

Mineração Nhambú Limitada conducted a regional exploration program for base and precious metals in the south of Bahia State between 1979 and 1981. Initial exploration comprised a stream sediment and soil sampling programme as well as regional geological mapping, which led to the discovery of a nickel-copper-cobalt anomaly at Fazenda Mirabela, 8km south-southeast of the town of Ipiaú.

However, Mineração Nhambú Limitada relinquished the ground in 1981, concluding that the Fazenda Mirabela nickel anomaly was of lateritic origin and unrelated to significant primary mineralisation.

In 1985 Caraíba Metais SA claimed tenements in the Fazenda Mirabela region to explore for copper, nickel and PGEs. The company carried out geological reconnaissance surveys as well as geochemical and geophysical surveys and minor drilling. The work was restricted to the ultramafic zone of the intrusion, as the company was denied surface access to the whole intrusion by the landowners at the time (Carvalho et al., 1981). Caraíba Metais SA identified a 40m thick layer of disseminated sulphides hosted by the ultramafic zone. The company also noted that the primary sulphide mineralisation was overlain by a 30m to 40m thick zone of in-situ supergene oxides (laterite), but did not investigate this profile.

At the time, however, the primary focus of the Caraíba Metals SA exploration was for copper-dominant deposits, which, combined with low metal grades encountered and existing economic conditions, led them to terminate exploration activities in the area, ceding their exploration rights to Companhia Baiana de Pesquisa Mineral (CBPM) in 1989.

CBPM claimed the tenements to follow up on the work of Caraíba Metais. Geophysical ground surveys carried out, including magnetics and very low frequency (VLF) electromagnetics, magnetic susceptibility measurements and geological mapping, as well as geochemical and petrographic analysis led to the definition of the Fazenda Mirabela intrusion as a differentiated mafic-ultramafic body comprised of a western ultramafic sequence, succeeded by an eastern mafic sequence with a nickel sulphide zone, defined earlier by Caraíba Metais SA, being located within the upper portion of the ultramafic sequence.

Additionally, the geophysical work permitted CBPM to subdivide the area into five magnetic domains.

An airborne magnetic and time-domain electromagnetic survey (QuesTEM) was flown in 1998, followed up by ground magnetic, electromagnetic and induced polarisation (IP) geophysics at the São Pedro and Grutinha Salobo targets, where a number of coincident magnetic-EM anomalies indicated the possible existence of massive sulphide targets.

The second phase of exploration by CBPM commenced in 2000 and comprised diamond drilling of the primary mineralisation, confirming the data previously obtained by Caraíba Metais SA (Fróes and Moraes, 2000). Auger and diamond drilling of secondary mineralisation above the ultramafic core indicated a potential lateritic resource.

CBPM also supported an MSc study of the Mirabela intrusion under the supervision of Professor A.J. Naldrett at the University of Toronto (Fróes, 1993). At the same time the Brazilian Geological Survey (CPRM) independently supported another MSc study of the Mirabela intrusion under the supervision of Professor M.G. da Silva at the University of Bahia (Abram, 1994).

In 2003, fulfilling its role of stimulating mineral exploration, CBPM offered private enterprise the opportunity to develop the nickel resources of the Mirabela sulphide and laterite target via public tender number 005/2003 (Cunha et al, 2000).

Mirabela Brazil, the Brazilian subsidiary of MNL, was selected on the basis of the discovery bonus and royalty offered to CBPM. Diamond drilling of the lateritic resource began in March 2004, and diamond drilling to investigate the area of sulphide mineralisation known as Santa Rita began in September 2004.

6.3 Historical Mineral Resource Estimates

6.3.1 Caraíba Metais SA (1981)

On the basis of conformity with a mineralised tholeiitic intrusive model, Caraíba Metais SA estimated a mineral resource in 1981 for an hypothetical 40m thick layer of disseminated sulphides that was assumed to extend with a reasonable consistency between five drillholes covering approximately 700m of strike of the current Santa Rita deposit and containing 18Mt at 0.5% nickel, 0.2% copper and less than 0.5g/t PGE and yielding 90,000t of contained nickel and 36,000t of contained copper (Carvalho et al, 1981). This historical mineral resource generated by Caraíba Metais SA does not use categories consistent with the CIM Guidelines and thus is not considered reliable by the authors. More recent mineral resource estimates generated by Coffey Mining for Mirabela Brazil are described in Section 17.

6.3.2 2008 and 2009 Resource Estimate

Coffey Mining supervised the estimation of the resources for the Santa Rita Open Pit and Santa Rita Underground deposits in September 2008 and February 2009 respectively (Gossage et al, 2009). The open pit estimate is now superseded by the December 2010 update (which incorporates mining depletion).

The 2008 open pit resource was estimated using Ordinary Kriging with Uniform Conditioning to emulate a change of support. The now superseded resource is shown in Table 6.3.2_1 utilising the cutoff grades detailed below:

Host Rock Type	Percentage Composition	Cutoff Grade
Pyroxenite	62	0.30%
Olivine Orthopyroxenite	14	0.35%
Harzburgite	21	0.45%
Dunite	3	0.50%
Weighted average cutoff grade	**100%**	**0.34%**

Table 6.3.2_1
Santa Rita Deposit
SUPERSEDED - Potential Mill Feed Mineral Resource Current as per September 2008
Reported by variable Cutoff Grades
OK (UC) Estimate - 5mE x 10mN x 5mRL Selective Mining Unit

Category	Mt	Ni %	Cu %	Co %	Pd ppb	Pt ppb	Au ppb
Weighted Average Cutoff Grade of 0.34% Ni							
Measured	15.1	0.65	0.16	0.017	51	108	65
Indicated	115.2	0.60	0.16	0.015	43	92	60
Inferred	19.8	0.60	0.16	0.016	36	86	58

The underground mineral resource (Table 6.3.2_2) is still current and the current author takes responsibility for the underground estimate for the purposes of future reporting requirements.

The underground estimate was generated using Ordinary Kriging of cut 3m composites. Specific details regarding the estimation methodology are discussed in Gossage et. al (2009).

Table 6.3.2_2
Santa Rita Deposit
February 2009 Santa Rita Underground Mineral Resource[1]

Category	Million tonnes	Ni (%)	Cu (%)	Co (%)	Pd (ppb)	Pt (ppb)	Au (ppb)
Grade Envelope Defined by Ni Cutoff Grade of 0.50% Ni - No Block Model Cutoff Applied							
Measured	-	-	-	-	-	-	-
Indicated	-	-	-	-	-	-	-
Inferred	87.5	0.79	0.23	0.018	65	133	83

1. Ordinary kriging estimate

6.4 Historical Production

Production data for 2010 is in Section 17.1.3.

6.5 Historical 2008 Reserve Estimates

The *now superseded* November 2008 Mineral Reserve was based upon the September 2008 Mineral Resource . The Reserve generation was carried out with Whittle Four-X, a Lerchs-Grossman based package, to develop a series of nested pits over the Mineral Resource area, considering initial topography.

The Mineral Reserves were based upon the Indicated and Measured Mineral Resources contained within the pit and above the internal cutoff grades of 0.12% of recovered nickel. Contained Measured Mineral Resources were transformed to Proven Reserves and contained Indicated Mineral Resources were transformed into Probable Reserves. Inferred Mineral Resources were not converted to Mineral Reserves and have instead been treated as waste for mine planning purposes.

Mining recovery, based on the applied SMU, was set to 95%, allowing for ore loss as a result of blasting, edge effects of cutbacks and wedges of potential mill feed left as a function of bench face advancement with pit depth.

The total Mineral Reserve for the Santa Rita project amounted to approximately 121,000kt at a nickel grade of 0.60% and 510kt of recovered nickel. Table 6.5_1 summarises the *now superseded* November 2008 updated Mineral Reserve estimate.

Table 6.5_1
Santa Rita Deposit
SUPERSEDED November 2008 Proven and Probable Mineral Reserves 1) 2) 3)

Category	Tonnage (Mt)	Ni (%)	Recovered Ni (%)	Recovered Ni (kt)
Proven Reserve	15.0	0.650	0.431	64.9
Probable Reserve	105.9	0.593	0.420	445.4
Total Reserve	**121.0**	**0.600**	**0.422**	**510.3**
Total Material (Mt)	**996.1**		**Strip Ratio**	**7.2**

1. Based on a nickel price of $7.00 per pound.
2. The Mineral Reserves as set out in the table above have been estimated by Carlos Guzmán of NCL Brasil Ltda, who is a Qualified Person under NI 43-101 and Member of the AusIMM.
3. Numbers may not add up due to rounding.

7 GEOLOGICAL SETTING

7.1 Regional Geology

The Santa Rita Project is located within the Archean-Palaeoproterozoic Itabuna-Salvador-Curaça belt, which extends from southeast Bahia along the Atlantic coast to Salvador, then northwards into northeast Bahia, separating the Archaean Gavião and Jequié blocks from the Serrinha block (Barbosa and Sabaté, 2004; Figure 7.1_1).

Figure 7.1_1
Location and Extent of the São Francisco Craton in Bahia

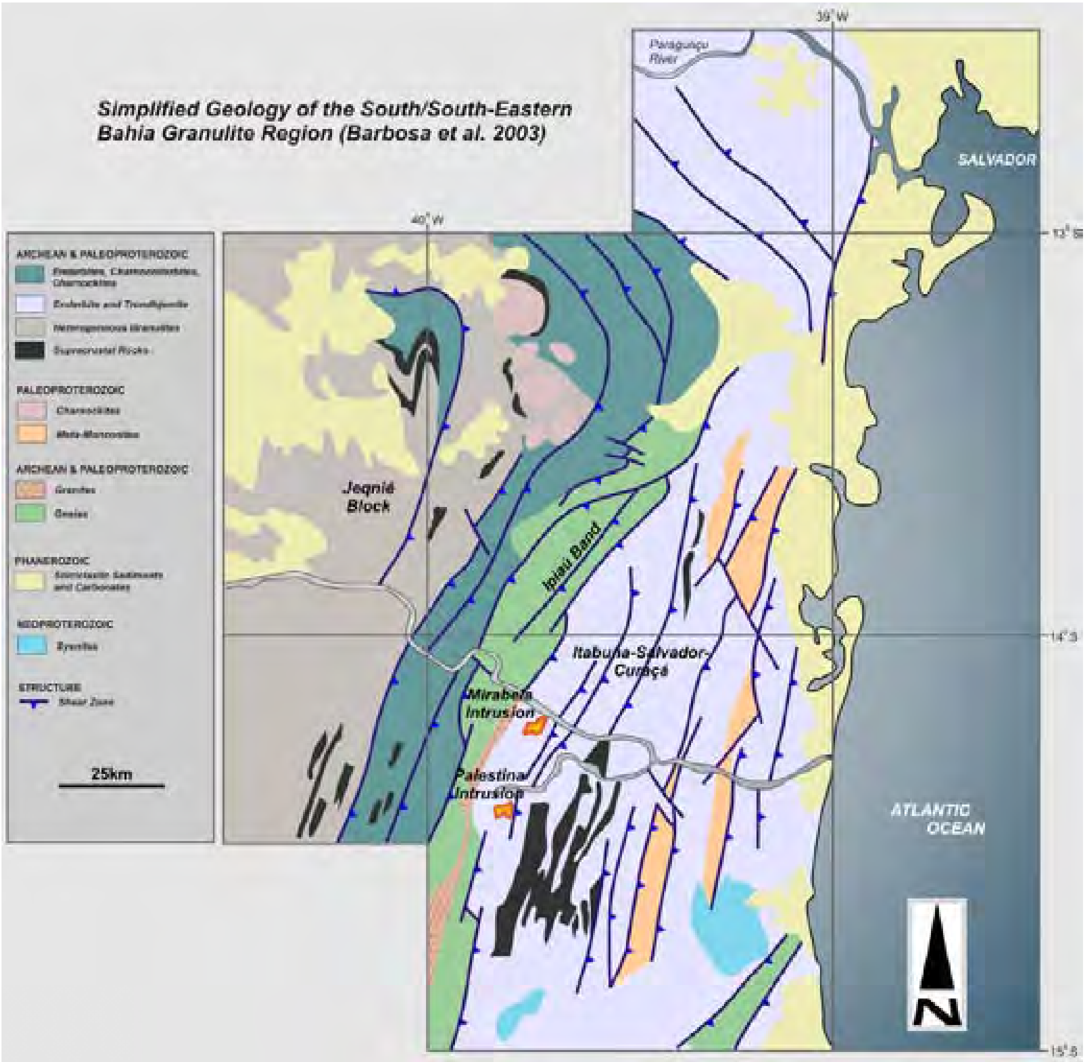
The Itabuna-Salvador-Curaça belt is the youngest segment exposed in the basement of the São Francisco Craton. It is mainly composed of a low-potassium calcalkaline plutonic suite, but also contains intercalated metasediments as well as gabbro and basalt.

The collision of the Jequié block and the Itabuna-Salvador-Curaça belt during the Palaeoproterozoic Transamazonian Orogeny resulted in the tectonic superposition and granulitisation of the southern part of the Itabuna-Salvador-Curaçá Belt (Barbosa et al., 2003).

A narrow belt of quartzo-feldspathic rocks and lesser granites, referred to as the 'Ipiaú Band', is wedged between the Jequié block and the Itabuna-Salvador-Curaça belt. The 'Ipiaú Band' preserves amphibolite facies metamorphic assemblages.

The latest transpressional phase of the Palaeoproterozoic deformation during the Transamazonian Orogeny is interpreted to have governed the emplacement of the Fazenda Mirabela and Palestina mafic to ultramafic intrusions in the southern part of the Itabuna-Salvador-Curaça belt (Barbosa & Sabaté, 2004). These co-magmatic intrusions are located close to the western margin with the Jequié block, and within 6km of the 'Ipiaú Band' (Figure 7.1_2). They intruded along the Aratuípe-Nova Canaã trend (Silva et al, 1992), a major structural lineament that extends for over 100km. The intrusions appear to occupy nuclei of anticlinal structures, which may have developed in response to the westward thrusting of the Itabuna-Salvador Curaça Belt over the Jequié block.

Figure 7.1_2
Simplified Geology of the South-Southeastern Bahia Granulite Region



The country rocks to the intrusions comprise a supracrustal succession and orthogneisses (charnockites), which are multiply deformed (Barbosa, 1986). The supracrustals are composed of quartzo-feldspathic and kinzigitic gneisses, quartzites, metamorphosed banded iron formations, metasediments (khondalites), mafic meta-volcanics, metamorphosed gabbroic sills and lesser serpentinites.

7.2 Fazenda Mirabela Intrusion

The Fazenda Mirabela Intrusion is host to the Santa Rita nickel orebody. The intrusion is layered and composed of ultramafics at the base and gabbronorites at the top. It has an ovoid exposed area of approximately 7km² (Figure 7.2_1). The intrusion shows no evidence of the penetrative deformation that has affected the enclosing country rocks. For simplicity, the complex is described in terms of two zones, a western ultramafic zone and an eastern mafic zone, which differentiated from one magma.

Figure 7.2_1
Mirabela Property Geology

Given that the Mirabela body clearly postdates the ca 2.1 Ga peak granulite facies conditions established in the country rocks, Silva et al (1996) concluded that an emplacement age of ca 2.0 Ga is more likely.

7.2.1 Petrography

The Fazenda Mirabela Intrusion was emplaced closely following peak granulite facies metamorphism into a sequence of charnockite, enderbite, gneisses, meta-norite, and banded iron formation.

The intrusion is the result of cumulative fractionation of tholeiitic magmas, generating a layered intrusion with a basal ultramafic zone, varying from dunite to harzburgite, to olivine orthopyroxenite, and finally to bronzitite, and an upper mafic zone of gabbronorite to augite norite. Between the footwall country rock and the ultramafic zone there is a zone showing inverted fractionation which is interpreted by Latypov et al (2007b) as a primary magmatic basal margin reversal arising from a temperature gradient-driven flux of low melting point components from the hot magma towards the relatively cold cumulate floor.

Western Ultramafic Zone

The western ultramafic zone comprises a typical ultramafic cumulate sequence. A dunitic core is successively overlain by peridotite, olivine orthopyroxenite and pyroxenite, whilst underneath the dunite the basal margin reversal comprises bronzitite and augite norite.

This zone occupies about one-third of the total area of the intrusion on its western side, and is reflected by a topographic high. The dunite core and a large part of the peridotite are completely serpentinised, with preservation of relic texture. The peridotites become gradually richer in pyroxene and poorer in olivine outwards from the nucleus. The overlying pyroxenite-rich units show minor alteration of their constituent minerals compared to the core. The extent of the ultramafic zone is well defined by outcrop mapping and magnetic response in hand specimens.

Eastern Mafic Zone

The mafic zone lies to the east of the ultramafic zone, is ellipsoidal in exposed shape, and occupies two-thirds of the surface area of the intrusion. It is estimated to be at least 1,000m thick. Topographically, it represents an area of subdued, almost planar, relief and comprises coarse-grained gabbronorites, leuco-gabbronorites and augite norites of remarkably homogeneous character, only locally disrupted by late tectonic overprints. Compositionally, olivine is absent and plagioclase becomes the major mineral phase, together with ortho- and clino-pyroxene.

Dolerite Dykes

At least two sets of dolerite dykes crosscut the Fazenda Mirabela intrusion in an east-west orientation.

A series of undeformed and un-metamorphosed dolerite dykes outcrop at approximately 8,431,100mN, where they separate the nickel mineralisation into the northern and central sectors. They are approximately 10m to 15m thick, dip steeply to the south. Nickel mineralisation generally shows an increase in grade adjacent to these dykes.

Further south, at approximately 8,430,300mN, a second series of suspected dolerite dykes occur. These dykes are strongly metamorphosed.

Pegmatite Dykes

Pegmatite dykes are common, especially within the peridotite unit of the ultramafic zone, where they appear to have intruded sub-parallel to the unit itself.

7.2.2 Laterite Development

A significant laterite profile has developed over the dunite-harzburgite core of the ultramafic unit but is absent or poorly developed over other lithologies. The laterite profile is typically 25m thick but reaches 60m in places and comprises saprolite at the base of oxidation up to limonite near the surface.

7.2.3 Serpentine Hydrothermal Alteration Product

In 2009, a hydrothermal alteration product (colloquially termed ‘kryptonite’) was identified in the north pit – termed serpentine alteration product (SAP) in this document. This alteration product occurs as narrow hydrothermal alteration selvedges up to 30-50cm wide on brittle structures within the mineralised zone (Figure 7.2.3_1). Although these structures can occur at any orientation, the most prevalent altered structure is the Type 1 fault; a N-S striking, ~45° west dipping fault set that truncates, and offsets the mineralised zones. These faults appear to be confined to the Fazenda Mirabela Intrusion (FMI) and probably represent chamber collapse faults that were initiated during early inflation of the magma chamber and were subsequently reactivated during serpentinisation of the olivine bearing lithologies in the ultramafic zone. Metamorphic fluids and pegmatites, probably associated with Transamazonian regional metamorphism, exploited almost all brittle structures in the FMI. Their intrusion increased the intensity of serpentinisation of the peridotite and dunite and is interpreted to have also generated the narrow hydrothermal alteration halos on the brittle structures. These narrow hydrothermal alteration halos are the source of the serpentine alteration product.

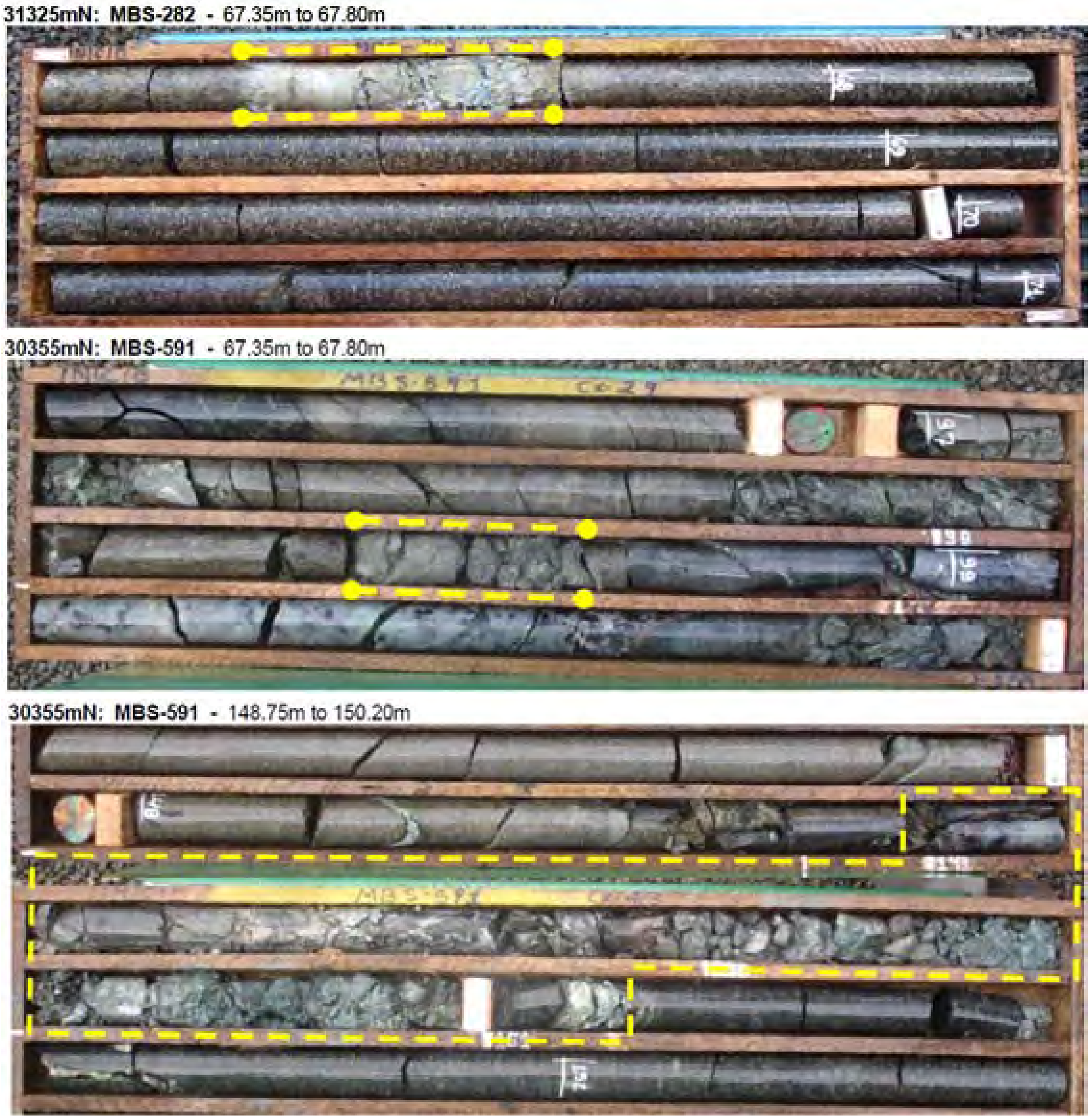
The key aspects of mineralogical studies undertaken on the SAP material are summarised below:

- The SAP composition is primarily of serpentine, vermiculite and smectite minerals.
- The SAP can contain up to 5% talc, but typically has talc concentrations of 1% or less.
- A highly unusual form of vermiform serpentine commonly occurs within the SAP.
- The principle serpentine mineral within the SAP appears to be lizardite but there are frequent occurrences of chrysotile. Fine fragments of chrysotile in the flotation circuit will bond electrostatically to sulphide grains, blinding the grain, so that the collector cannot attach to an air bubble and hence significantly impedes sulphide flotation.
- There is negligible chalcopyrite or pentlandite in the SAP

During late 2010 a re-logging exercise was undertaken to specifically identify the presence of SAP within the deposit and gauge the potential effect on the modelled resource. Data presented to date indicates that the SAP was most prevalent in the upper portions of the deposit and in the Hartzburgite lithologies near the location of the now-mined phase 1 of the north pit. The SAP material is expected to be less prevalent in the south pit region and in the deeper portions of the deposit.

The presence of the SAP has implications for metallurgical recovery, as was experienced in 2009 and early 2010. A de-sliming circuit has been considered for the mill to mitigate the presence of the SAP material (See Section 18.2.5).

Figure 7.2.3_1
Examples of SAP Material in Core



8 DEPOSIT TYPE

The Fazenda Mirabela Intrusion is a late - to post tectonic magmatic body, with the Santa Rita orebody representing a zone of stratabound disseminated nickel sulphides located near the contact of its mafic and ultramafic zones. It has intruded into a Paleoproterozoic mobile belt containing successions of intercalated metasediments, as well as ocean floor or back-arc basin gabbros and basalt.

According to conventional classification schemes of nickel sulphide deposits, the Santa Rita deposit is considered to be a differentiated mafic intrusion of tholeiitic affinity. Rhythmic layering is a prominent feature and can be recognized in outcrops and drillholes.

9 MINERALISATION

Disseminated nickel and copper sulphides form a stratiform body parallel to the lithostratigraphic contacts transgressing upwards from the harzburgite unit through the olivine orthopyroxenite unit and into the bronzitite unit proceeding from north to south.

The mineralised zone extends from one side of the Fazenda Mirabela Intrusion to the other, with widths up to 140m and averaging 40m over a strike length in excess of 2km. Mineralisation has also been tested down dip to depths exceeding 1,000m.

The primary disseminated mineralisation comprises predominantly granular aggregates of pentlandite (52%) with minor violarite (7%). These nickel sulphides are intimately associated with chalcopyrite (14%), pyrite (14%) and pyrrhotite (9%). Minor sulphides include mackinawite, millerite, poorly defined low-temperature iron sulphides, cubanite, bornite and chalcocite, along with traces of native copper. Low temperature pyrite is less abundant and is rarely colloform or lamellar in texture.

Traces of PGE also occur, but appear to be included within the structure of the principal sulphides. Individual sulphide aggregates are commonly not more than 0.5mm to 1mm in size; however, larger cumulates up to 30mm occur locally. Finer and more widely disseminated sulphide grains include abundant chalcopyrite.

10 EXPLORATION

Prior to commencement of MNL's exploration programs (2004 onwards), exploration has been completed by the operators Mineração Nhambú Limitada (1979- 1981), Caraíba Metais S/A (1985-1989) and CBPM (1989-2002) (Section 6.2).

MNL's strategy was initially designed to test nickel laterite mineralisation identified at the Serra Azul deposit until focus shifted to nickel sulphide mineralisation at Santa Rita. Later exploration programmes focussed primarily on drill-testing the sulphide mineralisation to understand its geological controls, to collect metallurgical and geotechnical data, and to define a high confidence Mineral Resource.

Exploration by MNL was primarily concentrated on the Fazenda Mirabela intrusion and the Peri Peri and Palestina prospects. Exploration surveys and investigations completed within the Mirabela Project have were planned, executed and supervised by expatriate and national MNL personnel, supplemented by consultants and drilling and geophysical survey contractors.

The current MNL exploration team is considered well qualified and motivated to fulfil the responsibilities of ongoing exploration.

Drilling and geophysical contractors used to by MNL include the following:

- Drilling:
  - Boart Longyear Geoserv (Diamond drilling)
  - GEOSOL (Geologia e Sondagens Ltda.) (Diamond drilling)
  - Geosedna Perfurações Especiais S.A. (RC drilling)
  - Kluane Sondagem e Perfuração de Solo do Brasil Ltda
- Geophysics
  - Fugro Ground Geomag S.A. (FLEM, IP and borehole EM)
  - Geotech Ltd (Aerial EM)
  - GroundProbe Pty Ltd (Ground penetrating radar)
  - CBPM (IP Data)
  - Geodatos do Brasil (Ground magnetics)
  - Laboratorio de Pesquisas em Geofisica Aplicada (Gravity surveys)
  - Systems Exploration NSW Pty Ltd (Petrophyscial properties of drillcore samples)
  - PGN Geoscience (Constrained gravity and magnetic data inversions)

10.1 Exploration Within the Fazenda Mirabela Intrusion

Whilst the geology of Fazenda Mirabela Intrusion is well established within the Santa Rita mineralized zone, both foot- and hangingwall limits to the mineralized zone, including the lower part of the ultramafic zone as well as the expanse of the mafic zone, (gabbronorite) are less well known.

In 2007, drilling work was carried out in order to investigate the presence of a zone of olivine-rich ultramafic lithologies that could potentially host Santa Rita style disseminated sulphides in the lower part of the ultramafic zone. However, this drilling revealed an inverted igneous stratigraphy without any significant sulphide occurrences. MNL concluded that the basal margin reversal and its sulphide-poor nature implies that the main sulphide horizon reflects a second magmatic pulse.

Drilling carried out at the northern end of the Santa Rita deposit intercepted a ±1m wide zone of massive and stringer nickel sulphides within the meta-gabbronorite country rock, underneath the Fazenda Mirabela Intrusion gabbronorite. This is the first evidence of nickel and copper sulphides occurring outside the host intrusion, raising the possibility that this zone may possibly represent a feeder conduit, remobilised sulphides or even nickel sulphides replacing existing country rock sulphides.

At the southern end of the Santa Rita deposit a single drillhole also intercepted a similar sulphide-rich zone within meta-gabbronorite country rock; however, the intersection proved to be only weakly-nickeliferous (max. 0.49% nickel). In the same area, a single borehole intercepted a massive breccia sulphide veinlet (with accessory biotite) between 303.85m and 304.72m depth hosted within harzburgite of the Fazenda Mirabela Intrusion. This material yielded the highest nickel and PGE grades at the project to date, including 0.87m at 10.15% nickel, 0.14% copper and 2.8g/t platinum and palladium.

Percussion drilling 1.5km northeast of the Santa Rita sulphide horizon tested the contact between gabbronorite and gneissic basement. The work revealed the contact zone to be sulphide-bearing. Low nickel grades were encountered in two drillholes, including 26m at 0.34% nickel and 0.10% copper from 18m to 44m downhole (MBRC062) as well as 11m at 0.36% nickel and 0.11% copper from 151m to 162m downhole (MBRC063). Subsequent soil sampling 0.8km further east along this contact revealed a geochemical soil anomaly containing 1% nickel, 0.3% copper, 0.3% chromium, and 12% iron. This anomaly was followed up by intensive drilling leading to the discovery of the Peri-Peri prospect (Section 10.2). The recognition that the entire gabbronorite border zone could potentially host similar mineralisation resulted in detailed soil sampling of the contact; however, no targets were identified other than Peri Peri.

PGN Geoscience (PGN) was contracted to invert the potential field data for sample density and magnetic susceptibility of drill samples in order to confirm the validity of an in-house unconstrained gravity inversion carried out using only the field gravity data. MNL's study suggested that the Peri Peri and the Santa Rita deposits were joined at depth, which would have important ramifications for targeting mineralization. However, PGN's study concluded that an amalgamation of the Peri Peri and the Santa Rita deposits at depth is very unlikely.

The gravity inversions, however, did not exclude the possibility of a down-dip extension to the mineralisation to at least 2km depth, or flattening under the current maximum drilled depth. In all cases, extra masses were delineated in the hangingwall of the olivine orthopyroxenite-orthopyroxenite-harzburgite complex, suggesting that the intrusion may thicken at depth (Ailleres, 2008).

10.2 Peri Peri Prospect

Soil sampling along the contact of gabbronorite and basement some 2km east of the Santa Rita sulphide horizon revealed a geochemical soil anomaly at the Peri Peri prospect, which was followed up by percussion drilling returning 20m at 0.62% nickel and 0.14% copper from surface (MBRC070) as well as 4m at 0.78% nickel and 0.13% copper from 17m to 21m downhole and 7m at 0.40% nickel, 0.12% copper from 26m downhole (MBRC071).

Following these initial results 37 diamond drillholes totalling approximately 5,400m have since been completed. Disseminated sulphide mineralisation with a maximum width of 60m has been intersected. The Peri Peri mineralisation is hosted within a steeply to the south-southwest dipping shoot, which is primarily composed of ultramafic rocks, but which locally transgresses the intrusive contact into the basement mafic granulite. As depicted in Figure 10.2_1 and Figure 10.2_2, the shoot has been intersected over a strike length of 350m and as deep as 150m below surface. Local occurrences of matrix- and stringer-style mineralisation, with up to 30% sulphides, were intersected within the basement footwall lithologies within 20m of the intrusive contact. A list of the significant nickel intersections at the Peri Peri prospect is given in Table 10.2_1.

Table 10.2_1

Significant Drill Intersections at the Peri Peri Prospect

Borehole ID	From (m)	Width (m)	Nickel (%)
MBS302	29	30	0.56
MBS307	57	25	0.57
MBS312	24	6	0.46
MBS322	36	36	0.62
MBS325	40	29	0.74
MBS329	96	12	0.45
MBS335	0	21	0.67
MBS336	36	20	0.72
MBS340	31	4	0.40
MBS341	81	10	0.42
MBS342	83	8	0.49
MBS380	135	5	0.78
MBS382	104	40	0.34
MBS384	93	10	0.40
MBS394	178	55	0.69
MBS397	125	17	0.73
MBS400	199	45	0.58
MBS401	272	40	0.77
MBS405	206	22	0.56
MBS407	238	14	0.87

Figure 10.2_1
Peri Peri Prospect

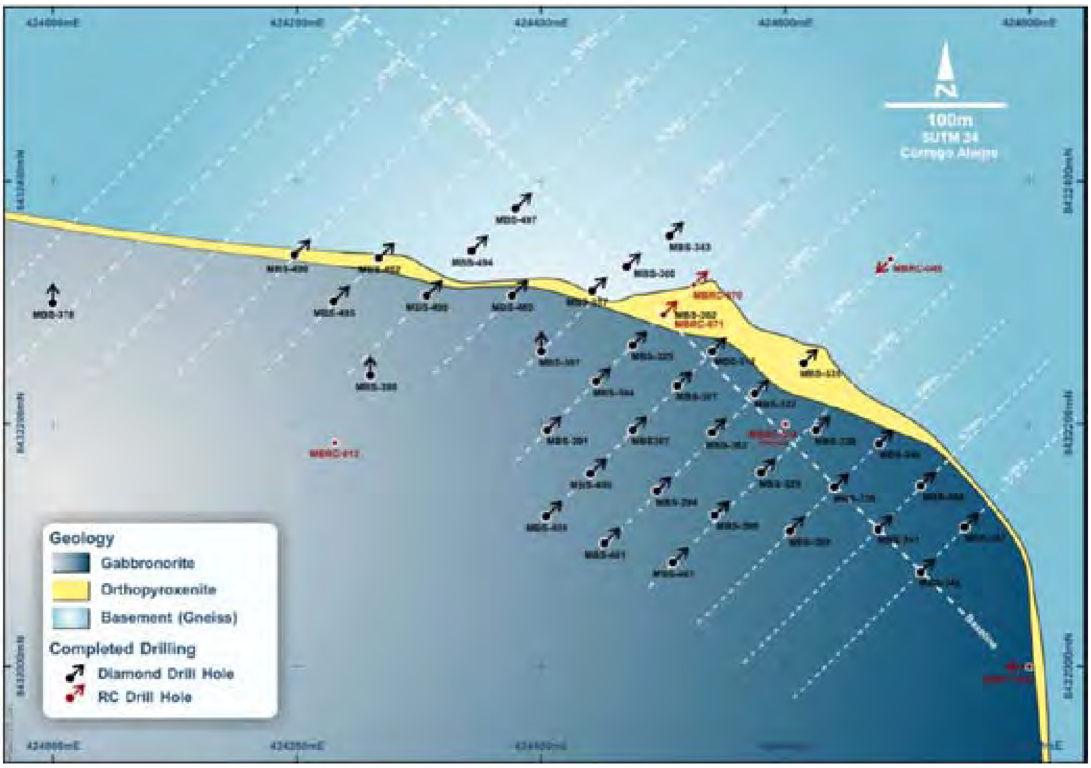
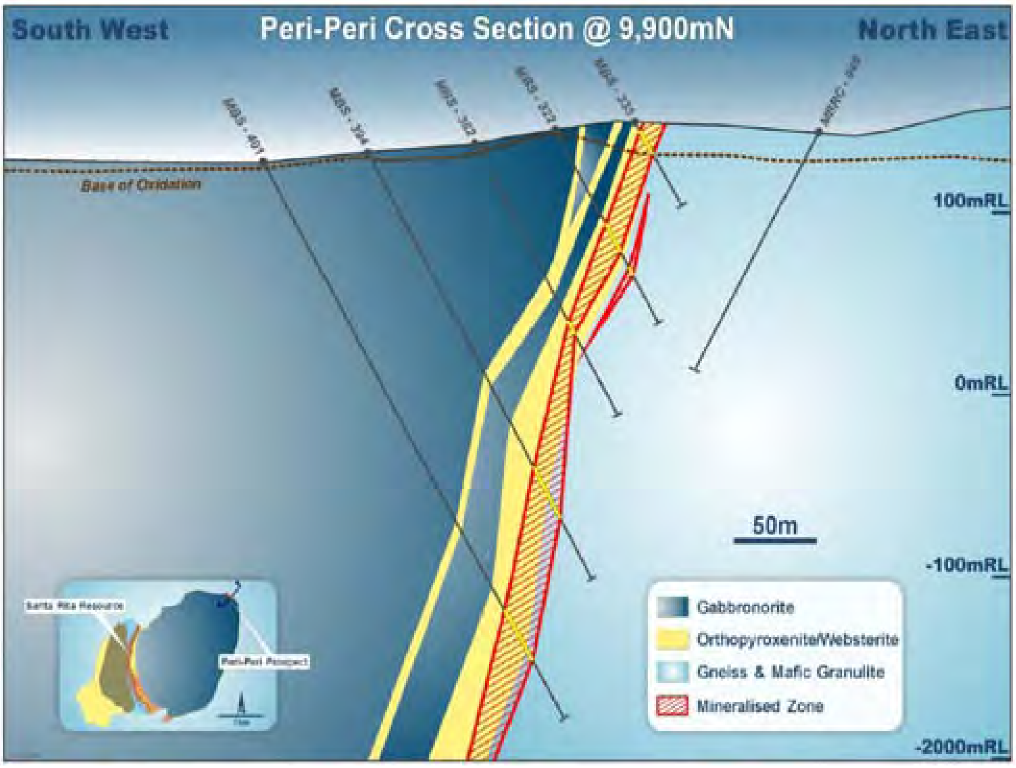


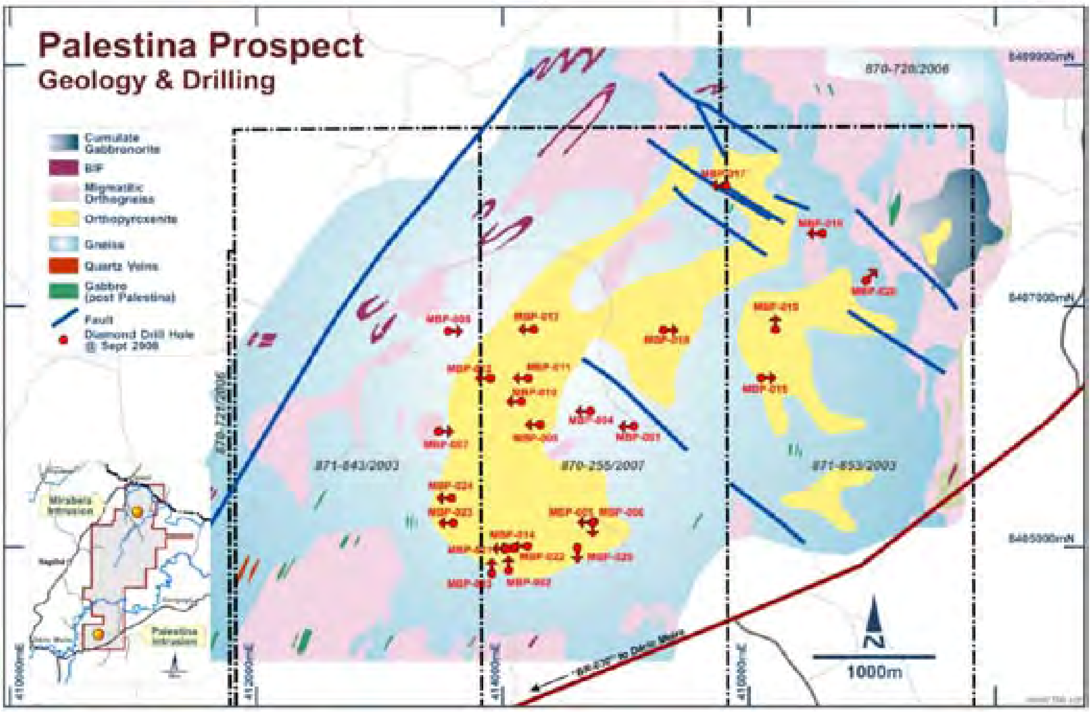
Figure 10.2_2
Peri Peri Cross Section



10.3 Palestina Prospect

The Fazenda Palestina mafic-ultramafic intrusion is located approximately 25km to the south-southwest of the Santa Rita Project and some 12km east of the town of Dário Meira, adjacent to the highway BR-030 (Figure 10.3_1).

Figure 10.3_1
Palestina Prospect



The intrusion cluster measures approximately 5km east-west by 3km north-south and, in common with the Fazenda Mirabela Intrusion, is intrusive into granulite facies country rocks. The two dominant lithologies within the intrusion comprise orthopyroxenites and lesser gabbronorites, the latter forming a border zone around the former in the east.

Previous exploration comprised geological mapping, rock and soil sampling, and airborne and ground geophysics (Fróes & Soares,1998; Soares, 2000).

Geochemical results indicated that the pyroxenites are anomalous in nickel, copper and PGE. MNL has since completed IP and EM ground surveys, which delineated a conductor located on the north-eastern intrusive margin, a gravity survey, detailed soil sampling, geological mapping and two drilling programmes.

The first drill campaign was restricted to zones not covered by Atlantic Rain Forest on the western side of the project, whilst the necessary permits to drill test the best geochemical anomalies located within the Forest were applied for; hence this drilling was considered to be stratigraphic in nature. Eight drillholes were completed between March and June 2007, totalling approximately 2,200m. Three holes intersected entirely basement lithologies, while the other five intersected ultramafic rocks of the Fazenda Palestina Intrusion. Although intervals of up to 5% sulphides were obtained in a single hole (MBP002), the maximum grade obtained was only 1m at 0.51% nickel and 0.13% copper, at a depth of 35m.

The second drill campaign was conducted between January to May 2008 after the necessary environmental licenses to work within the Atlantic Rain Forest were granted, and used a small-footprint, man-portable drill to test geochemical and geophysical targets. 17 drillholes were completed for a total of approximately 4,100m.

The majority of the holes intersected orthopyroxenite, which contained low grade nickel-bearing sulphides in several boreholes. A list of the significant intersections is given in Table 10.3_1.

Table 10.3_1
Significant Drill Intersections at the Palestina Prospect

Borehole ID	From (m)	Width (m)	Nickel (%)
MBP014	147	18	0.42
MBP021	144	4	0.43
	157	4	0.41
MBP022	251	6	0.43

The maximum nickel grade intersected was just over 0.70%, intersected in three adjacent holes drilled on the same section, including 1m at 0.71% nickel and 0.12% copper at a depth of 156m (MBP014), as well as 1 at 0.72% nickel and 0.17% copper at a depth of 146m (MBP021) and 1m at 0.71% nickel and 0.09% copper at 280m depth).

A detailed geochemical soil sampling programme was completed in the vicinity of the sulphide mineralisation in an attempt to delineate its surface expression; however, the survey was subsequently extended to cover virtually the entire intrusion. More than 1500 samples were collected over an area of approximately 6.4km². The programme clearly defined the location of the Palestina intrusion and refined the dimensions and location of anomalous areas previously delineated by CBPM's survey. The programme also showed that there is excellent spatial coincidence between geochemical anomalies and drill-tested nickel and copper sulphide mineralisation, validating the effectiveness of the survey. Additionally, the survey identified two large and strong anomalies that require drill-testing.

A small drill programme to test these anomalies is warranted, and will be executed upon receipt of the necessary environmental permits.

10.4 Mirabela-Palestina Regional Exploration

A campaign of stream sediment sampling was completed, covering all of the Mirabela tenements extending from the Fazenda Mirabela Intrusion in the north to the Fazenda Palestina Intrusion in the south, including the location of the Floresta mafic-ultramafic intrusion described by Barbosa (1995) and Arcanjo et al (1996).

Results of weak acid attack analyses showed the only coherent nickel, copper, gold anomaly to be that reflecting the Santa Rita mineralisation within the Mirabela intrusion, whilst the Palestina intrusion yielded an erratic, incoherent nickel, cobalt, gold, magnesium and arsenic anomaly covering a large area, but without copper anomalism. Results from strong acid attack analyses of the same samples confirmed that the only two strongly anomalous nickel, copper, chromium, magnesium areas were those draining the Mirabela and Palestina intrusions.

The supposed area of the Floresta mafic-ultramafic intrusion, located between the Mirabela and Palestina intrusions immediately north of the Gongogi River, produced a weak cobalt, copper, nickel anomaly. This anomaly was subsequently investigated by field mapping and a geochemical soil survey covering 6.6km², which yielded only very low values suggesting there are no mafic-ultramafic intrusives analogous with those at Mirabela or Palestina in the area. The weak anomalism was interpreted as reflecting an underlying, barren meta-pyroxenite within the supra-crustal belt.

There were no other significant nickel anomalies within the survey area.

11 DRILLING

No new exploration drilling has been undertaken since 2008. Sections 11 to 14 will concentrate on the drilling and sampling practices applicable to the resource.

In-pit grade control drilling will be discussed in Section 18.

11.1 MNL Drilling

No new resource drilling has been undertaken by MNL subsequent to the 2008 Resource estimation. The MNL drilling is summarised below.

11.1.1 Introduction

Diamond (DDH), reverse circulation (RC), open hole percussion (OHP) and auger drilling have been completed at the Mirabela Project until 2008 (Table 11.1_1). A subset of the total database, excluding auger, OHP and RC drilling, was generated and used for the Mineral Resource and Reserve estimates.

Table 11.1_1

Drilling Statistics as of December 2008

Deposit	Number DDH	DDH (m)	Number RC/OHP	RC/OHP (m)	Number Auger	Auger (m)	All Holes	Total (m)
Santa Rita	1,152	183,862.49	24	765.60	0	-	1,176	184,628.09
Exploration (incl. Palestina)	82	16,450.06	69	6,331.00	145	416.05	296	23,197.11
Total	**1,234**	**200,312.55**	**93**	**7,096.60**	**145**	**416.05**	**1,472**	**207,825.50**

Data collection can be subdivided into two distinct periods of exploration; prior to 2004 and 2004 to 2008. The first period relates to data collected as part of Brazilian company CBPM exploration management. The second period relates to data collected under work programmes managed by MNL. As such, further comments are directly attributed to each company.

Data collection methods applied by MNL have been reviewed by Coffey Mining and, as such, have been endorsed. As exploration completed by CBPM was undertaken prior to Coffey Mining's involvement in the Mirabela Project, no detailed review has been undertaken although the vast majority of the data applied to Mineral Resource estimates has been collected by MNL. The following sections are a summary of the MNL data drilling and collection procedures.

11.1.2 Drilling Techniques

Diamond Core Drilling

All holes were drilled with HQ pre-collars and completed with NQ core, with the exception of the laterite drillholes, which were drilled entirely with HQ. Core structural orientations were routinely recorded to assist in determining the controls on mineralisation and in establishing a reliable geological model for mineral resource estimation, also to provide additional geotechnical information to determine likely blast fragmentation and pit stability characteristics.

RC Drilling

RC drilling was completed at Santa Rita for sterilisation of the surrounding area. As such, it has not been used in the Mineral Resource estimate. For the inclined RC drilling, significant water ingress was noted resulting in poor quality samples, potential downhole contamination and variable recovery.

11.1.3 Drilling Orientation

The vast majority of downhole drilling intercepts represent the true mineralisation width, although in all cases the interpretation of the geology and mineralisation constraints has been completed in three dimensions and therefore directly considers the attitude of the mineralisation relative to the orientation of the drillholes.

The dominant drill direction at Santa Rita is -60° towards 270° (UTM Grid Zone 24 south, using Corrego Alegre datum). In the south-east extension zone, the drill direction was changed to -60° towards 180° to account for strike change of the mineralised zone from north-south to more east-west.

11.1.4 Drilling Quality – Drillhole Database Verification

It is Coffey Mining's opinion that the systems and procedures used by MNL limit the possibility of errors occurring in the data. To validate the database, randomly-selected MNL holes were audited against the original logs and assay reports.

In addition, Coffey Mining independently selected a number of drillholes and compared the digital database against the hardcopy data and laboratory assay certificates. Based on this independent assessment, the quality of the data in the database was excellent, with no material errors being identified at any stage of the validation process.

11.1.5 Survey

The collar coordinates were initially obtained using a GPS. More recently, the collars have been surveyed with a DGPS, and finally surveyed by TopMin and/or MNL surveyors.

The downhole direction and dip changes of drillholes were monitored by either single-shot surveys or by post-drilling north-seeking gyroscope surveys, or, in various instances, by both of these methods.

In December 2007 and January 2008, CBM (Construtora Barbosa Mello) completed a detailed survey over the whole project area from which topographic contours at 1m intervals were produced. The survey was completed using a planar grid coordinate system and was intended specifically for the design and construction phases of the project.

12 SAMPLING METHOD AND APPROACH

12.1 Sampling

12.1.1 Soil Sampling

Multiple phases of surface geochemistry have been executed by the operators of the property (Table 12.1_1). Figure 12.1_1 shows the locations of all soil-sample programs since 1989.

Figure 12.1_1
Location of Soil Geochemical Surveys since 1989

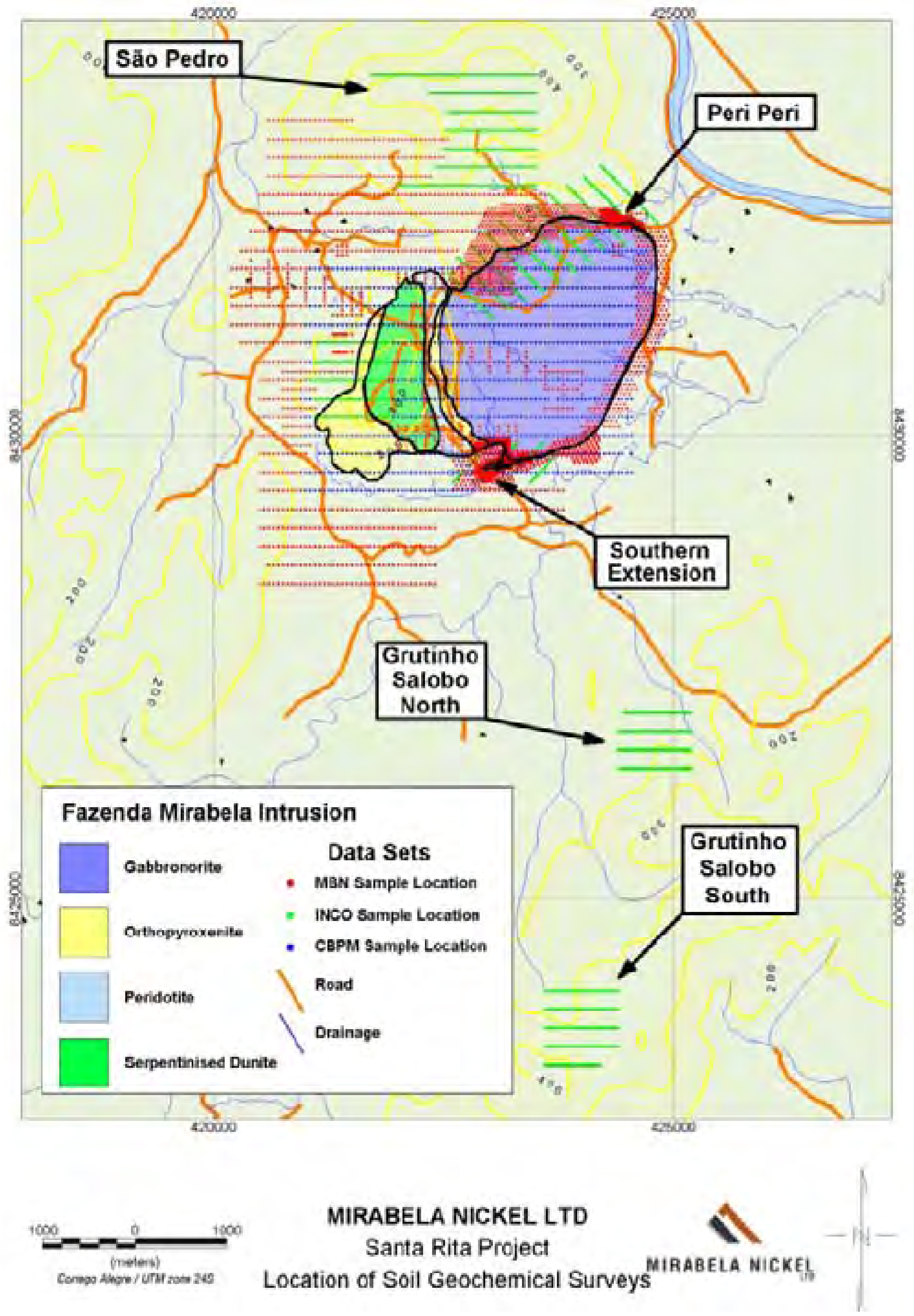


Table 12.1_1

Summary of Soil Geochemistry

Company	From	To	Description	Analytical Method
Mineração Caraíba SA	1985	1989	480 shallow bulk samples from the B horizon on a 100m by 40m grid	Method unknown, but samples analysed for Ni, Ct, Co, Cu, Pb, Zn, (Ag, Pt, Pd)
CBPM	1989	2003	1,087 bulk samples from B and C horizons on a 200m by 50m grid	Ag, Al, As, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, La, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Sr, Ti, V, Sn, W, Y, Zn, and Zr by ICP following an Aqua Regia digest; Au by atomic absorption, and Pt and Pd by optical emission spectrometry following an Aqua Regia digest (Lakefield Geosol Limitada)
INCO	2006	2006	1,329 bulk samples on a 200m by 25m grid	Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sr, Th, Ti, Tl, U, V, W, and Zn by ICP-AES following a four-acid digest (ALS Chemex, Vancouver)
MNL	2004	2008	2,512 samples as an extension to the CBPM program on a 40m by 40m grid and on a 20m by 20m grid at Peri Peri and the Southern Extension	Al, As, B, Ba, Be, Bi, Ca%, Cd, Co, Cr, Cu, Fe%, Ga, Hg, K%, La, Li, Mg%, Mn, Mo, Na%, Ni, Ni%, P, Pb, S%, Sb, Sc, Sr, Ti%, Tl, U, V, W and Zn were analysed by ICP-AES following an Aqua Regia digest (ALS Chemex)

12.1.2 Diamond Core Sampling and Logging

The zones of each hole sampled were selected at the discretion of the geologist completing the geological logging. The drill core was sampled in 1m intervals by trained and supervised technicians.

Each metre was sampled by taking half of each piece of core for that metre, leaving the half with the orientation line and/or metre marks in the tray, and placing them into the appropriate sample bag.

12.1.3 RC Sampling and Logging

RC drill chips were collected as 1m intervals downhole using a cyclone into PVC bags prior to splitting.

The collected samples were riffle split using multiple passes through a single stage riffle splitter. A final sample of approximately 2kg was collected for submission to the laboratory for analysis.

RC chip trays were systematically logged by collecting the sieved RC chips and storing them in a tray, with each labelled compartment of the tray containing the chips from one metre. RC sampling has not been reviewed by Coffey Mining in detail.

13 SAMPLING PREPARATION, ANALYSES AND SECURITY

Sampling was undertaken by MNL employees under the direction of MNL's geological staff. Sample analysis was undertaken by ALS Chemex Laboratories.

13.1 Sampling

13.1.1 Sample Security

The rapid submission of samples for analyses from drilling, and the close scrutiny of procedures by expatriate technical staff, provided little opportunity for sample tampering. Equally, given the umpire assaying via an external international laboratory and the regular 'blind' submission of certified reference material (CRM) to both the primary and umpire assay facilities, any misleading analytical data would have been readily recognised and investigated.

MNL drilling procedures requires samples to be taped closed once taken from the core sampling facility. Samples are then transported directly to the laboratory.

Reference material was retained and stored on site, including half-core and photographs generated by diamond drilling, duplicate pulps and residues of all submitted samples. All pulps were stored at ALS Chemex Ltd's storage facility in Belo Horizonte for three months, after which they were stored on site.

Coffey Mining has compared select diamond drillholes to the digital records for lithology and mineralisation style and has not identified any discrepancies.

13.1.2 Sample Quality

The sampling procedures adopted for diamond drilling prior to 2009 are consistent with current industry best practice. In addition, all technicians appear well trained and are effectively supervised by MNL expatriate staff.

Crushed quartz supplied by the laboratory was put into sample bags and used as 'blank' samples. The blank samples were inserted into the sample sequence for every 50^{th} sample.

Four certified standards have also regularly been inserted into the sample sequence as part of the quality control protocols. These samples were inserted on a rotating basis for every 50^{th} sample.

In addition to the routine assaying completed, thin sections have been collected in zones of anomalous nickel mineralisation for petrological studies. These thin sections have been collected at approximately 10m downhole intervals.

Every diamond drillhole completed was logged for geology, structure and geotechnical features. The lithological, stratigraphical and structural information gathered from these logs was then used, along with assay data and other information, to create a geological interpretation and model.

Coffey Mining did not assess the RC drill quality; however, the approach is also consistent with current industry best practice, except for wet drilling. Coffey Mining considers that wet RC drilling is inappropriate and drillholes should be stopped when significant water ingress occurs. The RC drilling has not been used to generate the Mineral Resource reported in this report.

The mostly 1m sampling is consistent with broad disseminated mineralisation styles identified at the Mirabela Project. The presence of scissor drillholes (drilled at an approximate 180° different azimuth), plus the collection of a substantial structural and geochemical database, has confirmed the validity of the drilling orientation and the geological interpretation.

Bulk density determinations for the sulphide samples have been conducted in accordance with industry standard procedures. The collection of a suite of transitional and oxide samples for testing using a method that includes oven drying of the core billet and sealing of the core with paraffin wax prior to standard immersion method density determinations is considered appropriate. A limited number of tests on the sulphide material were also routinely completed.

Assay Accuracy

CRM assays fell within acceptable ranges, with the majority of samples being within the tolerance limit (2 times the recommended standard deviation value), indicating that the assaying is accurate for Ni and Co, and is suitable for the purposes of grade estimation and mine planning studies. While the standard assaying for other elements was occasionally problematic, the umpire assaying supported the overall accuracy of the ALS Chemex assaying.

Blank material submitted returned satisfactory results, although a limited number of blanks returned elevated grades potentially indicating some low level contamination at the sample preparation process.

Assay Precision

Duplicate samples, prepared from the submitted sample after primary crushing, have been used to determine analytical error pertaining to the sample preparation and analytical procedures.

The duplicates indicated that the sample preparation had been adequate and was not impacting the precision of the majority of assaying. However, gold duplicate assaying was more problematic, as was the umpire assaying, with the pulverisation potentially insufficient to ensure precise assaying. Gold is not considered a material item for the Santa Rita operations, regardless, however future assaying protocols should investigate longer pulverisation times.

13.1.3 Analytical Laboratories

ALS Chemex Ltd was used as the principal analytical laboratory company. The sample preparation has been completed in Brazil and the analytical laboratories in Perth, Australia, and Vancouver, Canada, assayed the pulps.

The ALS Chemex laboratories in Perth and Vancouver are ISO 9001:2000 accredited. In addition, the ALS Chemex Vancouver laboratory is accredited to ISO 17025 by Standards Council of Canada for a number of specific test procedures including fire assay gold by AA, ICP and gravimetric finish, multi-element ICP and AA assays for silver, copper, lead, and zinc.

Umpire assay checks were also completed by ACME Analytical Laboratory Ltd (ISO 9001:2000 accredited) in Vancouver, Canada, and Ultra Trace Analytical Laboratories (ISO 17025 accredited), in Perth, Australia.

Additionally, analysis for non-sulphide nickel was conducted in May 2005 to determine the sulphide nickel portion of the total nickel assay result. A total of 12 pulp samples were submitted to ALS Chemex Ltd and Genalysis Laboratory Services Pty Ltd, both laboratories located in Perth, Australia. Samples were analysed using L-ascorbic acid digestion with AAS finish and hydrogen peroxide/ascorbic acid digestion with ICP-OES finish, respectively.

13.1.4 Sample Preparation and Analytical Procedure

The majority of the sample preparation and analysis has been completed by ALS Chemex Ltd. The sample preparation was completed at ALS Chemex sample preparation facility in Luziania, Brazil until February 2006, at which time it moved to Belo Horizonte, also in Brazil. Coffey Mining reviewed the Luziania facility and considered it to be well organised and run with the technical staff well trained.

The sample pulps were then sent to ALS Chemex analytical laboratories in Vancouver, Canada, and in Perth, Australia.

The majority of the nickel assaying has been completed using inductively coupled plasma atomic emission spectroscopy (ICP-AES) while inductively coupled plasma mass spectroscopy (ICP-MS) methods with appropriate collectors, for example 30g fire assay for gold and nickel sulphide collection for PGE's, have also been applied.

13.1.5 Adequacy of Procedures

It is Coffey Mining's opinion that the analytical methods used , including ICP-AES for nickel, is entirely appropriate. Sufficient quality control data exists to allow thorough review of the analytical performance of assay laboratories. The sampling methods, chain of custody procedures, sample preparation procedures and analytical techniques are all considered appropriate and are compatible with accepted industry standards.

14 DATA VERIFICATION

No new resource drilling has been undertaken since the 2008 resource estimate. As such the comments and recommendations from Gossage et al. (2009) for the data up to 2009 are still valid and have been again supported for this document. Full statistical plots are available in Gossage et al (2009) and have not been repeated in this document.

For the December 2010 update, the author has undertaking the following additional verification checks:

- Reviewed the QAQC data contained within the 2009 Technical report.
- Separately validated portions of the assay database against original laboratory return sheets (targeting the top 10% of Ni assays). *No material items were identified.*
- Compared drill core to the digital logging and assay data.
- Compared the drillhole data and subsequent 3D models to pit exposure.
- Compared grade control data against the Resource model and mill production figures.

Independent sampling was not undertaken during the 2010 field trip as the project is an operating nickel mine with documented nickel sales.

The author concurs with the previous comments and recommendations in the previous technical report that the database and assay data are suitable for use in the Resource estimation study.

14.1 Data Quality Summary

With the exception of Au, the assaying is considered both accurate and precise, and is suitable for mine planning studies. The quality control protocols are considered to be high industry standard and should be maintained for future drilling programs. However, it is recommended that the monitoring of quality control data, especially the standards and blank assaying, be done as a routine part of the data management process which for logistical reasons in the past has been completed in batches.

Assay batches returning CRM assays outside accepted ranges should be rejected and the laboratory asked to re-assay these samples at no cost. In addition, the submission of certified Au standards should be considered if Au becomes a significant revenue stream for the project and/or if improved quality control results are not returned for in future assaying.

Re-logging data undertaken in 2010 indicates that some of the SAP material could have been washed out during the drilling process – as identified by core loss in fault affected portions of the core. *Further work is required to determine the effect of core loss due to SAP material on the likely Ni grade of the relevant 1m assayed interval*. (Although it is noted that assaying of SAP material from within the northern pit region has returned results ranging from 0.07% to 0.8% Ni.)

14.2 Bulk Density Determinations

Bulk density determinations have been carried out by MNL. Density data (10,329 determinations) has been collected by MNL using billets selected from available diamond core.

The method applied to density collection for Santa Rita included sun drying, weighing the core in air and weighing in water. The bulk density was then determined as a ratio of weight in air over weight in water. The weighing is completed using high quality electronic scales with regular calibration of the scales completed.

The method represents an industry standard approach to dry bulk density collection when no porosity is present in the rocks, as is the case for the sulphide/fresh mineralisation.

Bulk density determinations for the sulphide samples have been conducted in accordance with industry standard procedures.

However, when the rock is partly or completely oxidised the methodology is inappropriate as moisture is absorbed during the water immersion step. The magnitude of the bulk density issue in the transition is difficult to quantify, although Coffey Mining considers the likely over call of the bulk density to be relatively small (<5%). Future density determinations for bulk density in oxidised or transitional material should be undertaken using either the calliper or wax methods.

15 ADJACENT PROPERTIES

There are no mineral deposits associated with adjacent projects that are directly relevant or comparable to the Mirabela Project.

16 MINERAL PROCESSING AND METALLURGICAL TESTING

16.1 Introduction

The Santa Rita nickel processing plant was commissioned in October 2009. The processing plant is conventional and consists of crushing, grinding, flotation, thickening and filtration to produce a saleable nickel concentrate, whilst flotation tailings are pumped to a storage facility.

During the 2010 calendar year, the Santa Rita processing plant processed 3.8 million tonnes of ore at a feed grade of 0.51% nickel and a nickel recovery of 53% to produce 10,375 tonnes of contained nickel. The concentrate averaged 12% nickel and no significant penalties resulted from concentrate sales. The nickel grade of the feed material was lower than predicted due to the inclusion of some low grade ore feed, which supplemented the high grade when plant throughput capacity exceeded the mine capacity.

Importantly, for the 2010 December quarter, 1.244 million tonnes were processed (4.98Mtpa equivalent) at a nickel head grade of 0.50% and at a nickel recovery of 60%.

As part of the project development, a comprehensive testwork programme was completed to determine the metallurgical properties of the various mineralised zones within the deposit. The testwork undertaken was thorough and of high quality, with particular emphasis on ensuring that samples tested were representative of the deposit. All of the metallurgical samples tested originated from either NQ (47.6mm), or, where required, PQ (85mm) diamond drill core.

In selecting representative samples, some problematic zones of the deposit were excluded from the testwork, as they were to be mined as waste using selective mining techniques. In practice, this was not possible and the inclusion of these zones affected nickel recovery for the first year of operation.

Personnel at Santa Rita have addressed the issues surrounding the problematic zones as follows:

- Focussed on a 'mine to mill' approach, thereby gaining an understanding of where the problematic zones are located, so that they can be mined and blended to minimise downstream metallurgical problems.
- Analysing the mineralogy of the problematic zones, so that potential solutions can be applied, in the form of reagent regimes and physical removal techniques.
- Designed a solution in the form of the installation of a desliming stage after grinding to remove ultrafine material from the flotation feed particles surface, where the problematic minerals are located and where nickel losses are negligible.

The mine to mill focus and variation of reagent regimes has allowed the Santa Rita processing plant to more recently operate at nameplate design capacity on a tonnage and nickel recovery basis, whilst the installation of a desliming plant should enable the processing plant to exceed nameplate capacity, based on testwork results and current plant performance.

Santa Rita also intends to expand the throughput of the processing plant from a nominal 4.6Mtpa to 7.2Mtpa, thereby increasing nickel production by around 56%

The major requirements for a processing plant expansion to 6.4Mtpa were allowed for during the initial design and construction phase of the processing plant and hence the expansion can now be completed with minimal interruption to operations and at a moderate capital cost. The ability to reach 7.2Mtpa throughput is predicated on the current knowledge of the comminution circuit, as well as the proposed installation of the desliming circuit, which will in effect remove approximately 0.8Mtpa of ultrafine material, containing non recoverable nickel and problematic minerals from the flotation feed. Included as part of the expansion is an additional ball mill, pebble crusher, filtration unit, and as mentioned above, a desliming circuit to remove ultrafine material.

16.2 Previous Metallurgical Testwork

16.2.1 Metallurgical Sampling

The Santa Rita metallurgical testwork was conducted on composites or straight NQ diamond drill core taken from some 523 drillholes around the Santa Rita deposit (Figure 16.2.1_1).

Five PQ diamond drillholes were also drilled where large diameter core was required to generate sufficient material for the comminution, engineering design and routine metallurgical development testwork.

Samples for metallurgical testwork were collected immediately after the receipt of assay results. All of the significant intersections (at nickel head grades greater than the cutoff) were sampled and divided into pre-determined metallurgical domains, with lithology being the predominant control.

The samples were then placed into protective bags and sent to Independent Metallurgical Laboratories Pty Ltd (IML) and AMMTEC Ltd. in Perth, Western Australia, where they were kept in cold storage to avoid oxidation until required for metallurgical testwork.

16.2.2 Metallurgical Testwork Program

A comprehensive testwork program was undertaken on the nickel sulphides to determine the mineralogical, comminution and metallurgical properties of the various mineralised zones within the deposit.

Preliminary metallurgical testwork began in July 2005 with a number of samples being submitted to SGS Lakefield by MNL for flotation testwork. Subsequent testwork was completed at a number of testing facilities across Australia. These facilities included, but were not limited to:

- Pontifex and Associates – ore dressing and mineralogy testwork and analysis
- JKTech – mineralogical testwork and analysis
- AMMTEC Ltd – flotation and comminution testwork
- Independent Metallurgical Laboratories Pty Ltd – flotation testwork
- SGS Lakefield Oretest – Flotation and heap leach testwork and analysis.

Figure 16.2.1_1
Metallurgical Testwork Samples Post-BFS

16.2.3 Mineralogy

Pontifex and Associates conducted mineralogical analyses of the flotation feed material and a number of the metallurgical testwork products with the following main results:

- The dominant sulphide minerals in the Santa Rita deposit are pentlandite, pyrrhotite, pyrite, chalcopyrite and violarite. The major gangue materials were identified as olivine, orthopyroxene, serpentine and chrome spinels.
- The recoverable nickel (sulphide) was found to be predominantly in the pentlandite, violarite and pyrite.
- Copper was primarily associated with chalcopyrite. Iron is most abundant in pyrite (~47%), less abundant in pentlandite and chalcopyrite chrome spinel.
- The platinum group elements (PGE) were identified as most likely to be in pentlandite, though due to the low concentrations in the samples analysed, this was difficult to confirm.

The investigation also indicated a number of key points about the gangue minerals including:

- Between 0.24% and 0.3% nickel is associated with olivine, 0.05% to 0.1% with orthopyroxene and approximately 0.09% with chrome spinels.
- Silicates contain approximately 110ppm cobalt.
- The majority of iron occurs in olivine (11 - 12%), serpentine (5 - 9%) and orthopyroxene (8%).

Based on the mineralogical findings, in particular the deportment of nickel and magnesia, Mirabela subdivided the orebody into three domains, which are tabulated below (Table 16.2.3_1).

Table 16.2.3_1
Santa Rita Deposit
Ore Domains Based on the Results of Mineralogical Testwork

Domain	Petrography	Description
P	Orthopyroxenite	Moderately competent average grade ore that yields the highest overall nickel recoveries and lowest magnesia in concentrates. Represents 60% of current mineral resource.
O	Olivine Orthopyroxenite	Relatively high grade ore with other properties that are close to the average for the orebody. Some oxidation is present at the surface expressions, and as a result some oxide ore is excluded from the ore reserve because of low or negligible potential for nickel recovery by flotation. Represents 14% of current mineral resource.
H	Harzburgite	Moderate grade ore with relatively low specific gravity (SG) and high competence. It has elevated levels of MgO and a low S:Ni ratios. Nickel recoveries and concentrate grades tend to be lower with this geological domain as demonstrated in the flotation testwork to date. Represents 26% of current mineral resource.

In the P and O domains most of the nickel is hosted in sulphides, and therefore recoverable, whereas in the H domain nickel is divided more evenly between sulphides and gangue minerals. Consequently, the P and O domains have a high proportion of recoverable nickel while the H domain has a lower proportion of recoverable nickel.

Mirabela also completed variability testwork, which identified the likely upside or downside expected from each ore type.

16.2.4 Metallurgical Testing

Comminution Testwork

A thorough comminution testwork program was conducted in three phases, with careful consideration in respect to sample representivity from within the Santa Rita deposit. Orway Mineral Consultants completed phases 1 and 2 of the comminution testwork with GRD Minproc completing phase 3. The phase 3 testwork identified the various mineralisation types and their respective contributions within the deposit.

The results indicated that the samples tested were of medium competency in terms of crushing and were in the medium to high range in terms of milling. They displayed an amenability to SAG milling. The abrasive properties or wear rates were less than that of quartz (0.40), but were still in the medium to high range (0.346).

Batch Flotation Testing

Extensive flotation testwork was conducted in five phases by the following laboratories:

- IML (now AMDEL Perth, Australia)
- AMDEL and AMMTEC (Perth, Australia).

All of the testwork was conducted in a thorough manner and as for the case with the comminution testwork, considerable attention was paid to ensuring that the samples were representative of the deposit.

Phases 1 to 3 focussed on optimising concentrate grade and recovery for the different ore domains within the deposit, whereas phase 4 testwork utilised composite samples.

Phase 5 utilised the results of the earlier phases to enable further optimisation. The primary focus of this phase was to test a composite sample, which was representative of the desired mineral resource head grade, and then conduct flotation testwork to determine the optimal grind size that would produce the highest concentrate grade, metal recovery and iron to magnesia ratio. The results of the Phase 5 flotation grind size optimisation testwork indicated that the optimum flotation grind size was approximately 125µm.

The testwork was conducted on a composite sample of 60% orthopyroxenite (Domain P), 14% olivine orthopyroxenite (Domain O) and 26% harzburgite (Domain H) at a nickel head grade of 0.61%. The sample achieved a nickel recovery in excess of 70% at a nickel concentrate grade of 13.0% at P_{80} grind sizes of 125µm and 145µm (Table 16.2.4_1).

Table 16.2.4_1
Santa Rita Deposit
Grind Size Optimisation - Phase 5 of the Flotation Testwork

Test Number	Grind Size (µm)	Nickel (%)			Copper (%)		
		Head	Concentrate Grade	Recovery	Head	Concentrate Grade	Recovery
GS3216	125	0.61	13.5	70.2	0.18	4.9	86.3
GS3219	125	0.61	12.8	72.2	0.18	4.6	86.3
GS3225	145	0.59	12.91	72.1	0.18	4.7	86.7
GS3226	145	0.60	13.08	70.4	0.18	4.9	86.0

The work reported in Table 16.2.4_1 was later repeated on the different blend of rock types reflecting the updated geological model of the orebody. P_{80} grind sizes ranging from 75µm to 175µm were batch tested. These tests showed that the nickel recovery increased slightly at the finer grind sizes tested. However, recovery was relatively constant from 106µm to 145µm (Table 16.2.4_2).

Table 16.2.4_2
Santa Rita Deposit
Grind Size Optimisation for Resource Composite

Grind size P_{80} [µm]	75	106	125	145	175
Nickel Recovery at 13% Concentrate Grade	72.5	71.9	71.3	71.3	69.1

In addition to this, there was also an extensive amount of optimisation testwork conducted to assess the effects of other factors such as pulp density, reagent addition and regrinding.

Locked Cycle Testing

Subsequent to the batch flotation testing, 6-cycle locked cycle flotation tests were completed on composite samples from the Santa Rita deposit. These tests were based on the grind size and reagent conditions established in the earlier phases of testing. The test results are given in Table 16.2.4_3.

Table 16.2.4_3
Santa Rita Deposit
Locked Cycle Testing Data

Test Number	Mass (%)	Nickel (%)			Copper (%)		
		Head	Concentrate Grade	Recovery	Head	Concentrate Grade	Recovery
GS2690	3.16	0.67	14.3	67.1	0.16	4.02	81.4
GS2764	2.84	0.65	15.2	66.8	0.16	4.27	77.7
GS3223*	3.40	0.58	12.2	71.9	0.17	4.34	88.2
GS3415*	3.44	0.63	13.6	73.8	0.19	4.79	88.5

* composite of 60% Domain P, 14% Domain O, 26% Domain H)

Bulk Flotation Testing

Large scale bulk flotation testing was conducted to produce concentrate to provide product to smelters as possible end-users of the concentrates. A total of 4.6kg of concentrate assaying 13.9% nickel, 4.5% copper, 10.1% magnesia and 25.4% iron was produced.

Further flotation tests achieved 71% nickel recovery at a 13% nickel concentrate grade from a 0.62% nickel head grade, with this concentrate sample being used for smelting and ancillary testwork.

Flash Flotation

A flash flotation test was conducted to determine whether any benefit might result from the inclusion of a flash flotation unit. Based on the preliminary testwork results, it was concluded that the flash flotation concentrate was not of high enough quality to include in the circuit.

Table 16.2.4_4
Santa Rita Deposit
Flash Flotation Testwork

Ni Head Assay (%)	Cleaner 1		Cleaner 2		Cleaner 3	
	Concentration Grade (%)	Recovery (%)	Concentration Grade (%)	Recovery (%)	Concentration Grade (%)	Recovery (%)
0.64	10.6	13.0	11.0	22.1	10.3	35.2

16.2.5 Ancillary Testwork

Bulk Solids

The materials handling testwork was conducted at TUNRA Bulk Solids and included:

- particle size range determination
- moisture content testwork
- shear testwork
- compressibility testwork
- wall friction testwork
- angle of repose testwork.

The results indicated an easy handling material with little bulk strength that increases slightly after three days undisturbed storage. The testwork indicated a low tendency to form stable “ratholes”. The angle of repose was 43° (worst case moisture content), however, this would be expected to decrease as the moisture content was reduced.

Tailings and Concentrate Thickener Design

Outokumpu Technologies conducted thickening testwork on concentrate and tailings. The tailings sample was sourced from a 12kg bulk flotation test and the concentrate sample was sourced from a 500kg bulk locked cycle test.

The tests conducted were:

- flocculant screening and dilution tests
- dynamic thickening test.

Of the four flocculants tested, Magnafloc 342 was found to be the most suitable for both the Santa Rita tailings and concentrate. A flocculent dosage of 10g/t was used in the dynamic testwork, based on the flocculent screening testwork results. The dynamic thickening testwork results attained a solids loading of $0.97t/m^2h$ at an underflow density of 67.0% w/w solids for the tailings and a solids loading of $0.25t/m^2h$ at an underflow density of 75.5% w/w solids for the concentrate.

MNL chose to install a 35m diameter tailings thickener and a 15m diameter concentrate thickener to allow for the proposed 6.4Mtpa upgrade.

A sample of concentrate, prepared for smelting testwork was tested to determine transport moisture limit (TML), stowage and other parameters. The concentrate was classified as not being of the self heating Class 4.2.

<u>Tailings Storage Facility Design</u>

Golder Associates conducted tailings storage facility testwork on a sample sourced from a 15kg bulk flotation test.

The following tests were conducted on the tailings sample provided:

- particle size distribution test
- particle density test
- settling tests
- permeability test.

The testwork report described the tailings material as a sandy silt and silty sand, respectively, with 100% passing 300µm and a P_{80} of approximately 110µm. About 5% of the material was less than one micron in size and the calculated tailings solid density was $3.20g/cm^3$.

The test results indicated that the tailings solids would likely settle out of the tailings slurry relatively quickly, with the liquid flowing on to form a reasonably clear supernatant pond with minimal suspended solids, allowing recovery and recycling of water to occur.

Permeability testwork was carried out to estimate a coefficient of hydraulic conductivity for use in seepage modelling. The results of these tests showed approximate rates of 6.5×10^{-7}m/s and 6.6×10^{-7}m/s.

16.2.6 Key Design Criteria

Table 16.2.6_1
Santa Rita Deposit
Key Design Criteria for Santa Rita Project

		Unit	
Physical Properties	UCS	MPa	86.6
	Crushing work index	kWh/t	23.2
	Bond work index - rod mill	kWh/t	18.4
	Bond work index - ball mill	kWh/t	20.4
	JK drop weight a x b		41.3
	SAG mill comminution SMC DWI		7.48
	Abrasion index		0.346
Flotation	Optimum mill product size, P_{80}	µm	125
	Nickel feed grade	%	0.61
	Nickel concentrate grade	%	13.0
	Nickel recovery	%	~70
Thickening	Settling rate	t/m^2h	0.95
	Underflow density	%w/w solids	65.0

16.2.7 Heap Leach Testwork

A bench scale analysis was conducted at SGS Lakefield Oretest on the option of using heap leach to treat 2Mt of oxide overburden at a head grade of 0.79% nickel and potentially 2.5Mt of laterite overburden at 2.2% nickel. The testwork showed that approximately 70% of the nickel was likely to be recoverable at a relatively low acid addition rate.

16.2.8 Additional Testwork

Additional testwork was also undertaken to finalise and optimise various aspects so as to determine:

- The metallurgy of the low grade ore types
- Bulk scale performance
- Magnesia rejection testwork
- Concentrate production testwork for smelters.

Work completed on magnesia rejection at the time did not show any significant benefits.

Approximately 5kg of concentrate assaying 12.3% Ni and with an Fe: MgO ratio of 3.6: 1 was prepared for smelting testwork.

17 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

17.1 Mineral Resource

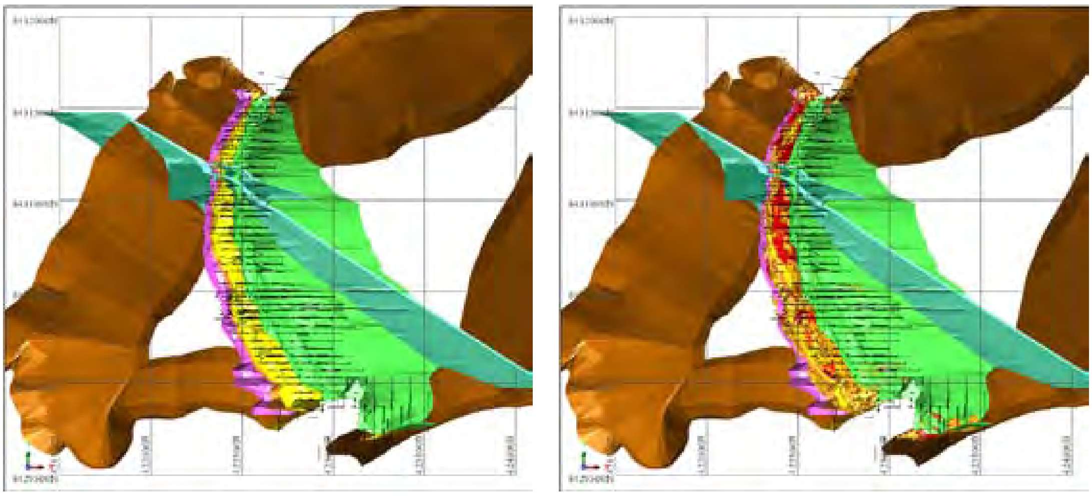
17.1.1 Introduction

The January 2011 update for the Santa Rita Open pit Resource is based upon the 2008 Resource (Gossage et. al, 2009), with mining depletion taken into account; and has been reported using a lower grade cutoff than previous. The competent person for the 2011 resource update is Neil Inwood of Coffey Mining.

17.1.2 Resource Estimation

The mineralised zones (Figures 17.1.2_1 and 17.1.2_2) used to define the mineralisation were defined using the sulphur content. Silicate Ni levels (based on analysis of drillhole assay data) vary in the host lithologies (averaging 0.225% Ni in the dunite, 0.175% in the harzburgite, 0.125% in the olivine orthopyroxenite, and 0.075% in the orthopyroxenite) and hence it is not possible to use a single Ni cutoff to define the mineralised zone. A base value of 0.2% sulphur was chosen to create a mineralised envelope that was continuous and represented sulphide Ni grades not silicate Ni material.

Figure 17.1.2_1
Plan View of the Interpreted Lithology and Mineralisation Interpretation



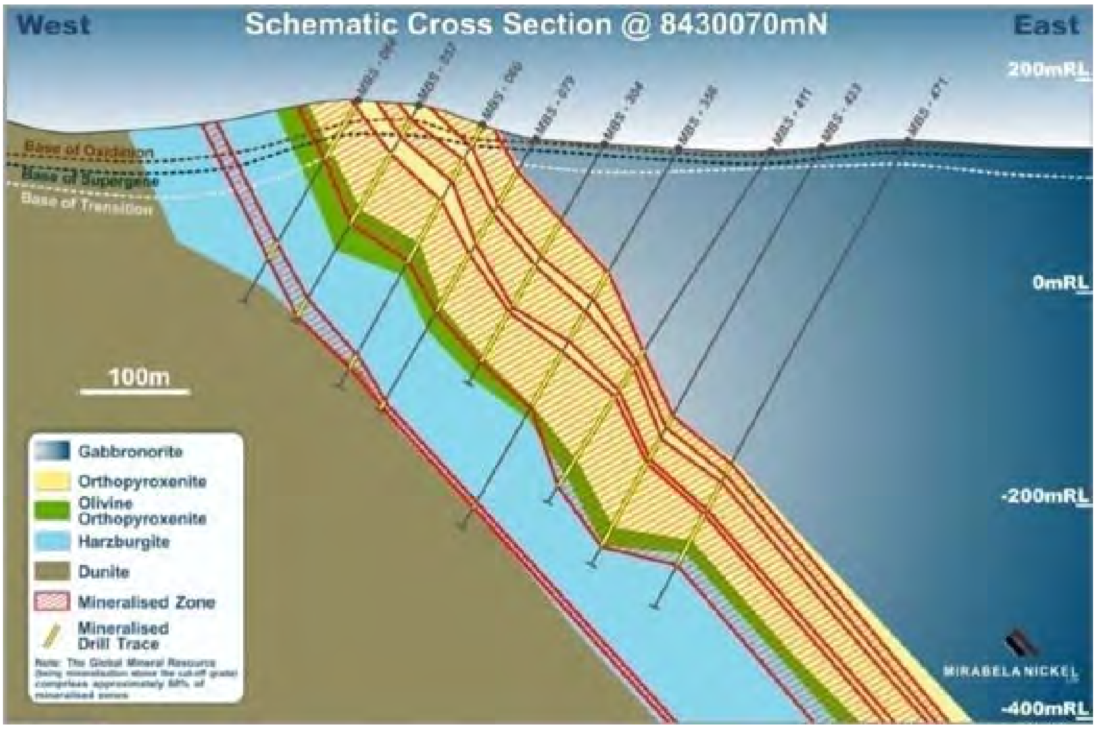
Drilling plus dunite, harzburgite, olivine orthopyroxenite, and gabbro contacts with cross-cutting dyke enclosed in the basement contact

Drilling plus dunite, harzburgite, olivine orthopyroxenite, orthopyroxenite and gabbro contacts with cross-cutting dyke enclosed in the basement contact PLUS mineralisation blocks

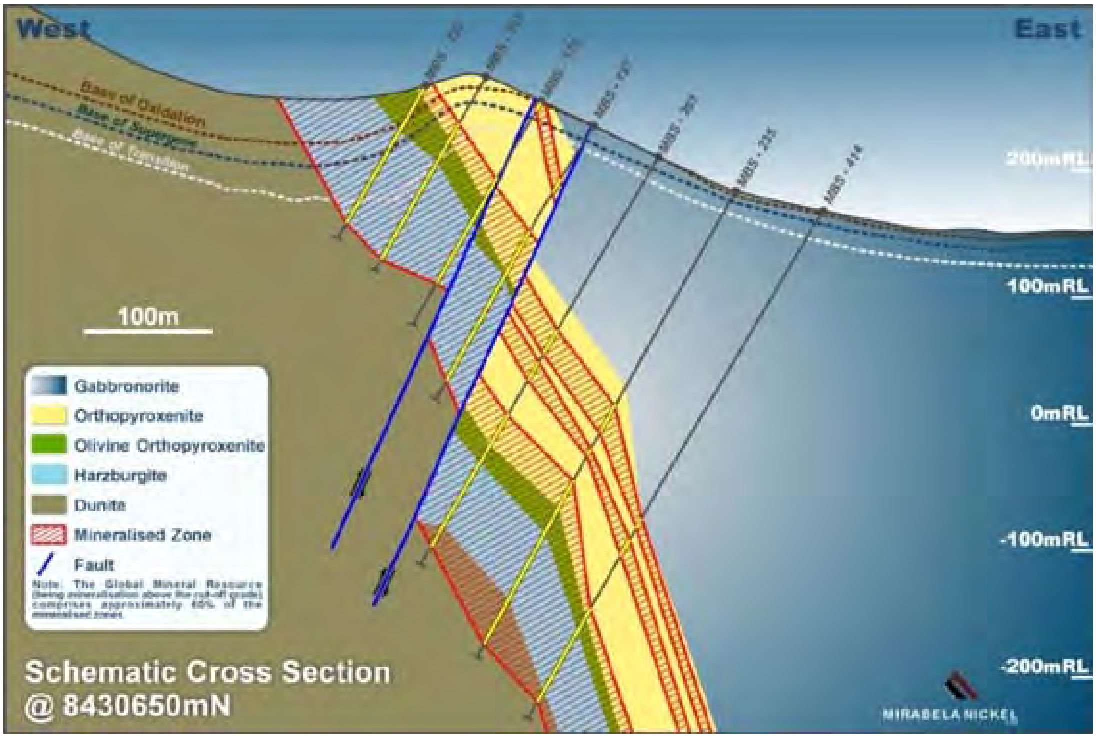
The 2011 open pit resource is based upon ordinary kriging of Ni within the mineralised zones with change of support of 5mE x 10mN x 5mRL emulated by Uniform Conditioning. All aspects of the resource estimate (compositing, domaining, estimation parameters, UC change of support etc.) remain the same as discussed in Gossage et al (2009). The December 2010 update incorporates mining depletion to the end of December 2010 as defined by the supplied DTM file *ATUALIZAÇÃO_UTM_27-12-10.dwg*.

Figure 17.1.2_2

Cross Section 8430070mN Displaying Drilling & Interpreted Geological Controls



Cross Section 8430650mN Displaying Drilling & Interpreted Geological Controls



17.1.3 Reconciliation to Production Data

The suitability for using the current model was additionally gauged by comparison with production data from the Santa Rita open pit in 2010. Summary reconciliation data is shown in Table 17.1.3_1 below. Although the table below does not incorporate stockpile movement or the effect of Low Grade material mined, the trend evident is supported by grade control data which generally reconciles well with the mill data.

Table 17.1.3_1
Santa Rita Deposit
Summary Reconciliation Data

Month	HG Resource Mined [1]			Mill Production [2]			% Difference (Mill/Resource)		
	Resource Tonnes [1]	Ni (%)	Ni Metal (t)	Tonnes	Ni (%)	Ni Metal (t)	Tonnage	Grade	Metal
July	187,325	0.67	1,258	356,662	0.53	1,906	181%	80%	152%
August	323,006	0.65	2,084	284,689	0.49	1,408	84%	77%	68%
September	241,847	0.64	1,546	300,864	0.53	1,587	118%	82%	103%
October	299,348	0.63	1,893	394,279	0.51	2,000	125%	80%	106%
November	244,117	0.58	1,409	417,472	0.50	2,087	162%	87%	148%
December	370,211	0.58	2,160	432,502	0.49	2,119	111%	84%	98%
6 month Total	**1,665,854**	**0.62**	**10,350**	**2,186,468**	**0.51**	**11,107**	**131%**	**82%**	**107%**

1. The HG resource figure is reported above the weighted average cutoff of ~0.34% that was used for the 2008 resource reporting, and incorporates a 95% mining recovery factor. Actual material sent to the mill has included some low grade material which is not reflected in the HG resource tabulation.

In summary, 30% more material was mined at a 18% lower grade for 7% more metal than was expected when compared to the high grade resource model (i.e. reconciled to material reporting above 0.3% Ni in pyroxenite, 0.35% Ni in Olivine Orthopyroxenite, 0.45% Ni in Harzburgite and 0.5% Ni in Dunite – averaging 0.34% Ni).

Based upon the grade control and reconciliation data that Coffey Mining has seen to date, it is expected that the use of the lower grade cutoff (~0.25% Ni on average - see section below) for mine planning and resource reporting purposes, will result in improved reconciliation to the resource model.

17.1.4 Resource Classification and Reporting

The same classification criteria have been used as per the previous resource and are summarised in Table 17.1.4_1.

The mineral resource estimate for the Santa Rita deposit has been categorised in accordance with the criteria laid out in the Canadian National Instrument 43-101 ("NI 43-101") and the JORC code. A combination of Measured, Indicated and Inferred Mineral Resources have been defined using definitive criteria determined during the validation of the grade estimates, with detailed consideration of the CIM categorisation guidelines.

Table 17.1.4_1
Santa Rita Deposit
Confidence Levels of Key Categorisation Criteria

Items	**Discussion**	**Confidence**
Drilling Techniques	Diamond - industry standard approach.	High
Logging	Geological logging is completed using standard nomenclature and apparent high quality.	High
Drill Sample Recovery	Acceptable recoveries determined for the majority of the drilling.	High
Sub-sampling Techniques & Sample Preparation	Industry standard for diamond drilling	High
Quality of Assay Data	Extensive quality control data available and has been assessed. The majority of quality control data is acceptable.	Moderate to High
Verification of Sampling and Assaying	Umpire assaying completed which indicates robust analytical data.	Moderate
Location of Sampling Points	All drillhole collars and have been surveyed and most drillholes have been downhole surveyed.	High
Data Density and Distribution	The current data spacing is considered appropriate for resource evaluation, but local infill drilling required to test SMU modelling assumptions.	Moderate to High
Audits or Reviews	The current resource estimation has not been audited by independent parties.	NA
Database Integrity	No Material errors identified.	High
Geological Interpretation	The interpreted lithological and weathering boundaries are considered robust and of high confidence. Mineralisation boundaries are more difficult to determine and part of the resource was constrained on geology and a nominal 0.2% Ni lower cutoff grade.	Moderate
Estimation and Modelling Techniques	The Ni resource estimate has been generated via OK with change of support by UC. Coffey Mining considers OK + UC estimation approach appropriate where selective mining is being considered based on cutoff grades. Relative nuggets are low to moderate and therefore a moderate level of mining selectivity should be achieved. Further small scale co-simulation could be completed to confirm the level of mining selectivity likely to be achieved for Ni, Cu and Co.	Moderate to High
Cutoff Grades	Geology and a notional 0.2% Ni cutoff grade criteria plus S grades have been used to complete the interpretation of mineralisation domain envelopes to exclude material that is definitely waste. The estimation methods used in the resource estimation study are not cutoff grade dependent and allow reporting at a range of cutoffs However, the Santa Rita is a low grade disseminated deposits and mining at elevated cutoff grades above 0.5% Ni is likely to be unsuccessful.	Moderate to High
Mining Factors or Assumptions	The resource estimate has used geostatistical techniques which take into account information effect and tries to replicate a recovered resource (i.e. inclusive of mining dilution) given that the proposed minimum mining unit represents the size for which UC was applied. The resource model thus takes into account proposed mining dilution. The modelling of dilution needs to be proofed against production data once available.	Moderate
Tonnage Factors	Detailed statistical evaluation of the dry bulk density data subdivided by weathering has been completed prior to assignment of average bulk densities. The bulk density is considered to be well established.	Moderate to High

Applying the above confidence levels, mineral resource classification codes were assigned to the mineral resource block model using the following criteria:

- Measured Mineral resources
  - A portion of the shallower part of the northern and southern zones has the drill density exists to report measured mineral resources.
- Indicated Mineral resources
  - Blocks estimated with estimation pass 1 not categorised as measured.
  - Blocks located above base of drilling surface constructed approximately 40m (average drill spacing) below the deepest drilling intercept.
  - Blocks falling within pit optimisation shell *case1v4_28aug08_pit27* (a pit shell optimised at US$7/lb in 2008 which encompassed the vast bulk of the potentially Indicated material).
- Inferred Mineral resources
  - Blocks estimated with estimation pass 1 or 2 not categorised as indicated or measured.
  - Blocks located above base of drilling surface constructed approximately 120m (average drill spacing) below the deepest drilling intercept.
  - Blocks falling within pit optimisation shell *case1v4_28aug08_pit27*.
- Not classified
  - Blocks not qualifying as measured indicated or inferred.

17.1.5 Resource Tabulation

Measured, Indicated and Inferred Mineral resources are reported for the Santa Rita deposit, based on the “recoverable” model emulating selective mining for a 5mE x 10mN x 5mRL SMU (UC). Grade tonnage reports are provided in Tables 17.1.5_1 and 17.1.5_2.

Table 17.1.5_1
Santa Rita Deposit
Classified Mineral Resource Current as per 27 December 2010[1) 2)] and End of December 2010 [2)]
Reported by variable Cutoff Grades defined by Host Rock Type
OK (UC) Estimate - 5mE x 10mN x 5mRL Selective Mining Unit

Category	Mt	Ni %	Cu %	Co %	Pd ppb	Pt ppb	Au ppb
Insitu Resources[1) 2)] - Weighted Average Cutoff Grade of 0.25% Ni							
Measured	**16.3**	**0.57**	0.14	0.016	50	101	61
Indicated	**156.0**	**0.51**	0.13	0.014	41	87	56
Inferred	**25.7**	**0.53**	0.14	0.015	35	83	55
ROM Stockpile [3]– Reported at the end of December 2011							
Indicated	**0.3**	**0.34**	0.14	0.16	50	101	61

1. The resource includes a 95% mining recovery factor. Weighted average Ni cutoff grade approximately 0.25%. Figures have been rounded.
2. These figures are for the in-ground or insitu Resources only.
3. ROM stockpile grades have been estimated based upon the average of production reported grades for Ni and Measured grades estimated for the in-situ resource above..

A variety of cutoff grades are required for each ore type, because they vary in olivine content. Olivine contains non-sulphide nickel that is not recoverable (silicate nickel), so lower olivine content increases nickel recovery and reduces the corresponding cutoff grade. Mineral resource grades reflect the combined sulphide and silicate nickel content, because assay technology is not accurate enough to measure sulphide nickel content alone for mineral resource estimation.

There are four different types of mineralised rock. Each has a different cutoff grade depending on its non-sulphide nickel content. Pyroxenite has a low cutoff grade to reflect low olivine and low non-sulphide nickel content, whereas dunite has a high cutoff grade to reflect high olivine and high non-sulphide nickel content.

The resource table is shown in Table 17.1.5_1. A lower grade cutoff has been used the Mineral resource as to the December 2010 statement as the Ni price has increased from the previous US$7/lb. The reporting cutoffs used are outlined below:

Host Rock Type	Percentage Composition	Cutoff Grade
▪ Pyroxenite	62	0.20%
▪ Olivine Orthopyroxenite	13	0.25%
▪ Harzburgite	22	0.35%
▪ Dunite	3	0.40%
▪ **Weighted average cutoff grade**	**100%**	**0.25%**

Table 17.1.5_2 shows the resource reported at various Ni% cutoff grades (without consideration of host- rock type).

Table 17.1.5_2

Santa Rita Deposit

Mineral Resource[1] Current as per 27 December 2010
Reported at different Ni Cutoff Grades
OK (UC) Estimate - 5mE x 10mN x 5mRL Selective Mining Unit

Cutoff	Category	Mt	Ni %	Cu %	Co %	Pd ppb	Pt ppb	Au ppb
0.20% Ni	Measured	21.7	0.50	0.11	0.015	52	98	59
	Indicated	177.1	0.49	0.12	0.014	42	87	56
	Inferred	28.2	0.51	0.13	0.015	36	84	56
0.30% Ni	Measured	17.0	0.56	0.13	0.016	55	106	64
	Indicated	134.3	0.56	0.15	0.015	45	95	61
	Inferred	22.6	0.57	0.15	0.016	38	89	60
0.40% Ni	Measured	12.2	0.65	0.16	0.017	58	114	69
	Indicated	95.0	0.65	0.17	0.016	48	101	65
	Inferred	19.3	0.62	0.16	0.016	39	91	61
0.50% Ni	Measured	8.8	0.73	0.18	0.018	60	120	72
	Indicated	66.8	0.74	0.20	0.017	50	106	69
	Inferred	11.8	0.74	0.20	0.018	41	98	66

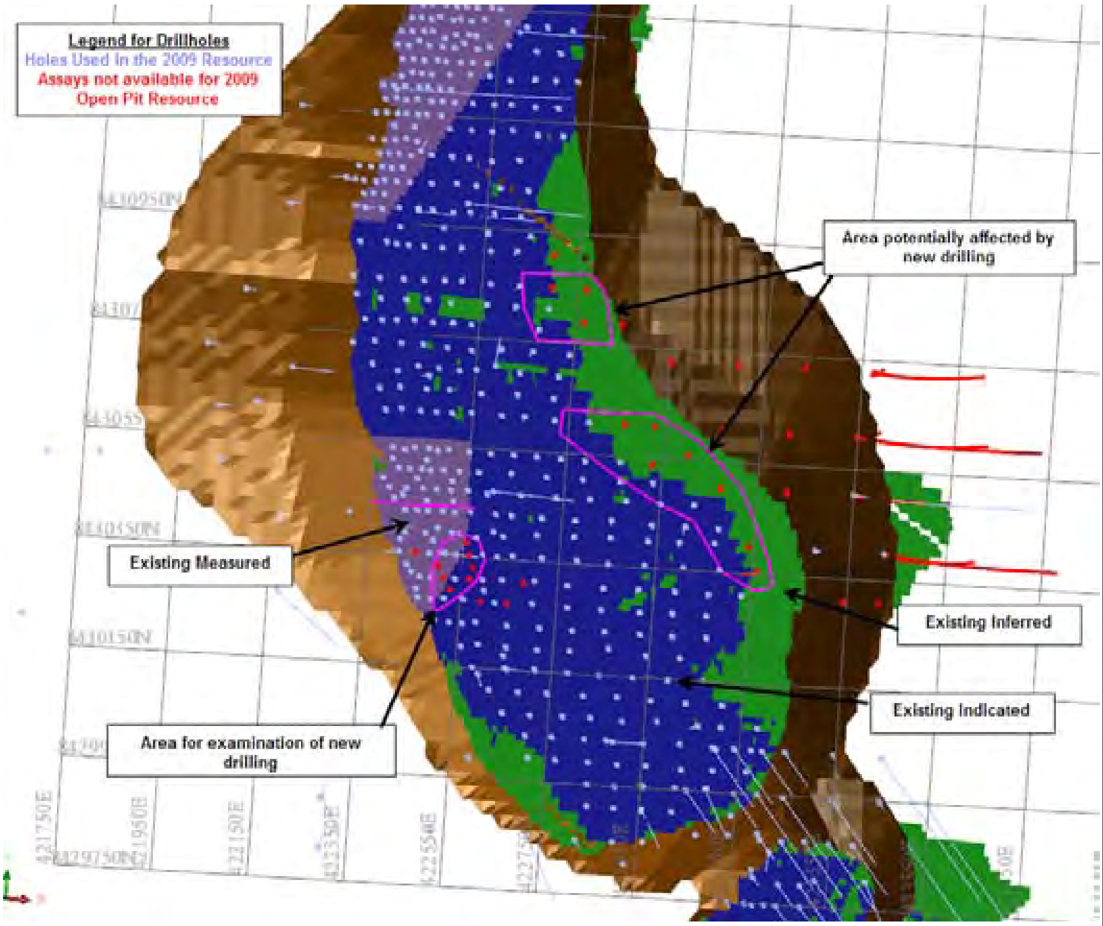
1. The resource includes a 95% mining recovery factor.

Comments and Recommendations

Based upon a review of the current reconciliation, grade control and mining data, it is considered that the current resource model reported above the Low Grade threshold is appropriate for mining of the Santa Rite open pit deposit. Coffey Mining has the following recommendations for the ongoing resource estimation studies:

- Subsequent to the modelling of the current resource model (initially undertaken in August 2008 – for drillholes up to and including MBS-583), assay results were received for an additional approximately 25 additional drillholes (see Figure 17.1.5_1). This information was not used in the resource modelling and has the potential to expand the depth extension of the open pit resource and to allow for classification upgrades of some portions of the current Inferred and Indicted material. The extra information gained by these drillholes would also necessitate an update of the geological modelling (specifically fault contacts and the boundary of the sulphide model). **T*here was not sufficient time available for the purposes of this report to undertake a revised resource model incorporating this information; it is recommended that an updated resource model be generated incorporating these missing drillholes plus any additional data to be drilled by Mirabela.***
- Mining of the first phases of the resource has identified that the SAP will impact on the resource recoveries and mining and milling strategies will be required to mitigate the effect of this material (see Section 18.2.6)).
- Ongoing reconciliation of the resource model is recommended. This should include a reconciliation to a declared ore mined figure (i.e. stockpile and mill reconciled mined figures) and should report the resource above the marginal economic cutoff grade (i.e. the Low grade cutoff discussed above). The reconciliation results should be incorporated into the decision process as to future resource modelling methods (e.g. OK or OK incorporating change of support).
- RC grade control is recommended to allow for longer term mine planning. The RC drilling should be undertaken with full QAQC protocols with a view that the RC data would also be used in any resource upgrades.
- Any future use of the blast hole rigs for grade control data should include an analysis of the grade data to the diamond and/or RC data to assess for potential biases due to sample quality issues.
- The resource has been reported with the inclusion of a 95% mine recovery factor, it is suggested that this practice continues.
- Further work is required to determine the effect of core loss due to SAP material on the likely Ni grade of the relevant 1m assayed interval.

Figure 17.1.5_1
Location of Additional Drillhole Data Not Utilised in Current Open Pit Resource



17.2 Dilution and Ore Losses

It is becoming common in the industry to develop resource models (particularly where nonlinear estimation techniques are applied), which essentially take into account potential dilution within the blocks, or adopt selective mining unit (SMU) as part of the resource modelling process. The Santa Rita mineral open pit mineral resource model has been assessed to achieve this outcome and hence through the uniform conditioning process, the mining model adopted is considered to be a 'diluted' model.

Mining recovery, based on the applied SMU, has been set to 95%. This is to allow for ore loss as a result of blasting, edge effects of cutbacks and wedges of potential mill feed left as a function of bench face advancement with pit depth.

17.3 Mineral Reserve Estimate

The mineral reserve estimate was completed by Carlos Guzman of NCL Brasil Ltda (NCL) an Independent Qualified Person for the purposes of NI 43-101. Additional information on mining can be found in Section 18.

17.3.1 Operating Parameters and Criteria

A mine plan was developed for the Santa Rita project to process 7.2M tonnes of ore per year with a peak total material movement rate of 50M tonnes per year. The mine is scheduled to work seven days per week or 365 days per year. Each day will consist of three 8 hour shifts. Four mining crews will cover the operation. Included in these operations will be normal drilling, blasting, loading, hauling activities, as well as the supporting functions of dewatering, grade control and equipment maintenance.

The study is based on operating the Santa Rita mine with excavators of 10 cubic meter capacity and trucks with a capacity of 90 tonnes for the ore in 5 metre passes, and 16.5 cubic metre capacity excavators with 136 tonnes trucks capacity for the waste in 15m benches. This type of equipment is able to develop the require productivity to achieve an annual total material movement of 50M tonnes and also to have good mining selectivity with the minor excavators as defined by the grade control activities. Whilst Mirabela is predominantly an owner-operator, Mirabela also contracts with mining contractors to supply and operate trucks, drill rigs and loaders.

17.3.2 Pit Optimisation and Design Parameters

The project's Mineral Resource model, which has been used for pit optimisation, is based on the non-linear resource estimation technique of uniform conditioning. This method enables the estimation of local recoverable resources at different selective mining unit sizes, which can be substantially smaller than the drilling density, without creating bias or over-smoothing local values.

Whittle Four-X pit optimisation software was applied in conjunction with Gemcom for the mining model preparation and actual optimisation runs.

The economic parameters assume a nominal 7.2Mtonnes per year treatment plant throughput rate.

Whittle Pit Optimisation Model Construction

The Whittle Four-X model development was carried out using Gemcom software. Whittle Four-X uses the amount of metal in a block for assessment, rather than the block's grade value. The process calculates the grade from the supplied tonnage and metal content, which are provided for each model block. The metal content for each block is calculated using the grade estimate derived from the uniform conditioning resource estimate.

Base Parameters

Table 17.3.2_1 summarises the base case economic parameters used for Whittle Four-X economic shells analysis and mine design.

Table 17.3.2_1
Santa Rita Deposit
Lerch-Grossman Optimisation Parameters

Metallurgical Recovery %	
F =	Ni/MgO*S
MgO =	Mg*1.658
Ni Recovery =	[95.335*F^2+12.105*F+0.4133]*1.05, MAX 0.9

Metal Prices	**USD/lb pay**	**USD/t pay**	**USD/% pay**	**Payability (%)**
Nickel price	8.000	17,636.96	176.37	
Smelter charges	1.948	4,293.80	42.94	89%
Net revenue	6.052	13,343.16	133.43	

Operating Costs	**Units**	**Quantity**
Process cost	USD/t ore	9.00
General and administrative	USD/t ore	1.86
CFEM and Landowner	USD/t ore	1.71
CBPM Royalty	USD/t ore	0.85
Transport cost	USD/t ore	1.55
Total process cost including concentrate	USD/t ore	14.98
Mining cost - average, including CAPEX	USD/t mined	1.96

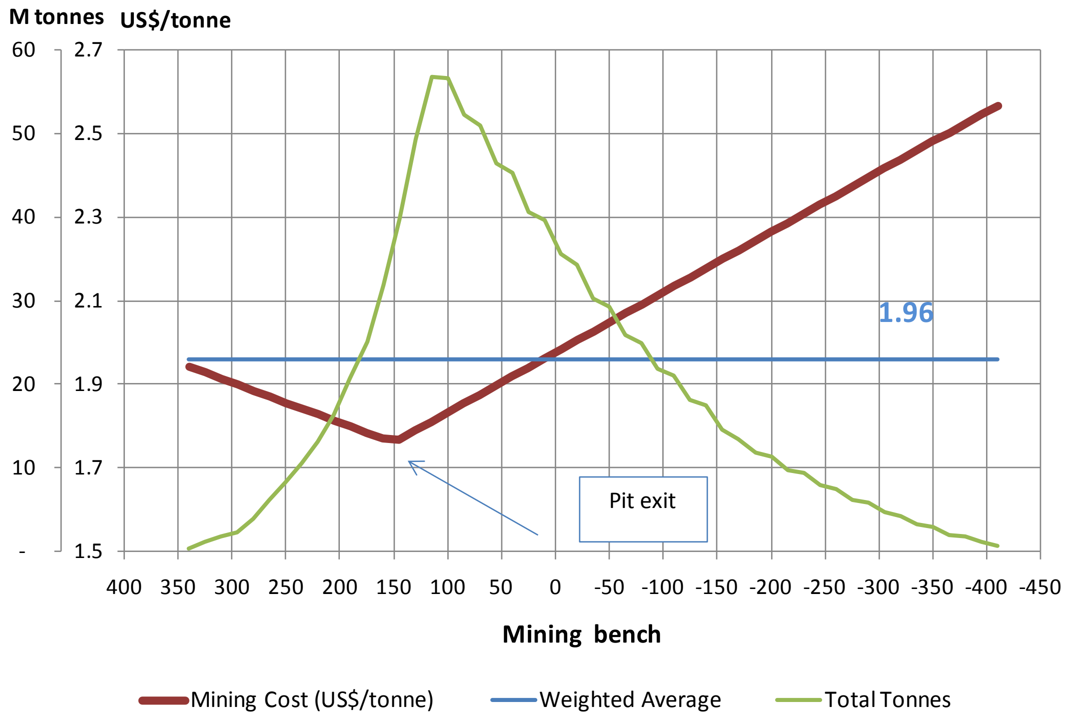
Note: Only Nickel adds value during the optimisation process.
Secondary elements prices and recoveries only for reporting purposes.

Mining Cost Details	
US$/t mined	
Grade Control Drilling	0.019
Drilling	0.119
Blasting	0.329
Loading	0.168
Hauling	0.350
Auxiliary Equipment	0.142
General mine	0.064
General maintenance	0.103
G&A	0.245
Tech Services	0.018
Total (US$/t)	**1.556**
CAPEX (US$/t)	0.404
Opex+Capex (US$/t)	**1.960**

The mining cost estimate for the pit optimisation process is based on opex/capex model developed by NCL for the Feasibility Study and updated by Mirabela according to the obtained results of 2010. The estimated average life of project mining cost was separated into various components such as fuel, explosives, tyres, parts, salaries etc. according to similar current operations in Brazil. This resulted in the mining cost estimate of approximately US$1.96 per tonne shown in Table 17.3.2_1.

Additionally to the estimated average mining cost, a variable cost with depth was modelled and used with the pit optimisation process, according on what is shown in Figure 17.3.2_1.

Figure 17.3.2_1
Variable Mining Cost with Depth



The metal prices, processing costs, refining costs, and processing recoveries were provided to NCL by Mirabela personnel, based on the 2010 results.

Slope Angles

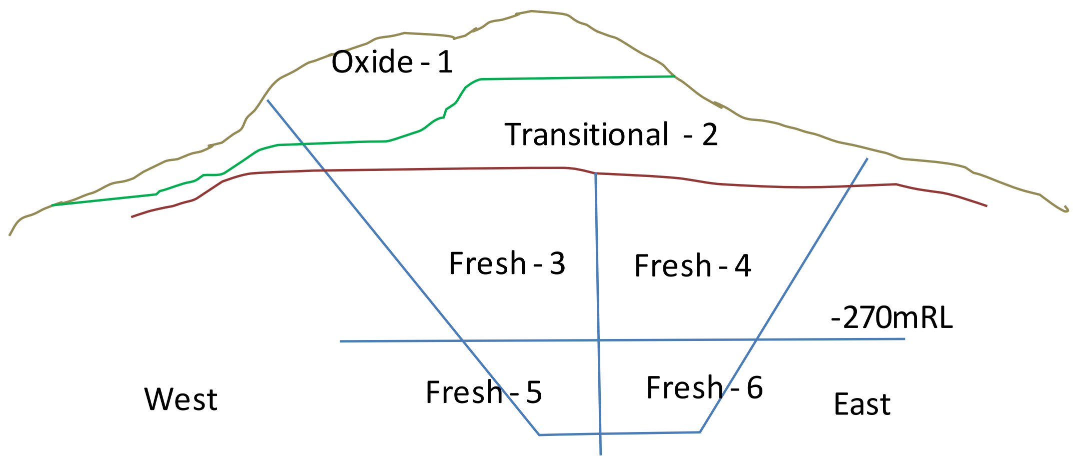
Slope angles, varying from 34° to 52°, were used for the optimisation process. This information was provided by VOGBR, based on the review of the BFS available data. Table 17.3.2_2 and Figure 17.3.2_2 summarises the values used.

The recommended angle for fresh rock was lowered down from 54º as an allowance for ramps during the following pit design stage.

Table 17.3.2_2
Santa Rita Deposit
Slopes Angles for Pit Optimisation

Geotechnical Domain	Overall Slope Angle (º)	Description
1	34º	Oxide
2	41º	Transitional
3	52º	Fresh, West wall, above -270mRL
4	49º	Fresh, East wall, above -270mRL
5	48º	Fresh, West wall, below -270mRL
6	45º	Fresh, East wall, below -270mRL

Figure 17.3.2_2
Slopes Configuration for Pit Optimisation



Whittle Four-X Economic Shells Results

Table 17.3.2_3 shows the results of the final optimisation run. Pit shells were generated for several nickel prices, from US$5.0/lb to US$10.0/lb, using the discounted technique, applying a discount rate of 8% every 75 vertical metres (5 benches per year). Figure 17.3.2_3 and Figure 17.3.2_4 show graphically those results and compared with the pit design from the last reserves exercise, developed in February 2009. Measured and indicated resources were used as only these can be converted into reserves. Inferred mineral resources are not converted to reserves and are instead treated as waste for mine planning purposes.

Figure 17.3.2_3
Tonnes and Grades versus Pit Number

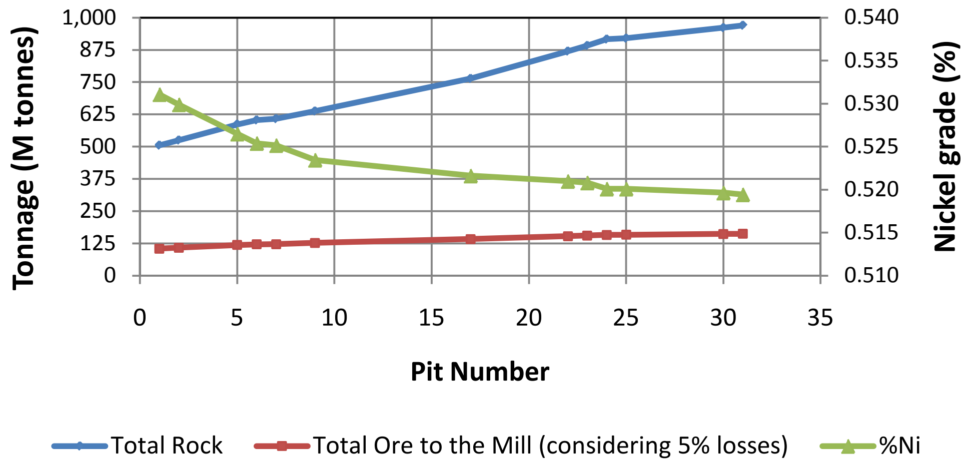
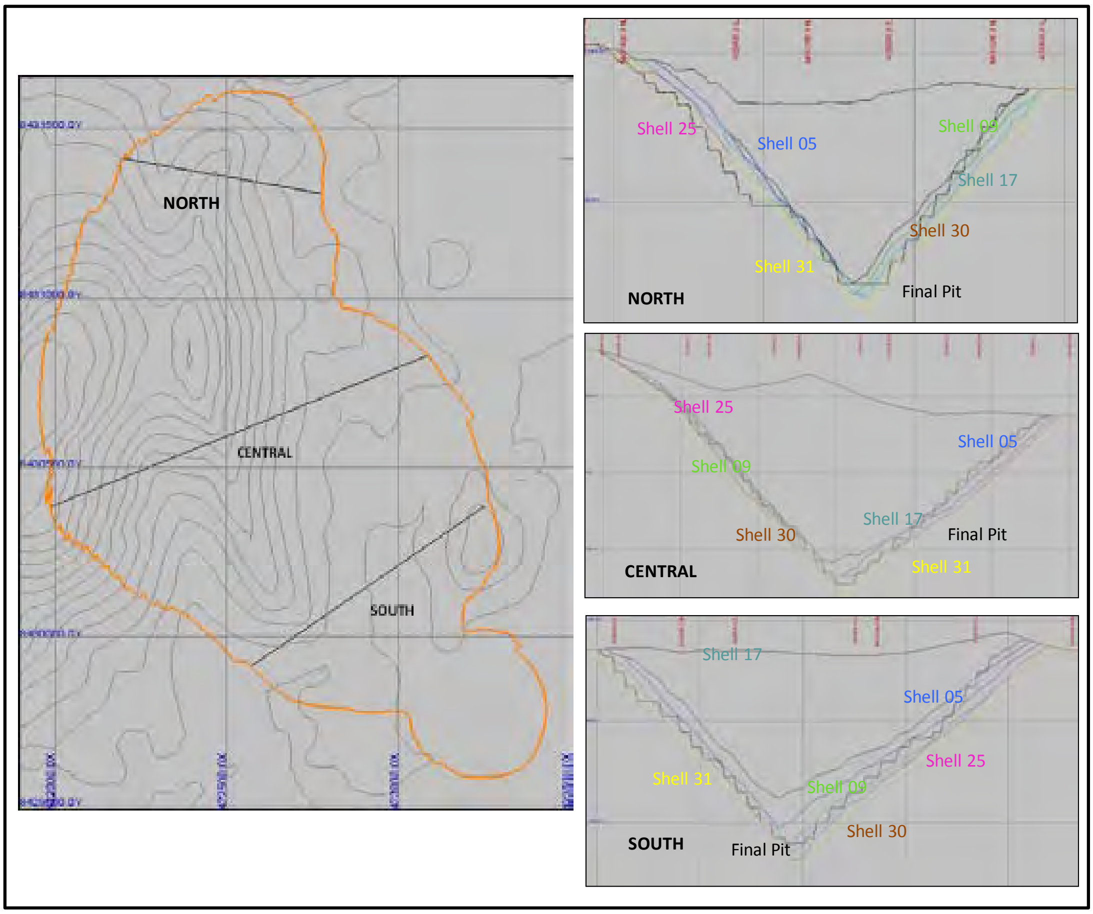


Table 17.3.2_3
Santa Rita Deposit
Lerch-Grossman Economic Shells Results

Pit	Total Material (Ktonnes)	Strip Ratio	Total Ore to the Mill (5% Ore Losses)		Recovery (%)	Recovered Ni (Ktonnes)	Costs		
			Ktonnes	%Ni			Average (US$/lb)	Incremental (US$/lb)	Mining (US$/tonne)
1	505,294	3.82	104,742	0.531	68.6%	340	5.32	5.32	1.90
2	525,018	3.85	108,320	0.530	68.6%	351	5.34	5.80	1.90
5	586,270	3.93	118,908	0.526	68.5%	382	5.40	6.04	1.91
6	602,927	3.96	121,673	0.525	68.5%	390	5.41	6.19	1.91
7	608,037	3.97	122,460	0.525	68.5%	392	5.42	6.24	1.91
9	637,635	4.02	127,084	0.523	68.4%	405	5.45	6.49	1.92
17	763,765	4.37	142,114	0.522	68.6%	453	5.57	6.54	1.94
22	869,738	4.67	153,314	0.521	68.7%	489	5.66	6.80	1.95
23	891,500	4.73	155,579	0.521	68.7%	495	5.68	7.16	1.95
24	916,362	4.79	158,156	0.520	68.7%	503	5.70	7.24	1.96
25	919,732	4.81	158,435	0.520	68.7%	504	5.70	7.48	1.96
30	960,627	4.93	161,883	0.520	68.8%	515	5.74	7.57	1.96
31	969,943	4.97	162,544	0.519	68.8%	517	5.75	8.21	1.96

Figure 17.3.2_4
Pit Shells Cross Sections



The optimisation was generated considering only nickel adding value to the resource model blocks and 5% ore loss.

Physically analysing the obtained shells, three sectors can be identified, named as north pit, central pit and south pit. The three of them join together in the final geometry.

The table and figures above show that the first 100M tonnes of ore are at very low risk, with a strip ratio of 3.8 to 1 and an incremental cost of US$5.32/lb.

From that point, 175ktonnes of payable nickel are added (578ktonnes of nickel contained in concentrate) with a systematic increase of the strip ratio at higher mining costs.

The last shell with an incremental cost lower than the evaluating price of US$8.0/lb corresponds to pit 30, which contains a total of 161.9M tonnes of ore and payable nickel of 515 ktonnes. Pit 30 was then the selected as final shell and validate the final pit designed for the last reserves exercise of February 2009.

The additional recovered nickel, comparing both reserves exercises, comes from lowering the UC cut-off grades, what reconcile better with the production during 2010, and the increase of the average nickel recovery.

It is important to note that the parameters shown in Table 17.3.2_3 are initial estimates, done at the beginning of the project, for the purpose of starting the design process. They are not the final economic parameters developed for this study.

17.3.3 Pit and Mining Phases Designs

<u>Final Pit Designs</u>

The final pit design was based on the economic shell obtained with an incremental cost lower than US$8.0 per pound and with variable slopes angle according to geotechnical domains, ranging from 39º to 56º. Table 17.3.3_1 shows the key open pit design parameters.

Table 17.3.3_1
Santa Rita Deposit
Pit Design Parameters

Haul Road Width	25m
Haul Road Grade	10%
Bench Height	15m
Stacked Bench Height with 2 Benches Stacked (fresh rock)	30m
Nominal Minimum Mining Phase Width	70m
Batter Angle	as per geotechnical domains
Berm Width	as per geotechnical domains

Geotechnical Domains	**Batter Height (m)**	**Batter Angle (º)**	**Berm Width (m)**
Oxide	15	50	10
Transition	15	65	10
Fresh Rock	30	80	15

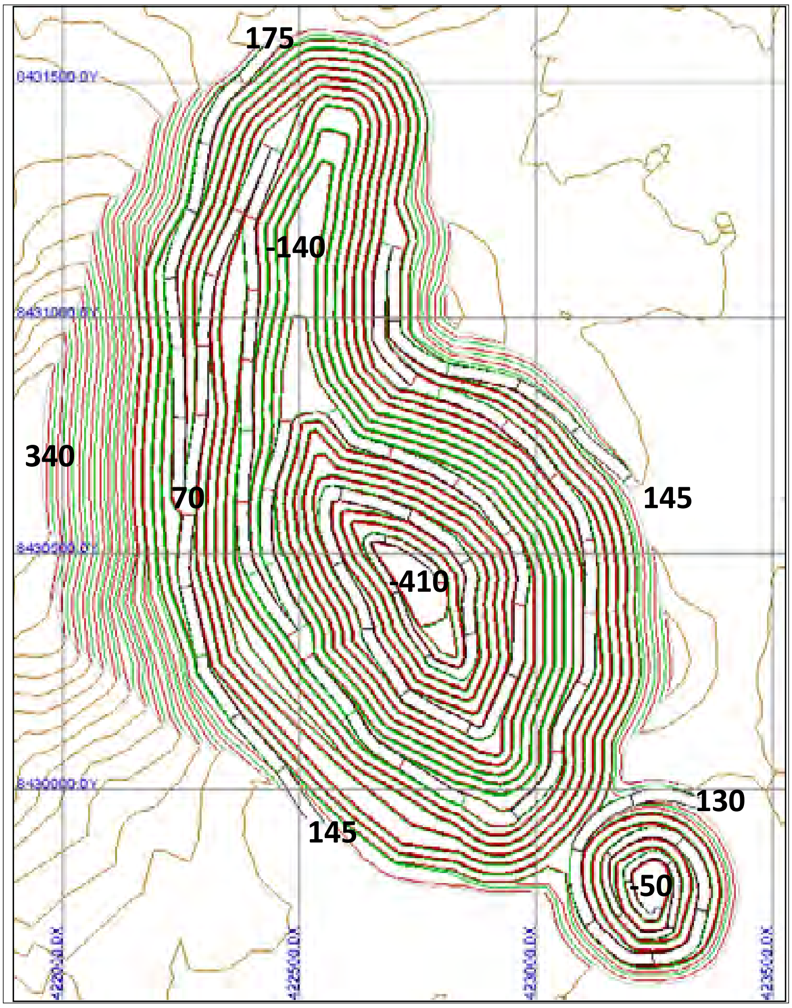
The road width of 25 metres is to accommodate the selected 96 and 136 tonne trucks. NCL used the 10% road gradient, which is common in the industry for these types of trucks. In general, the last three benches of every mining phase were designed with a ramp of 15m wide.

An independent pit was designed at the south that deeps down to -50m elevation. The last five benches of this minor pit were designed with a ramp of 15m wide.

The current mine plan is designed with 15m benches stacked to 30 metres (i.e. double benching) for the fresh rock material. Mining costs for this report are based on blasting 15m benches for the waste zones and 5m slices for the ore, to assure a good selectivity. As a high strip ratio is expected, this differential drilling and blasting operations don't seem to be difficult, as large areas are going to be 100% waste.

Figure 17.3.3_1 shows the final pit design. There is a single exit on the east side of the pit and two exits on the west side of the pit that allow independent access to the ROM-pad area, primary crusher and to the waste storage areas. The final pit is 2300m long in the north-south direction and 1250m wide in the east-west direction. The pit bottom is at the -410 meter elevation. The highest wall is about 750 meters on the west side. The total area disturbed by the pit is about 173 hectares.

Figure 17.3.3_1
Final Pit Design



Mining Phases Designs

NCL designed a set of eight mining phases for the Santa Rita Project Figure 17.3.3_2 shows the phase outlines on the 115 mining bench.

Phases 1 and 2 target the ore in the highest grade and lowest strip ratio in the northern area of the mine, down to 70m elevation and 25m elevation respectively.

Phase 3 corresponds to an initial pit at the central-south area down to 40m elevation.

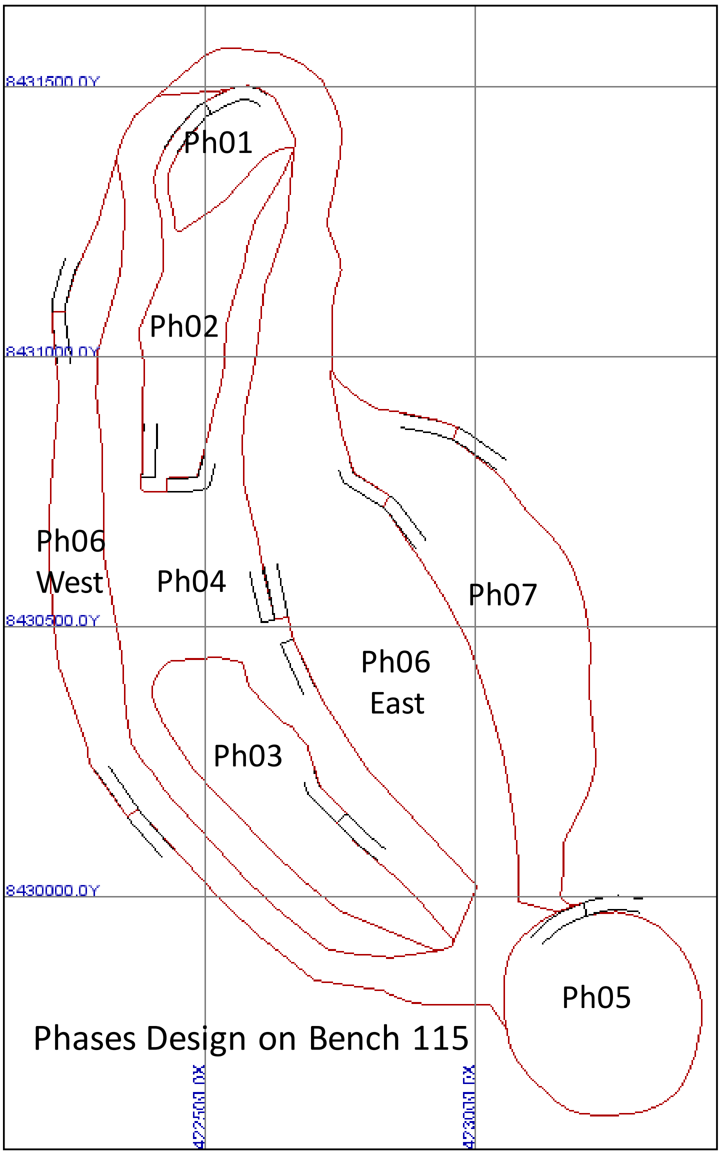
Phase 4 joins together the north pit with the south pit and deeps down to -35m elevation at the centre.

Phase 5 corresponds to the independent pit at the south.

Phase 6 is divided into two push-backs, the east that goes down -140m elevation and then the west wall that expands to final configuration; going down to -230m.

Phase 7 corresponds to the final expansion at the east and deeps down to the final configuration at -410m elevation.

Figure 17.3.3_2
Phases Design on 115 Bench



Tabulation of Pit Contained Resources

Table 17.3.3_3 summarises the pit contained resources for the final design pit at several different nickel recovered cutoff grades, and Table 17.3.3_4 for the individual mining phases, both summaries were updated with the mined volumes until December 2010. The tables include only measured and indicated resources using the updated September 2008 UC block model with lower cutoffs, inferred is considered as waste material.

For mine production schedule purposes a “recovered nickel” grade was calculated to take into account the effect of variable recoveries for nickel, as a function of the Nickel, Manganese and Sulphur content on each estimated block, as previously detailed in Table 17.4.2_1. Secondary elements were taken into account only for reporting purposes and do not interfere in the definition of ore. Table 17.3.3_2 shows the details for the break even cutoff grade calculation for “recovered nickel”. According to this, every block from the resource model contained in the final pit is considered as ore if its “recovered nickel” grade is greater or equal to 0.13%.

Table 17.3.3_2 **Santa Rita Deposit** **Cutoff Calculation for Recovered Grade**	
Processing cost per tonne	14.98
Overall met. Recovery (for Ni recovered)	89%
Metal price – Net per tonne	133.43
Cutoff Grade Ni % recovered	0.13

At 0.13% "recovered nickel" cutoff grade, the final pit contains 167.4M tonnes of ore at 0.52% nickel and 961.5M tonnes of total material.

NCL does not consider Table 17.3.3_3 and Table 17.3.3_4 a statement of potential mineable reserves. It is included to provide a distribution of ore grades in the pit and various phases. The mineral reserve is based on the mine production schedule and is shown in Table 17.3.4_1.

Table 17.3.3_3
Santa Rita Deposit
Resources in Final Pit at Various Cutoff Grades

Cutoff (% Ni Recovered)	**Ore**							**Contained Nickel (ktonnes)**	**Strip Ratio**
	Ktonnes	**Ni (%)**	**Cu (%)**	**Co (%)**	**Pd (ppb)**	**Pt (ppb)**	**Au (ppb)**		
0.60	22,826	0.80	0.21	0.018	47	113	75	183	41.1
0.30	85,752	0.64	0.17	0.016	50	107	69	550	10.2
0.13	*167,385*	*0.52*	*0.13*	*0.015*	*40*	*86*	*55*	*872*	*4.7*
0.00	169,345	0.52	0.13	0.015	40	86	55	877	4.7
Total Material	**961,495 ktonnes**								

Table 17.3.3_4
Santa Rita Deposit
Resources Contained in Mining Phases at Various Cutoff Grades

Cutoff [1]	**Ore Ktonnes**	**Nickel (%)**	**Nickel (ktonnes)**	**Strip Ratio**
Mining Phase 1			**Total Ktonnes 7,027**	
0.60	486	0.776	3.8	13.46
0.30	1,811	0.652	11.8	2.88
0.13	2,269	0.607	13.8	2.10
0.00	2,270	0.607	13.8	2.10
Mining Phase 2			**Total Ktonnes 64,066**	
0.60	1,957	0.775	15.2	31.73
0.30	7,191	0.646	46.5	7.91
0.13	11,255	0.570	64.2	4.69
0.00	11,370	0.567	64.5	4.63
Mining Phase 3			**Total Ktonnes 28,448**	
0.60	320	0.749	2.4	87.96
0.30	3,115	0.576	17.9	8.13
0.13	10,878	0.433	47.1	1.62
0.00	11,137	0.429	47.8	1.55
Mining Phase 4			**Total Ktonnes 158,595**	
0.60	2,775	0.800	22.2	56.15
0.30	15,120	0.635	96.1	9.49
0.13	33,779	0.504	170.4	3.70
0.00	34,337	0.500	171.8	3.62
Total			**Total Ktonnes 961,495**	
0.60	22,826	0.802	183.0	41.12
0.30	85,752	0.641	549.7	10.21
0.13	167,385	0.521	872.2	4.74
0.00	169,345	0.518	877.3	4.68

Cutoff [1]	**Ore Ktonnes**	**Nickel (%)**	**Nickel (ktonnes)**	**Strip Ratio**
Mining Phase 5:			**Total Ktonnes 25,513**	
0.60	81	0.715	0.6	315.14
0.30	2,432	0.532	13.0	9.49
0.13	4,027	0.474	19.1	5.34
0.00	4,029	0.474	19.1	5.33
Mining Phase 6A			**Total Ktonnes 281,752**	
0.60	4,197	0.783	32.9	66.14
0.30	19,085	0.622	118.8	13.76
0.13	44,018	0.486	213.9	5.40
0.00	44,786	0.482	215.9	5.29
Mining Phase 6B			**Total Ktonnes 162,508**	
0.60	5,385	0.843	45.4	29.18
0.30	17,617	0.679	119.7	8.22
0.13	28,158	0.583	164.3	4.77
0.00	28,296	0.582	164.7	4.74
Mining Phase 7			**Total Ktonnes 233,587**	
0.60	7,626	0.796	60.7	29.63
0.30	19,381	0.650	126.0	11.05
0.13	33,001	0.544	179.6	6.08
0.00	33,120	0.543	179.9	6.05

1. Cutoff : % Ni recovered

17.3.4 Mine Production Schedule

A mine production schedule was developed to show the ore tonnes, metal grades, total material and waste material by year throughout of the life of the mine. The distribution of ore and waste contained in each of the mining phases was used to develop the schedule, assuring that criteria such as continuous ore exposure, mining accessibility, and consistent material movements were met.

NCL used an in-house developed system to evaluate several potential production mine schedules. Required annual ore tonnes and user specified annual total material movements are provided to the algorithm, which then calculates the mine schedule. Several runs at various proposed total material movement schedules were done to determine a good production schedule strategy. It is important to note that this program is not a simulation package, but a tool for calculation of the mine schedule and haulage profiles for a given set of phases and constraints that must be set by the user.

The mine plan developed by NCL does not include any special provisions for dilution because the resource block model is considered as already diluted. NCL considered a 95% ore mining recovery due to the disseminated characteristics of the ore and the proximity of the economical cutoff to the background nickel content of the rock. Nevertheless, careful grade control must be carried out during mining to minimise misplaced ore due to the important effect of head grade on nickel recovery. These efforts should include the following standard procedures:

- Implement an intense and systematic program of sampling, mapping, laboratory analyses, and reporting.
- Utilise specialized in-pit, bench sampling drills for sampling well ahead of production drilling and blasting.
- Use of excavators and benches no higher than 5m (as presently being planned and executed) to selectively mine ore zones.
- Maintain top laboratory staff, equipment, and procedures to provide accurate and timely assay reporting.
- Utilise trained geologists and technicians to work with excavator operators in identifying, marking, and selectively mining and dispatching ore and waste.

Table 17.3.4_1 shows the mine production of ore for each mining year. The schedule is based on 7.2M tonnes per year to the processing plant. The table also shows the total material movement from the mine by year, with a constant Mine Movement of 50M tonnes during a most part of the plan. The limit on the ore production is the number of benches that it is possible to mine in a year in a single phase, or vertical development per phase.

Two waste rock storage areas, one at the east of the pit and other to the south of the pit, were designed for the Santa Rita Project. Details on the location can be found on Section 18.

Table 17.3.4_1
Santa Rita Deposit
Mine Production Schedule

Mining Year	Mined Ore			Waste (Ktonnes)	Total Ktonnes	Strip Ratio	Mined Ore (Ktonnes)	
	Ore Ktonnes	Nickel (%)	Nickel (ktonnes)				Direct Tipping	To Stockpile
2011	4,911	0.509	26.04	35,847	40,758	7.30	2,456	2,456
2012	7,200	0.518	37.3	33,299	40,499	4.62	3,600	3,600
2013	7,200	0.529	38.1	36,163	43,363	5.02	3,600	3,600
2014	7,200	0.528	38.0	42,800	50,000	5.94	3,600	3,600
2015	7,200	0.482	34.7	42,800	50,000	5.94	3,600	3,600
2016	7,200	0.497	35.8	42,800	50,000	5.94	3,600	3,600
2017	7,200	0.490	35.3	42,800	50,000	5.94	3,600	3,600
2018	7,199	0.479	34.5	42,801	50,000	5.94	3,600	3,600
2019	7,200	0.479	34.5	42,800	50,000	5.94	3,600	3,600
2020	7,200	0.490	35.3	42,800	50,000	5.94	3,600	3,600
2021	7,200	0.481	34.6	42,800	50,000	5.94	3,600	3,600
2022	7,200	0.501	36.1	42,800	50,000	5.94	3,600	3,600
2023	7,200	0.523	37.7	42,800	50,000	5.94	3,600	3,600
2024	7,200	0.578	41.6	42,800	50,000	5.94	3,600	3,600
2025	7,200	0.528	38.0	42,800	50,000	5.94	3,600	3,600
2026	7,200	0.537	38.7	42,800	50,000	5.94	3,600	3,600
2027	7,200	0.534	38.4	39,000	46,200	5.42	3,600	3,600
2028	7,200	0.544	39.2	39,000	46,200	5.42	3,600	3,600
2029	7,200	0.478	34.4	38,877	46,077	5.40	3,600	3,600
2030	7,200	0.574	41.3	11,319	18,519	1.57	3,600	3,600
2031	7,200	0.563	40.5	7,451	14,651	1.03	3,600	3,600
2032	7,200	0.574	41.3	3,811	11,011	0.53	3,600	3,600
2033	2,906	0.637	18.5	1,312	4,218	0.45	1,453	1,453
Total	**159,015**	**0.521**	**828.8**	**802,480**	**961,495**	**5.05**	**79,507**	**79,507**

The total of the mined ore will be hauled to a ROM-pad area close to the primary crusher for later rehandle and blending to feed the processing plant. It has been considered that 50% of the mined ore will be for direct tipping and the difference to complete the plant feed scheduled will be rehandled.

The plant feed is shown in Table 17.3.4_2. The plant feed also include 0.276 M tonnes of ore, corresponding to the situation of three stockpiles at the end of December 2010, rehandled and sent to the plant during 2011 and 2012. Tonnage and grades of the stockpiles were provided to NCL by Mirabela personnel and were also affected by the 5% of ore losses.

Recovery data used in the optimisation is summarised in Section 18.3. A desliming process is also being considered for the Mill and is discussed in more detail in Section 18.2.5.

Table 17.3.4_2 Santa Rita Deposit Plant Feed Schedule										
Mining Year	Plant Feed								Nickel Recovery (%)	Recovered Nickel (ktonnes)
	Ore Ktonnes	Nickel (%)	Nickel Ktonnes	Copper (%)	Cobalt (%)	Palladium (ppb)	Platinum (ppb)	Gold (ppb)		
2011	5,188	0.502	26.0	0.129	0.022	29.7	70.4	45.5	64.5	16.8
2012	7,200	0.518	37.3	0.127	0.015	38.7	84.9	51.3	64.2	23.9
2013	7,200	0.529	38.1	0.123	0.015	40.6	91.2	53.8	66.5	25.3
2014	7,200	0.528	38.0	0.134	0.015	56.0	92.4	55.4	69.5	26.4
2015	7,200	0.482	34.7	0.125	0.014	51.1	90.3	56.0	66.0	22.9
2016	7,200	0.497	35.8	0.123	0.015	42.2	84.2	51.0	65.4	23.4
2017	7,200	0.490	35.3	0.125	0.014	41.0	84.0	50.6	65.5	23.1
2018	7,199	0.479	34.5	0.121	0.014	42.1	87.3	52.2	63.7	22.0
2019	7,200	0.479	34.5	0.124	0.014	35.4	75.7	46.0	64.5	22.2
2020	7,200	0.490	35.3	0.126	0.014	39.2	82.9	50.7	65.5	23.1
2021	7,200	0.481	34.6	0.128	0.014	29.5	61.4	40.8	67.2	23.3
2022	7,200	0.501	36.1	0.132	0.014	35.1	78.8	49.5	68.1	24.6
2023	7,200	0.523	37.7	0.136	0.015	39.0	86.9	56.5	68.5	25.8
2024	7,200	0.578	41.6	0.140	0.016	58.2	115.3	72.0	66.4	27.6
2025	7,200	0.528	38.0	0.138	0.015	40.0	91.4	59.2	68.9	26.2
2026	7,200	0.537	38.7	0.140	0.015	42.5	97.7	63.4	69.1	26.7
2027	7,200	0.534	38.4	0.140	0.015	44.1	94.5	63.7	69.3	26.6
2028	7,200	0.544	39.2	0.146	0.015	35.5	79.1	56.2	72.8	28.5
2029	7,200	0.478	34.4	0.133	0.014	33.3	70.2	48.2	68.6	23.6
2030	7,200	0.574	41.3	0.157	0.015	38.6	88.4	62.4	76.0	31.4
2031	7,200	0.563	40.5	0.152	0.015	34.5	85.4	61.4	75.5	30.6
2032	7,200	0.574	41.3	0.151	0.015	35.5	92.2	61.5	75.6	31.2
2033	2,906	0.637	18.5	0.170	0.016	44.5	112.9	72.7	77.7	14.4
Total	**159,291**	**0.521**	**829.8**	**0.170**	**0.016**	**44.5**	**112.9**	**72.7**	**68.7**	**569.8**

* Ni recovery on a block by block basis, applying 5% increase from 2013 due to desliming plant

17.3.5 Mineral Reserve

The mineral resource calculated in September 2008 was used for the conversion to mineral reserve described below.

Mining reserve analyses were carried out with Whittle Four-X, a Lerchs-Grossman based package, to develop a series of nested pits for the mineral resource area, considering the full open pit option and end of December 2010 topography.

Optimised shells obtained only with sulphide resources as ore were selected as guides for mine designs. The mineral reserves are defined as mineral resources contained by the pit, above the internal cutoffs grade of 0.13% of recovered nickel and applying a 5% of ore losses. Contained measured resources are transformed to proven reserves and contained indicated resources are transformed into probable reserves. Inferred mineral resources are not converted to mineral reserves and are instead treated as waste for mine planning purposes.

It is the opinion of the Qualified Person of NCL that the mine production schedule defines the mineral reserve for a mining project. The total update mineral reserve for the Santa Rita project amounts to 152M tonnes at a nickel grade of 0.532% and 580.6ktonnes of recovered nickel. Table 17.3.5_1 summarises the updated mineral reserve estimate.

Table 17.3.5_1
Santa Rita Deposit
Proven & Probable Mineral Reserves 1) 2) 3)
current as at end December 2010

Classification[1]	Tonnes (million)	Nickel Grade (%)	Copper Grade (%)	Cobalt Grade (%)	Recovered Nickel (ktonnes)
Proven	16.7	0.57	0.14	0.016%	64.1
Probable	142.6	0.52	0.13	0.015%	505.7
Total	**159.3**	**0.52**	**0.13**	**0.015%**	**569.8**

1. Contained Ni – 829,800t (1,829 million lb); Strip ratio – 5.0 to 1; Weighted average recovery – 68.7% Ni.
2. The Mineral Reserves as set out in the table above have been estimated by Carlos Guzmán of NCL Brasil Ltda, who is a Qualified Person under NI 43-101 and Member of the AusIMM.
3. Numbers may not add up due to rounding.

The difference between the reported reserves of Table 17.3.5_1 and the resources contained in final pit of Table 17.3.3_3 corresponds to the assumed 5% losses during mining operations and the ore stockpiled at the end of December 2010.

All mining modifiers, including aspects relating to metallurgy, processing, infrastructure and/or mining have been included in the Mineral Reserve determination. Environmental, permitting, legal, title, taxation, socio-economic, marketing, and or political factors have also been considered, where relevant, and are discussed in various sections of this report (refer to Sections 4, 16, 18 and 19).

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

18.1 Mining and Processing Operations

The Santa Rita Project is a purpose-built greenfield open-cut mine located alongside a conventional nickel sulphide concentrate processing plant, which minimizes haul distances from the mine faces to the ROM pad. Mirabela employs conventional drill and blast, load and haul mining activities at the Santa Rita Project using diamond production drills, O&K and CAT excavators and CAT dump trucks. Whilst Mirabela is predominantly an owner-operator, Mirabela also contracts with mining contractors to supply and operate trucks, drill rigs and loaders.

Mirabela's processing plant was constructed using equipment from leading suppliers, including Outotec and Metso, and was commissioned in October 2009. The plant is a conventional nickel sulphide concentrator, which consists of a primary crusher, a conventional SAG mill and ball mill, a flotation circuit and a dewatering/filtration section. Mined ore is hauled to a ROM pad close to the primary crusher for either direct feed to the crusher or stockpiling and blending. Material is delivered to the primary crusher via a front end loader and/or dump trucks with a capacity of up to 150 tonnes. Following crushing, material is conveyed to a coarse ore stockpile, where it is fed at a steady rate to the milling circuit. The milling circuit consists of an 8.0 MW SAG mill operating in a closed circuit with a pebble crusher, which together operate in open circuit with a 5.8 MW ball mill to produce the feed to the flotation circuit.

The flotation circuit is a conventional rougher/scavenger/cleaner flotation circuit with the first stage of flotation occurring in the rougher flotation cells, the underflow from the rougher feeding the second stage scavenger flotation circuit and the overflow from the roughers and scavengers feeding a third stage of flotation in the cleaner circuit. The product from the flotation cells feeds a concentrate thickener before feeding the Larox filter, which produces the final concentrate product, which drops from the Larox filter into the concentrate warehouse. The final concentrate product has nickel grades of between 13.0% and 14.5%, copper grades of between 4.5% and 5.0% and cobalt grades of between 0.2% and 0.25%. The nickel concentrator is currently operating with average nickel recoveries marginally above 60%, with 62% in December 2010, an average of 60% achieved for the three months ended December 31, 2010 and an average of 53% achieved for the twelve months ended December 31, 2010. Provided that the proposed expansion (including desliming) is implemented as planned, Mirabela should achieve nickel recoveries on excess of 65% over the LOM. The 2010 full year production totalled 10,375t nickel in concentrate.

Mirabela has developed a method through which to remove the chloritic altered fines material prior to the flotation circuit through a desliming mechanical separation process to be conducted downstream of the SAG mill. The desliming process is a relatively simple, low cost process, comprising two stages of cyclones downstream of the grinding circuit, to remove the chloritic altered fines material before the flotation circuit. The desliming plant is planned to be operational by Q3 2011 and is expected to achieve recoveries of better than 90% of the sulphidic nickel in the ore.

Mirabela's tailings storage facility has been designed to contain 100 million tonnes of tailings. The current height of 14 metres is sufficient for the first three years of production. Two wall lifts are scheduled for years 3 and 15 to accommodate the expected 17 year mine life of the Santa Rita project.

The Santa Rita Project site also includes a modern, fully-equipped laboratory located alongside the processing plant that enables the necessary material sampling and testing to be conducted onsite.

Pursuant to the offtake agreement with Votorantim, Votorantim is responsible for collecting Mirabela's concentrate at the Santa Rita mine gate. Votorantim's trucks arrive on a daily basis, Monday through Saturday. Mirabela loads nickel concentrate onto Votorantim's trucks in the concentrate warehouse using a front-end loader. Pursuant to its offtake agreement with Norilsk, Mirabela is responsible for shipping nickel concentrate (including the costs thereof) on a CIF basis to Rotterdam, Holland. The concentrate is then shipped by Norilsk from Rotterdam to Norilsk's Harjavalta refinery in Finland. In making deliveries to Norilsk, the concentrate is loaded onto contractor trucks from the Mirabela concentrate warehouse and transported 140km on sealed roads to the Port of Ilhéus, where the concentrate is offloaded into a warehouse rented by Mirabela within the port. From the warehouse, nickel concentrate is loaded into skips that are lowered via crane into the ship's hold before the bottom of the skip is opened, allowing the concentrate to be discharged into the hold.

Indicative production forecasts for 2011 and 2012 are shown in Table 18.1_1.

Table 18.1_1
Production Forecast

	CY2010A (kt)	CY2011F (kt)	CY2012F (kt)
Nickel in Concentrate Produced	10,375	16,800	23,900

Source: MNL ASX Announcements and Life of Mine Model (Feb 2011).

18.1.1 Open Pit Operations

The current mining plan is based on exploiting the Santa Rita sulphide nickel deposit at a plant throughput of 7.2Mtpa by conventional open pit mining techniques, using excavators of $10m^3$ capacity and trucks with a capacity of 90t for the ore in 5m flitches, and $16.5cm^3$ capacity excavators with 136t trucks capacity for the waste in 15m benches. This type of equipment is able to develop the require productivity to achieve an annual total material movement of 50M tonnes and also to have good mining selectivity with the minor excavators as defined by the grade control activities. The fleet is complemented with drilling rigs for ore and waste, as 100% of material is defined as hard rock. Auxiliary equipment includes track dozers, wheel dozers, motor graders and water truck. Additionally a reverse circulation drill rig is utilised for grade control drilling purposes.

The operations are planned to be performed and managed by the owner up to a maximum capacity of 50Mt per year. The extra requirement, according to the mine schedule and longer hauling distances, is planned to be executed by mining contractors (Table 18.1.1_1). Table 18.1.1_2 shows the major equipment fleet requirement and replacement.

Table 18.1.1_1
Mine Production Schedule
Owner / Contract Mining Distribution

Mining Year	Total Mined Ktonnes	Owner Mining (Ktonnes)			Contract Mining (Ktonnes)		
		Drilling	Loading	Hauling	Drilling	Loading	Hauling
2011	40,758	21,203	40,122	33,838	19,555	636	6,920
2012	40,499	22,444	37,574	37,574	18,055	2,925	2,925
2013	43,363	43,363	43,363	43,363	0	0	0
2014	50,000	50,000	50,000	39,843	0	0	10,157
2015	50,000	50,000	50,000	42,434	0	0	7,566
2016	50,000	50,000	50,000	50,000	0	0	0
2017	50,000	50,000	50,000	50,000	0	0	0
2018	50,000	50,000	50,000	50,000	0	0	0
2019	50,000	50,000	50,000	48,757	0	0	1,243
2020	50,000	50,000	50,000	49,877	0	0	123
2021	50,000	50,000	50,000	48,847	0	0	1,153
2022	50,000	50,000	50,000	50,000	0	0	0
2023	50,000	50,000	50,000	47,308	0	0	2,692
2024	50,000	50,000	50,000	50,000	0	0	0
2025	50,000	50,000	50,000	49,501	0	0	499
2026	50,000	50,000	50,000	50,000	0	0	0
2027	46,200	46,200	46,200	46,200	0	0	0
2028	46,200	46,200	46,200	40,912	0	0	5,288
2029	46,077	46,077	46,077	35,528	0	0	10,549
2030	18,519	18,519	18,519	18,519	0	0	0
2031	14,651	14,651	14,651	14,651	0	0	0
2032	11,011	11,011	11,011	11,011	0	0	0
2033	4,218	4,218	4,218	4,218	0	0	0
Total	**961,495**	**923,885**	**957,934**	**912,380**	**37,610**	**3,561**	**49,115**

Figure 18.1.1_1 is an overview of the mining infrastructure plan and shows the mining lease boundary.

18.1.2 Underground Operations

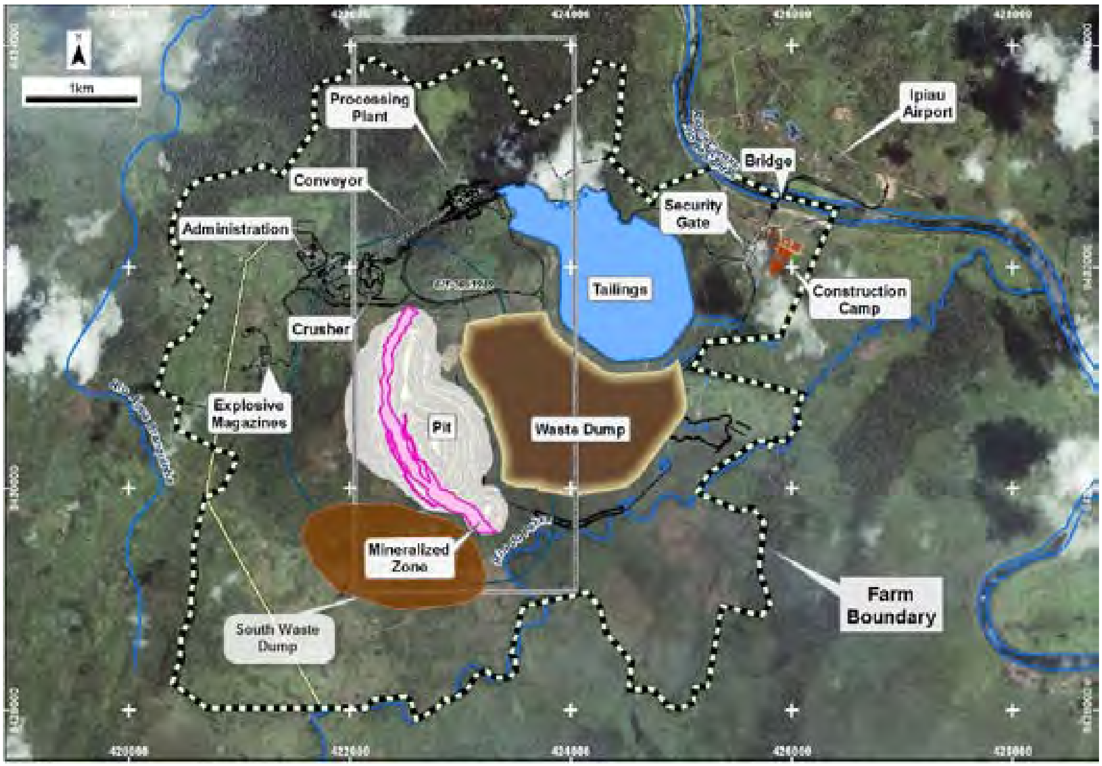
Mirabela is exploring the potential for an expansion of Santa Rita through development of an underground mining operation beneath the open-pit. No new work has been undertaken on the potential for underground operations since 2008.

Table 18.1.1_2

Mine Major Equipment Fleet Requirement and Replacement

Equipment Type:		**Time Period**																						
		2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
Drill rigs (ROC L8)	Req	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	Adq/Repl			1			3			1			3			1			3					
Drill rigs (PV271)	Req	1	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	1	1	1
	Adq/Repl			1	1		1			1	1		1			1	1		1					
Drill rigs (DML)	Req	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2				
	Adq/Repl			2			1			2			1			2								
O&K RH90C (10 cu. m)	Req	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Adq/Repl			1			1			1			1			1			1					
O&K RH120E (16.5 cu. m)	Req	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	1
	Adq/Repl						3						3						3					
CAT 994f Wheel Loader	Req	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3				
	Adq/Repl				1		2				1		2				1		2					
CAT 992K Wheel Loader	Req	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Adq/Repl						1						1						1					
CAT777F truck (90mt)	Req	6	6	6	6	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Adq/Repl						1						1											
CAT785 truck (136mt)	Req	12	12	16	16	16	28	32	37	38	38	38	39	41	41	41	47	49	49	49	29	24	19	20
	Adq/Repl			4			24	4	5	5			25	6	5	5	6	2	25	6				
Track Dozer	Req	5	5	5	5	5	5	4	4	4	4	4	4	4	4	4	4	4	4	3	2	2	2	2
	Adq/Repl						4						4						3					
Wheel Dozer	Req	3	3	3	4	4	4	4	4	4	4	4	4	3	3	3	3	3	3	3	2	2	2	2
	Adq/Repl						4						4						3					
Motor Grader	Req	3	3	4	4	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Adq/Repl						2						2						2					
Water Truck (20000 liter)	Req	3	3	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3	3	2	2	2	2
	Adq/Repl						4						4						3					
RC Grade control drill rig	Req	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Adq/Repl						1						1						1					

Figure 18.1.1_1
Santa Rita Project Infrastructure



18.2 Metallurgical Processing

The Santa Rita processing plant is conventional and consists of crushing, grinding, flotation, thickening and filtration to produce a saleable nickel concentrate, whilst flotation tailings are pumped to a storage facility.

Its nameplate capacity is 4.6Mtpa and was designed in such a way that an expansion to 6.4Mtpa could be readily facilitated. It is proposed that an expansion to 7.2Mtpa be implemented, however, approximately 0.8Mtpa of this feed would be removed from the process stream prior to flotation using desliming cyclones. This in effect means the expansion remains the same as planned for 6.4Mtpa in many areas of the circuit. In those areas where the additional tonnes (0.8Mtpa) are required to be processed, operating experience has confirmed its viability.

18.2.1 Process Description

Ore from the mine is crushed from a nominal F_{80} size of 800mm to a P_{80} size of 250mm via a Metso 50/65 MK II gyratory crusher at a rate of approximately 1,500tph (10Mtpa). The primary crushed ore is then conveyed to an open stockpile, with a total capacity of 67,000t, or 84 hours (live capacity 15,000t or 19 hours).

Three feeders allow the ore to be extracted from beneath the open stockpile at a controlled rate for feed to the SAG and ball mill grinding circuit.

The SAG mill is a 30' diameter by 16.4' long Outotec mill with an 8MW motor. The design target P_{80} is 12mm at a nominal throughput of 700tph. At present the SAG mill is operating without the use of grinding media, that is, it is operating as an AG mill, however, it is expected that it will revert to a SAG operation when the proposed 7.2Mtpa expansion phase is completed.

A Metso HP400 pebble crusher operates in closed circuit with the SAG mill to crush material in the size range -70mm +12mm.

Material less than 12mm flows to a common hopper shared by the SAG and ball mill circuits, from which material is pumped to a cluster of ten 26" diameter Weir cyclones, allowing the 20' diameter x 28.5' long 5.8MW Outotec ball mill to operate in closed circuit to produce a nominal flotation feed product with a P_{80} of approximately 125µm.

The cyclone overflow is then sampled prior to the flotation circuit, which consists of six 160m³ Outotec rougher tank cells and six 160m³ Outotec scavenger tank cells. The rougher concentrate reports to the cleaner circuit, which consists of six 70m³ cleaner cells, three 70m³ scavenger cleaner cells and four 30m³ recleaner cells, whilst the scavenger tail reports to the tailings thickener. The rougher, scavenger, cleaner and recleaner concentrate and tailings streams are configured in a conventional manner.

The final concentrate is thickened in a 15m diameter thickener to a density of approximately 65% w/w solids, from where it is pumped to storage tanks ready for filtration, which is carried out by a Larox pressure filter. The final tailings are thickened in a 36m diameter thickener to a density of approximately 60% w/w solids. Thickener overflow water is recirculated for use within the processing plant.

Reagents are prepared, stored and distributed in dedicated areas, as are services (eg air, etc).

18.2.2 Process Flowsheet

The current process flowsheet (4.6Mtpa nameplate design) is shown in Figure 18.2.2_1.

The expanded process flowsheet (7.2Mtpa with desliming) is shown in Figure 18.2.2_2.

Figure 18.2.2_1
Current Process Flowsheet (4.6Mtpa Nameplate Design)

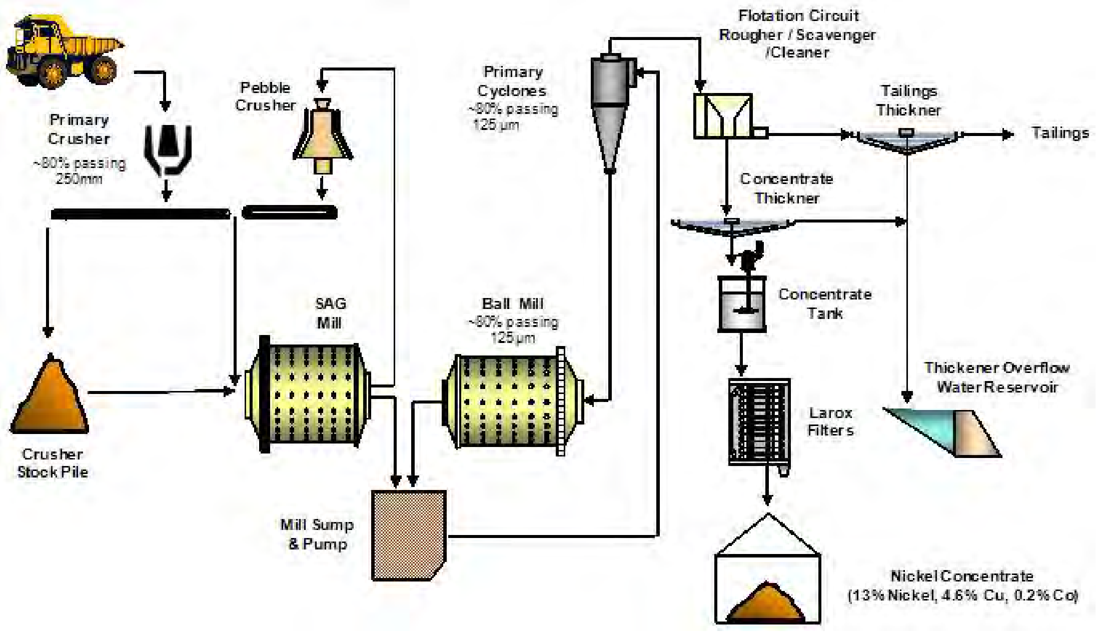
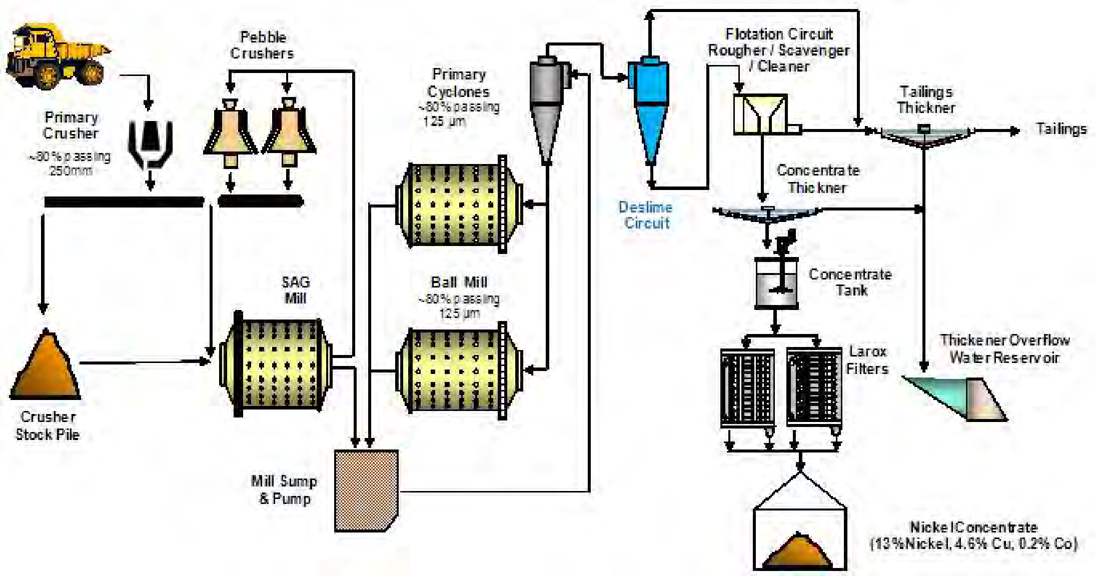


Figure 18.2.2_2
Expanded Process Flowsheet (7.2Mtpa with Desliming)



18.2.3 Metallurgical Accounting

The Santa Rita project uses conventional methodology in the measurement, calculation and reporting of the processing plant production figures. This includes the source of such data from areas such as; measurement devices (eg, weightometers), sampling protocols, analytical methods, laboratory capability, QA/QC, and reporting system.

For tonnage calculations, the equipment type, positioning, operation and maintenance protocols (for calibration) are to acceptable levels for the purposes of reporting to TSX 43.101 standards.

The production tonnage calculations are derived from a weightometer that feeds the SAG mill, which has a constant moisture content applied to it, and from the weigh cells at the concentrate filter discharge, which has moisture contents determined from laboratory analysis.

The sampling systems and protocols are in accordance with ISO Standards and factors that might lead to sample bias are accounted for, as is the security of samples with respect to labelling and cross contamination. The Santa Rita project has an online stream analyser, which is maintained by the supplier. Calibrations are carried out regularly and comparisons of online results and laboratory assay results are undertaken as a cross check on a frequent basis.

The laboratory facility is of a high quality with excellent equipment (including backup equipment). The procedures observed conform to typical standards and the knowledge of the laboratory personnel is of a relatively high standard. Internal and external QA/QC checks are carried out on the various types of samples analysed at appropriate time intervals. There is also facility for metallurgical testing within the laboratory.

The metallurgical accounting system is a secure database arrangement that sources data from the different systems in the plant, (eg, weightometers, laboratory, etc). A single caretaker updates the metallurgical balance and data from certain sources remains in its original format in the database and is only manipulated in the downstream calculation sheet. Protocols are in place to deal with erroneous or anomalous datasets and random audit checks can be made to confirm uniformity between the actual and cross check data.

Overall, the metallurgical accounting system as a whole is of a high quality. The data produced from it is accurate and reliable to typical levels appropriate for TSX 43.101 reporting.

18.2.4 Processing Plant Performance

The Santa Rita processing plant performance for 2010 is shown in Table 18.2.4_1.

The processing plant achieved nameplate capacity for ore throughput and nickel recovery for the 2010 December quarter. This equated to an annualised throughput rate of 4.98Mtpa versus nameplate capacity of 4.6Mtpa. Nickel recovery also improved significantly to an average of 60% for a nickel head grade of 0.50%. The nickel head grade was influenced by the addition of low grade material, not included in the ore resource, but which was processed due to the spare capacity in the processing plant.

In terms of nickel recovery, the nickel residue values in the flotation tailings averaged 0.20% and were generally independent of head grade throughout December. On those days where the nickel head grade equalled or exceeded the mine plan target, nickel recoveries exceeded nameplate design.

Despite the flotation recovery performance of the processing plant in the 2010 December quarter, benefits exist in terms of consistent performance and mining flexibility if the problematic minerals issues can be further solved through the installation of a desliming process.

Table 18.2.4_1

Mirabela Mineração Do Brasil Ltda
2010 Production Statistics

			Q1 2010 Actual	Q2 2010 Actual	Q3 2010 Actual	Q4 2010 Actual	YTD 2010 Actual
Mining	Total Material Mined	Tonnes	5,455,960	7,098,771	7,424,225	9,078,824	29,057,780
	Ore Mined	Tonnes	652,634	663,009	846,244	923,796	3,085,683
	Nickel Grade	%	0.56	0.55	0.55	0.55	0.55
Processing	Total Ore Processed	Tonnes	778,032	840,319	942,215	1,244,253	3,804,818
	Nickel Grade	%	0.51	0.52	0.52	0.50	0.51
	Copper Grade	%	0.15	0.13	0.12	0.11	0.13
	Cobalt Grade	%	0.02	0.02	0.02	0.02	0.02
	Nickel Recovery	%	48	52	49	60	53
	Copper Recovery	%	62	67	68	74	68
	Cobalt Recovery	%	28	30	27	31	29
	Nickel Residue		0.27	0.25	0.27	0.20	0.24
	Nickel in Concentrate Produced	DMT	1,991	2,304	2,405	3,676	10,375
	Copper in Concentrate Produced	DMT	721	764	774	980	3,239
	Cobalt in Concentrate Produced	DMT	35	40	41	62	179
Sales	Nickel in Concentrate Sold	DMT	1,987	2,505	2,359	3,104	9,956
	Copper in Concentrate Sold	DMT	720	824	753	832	3,129
	Cobalt in Concentrate Sold	DMT	35	43	37	53	168

Report prepared by Mining, Processing and Finance MMB division.

The specifications of the nickel concentrate produced satisfied the current offtake agreements and external shipping of concentrate is expected to commence in 2011 with the completion of the concentrate storage and loading facilities at the port of Ilheus.

The existing tailings storage facility has not caused any significant issues for the processing plant to date and is not expected to in the future.

18.2.5 Proposed Desliming of Problematic Minerals

As has been discussed, the Santa Rita project underwent a thorough metallurgical testwork program, which took considerable care in ensuring that samples tested were representative of the deposit.

Despite this, the inability of the mine to selectively mine out zones of problematic minerals caused significant issues in the nickel flotation recovery of the processing plant throughout the first year of operation.

Mineralogically, these problematic zones included layers of particular minerals, primarily chrysotile {$Ni_3Si_2O_5(OH)_4$} and lizardite {$Mg_3Si_2O_5(OH)_4$}, which have been termed as SAP in this report in certain instances, for ease of reference. In simple terms, the fine layer of chrysotile or lizardite impedes the air bubbles from attaching to the sulphide surface during the flotation component of the process, reducing the particles ability to float and to be recovered in the concentrate.

It is understood that when the first material was mined from the open pits and stockpiled on the ROM, the SAP', which was present, was largely washed from the surfaces of the rock fragments by rainfall during the wet season. This meant that the SAP presented relatively few metallurgical issues during the initial months of commissioning. When the processing plant was required to treat material (that had not been 'washed' by rain on the ROM), but was processed directly from the mine, the nickel recovery decreased significantly due to the presence of these problematic minerals.

Site personnel approached the problem from a mine to mill perspective, as well as from a metallurgical perspective, both of which were important in terms of providing a long term sustainable solution. Originally, it was believed that this problematic material could be excluded from the plant via selective mining and hence any future solution would require an understanding of what the mine could realistically achieve and what the process plant required.

A series of tests were completed, both at a practical level and on a laboratory scale, from which a detailed understanding of the problem was formulated. A number of changes (including ore blending at the ROM and modified flotation reagent regimes) have been made to the operating parameters over the second half of 2010, which have assisted in improving the nickel flotation recovery to levels close to or equal to that of nameplate design.

The mine is now able to provide a blend of ore feed that maintains the level of these problematic minerals to less than 10%. This allows the processing personnel to achieve nickel recoveries equivalent to that of nameplate design.

In addition to applying mine to mill strategies that maintain the presence of problematic material to less than 10% and the reagent regime modifications, Santa Rita personnel also propose to remove the problematic minerals from the flotation feed via a simple desliming process.

Santa Rita site personnel carried out numerous tests to confirm the presence of the SAP as the major source of the nickel recovery issues. The approach taken was logical and methodical with appropriate tools and methods used, including detailed mineralogical investigations. The samples utilised for the testwork are considered appropriate and although their representivity is biased to the current ore supply from within the pit, the fundamentals of the SAP problem would not be expected to alter significantly, although the intensity of the occurrence may change.

The fundamental approach taken is that the SAP is generally in the form of a fine layer of clayey type material that exists on the fractured surface of the fragmented rock and that it can be washed off. This is supported by the testwork that has been undertaken and hence desliming using hydrocyclone classification after grinding is considered to be an appropriate solution.

Mineralogical analysis on flotation tailings has identified that a significant percentage of the nickel sulphides in the size range less than 20 microns do not report to the flotation concentrate. In addition to this, the major portion of the SAP (chrysotile and lizardite minerals) are less than 20 microns in size.

As a result of this, a desliming size of between 10 microns and 20 microns has been targeted, providing a relatively low risk solution. The finer the nickel sulphide, the more difficult it is to float, hence a cut size closer to 10 microns than 20 microns is preferred for fine nickel sulphide recovery, whilst the closer the cut size is to 20 microns, the more SAP (chrysotile and lizardite minerals) that can be removed from the flotation feed.

To accurately ascertain the optimum deslime cut size, an extensive number of samples would need to be tested, which is not considered practicable, nor necessary, and the current approach, that is, the removal of material at a size (which can be optimised during the operational phase) of less than 10 microns to 20 microns provides a robust solution.

Mirabela recently completed a two-month pilot plant test program at Fundação Gorceix, the mineral technology area of Universidade Federal de Ouro Preto, to test the performance of the proposed desliming mechanical separation process. The pilot plant is a 200kg/hr concentrator employed by mining companies including Vale, Anglo and Votorantim to conduct process optimization trials. The results of the pilot plant testwork carried out by Mirabela in October and November 2010 were consistent with the Mirabela laboratory test results and confirmed a conventional low cost desliming process comprising two stages of cyclones downstream of the SAG mill to be the most effective mechanical separation process.

For the purposes of predicting the actual improvements in nickel recovery, Mirabela has applied half of the nickel recovery improvement that was observed in the pilot plant testwork, which is potentially conservative. This is mainly due to the fact that individual domains were tested, as opposed to a blend representing the current mine plan. One of the main advantages of the proposed desliming circuit is that it will remove to a large extent the dependence of nickel recovery on MgO content, which at present demonstrates a relationship to the SAP content of the ore.

The detailed engineering design of the proposed plant modifications is nearing completion. Historically, engineering design of classification equipment aimed at removing material less than approximately 30 microns tends to be conservative by nature, as this type of process is performed less often, hence it is possible that the proposed circuit may be overdesigned. Metallurgically, this is of minor consequence as the equipment sizing could be corrected as part of the expansion phase to 7.2Mtpa.

The evidence from testwork indicates that the proposed modifications to the processing plant to include desliming, should remove the problematic SAP (chrysotile and lizardite minerals), so as to allow the processing plant to achieve design (or better) nickel recoveries on a consistent basis. This assumes that efficient 'on site' mine to mill communication and cooperation continues with respect to ore classification from within the pit and with crusher feed blending on the ROM.

18.2.6 Proposed Plant Modifications

Desliming

It is proposed that a cyclone classification arrangement be installed to facilitate the removal of sub 20 micron material from the flotation feed stream. The principles and operation of this arrangement are relatively simple. Maintainability and operability of the final engineering design are important to ensure that desliming can be readily completed, independent of the ore feed.

Expansion to 7.2Mtpa

As part of the project implementation, consideration was given to design of the processing plant such that an expansion to 6.4Mtpa could be achieved in the minimum time frame and at minimal capital cost. The expansion includes the following equipment:

- Additional Metso HP400 pebble crusher (same design and capacity as existing pebble crusher).
- Additional 20' diameter x 28.5' long ball mill with 5.8MW motor.
- Additional Larox PF144 filter

The crushing circuit is currently throughput limited at times, due partly to the crushing circuit configuration and design, and partly due to a need for ongoing optimisation (eg conveyor power, etc). These issues are currently being addressed and based on those problems being solved, which should be readily achievable, the crushing circuit would have the capacity to process 7.2Mtpa.

The grinding circuit design is considered adequate to achieve 7.2Mtpa, even though this was originally designed for 6.4Mtpa. This is due to the knowledge of actual operating data thus far. The Santa Rita SAG mill is currently operating as an AG mill (i.e. no grinding media). In the event that material from deeper within the deposit does not show a corresponding softness compared to that of design, which was conservative in this area, then the Santa Rita project could easily implement part or all of the desliming prior to the ball milling circuit, which would allow material, albeit fine product, to be bypassed, allowing for additional and more efficient grinding capability.

For the purposes of the expansion, it is proposed that the flotation circuit remain unchanged. Santa Rita personnel have liaised with Outotec in order to evaluate the existing capacity of the flotation circuit. It is considered that the existing capacity should be adequate for an expansion to 7.2Mtpa, provided that approximately 0.8Mtpa of slimes are removed prior to the flotation circuit.

There is a low risk that the flotation capacity may be undersized if less than 0.8Mtpa is removed in the desliming stage. The estimate of removing 0.8Mtpa in the desliming stage is considered reasonable based on testwork and knowledge of the deposit from processing activities thus far, however, as part of the desliming circuit commissioning and optimisation process, it may eventuate that a lesser amount of material should be removed in the desliming stage. If this is the case, then the net effect would be that the rougher and scavenger circuit should still have adequate capacity, however, the cleaner circuit may require minor modification and/or upgrade. It should be reiterated that the risk of this is considered to be low and even if it did occur, then the result would likely be a small reduction in nickel recovery (or concentrate grade), but would not represent a fatal flaw to the proposed expansion.

The addition of a second filtration unit provides ample capacity in that area and concentrate storage and handling facilities are deemed adequate for the expansion case.

The ability of the tailings thickener to handle 7.2Mtpa may be questionable, however, Santa Rita have a contingency to bypass part of the tailings stream if required and with adequate tailings pipeline capacity, this would allow the expansion case to be achieved.

Metallurgically, the ability of the Santa Rita processing plant to produce a similar nickel concentrate at proposed nickel recovery targets should not be affected by the proposed expansion case. Based on the performance of the processing plant in Q4 2010, it would be expected that the processing plant should be able to maintain nickel residue grades of 0.20% or lower nickel at 7.2Mtpa for similar ore feed, if the expansion is completed as planned.

18.2.7 Site Personnel and Training

The site personnel currently operating the Santa Rita processing plant are competent and have the ability to train new personnel as required. The level of process knowledge and nickel / flotation experience is adequate to operate and maintain the processing plant in accordance with the proposed expansion plan, including the desliming circuit, as well as to make process improvement and optimisation as required.

18.3 Nickel Recovery

The nickel recovery calculations for the Santa Rita project have been determined for two scenarios; the current situation where there is no desliming and there is an established relationship between nickel grade, sulphur grade and MgO grade, and the future situation where desliming is implemented and the nickel recovery has been adjusted based on extensive pilot plant testwork.

Site personnel have utilised the recent performance of the processing plant to determine a nickel recovery algorithm that calculates the nickel recovery based on nickel grade, sulphur grade and MgO grade. The algorithm is shown below.

Nickel Recovery = $95.335 * x^2 + 12.105 * x + 0.4133$

Where x = (% Ni in flotation feed / % MgO in flotation feed * % Sulphur in flotation feed)

The pilot plant testwork for the proposed desliming has indicated that an improvement in nickel recovery of up to 10% can be achieved. Mirabela have applied half of this potential improvement to nickel recovery (5%) to their financial model.

In addition to the improvements that are to be expected from the desliming process, the Santa Rita deposit also has the advantage that as the mine progresses, the percentage of sulphidic nickel, which is readily floatable increases, meaning that the recovery should continue to improve over the life of mine for the current resource.

18.4 Operating Results

Mirabela has recorded a strong improvement in production for the quarter ended 31 December 2010, with the following key results for the two months:

- total ore processed of 1,244 tonnes, representing an annualised throughput rate of 5.0Mtpa – above the 4.6Mtpa plant nameplate capacity.
- average plant nickel recovery of 60%.
- average nickel feed grade of 0.55%.
- total production of 3,676t nickel in concentrate.

Year to date (December 2010) production is 10,375t nickel in concentrate, above the Company's 2010 full year production guidance of 9,500 to 10,000t of nickel in concentrate.

18.5 Markets

Contracts for the sale of all of the concentrate production from the Santa Rita project for a period of 5 years to the end of 31 December 2014 have been entered into with Votorantim Metais Niquel S.A. and Norilsk Nickel Harjavalta OY.

Nickel, copper and cobalt markets are mature global markets with reputable smelters and refiners located throughout the world. Daily prices are quoted on the New York spot market and the LME and can be found on http://www.kitcometals.com/ and http://www.lme.com/ respectively.

As the nickel concentrate production market is a commodity market, competition is driven primarily by the cost of supply to the end market. Norilsk Nickel dominates the first quartile of the industry cost curve, with negative cash costs, primarily due to high by-product credits, including palladium, platinum and copper. As a result, the majority of the other suppliers in the global nickel market compete from a cost perspective in the second, third and fourth quartile of the industry cost curve.

18.6 Contracts

18.6.1 Norilsk Offtake Agreement

In September 2008, Mirabela Brazil entered into a concentrate sales agreement (the "Norilsk Offtake Agreement") with Norilsk, a limited liability company incorporated under the laws of Finland, pursuant to which Norilsk agreed to purchase in 2009, all nickel concentrate produced from the Santa Rita Project that is in excess of 35,000 dry metric tonnes ("DMT") and 50% of the nickel concentrate produced from the Santa Rita Project from January 1, 2010 through December 31, 2014, provided that, subject to certain conditions, minimum nickel content in the nickel concentrate to be sold and purchased during the term of the Norilsk Offtake Agreement is not less than 66,500 tonnes.

Mirabela Brazil is responsible for shipping the nickel concentrate to Rotterdam, Holland or, subject to agreement by the parties, another port.

18.6.2 Votorantim Offtake Agreement

In July 2008, Mirabela Brazil entered into a concentrate sales agreement (the "Votorantim Offtake Agreement") with Votorantim, as buyer, and Votorantim Metais Ltda., as guarantor, each a limited liability company enrolled with the Brazilian Taxpayer's Registry of the Ministry of Finance, pursuant to which Votorantim agreed to purchase:

from the commencement of production to December 31, 2009, all nickel concentrate produced from the Santa Rita Project up to a maximum quantity of 7,000 DMT per month, unless otherwise agreed by Mirabela Brazil and Votorantim, and

50% of the nickel concentrate produced from the Santa Rita Project from January 1, 2010 through December 31, 2014.

Mirabela Brazil is responsible for delivering the applicable amount of nickel concentrate onto Votorantim's trucks at a delivery point at the project site specified by Mirabela Brazil, generally on a daily basis or as otherwise agreed to by the parties. On a quarterly basis, Mirabela Brazil is required to provide to Votorantim a forecast of its anticipated production for the next quarter and is required to promptly advise Votorantim of any changes to such forecast.

18.6.3 Hedging Contracts

As part of Mirabela's Senior Loan Agreement, it has a mix of hedging arrangements as summarised below:

Table 18.6.3_1
Hedging Summary

Transaction	Tonnes / Volume	Commencing	Close Out Date
a) Nickel Fwds	17,000	07/2010	03/2014
b) Nickel Fwds	2,400	07/2010	06/2011
c) Copper Fwds	8,952	04/2011	03/2015
d) USD IRS Amortizing Swap	$100m	05/2009	09/2015
e) Currency Fwds	US$93.3m	-	-
f) Copper Call Options	4,200	07/2010	03/2012
g) Nickel Call Options	1,700	07/2010	06/2012

18.6.4 Mining Agreements

<u>Exploration and Mining Agreement</u>

In October 2003, Mirabela Brazil entered into an Exploration and Mining Lease Agreement (as amended, the "Exploration and Mining Agreement") with Rio Salitre Mineração Ltda, CBPM and, by amendment, a subsidiary of CBPM, Utinga Mineração Ltda ("Utinga"), to explore and mine certain specified mineral tenements. The Exploration and Mining Agreement continues to apply to the Exploration Licenses held by CBPM or Utinga, including those not currently the subject of a mining license or subject to the Mining Lease.

<u>Mining Lease</u>

The Mining Lease among Mirabela Brazil and CPBM is dated March 3, 2008 and was registered at the DNPM on June 9, 2008. The Mining Lease has a term of 20 years from June 9, 2008 and is renewable. Pursuant to the Mining Lease, Mirabela Brazil, as the lessee, must pay all taxes, development and operational costs and keep the underlying Mining License in good standing. In addition, Mirabela Brazil must pay CBPM royalties for the leasing of the mining rights of nickel sulphide ores and nickel laterite ores, as described under "-Royalties-Royalties to CBPM".

<u>Royalties</u>

The Santa Rita deposit is subject to the following royalties and similar payments:

<u>Royalties to CBPM</u>

Mirabela pays royalties to CBPM on a monthly basis for the leasing of the mining rights to nickel sulphide ores and nickel laterite ores as follows:

- Sulphide ore: the equivalent of 2.51% of the gross revenue from the sales or conversions of concentrates of nickel produced from sulphide ore, calculated on the basis of 60% of the market value of nickel contained in the concentrate plus the market value of the other metals contained in the concentrate which are economically recoverable and marketable, expressed in nickel-equivalent, including copper, cobalt, gold and metals in the platinum group.
- Laterite ore: the royalty for the laterite ore will be based upon each tonne of extracted mineral converted or sold, according to the scale below:
  - The equivalent to US$1.01/tonne of laterite ore, if the value of nickel on the London Metal Exchange is lower than US$8,000 per tonne.
  - Other metals contained in the laterite ore – US$0.31/tonne of extracted mineral transferred or sold.

Mirabela pays a federal ad valorem royalty of 2% of revenue from nickel production, less taxes, transportation and insurance costs.

<u>Royalties to Landowners</u>

Mirabela pays a royalty of 1% of revenue from nickel production, less taxes, transportation and insurance costs to landowners in connection with, and in exchange for, surface rights to the land that comprises the Santa Rita Project site.

18.7 Environmental Considerations

All reports required for compliance with the pre-conditions for the Installation Licence have been submitted to the IMA (Instituto do Meio Ambiente). The application for the Operating Licence was submitted on 18th December 2008. As discussed in Section 1.1.1.2, a potential liability of US$2.17M is required to cover the environmental liabilities of the project.

Remediation and reclamation plans have been budgeted for in the LOM plan.

Sustainability and Operating (SO) reports are issued annually, with the latest covering the period up to December 2010. The SO report covers items such as the site environmental management system, Safety and Occupational Health, safety management, the Occupational Health Physician Control Program and Human Organisation and Development.

Santa Rita Mine is entered in case DNPM Number 871.369/ 1989 and has a Location License, Implementation License, Amendment License, and Mining License, according to resolution CEPRAM number 3734/2006, Ordinance CRA number 8697/2007, Ordinance number: 10.316/2008 and Ordinance IMA number: 10.570, respectively (Appendix I – Licensing / Authorizations of Santa Rita Mine.

Table 18.7_1

Environmental Reports Submitted To IMA in 2010

Constraint	Title	Submitted Date	Protocol Nº
XXXV Mining License	Extension of deadline for submitting the final report f the constraint XXXV	02/26/10	IMA/ATEND-Feb.26-2010-09:53-055348-V78
XXVII Mining License	Technical report of environmental guarantee and its annexes	02/26/10	IMA/ATEND--Feb. 26-2010-09:26-055347-V70
I Mining License	Report of the agricultural Exhibition at the Park José Thiara	02/26/10	IMA/ATEND—Feb. 26-2010-09:27-055347-V74
II Mining Licence	Report of the Cocoa Revitalization Program	02/26/10	IMA/ATEND--Feb- 26 -2010-09:28-055347-V78
III Mining Licence	Report of the Recovery Program and Monitoring of APP`s	02/26/2010	IMA/ATEND—Feb. 26-2010-09:28-055347-V81
IV Mining Licence	Program of qualification of labor and report of the progress of the program of qualification of workforce	02/26/10	IMA/ATEND—Feb. 26 -2010-09:29-055347-V84
V Mining l Licence	Report of the Environmental Sustainability Plan	02/26/10	IMA/ATEND—Feb. 26-2010-09:30-055347-V86
VI Mining Licence	Report of the Center of Education and Environmental Culture	02/26/10	IMA/ATEND—Feb. 26-2010-09:30-055347-V90
XVI Mining Licence	Rationale for the fulfillment of the requirements of the DNPM	02/26/10	IMA/ATEND—Feb. 26-2010-09:39-055348-V19
XVII Mining Licence	Report of the Monitoring Fluviometric Program (Biconsulting and Mirabela)	02/26/10	IMA/ATEND—Feb. 26-2010-09:39-055348-V21
XVIII Mining Licence	Report of monitoring of capture of raw water Program	02/26/10	IMA/ATEND—Feb. 26-2010-09:40-055348-V26
XIX Mining Licence	Report of the monitoring groundwater (Bioconsultancy)	02/26/10	IMA/ATEND- Feb. 26-2010-09:41-055348-V28
XX Mining Licence	Report of the monitoring piezometric Program (Bioconsultancy)	02/26/10	IMA/ATEND--Feb. 26-2010-09:42-055348-V31
XXI Mining Licence	Report of the monitoring reforestation of the legal reserve	02/26/10	IMA/ATEND--Feb. 26-2010-09:42-055348-V33
XXII Mining Licence	Report of Solid Waste Management Program	02/26/10	IMA/ATEND—Feb. 26-2010-09:43-055348-V37
XXIII Mining Licence	Reports of monitoring Noise Program (Bioconsultancy and Mirabela)	02/26/10	IMA/ATEND-Feb. 26-2010-09:44-055348-V41
XXIV Mining Licence	Justification for the replacement of the Program for Prevention of Environmental Risks – PPRA by Risk Management Program - PGR	02/26/10	IMA/ATEND—Feb. 26-2010-09:44-055348-V44
XXV Mining Licence	Report of the Medical Control and Occupational Health Program – PCMSO and Annual Health Report	02/26/10	IMA/ATEND—Feb. 26 -2010-09:45-055348-V47
XXVI Mining Licence	Receipt of the distribution of Personal Protective Equipment – EPI – in the mine receipt	02/26/10	IMA/ATEND—Feb. 26-2010-09:46-055348-V49
XXVII Mining Licence	Annexes of RTGA as acts and work plan of technical on Environmental Guarantee Committee	02/26/10	IMA/ATEND—Feb. 26-2010-09:49-055348-V55
XXVIII Mining Licence	Report of the Support Agrotechnical of the School	02/26/10	IMA/ATEND—Feb. 26-2010-09:48-055348-V59
XXIX Mining Licence	Report of supporting the viability of partnership with schools and universities	02/26/10	IMA/ATEND—Feb. 26-2010-09:49-055348-V61
XXX Mining Licence	Report of the monitoring of the landscape	02/26/10	IMA/ATEND—Feb. 26-2010-09:50-055348-V66
XXXI Mining Licence	Report of the weather	02/26/10	IMA/ATEND—Feb. 26-2010-09:51-055348-V68
XXXII Mining Licence	Project of the remediation of the stream Santa Rita	02/26/10	IMA/ATEND—Feb. 26-2010-09:52-055348-V72
XXXIII Mining Licence	Justification of the presentation of satellite image that has been docketed	02/26/10	IMA/ATEND—Feb. 26-2010-09:52-055348-V74
XXXV Mining Licence	Report of archaeological material recovered	02/26/10	IMA/ATEND—Feb. 26-2010-09:55-055348-V80
XXXVI Mining Licence	Justification for the submission of the closure plan	02/26/10	IMA/ATEND—Feb. 26-2010-09:55-055348-V83
XXXVII Operational Licence	Report of the committee of accompanying	02/26/10	IMA/ATEND—Feb. 26-2010-09:56-055348-V86
XXXVIII Mining Licence	Rationale for the representation of the sustainable development plan - PDS	02/26/10	IMA/ATEND—Feb. 26-2010-09:57-055348-V90
XXXIX Mining Licence	Report of the mining plan	02/26/10	IMA/ATEND—Feb. 26-2010-09:59-055348-V96
XL Mining Licence	Report of the project of the basin disposal of waste	02/26/10	IMA/ATEND—Feb. 26-2010-09:58-055348-V92
XLIII Mining Licence	Report of datas quality quantitative of material moved	02/26/10	IMA/ATEND—Feb. 26-2010-10:02-055348-V98
XLIV Mining Licence	Report of the monitoring of the Atlantic forest fragments program (Bioconsultancy and Mirabela) Revegetation Program, Monitoring and rescue wildlife program, wildlife attractive program	02/26/10	IMA/ATEND—Feb. 26-2010-10:03-055349-V02
XLV Mining Licence	Mirabela Newsletter Report	02/26/10	IMA/ATEND—Feb. 26-2010-10:05-055349-V04
XLVI Mining Licence	Report of the neighbourhood impact program	02/26/10	IMA/ATEND—Feb. 26-2010-10:05-055349-V08
I, II, III, VI, XIII, XXI, XXX, XXXVIII e XLIV Mining Licence	Investment proposal to comply with the constraints I, II, III, VI, XIII, XXI, XXX, XXXVIII e XLIV of operational license	07/14/10	2010-011515/TEC/RC-0040
XXXVI Mining Licence	Technical justification for not enforcing procedures of withdraw of the topsoil	08/06/10	SAC\BOCADORIO AUG. 06/2010 14:45 000000361

18.8 Taxes

The main principles of the Brazilian taxation system are defined by the Federal Tax Code 1966 and by the Federal Constitution of 1988. There are three levels of tax collection by:

- Federal
- State; and
- Municipal Governments

The Federal tax system is managed by the Receita Federal do Brasil (RFB) which is part of the Ministry of the Economy. The States and municipalities have similar agencies.

18.8.1 Federal Corporate Income Taxes

There are two income taxes in Brazil, which are charged in a similar tax basis:

- Corporate Income Tax (IRPJ); and
- Social Contribution Tax (CSLL).

<u>IRPJ</u>

- Charged on net taxable income
- Basic rate of 15%, plus a surtax of 10% on annual income that exceeds R$240k per year

<u>CSLL</u>

- Paid in addition to IRPJ
- Levied on taxable income
- Rate of 9%
- Not deductible

Taxpayers can elect to pay tax quarterly or annually, in which case they will be required to collect monthly anticipations of the annual IRPJ and CSLL due, based upon their gross income, and make the necessary adjustments by the end of the calendar-year.

18.8.2 Gross Revenues Taxes

<u>PIS and COFINS</u>

Are Federal taxes charged on revenues on a monthly basis, at the following rates:

- PIS 1.65%
- COFINS 7.6%

Under the non-cumulative mechanism, taxpayers can recognise corresponding credits over certain costs and expenses, as defined by law. Such credits may be used to offset PIS and COFINS due on taxable revenue.

18.8.3 Indirect Taxes

There are three forms of indirect taxes including:

- IPI – a Federal VAT-like tax that is levied on the import and manufacturing of goods, at rates varying in accordance with the tax classification of the goods.
- ICMS – a state type of value added tax that is levied mainly on the import and on the sale of goods, as well as on inter-municipal and interstate transportation services and communication services. Rates vary by State and type of good.
- ISS – a Municipal tax levied on revenues derived from the provision of services. The tax base is the price of the service and rates vary from 2 to 5%, according to the municipality and the type of service being rendered.

18.8.4 Other Taxes

Other taxes may also have an impact on the company`s transactions, including

- IOF – a Federal tax that is levied on certain types of transactions, such as, loans, foreign exchange transactions, insurance transactions, and on certain financial transactions with bonds or securities. Rates and tax bases vary in accordance with the transactions being carried out.

18.9 Commodity Prices

Mirabela subscribes to independent analysts Brook Hunt and CRU for nickel market data and nickel price forecasts. This Technical Report uses the commodity price forecasts summarised in Table 18.9_1 based on Brook Hunt, CRU and analyst report data available to the company:

Table 18.9_1
Forecast Commodity Prices

Item			CY2011F	CY2012F	CY2013F	CY2014F	Long Term
Real Prices	Nickel (US$/lb)	Average	11.0	10.0	9.5	8.8	8.1
	Copper (US$/lb)	Average	4.0	4.3	4.0	3.7	2.3
	Cobalt (US$/lb)	Average	17.8	17.5	17.5	17.5	17.5

Section 18.11.1 includes analyses of sensitivities to nickel price.

18.10 Capital and Operating Cost Estimates

18.10.1 Mining Operating Costs and Sustaining Capital

The original mine operating costs and sustaining capital developed by NCL for the Feasibility Study and the previous Technical Report, have been updated by NCL based on:

- The production results of the last 12 months operations to December 31, 2010;
- Working with Mirabela mine planning and operational personnel and the data provided by Mirabela to NCL; and
- NCL’s experience on comparable mining operations.

The detailed mine operating costs for the 23 year mine life are presented in Table 18.10.1_1.

The remaining life of mine sustaining capital calculated by NCL, based on the detailed equipment schedule in Table 18.1.1_2, is US$434m.

18.10.2 Other Operating Costs and Sustaining Capital

Process, administration and treatment and refining cost estimates for the Santa Rita operation are summarised in Table 18 10.2_1 as C1 unit cash costs (as defined by Brook Hunt).

The cost estimates in Table 18.10.2_1 are based on actual data for 2010 and operating cost forecast data provided by the company and reviewed by NCL.

Sustaining capital for the plant is estimated at US$10m per annum over the life of the mine.

18.10.3 Growth Capital

Growth capital is estimated to be US$50m in 2011, for the completion of plant expansion and ramp-up. Future growth capital for projects and exploration will be evaluated on a stand-alone basis.

18.11 Economic Analysis

The economic model in this report has been developed based on the results of the Technical Report and the production, operating cost, CAPEX and pricing data presented in the previous sections. Table 18.11_1 presents the outputs from the economic model. The key assumptions are summarised below:

<u>Foreign Exchange</u>

The majority of Mirabela's operating costs are in Brazilian Real (R$) and all Mirabela's revenues are US$ based. Mirabela currently has foreign exchange hedging in place which reduces this exposure, as described in Section 18.6.3.

The economic model assumes a flat R$:US$ LOM foreign exchange rate of 1.80 to 2015 and then a long term flat rate of 2.0 in line with corresponding flat long term commodity nickel pricing of US$ 8.1 from 2015.

Section 18.12 illustrates sensitivities to variation in foreign exchange.

<u>Hedging</u>

The economic model includes all nickel and copper metal hedging and the interest rate swap and foreign exchange hedging, but excludes the nickel and copper call options which are treated as financing charges.

Table 18.10.1_1

Summary of Mine Operating Cost - per Total Tonne (US$/tonne)

Year	Total Mined (Ktonnes)	Grade Control Drilling (KUS$)	Drilling (KUS$)	Blasting (KUS$)	Loading (KUS$)	Hauling (KUS$)	Auxiliary Equipment (KUS$)	General Mine (KUS$)	General Maintenance (KUS$)	G&A (KUS$)	Tech Services (KUS$)	Total Owner Cost		Contract Mining (US$)	TOTAL (US$)	TOTAL (US$/tonne)	Revised Total (US$)	Revised Total (US$/t)
												(KUS$)	(US$/tonne)					
2011	40,758	756	3,039	23,702	4,658	7,777	6,510	2,593	4,195	9,972	746	63,948	1.57	16,136	80,086	1.96	104,748	2.57
2012	40,499	752	5,055	24,222	4,402	8,553	6,510	2,576	4,169	9,908	741	66,888	1.65	14,321	81,211	2.01	104,082	2.57
2013	43,363	805	10,157	25,697	5,170	11,547	7,184	2,759	4,464	10,609	794	79,185	1.83	-	79,187	1.83	79,187	1.83
2014	50,000	928	11,685	29,113	6,064	12,354	7,545	3,181	5,147	12,233	915	89,164	1.78	10,319	99,485	1.99	99,485	1.99
2015	50,000	928	11,685	29,113	6,064	12,558	6,918	3,181	5,147	12,233	915	88,741	1.77	6,614	95,357	1.91	95,357	1.91
2016	50,000	928	11,685	29,113	6,064	17,819	6,505	3,181	5,147	12,233	915	93,590	1.87	-	93,592	1.87	93,592	1.87
2017	50,000	928	11,685	29,113	6,064	20,085	6,192	3,181	5,147	12,233	915	95,542	1.91	-	95,544	1.91	95,544	1.91
2018	50,000	928	11,685	29,113	6,064	23,724	6,192	3,181	5,147	12,233	915	99,181	1.98	-	99,183	1.98	99,183	1.98
2019	50,000	928	11,685	29,113	6,064	24,980	6,192	3,181	5,147	12,233	915	100,437	2.01	2,239	102,678	2.05	102,678	2.05
2020	50,000	928	11,685	29,113	6,064	23,126	5,878	3,181	5,147	12,233	915	98,270	1.97	206	98,477	1.97	98,477	1.97
2021	50,000	928	11,685	29,113	6,064	24,974	5,878	3,181	5,147	12,233	915	100,118	2.00	2,021	102,141	2.04	102,141	2.04
2022	50,000	928	11,685	29,113	6,064	25,304	6,192	3,181	5,147	12,233	915	100,761	2.02	-	100,763	2.02	100,763	2.02
2023	50,000	928	11,685	29,113	6,064	27,728	5,703	3,181	5,147	12,233	915	102,696	2.05	5,406	108,104	2.16	108,104	2.16
2024	50,000	928	11,685	29,113	6,064	27,726	5,215	3,181	5,147	12,233	915	102,206	2.04	-	102,208	2.04	102,208	2.04
2025	50,000	928	11,685	29,113	6,064	27,742	4,901	3,181	5,147	12,233	915	101,909	2.04	954	102,865	2.06	102,865	2.06
2026	50,000	928	11,685	29,113	6,064	31,761	5,215	3,181	5,147	12,233	915	106,241	2.12	-	106,243	2.12	106,243	2.12
2027	46,200	857	10,697	27,157	5,552	33,788	4,854	2,939	4,756	11,303	846	102,749	2.22	-	102,751	2.22	102,751	2.22
2028	46,200	857	10,697	27,157	5,552	34,082	4,854	2,939	4,756	11,303	846	103,043	2.23	15,772	118,818	2.57	118,818	2.57
2029	46,077	855	10,665	27,094	5,536	34,509	4,541	2,931	4,743	11,273	843	102,990	2.24	37,566	140,558	3.05	140,558	3.05
2030	18,519	344	3,884	12,909	2,302	19,836	3,098	1,178	1,906	4,531	339	50,327	2.72	-	50,330	2.72	50,330	2.72
2031	14,651	272	2,972	10,919	1,960	16,523	3,098	932	1,508	3,584	268	42,036	2.87	-	42,039	2.87	42,039	2.87
2032	11,011	204	2,114	9,045	1,638	13,185	2,737	701	1,133	2,694	202	33,653	3.06	-	33,656	3.06	33,656	3.06
2033	4,218	78	800	3,530	641	5,412	1,061	268	434	1,032	77	13,334	3.16	-	13,338	3.16	13,338	3.16
TOTAL	**961,495**	**17,844**	**211,981**	**569,898**	**116,242**	**485,094**	**122,973**	**61,168**	**98,971**	**235,239**	**17,600**	**1,937,010**	**2.01**	**111,554**	**2,048,613**	**2.13**	**2,096,145**	**2.18**
TOTAL (US$/tonne)		**0.02**	**0.22**	**0.59**	**0.12**	**0.50**	**0.13**	**0.06**	**0.10**	**0.24**	**0.02**	**2.01**		**0.12**	**2.13**			

Notes:
1. All costs have been calculated in Brazilian Real (R$)
2. An flat exchange rate of 1.80 R$:US$ to 2015 and from 2016 a flat rate of 2.0 has been used to convert mining costs to US$ costs
3. The contract mining costs assume current rates for drilling, loading and hauling.
4. Mining costs for 2011 and 2012 will be above benchmark rates for the following reasons: a) there will be a transition phase from the Old Mine Plan to the New Mine Plan (the Old Mine planned assumed Mirabela would move 51Mtpa material in 2011), b) Mirabela currently has higher cost short term mining contracts in place targeting early completion of the prestripping and opening up the full strike length of the mine, c) the mine is in ramp-up and there will be inefficiencies associated with ramp-up.
5. Therefore in 2011 and 2012 mining costs have been based on Mirabela's zero based 2011 Budget unit costs of US$2.57/tonne mined.

Table 18.10.2_1

Summary of C1 Cash Costs (as defined by Brook Hunt)
US$/lb of Contained Nickel Produced

Year	Strip Ratio	Mining Costs		Processing Costs (US$/lb)	Admin Costs (US$/lb)	Transport & Shipping Costs (US$/lb)	Byproduct Credits (US$/lb	Total Cash Costs (US$/lb)	Smelter Charges (US$/lb)	Total C1 Cash Costs (US$/lb)
		(US$/tonne)	(US$/lb)							
2011	7.30	2.57	2.39	1.68	0.74	0.18	(1.51)	**3.47**	2.22	**5.69**
2012	4.62	2.57	2.22	1.56	0.48	0.22	(1.57)	**2.91**	2.08	**4.99**
2013	5.02	1.83	1.59	1.38	0.46	0.23	(1.36)	**2.30**	1.97	**4.27**
2014	5.94	1.99	1.63	1.27	0.44	0.24	(1.33)	**2.24**	1.97	**4.21**
2015	5.94	1.91	1.80	1.42	0.51	0.22	(1.00)	**2.95**	1.79	**4.74**
2016	5.94	1.87	1.54	1.22	0.44	0.20	(0.98)	**2.42**	1.78	**4.20**
2017	5.94	1.91	1.59	1.25	0.45	0.20	(1.00)	**2.48**	1.78	**4.26**
2018	5.94	1.98	1.73	1.30	0.47	0.19	(0.98)	**2.71**	1.77	**4.49**
2019	5.94	2.05	1.77	1.30	0.46	0.19	(0.95)	**2.78**	1.77	**4.55**
2020	5.94	1.97	1.64	1.23	0.45	0.20	(0.96)	**2.55**	1.78	**4.33**
2021	5.94	2.04	1.69	1.24	0.44	0.20	(0.97)	**2.60**	1.79	**4.39**
2022	5.94	2.02	1.58	1.16	0.42	0.20	(0.98)	**2.38**	1.79	**4.17**
2023	5.94	2.16	1.61	1.12	0.40	0.21	(1.04)	**2.30**	1.80	**4.10**
2024	5.94	2.04	1.42	1.03	0.37	0.21	(0.96)	**2.08**	1.82	**3.89**
2025	5.94	2.06	1.51	1.11	0.39	0.21	(0.94)	**2.27**	1.82	**4.09**
2026	5.94	2.12	1.53	1.07	0.39	0.21	(0.96)	**2.23**	1.82	**4.06**
2027	5.42	2.22	1.62	1.08	0.39	0.21	(0.97)	**2.33**	1.82	**4.16**
2028	5.42	2.57	1.76	1.00	0.36	0.22	(0.93)	**2.41**	1.82	**4.23**
2029	5.40	3.05	2.51	1.22	0.44	0.20	(1.09)	**3.29**	1.83	**5.12**
2030	1.57	2.72	0.73	0.92	0.33	0.22	(0.95)	**1.25**	1.82	**3.08**
2031	1.03	2.87	0.62	0.94	0.34	0.22	(0.96)	**1.17**	1.84	**3.02**
2032	0.53	3.06	0.49	0.92	0.33	0.24	(0.97)	**1.01**	1.91	**2.92**
2033	0.45	3.16	0.42	1.32	0.72	0.26	(0.84)	**1.87**	1.59	**3.46**
Total	5.05	2.18	**1.54**	**1.21**	**0.44**	**0.21**	**(1.05)**	**2.35**	**1.84**	**4.19**

Notes:
1. Brook Hunt definition of C1 cash costs: Net Direct Cash Cost (C1) represents the cash cost incurred at each processing stage, from mining through to recoverable nickel delivered to market, less net by-product credits (excluding royalties).
2. C1 cash costs assume an average payability of 89% LOM (based on a 50:50 split between Norilsk and Votorantim)
3. C1 cash costs are based on the commodity prices listed in section 18.9 and and exchange rate of 1.80 R$:US$ to 2015 and from 2016 a flat rate of 2.0 has been applied to mining costs.
4. Mining costs above the life of mine strip ratio of 5.0 are capitalised.
5. Admin costs includes in country corporate office costs in Belo Horizonte for LOM.

Table 18.11_1

Economic Analysis (US$)

	Units	2011F	2012F	2013F	2014F	2015F	2016F	2017F	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F
Project Cashflow Before Cap-Ex	USD'000	127,495	161,088	171,637	175,326	121,637	140,891	143,393	126,200	120,925	133,109	132,147	151,007	167,199	183,397	165,795	169,457	163,961	174,653	122,293	237,275	238,927	261,170	110,425
Capitalised Deferred Stripping Costs	USD'000	32,433	-	-	15,175	14,546	12,689	12,953	13,452	13,924	13,356	13,848	13,663	14,656	13,857	13,946	14,405	6,389	7,388	8,372	-	-	-	-
Growth and Sustaining Capital Expenditure	USD'000	58,569	12,475	26,197	16,965	10,000	108,614	17,812	19,765	28,150	16,965	10,000	110,567	21,718	19,765	28,150	32,020	17,243	108,630	20,055	8,337	8,337	8,337	3,403
Project Cashflow Post Cap-Ex	**USD'000**	**36,493**	**148,614**	**145,440**	**143,186**	**97,091**	**19,588**	**112,628**	**92,982**	**78,851**	**102,788**	**108,300**	**26,777**	**130,825**	**149,775**	**123,700**	**123,032**	**140,329**	**58,635**	**93,866**	**228,938**	**230,590**	**252,833**	**107,022**

Notes:
1. Excludes General and Administrative costs related to Perth Corporate Office.
2. Excludes tenement maintenance outside of Santa Rita Project.
3. Includes in-country Corporate Office (Belo Horizonte) Costs for LOM.

2011 and 2012 Mining Costs

Mining costs for 2011 and 2012 will be above benchmark rates for the following reasons:

- There will be a transition phase from the Old Mine Plan to the New Mine Plan. The Old Mine plan and Mirabela's 2011 budget assumed Mirabela would move 51Mtpa material in 2011, the New Mine Plan shows a 41Mtpa material movement.
- Mirabela is in ramp-up with the associated ramp-up inefficiencies including:
  - Higher cost short term mining contracts put in place targeting early completion of the prestripping and opening up the full strike length of the mine
  - Lower mining and equipment productivities that will improve as the mine opens up, maintenance practices improve and training and capability improves

Therefore in 2011 and 2012 mining costs have been increased from the bench mark rates in Table 18.10.1_1 to Mirabela's "zero based" 2011 Budgeted mining unit costs of US$2.57/tonne mined (US$2.57/tonne mined was developed based on the 51Mtpa material moved in the Old Mine plan).

Project Cashflows

"Project Cash Flow Before Capex" is defined as revenue less project operating costs, project indirect and administrative costs and taxation costs, but before Capital Expenditure.

All Project Cash Flows exclude any financing costs.

18.11.1 Sensitivity Analysis

Net Operating Cashflow effects of key sensitivities applied are set out below:

Table 18.11.1_1
Project Cashflow Sensitivity Analysis

		Project Cashflow* Effect		
		CY2011F USD'm	**CY2012F USD'm**	**LOM USD'm**
Commodity Price	Nickel +/- $1/lb	9.8	23.6	**735.2**
Grade	Nickel Head Grade +/- 10%	-	41.7	**548.5**
Recovery	+/- 1%in recovery (i.e. 65% to 64%)	-	5.1	**55.9**
Foreign Exchange	BRL/USD (+/- 0.10)	17.5	18.8	**389.2**
Unit Costs	+/- 10% on Op-Ex	15.8	16.9	**319.4**

* Note – 'Project Cashflows' excludes all finance cashflows.

18.12 Payback

Payback has been calculated based on initial capital costs of US$ 883.64m which includes plant and equipment, land and construction expenditure, taken from Mirabela's audited 31 December 2009 accounts.

Based on the Net Operating Cashflows as defined in Section 18.11, the payback period is approximately 12 years.

18.13 Mine Life

Based on the treatment of 7.2Mt of ore per annum from the open pit mining of the existing 159.3Mt reserve, the project will have a remaining mine life of 23 years.

19 INTERPRETATION AND CONCLUSIONS

Mining and processing facilities at the Santa Rita operation have been successfully commissioned and are ramping up to full production. Annualised production based on the last quarter of 2010 (October to December) was 4.9Mtpa, above the name plate capacity of 4.6Mtpa.

Mineral Resource and Mineral Reserve updates have been carried out during 2010 and 2011 and are documented in this report. These updated estimates indicated that MNL can continue to produce open pit ore successfully from the Santa Rita operation. Future work will focus on:

- Further optimisation of the open pit mine, resources and reserves,
- Extension of the open pit aimed at further increasing resources and reserves,
- Better definition of the Underground resources (currently 87.5mt @ 0.79% nickel – see Section 6.3.2, Table 6.3.2_1), and
- Evaluation of regional exploration targets i.e. Peri Peri and Palestina

MNL's current strategy with respect to mining and processing is considered appropriate, as is the proposed processing plant expansion (inclusive of desliming).

20 RECOMMENDATIONS

The key recommendations from the work carried out for the Technical Report and the associated results and conclusions are as follows:

- The current resource model should be updated to include the assay results were received for the additional 25 additional drillholes (see Figure 17.1.5_1). This information was not available for the current resource modelling and has the potential to expand the depth extension of the open pit resource and to allow for classification upgrades of some portions of the current Inferred and Indicted material. The extra information gained by these drillholes would also enable an update of the geological modelling (specifically fault contacts and the boundary of the sulphide model). **T*here was not sufficient time available for the purposes of this report to undertake a revised resource model incorporating this information; it is recommended that an updated resource model be generated incorporating these missing drillholes plus any additional data to be drilled by Mirabela.***
- Further drilling should be undertaken to assess the effect of the deeper higher-grade mineralisation that has identified in the central and northern portion of the deposit.
- Ongoing reconciliation of the resource model is recommended. This should include a reconciliation to a declared ore mined figure (i.e. stockpile and mill reconciled mined figures) and should report the resource above the marginal economic cutoff grade (i.e. the Low grade cutoff discussed in Section 17.1.5). The reconciliation results should be incorporated into the decision process as to future resource modelling methods.
- RC grade control is recommended to allow for longer term mine planning. The RC drilling should be undertaken with full QAQC protocols with a view that the RC data would also be used in any resource upgrades.
- Drilling and blasting studies should be undertaken to help improve these aspects for the long term. Specific attentions should be made to align the drilling and blasting efficiency with similar operations in Brazil and elsewhere.

The estimated cost of additional resource drilling would be approximately US$1.5M, with approximately US$200K required for resource and mining studies and reconciliation work. The cost of a drilling and blasting study is estimated at $200K.

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22 CERTIFICATES

Certificate of Qualified Person

As an author of the report entitled "Technical Report, Santa Rita Project, Mirabela Nickel Limited, Brazil" dated 22nd March, 2011, on the Santa Rita Project property of Mirabela Nickel Limited (the "Study"), I hereby state:

1. My name is Neil Andrew Inwood and I am a Principal Resource Geologist with the firm of Coffey Mining Pty. Ltd. of 1162 Hay Street, West Perth, WA, 6005, Australia.
2. I am a practising geologist and a member of the AusIMM (210871).
3. I am a graduate of Curtin University of Technology in Western Australia with a BSc in Geology in 1993 and a PGradDip in Hydro-Geology in 1994. In 2007 I graduated from the University of Western Australia with an MSc in Geology and from Edith Cowan University with a Post Graduate Certificate in Geostatistics.
4. I have practiced my profession continuously since 1994.
5. I am a "qualified person" as that term is defined in National Instrument 43-101 (Standards of Disclosure for Mineral Projects) (the "Instrument").
6. I visited the Santa Rita property and surrounding areas for 3 days in May 2010. I have performed consulting services during and reviewed files and data supplied by Mirabela Nickel Limited up to December 2010.
7. I am responsible or jointly responsibly for Sections 1, 2 to 15, 17.1, 17.2, 18.1.2, 18.5, 18.6, 18.7, 18.8, 18.12, 21, 22 and associated text in the summary, conclusions and recommendations.
8. As of the date of this certificate, to the best of my knowledge, information and belief, the Study contains all scientific and technical information that is required to be disclosed to make the Study not misleading.
9. I am independent of Mirabela Nickel Limited pursuant to section 1.4 of the Instrument.
10. I have read the National Instrument and Form 43-101F1 (the "Form") and the Study has been prepared in compliance with the Instrument and the Form.
11. I do not have nor do I expect to receive a direct or indirect interest in the Santa Rita property of Mirabela Nickel Limited, and I do not beneficially own, directly or indirectly, any securities of Bannerman Resources or any associate or affiliate of such company.

Dated at Perth, Western Australia, on 22nd March 2011

[signed]

Neil Inwood
Principal Resource Consultant

BSc (Geology)
MSc (Geology)
Post Grad Cert Geostatistics

Certificate of Qualified Person

As an author of the report entitled "Technical Report, Santa Rita Project, Mirabela Nickel Limited, Brazil" dated 22nd March, 2011, on the Santa Rita Project property of Mirabela Nickel Limited (the "Study"), I hereby state:

1. My name is Rodney James Smith and I am a Principal Consultant - Metallurgy with the firm of Coffey Mining Pty. Ltd. of 1162 Hay Street, West Perth, 6005.

2. I am a practising metallurgist and have been a member of the Australasian Institute of Mining and Metallurgy (AusIMM) for approximately 30 years.

3. I am a graduate of the University of New South Wales (Sydney, Australia) and hold a Bachelor of Science (Hons) Metallurgy degree (1982).

4. I have practiced my profession continuously since 1982.

5. I am a "qualified person" as that term is defined in National Instrument 43-101 (Standards of Disclosure for Mineral Projects) (the "Instrument").

6. I personally visited the Santa Rita Project in 2010, and performed consulting services on numerous occasions between 2007 and 2011, and have reviewed files and data supplied by Mirabela Nickel Limited.

7. I am responsible or jointly responsible for Sections 16, and portions of Section 18.1, 18.2, 18.3, 18.4, 18.9, 18.3 and associated text in the summary, conclusions and recommendations of the Study.

8. I am not aware of any material fact or material change with respect to the subject matter of the Study, which is not reflected in the Study, the omission of which would make the Study misleading.

9. I am independent of Mirabela Nickel Limited pursuant to section 1.4 of the Instrument.

10. I have read the National Instrument and Form 43-101F1 (the "Form") and the Study has been prepared in compliance with the Instrument and the Form.

11. I do not have nor do I expect to receive a direct or indirect interest in the Santa Rita Project property of Mirabela Nickel Limited, and I do not beneficially own, directly or indirectly, any securities of Mirabela Nickel Limited or any associate or affiliate of such company.

Dated at Perth, Western Australia, on 22nd March 2011

[signed]

Rodney James Smith BSc Met (Hons)
Principal Consultant – Metallurgy

Certificate of Qualified Person

As an author of the report entitled "Technical Report, Santa Rita Project, Mirabela Nickel Limited, Brazil" dated 22nd March, 2011, on the Santa Rita Project property of Mirabela Nickel Limited (the "Study"), I hereby state:

1. My name is Carlos Guzman, Principal and Project Director with the firm of NCL Brasil Ltda, Nova Lima, Minas Gerais, Brazil. My address is Alameda da Serra 500/315, Nova Lima, Brazil.

2. I am a practising mining engineer registered with the Australasian Institute of Mining and Metallurgy (MAusIMM 229036).

3. I am a graduate of the Universidad de Chile and hold a Mining Engineer title (1995).

4. I have practiced my profession continuously since 1995.

5. I have read the definition of "qualified person" set out in National Instrument 43-101 (the "Instrument") and certify that by reason of my education, affiliation with a professional association (as defined in the Instrument) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of the Instrument.

6. I most recently conducted a personal inspection of the Santa Rita Project in November 2010 for a period of 2 days.

7. I am responsible or jointly responsible for Sections 17.3, 18.10, 18.11, 18.12 and portions of Section 18.1, 18.9 and associated text in the summary, conclusions and recommendations of the Study.

8. 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.

9. I have had prior involvement with the property that is the subject of the Technical Report. The nature of my prior involvement is that I prepared part of the technical reports dated effective February 2009 regarding the property.

10. I am independent of Mirabela Nickel Ltd. pursuant to section 1.4 of the Instrument.

11. I have read the Instrument and Form 43-101F1 (the "Form") and the Technical Report has been prepared in compliance with the Instrument and the Form.

Dated at Nova Lima, Minas Gerais, Brazil, on 22nd March 2011.

[signed]

Carlos Guzman BSc, MAusIMM
Principal Mining Engineer