NICKEL MINING COMPANY

OUR EXPERTISE,

OPTIMISING THE MINES TO CREATE ADDED VALUE AND EMPLOYMENTS AND STRENGTHEN NEW CALEDONIA'S ECONOMIC DEVELOPMENT

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Establishment of NMC: 22nd May 2006

Permanent Staff: 624 employees (December 2013)

Business activity: production and sale of nickel ore

Production capacity: 1.8 million tons of saprolite and 0.5 million tons of limonite per year

Buyers: SNNC in Korea buys the saprolite ore and QN in Australia the limonite ore

Shareholders: SMSP (Société Minière du Sud Pacifique in New Caledonia) 51 % and POSCO (Pohang Iron & Steel Corporation in South Korea) 49 %

Administrative headquarters:

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Nickel Mining Company SAS :

a mining expertise integrated into metallurgy

Challenge

Consolidate the company's industrial and commercial integration and thus meet requirements for supplies to SNNC, the Gwangyang ferronickel processing Plant, in which SMSP holds 51% equity investment.

Objective

Produce and export 1.8 million tons (3.8 in 2014) per year of saprolite ore, which chemical specifications must comply with Gwangyang Plant kiln parameters.

Innovation

Develop mine planning as a tool for evaluation and enhanced performance, maximising knowledge and exploitation of mining resources, to ensure the partnership's long term sustainability of operations and its economic profitability.

President's statement

18 years after its acquisition by SOFINOR, SMSP, which at the beginning, had neither mining titles nor mines, and which main activity was to supply the SLN Doniambo Plant, got access to the protected field of metallurgy with the launching of operations of the Gwangyang Plant in South Korea. After Total and Renault, it is the third largest French industrial investment ever built in Korea.



To get there, it would have been necessary to

proceed step by step, from sub-contracting to mining and then to metallurgy. Today through its subsidiary NMC, SMSP is recorded to be the first mining company in New Caledonia which optimizes its mining assets and processes the low grade ore traditionally exported as crude ore without industrial added value for the country.

In November 2008, SMSP has indeed developped a further method of valorization of the mining resource, and thus, offered the Caledonian small mining operators the opportunity to develop their resources, to smooth over their exports in long terms and to sustain their operations.

In May 2013, the signing of the SMSP / POSCO partnership's agreement to proceed to the expansion of its ferronickels' production capacities, while reducing the grading of exported ore, will ensure to sustain the mining resources.

By exporting nickel in the form of ore rather than crude ore without added value, the Caledonian mining industry can now register into a pattern of sustainable development for the country's benefits.

André DANG VAN NHA

A brief overview of the SMSP - POSCO partnership

A model of industrial and commercial integration

Although NMC is a recently established company, it has gradually been restructured to achieve vertical integration and to fully meet the supply requirements of the Gwangyang Plant, which delivers an annual production capacity of 30,000 tons of nickel contained in ferronickel.

2005	February June	André Dang proposes the partnership project to POSCO. The POSCO-SMSP working group is set up to draft the Memorandum of Understanding (MOU).
2006	April May	Signing of the Memorandum of Agreement (MOA) by SMSP and POSCO. Establishment of the two joint venture companies NMC and SNNC.
2007	October	North Province Assembly decision to transfer SMSP mining titles to NMC, closing of agreements between SMSP, POSCO, SNNC & NMC.
2008	June	1st nickel ore's shipment to Gwangyang.
	November	Opening ceremony of the Gwangyang Plant.
2009	April	Setting up of QSS Committees.
	October	Full plant production capacity achieved and implementation of double shift system implemented at Poya.
	November	Launching of major fixed facility works.
2010	March December	Implementation of double shift system at Ouaco, Nakéty & Kouaoua centres. Celebration of 3 million tons of ore shipped by NMC to SNNC.
2011	August September	Decision to proceed to the expansion of SNNC and NMC production capacities. SNNC signed a MOU for the Gwangyang Plant's expansion works and laying of foundation stone.
2013	Мау	Signing of the expansion agreement of SNNC and NMC production capacities.





NMC: A joint venture born of an innovative partnership

An outcome of a partnership between POSCO, the world's third biggest steel producer and SMSP Group, New Caledonia's leading ore exporter.

1. A JOINT VENTURE

Nickel Mining Company SAS (NMC) is a joint venture company forming the mining branch of the partnership between SMSP (Société Minière du Sud Pacifique) and POSCO (Pohang Iron & Steel Corporation). NMC was established on 22 May 2006 with the signing of the Memorandum of Understanding, which also led to the creation of SNNC (Société de Nickel de Nouvelle-Calédonie et Corée), likewise a joint venture and the industrial branch of the same partnership.

NMC's primary objective is to ensure steady nickel ore supplies to SNNC, operator of the very first ferronickel production plant based in South Korea. In terms of quality, the ore must not only comply with nickel grading requirements but also physicchemical specifications, with precise iron/nickel and magnesium/silica ratios. The Gwangyang pyrometallurgical Plant reached its nominal production capacity of 30,000 tons a year in October 2010 only eleven months after it was commissioned in November 2008. The Gwangyang Plant's expansion will double its rated capacity in lowering the nickel content to 2%, to reach an annual production capacity of 54,000 tons instead of 60,000 tons of nickel metal contained in ferronickel. SNNC produces and sells its entire ferronickel output to POSCO steel plants.

NMC has four mining centres located in the North Province: Ouaco and Poya on the West Coast, Nakéty and Kouaoua on the East Coast.

NMC has become one of New Caledonia's top ten market sectors employers, generating over 878 direct and indirect jobs on December 2013 and ranked 6th according to a survey published by the Institute d'Emission d'Outremer.

With the Gwangyang Plant's strong profitability, NMC continues to expand both its workforce and

equipment resources, to meet the increase of its annual export program. NMC and Cotransmine (the company ensuring loading operations) saved 567 jobs in 2007. From 2008 to 2012, 652 direct and indirect jobs have been created. In 2013, 63 additional positions have been created to ensure the power supply's ramp up of the second production line.



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2. MANAGEMENT

NMC joint venture is governed by a board composed of three representatives for each of the two shareholders. The shareholders are respectively represented at general assemblies by André DANG VAN NHA for SMSP and YUN Ki-Mok for POSCO. The board is composed of six representatives:

André DANG VAN NHA Marcel THOMAS David GUYONNET YOO Byeong-Og CHOI Jong-Gyun KIM Hyo-Chan SMSP Member SMSP Member POSCO Member POSCO Member POSCO Member





3. AN INNOVATIVE PARTNERSHIP

By optimising its mining assets, SMSP acquired a majority shareholding in the Gwangyang Plant, processing the ore, thus ensuring the long term sustainability of mining in New Caledonia. POSCO secured a significant part of its ferronickels' supplies within the partnership.

4. A MODEL OF INDUSTRIAL AND COMMERCIAL INTEGRATION

The special feature of such an arrangement, based on the elimination of intermediary costs, opening the way to lower production costs and thus, the processing of low grade ore, resides in the fact that SMSP contributes 49% of its mining assets (excluding Koniambo) in return for a 51% shares in the South Korean company which owns the plant. The entire production is sold to POSCO.



Cross-shareholding with POSCO

Mining Company Traders Smelting Company Traders Steel producer Current trade chain: NMC - SNNC Steel producer

Removal of intermediation costs

SMSP was founded in 1969 as a subcontractor company and taken over in 1990 by the North Province, before acquiring its own mining titles and became 1995 New Caledonia's largest nickel ore exporter and, since 1998, held a majority interest in the construction of the North Plant.

POSCO, founded in 1968, has grown and expanded to become the world's fifth largest steel producer, owning no basic resources but empowered by a spirit of competitive daring equal to every challenge.



NEW CALEDONIA IS A LAND OF NICKEL

For more than 130 years, nickel has been occupying an emblematic position in the territory's landscape, the evolution of its institutional and economic development as the mine's product is, by far, the country's leading source of export. Nickel has also a highly symbolic value for local communities, including those in the North with the mobilization and construction of the Northern Plant, and which enables a breakthrough in the territory's process of economic empowerment.

The massifs of peridotite mineral cover 1/3 of New Caledonia's main land surface, representing approximately 25% of the world's nickel ore resources. Located on the superficial part of the massifs' mountains, the New Caledonian nickel's ores, exploited in sky open pits, represent 11% of the world nickel reserves, and 7% of the world nickel production.

Only 2/3 of these mineralized zones have been conceded to mine operators and half of them have been subject to in-depth researches. More than 1,700 mining titles are currently owned by approximately 50 holders. Out of this figure, 6 are currently on operations: Société Le Nickel - SLN, Ballande Group, Nickel Mining Company SAS, Vale New Caledonia, Georges Montagnat Mining Company and Koniambo Nickel SAS.

Through its subsidiaries Koniambo Nickel SAS and Nickel Mining Company SAS, SMSP Group owns 17% of New Caledonia' conceded mining surfaces. 4% of this surface corresponds to the Northern Plan's Koniambo deposit, and 13% corresponds to the 5 NMC mining centers out of which, 4 are fully dedicated to the export of ore, towards the production of ferronickels by the Gwangyang production unit. The centers currently on operation are Ouaco, Poya, Nakety and Kouaoua. Boakaine is currently closed.

THE SMSP GROUP'S STRATEGY OF OPTIMIZATION OF RESOURCE

Two years later, following its acquisition in 1990, SMSP, which had no mining assets, and worked as a piece-work subcontractor for the account of Société Le Nickel Company-SLN, became a full mining company, in acquiring mining assets formerly belonging to SLN Company as well as to other local firms having faced difficulties in the past. The saidassets are since transferred to NMC.

Acquisition of these mines at the end of life or abandoned mines whose rich ore has been removed, has enabled the company to develop this resource, by lowering the cut-off grade and exporting the low-grade ore, intended to supply Japanese customers, while extending its operations' lifespan to twenty years. Between 1994 and 2007, SMSP would have been exporting an annual average of 31,000 tons of nickel metal contained in ore, i.e. 2.1 million tons of wet ore per year, ranking the company in the leading range of world exporters of ore.

Similarly, should we recall that the SLN had estimated the Koniambo deposit to worth 748 000 tons of nickel metal able to be processed by its Doniambo Plant, representing about 10 years of operation for the latter, while SMSP and its Canadian Falconbridge partner had demonstrated the existence of more than 6 million tons of nickel metal, offering more than 100 years operations. One can say that the Northern Plant itself is the pure product of an optimal management of mining resources.

In addition, through SMSP/POSCO partnership, the company was able to restore a third life to its mines (excluding Koniambo) and safeguard its created jobs, taking a majority shareholding in a plant able to process the ore at an even lowest grade. During 2006-2007, the mining company's last traditional customers have been, in order of importance of volume, Chinese Ningbo - Baosteel - Dalian Continental - Carter Company, Australia's Queensland Nickel (QN), Japanese Marubeni and Mitsui. Since 2008, almost all the exported saprolite ore of its NMC subsidiary, to which it has transferred its mining assets, has been intended to supply the Gwangyang Plant in South Korea.

The purchase of the old mines in the early 90's, the Koniambo deposit's valorization intended for the construction of the Northern Plant, or elsewhere, the partnership development with POSCO processing a disregarded low grade ore, illustrate perfectly the ability to optimize valuable resources and process what might seem to be a handicap into a successful economic springboard.

Developing a new way to optimise mining resources

A strategy for sustainable development

The partnership with POSCO through NMC joint venture is based on a mining expertise and a coherent development strategy conducted over the long term economic benefit of the country. This expertise of the field men and women, and this implemented strategy by management, are rooted in the optimal management of recoverable resources.



By optimizing its mineral resources through the upgrading of lower grade ores, NMC has extended the life span of its mines, thereby safeguarding and creating jobs even at a time of economic downturn. NMC ensures POSCO of long term access to essential ore resources and a reliable plant's supply.

With the Gwangyang Plant expansion, NMC mines will double their production capacity. The only way to increase the resource was to gradually reduce nickel ore grade exported to South Korea. This nickel ore grade has been lowered from 2.21% to 2.14% in 2010, to 2.12% in 2011, to 2.08% in 2012 and to 2.01% in 2013.

Thanks to the SMSP/POSCO partnership, NMC is equipped with highly efficient tools to optimise its recoverable resources, allowing the company to produce and process its low grade ore.



NMC deposits were born out of a tectonic shock, thirty-seven millions years ago. The overlap of the Australian and oceanic plates still leaves a landscape marked with two very separate types of vegetation and geomorphology highly contrasted.

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1. THE VARIOUS MINERAL ORES PRO-DUCED BY NMC CENTRES



• Saprolite (from the Ancient Greek «sapros» meaning rotten or decomposed), known as garnierite in New Caledonia, is an ore high in nickel content found close to the parent rock. Saprolite is processed by smelting, which produces ferronickel, shot and matte.

• Limonite (from the Latin «later» meaning a brick), known as laterite in New Caledonia, is an ore with a lower nickel content and a high iron content, found under the ironstone crust. Limonite is processed by

hydrometallurgy, which produces nickel oxide and cobalt.

In 2012, NMC produced 1,784,000 tonnes of ore (all grades). Production of saprolite ore, mainly for shipment to the Gwangyang Plant, totalled 1.4 million tonnes and production of limonite ore for shipment to Australia totalled 378,000 tonnes.

In 2013, NMC produced 2,190,000 tonnes of ore (all grades). Exportation of saprolite ore, mainly for shipment to the Gwangyang Plant, totalled 1,838,703 tonnes and production of limonite ore for shipment to Australia totalled 215,197 tonnes.

2. SPECIFIC PROPERTIES OF ORE TO BE PROCESSED IN THE GWANGYANG PLANT'S FURNACE

The pyrometallurgical plant was designed and sized to process ore with a low nickel grade, an iron/nickel ratio between 4.5 and 6.0, a iron grade from 10 to 15, a magnesium/silica ratio between 0.62 and 0.67 and a granulometrics less than 100 millimetres. Given these chemical parameters, ore supply requirements are complex and the mining company must achieve a careful balance between various production areas to obtain a nickel ore with chemical properties matched to the plant kiln parameters. Nickel ore is the raw material used in the manufacture of ferronickel. Every month, 150,000 tons of saprolite ore are produced and shipped to supply the Gwangyang Plant, with a feed rate of 5,000 tons per day. The four NMC mining centres' ores of Ouaco, Poya, Nakéty and Kouaoua are mixed and homogenized at the plant to obtain an ore with a nickel, iron, magnesium and silica grading, suited to the sizing of the 94MW electric furnace.



In 1864, Jules Garnier, a Mining Engineer, identifies a green rock on the borders of Dumbéa River. He entrusted mineralogists, who confirmed the discovery of an unknown mineral, a magnesium and nickel hydrous silicate. It is the birth of the «saprolite" ore and miners still call «garnierite» all Caledonian silicate minerals.





The various ore production phases

A mining activity entirely dedicated to supply the Gwangyang Plant

Mining operations can be divided into several phases.

1. GEOLOGY

This first phase comprises the following operations: prospecting, submission of an Exploration Permit, completion of a drilling campaign and mine modelling.

- Prospecting. This is the research phase designed to identify the most promising areas and the deposit morphologies most indicative of the presence of nickel ore. The work involves a field trip to carry out a structural geological analysis including the taking of surface samples for subsequent laboratory analysis.
- Request of Exploration Permit. Potential mineral-bearing areas are included in a formal exploration work request submitted to the DIMENC. Exploration work will be carried out using a truck-mounted or helicopter-portable drill rig, depending on land morphology and vegetation cover.
- Drilling campaign. Initial widely-spaced drilling is carried out to estimate geological resources, followed by more closely-spaced drilling to obtain a more precise picture of indicated resources. All campaign drill-core data undergoes laboratory analysis and is then integrated into a data base.

Modelling. Isatis software is used to carry out kriging (geostatistics) on drill-core data to obtain a 3D block model of the orebody. This geological model is graphically displayed in Surpac, integrating mapping comprising cartographic data (topography, orthophotos, mining cadastre, etc.). At this stage, a resource's estimation is made following identification of the geological envelopes.



THE SAPROLITE ORES

The saprolite ores are peridotites minerals partially decomposed which nickel-rich zones have been exploited for over a century (silicate nickel garnierite's ores). In the saprolite, the released nickel during the alteration process can be trapped and concentrated in the serpentine residual or minerals contained in soils. The saprolite nickel ores retain relatively high contents in silicon, magnesium and iron and an average nickel content of 1.9 to 3%. These silicate minerals are processed by pyrometal-lurgical process at the Gwangyang Plant in South Korea. With regard to the NMC, the cut-off grades are in the range 1.5% and 1.6% Ni.

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2. MINE PLANNING

The 3D model is used by mine planning to identify optimum economic pit limits and to deduce the mineral reserves contained therein. Planning incorporates a coherent set of forecast figures, reflects the key aspects of company activity and consists in establishing mine plans for the long term (up to 25 years), the medium term (3 to 5 years) and the short term (1 to 2 years). Each plan represents a development project with its associated investments, environmental measures and plans, specificities and regulatory formalities (assessment of mineral reserves, operational sequence including major works such as tracks, stockpiles, surface water management structures...).



3. PRE-MINING OPERATIONS

Pre-mining operations include preliminary work on major undertakings such as opening up access tracks, tailings stockpile areas and environmental management structures, together with closespaced (5 to 10 metres) destructive drilling (air core)designed to fine-tune short-term mine planning and thereby ensure improved ore selectivity.

4. MINING OPERATIONS

A series of different operations are involved including: stripping, extraction, sorting of workable ore, stockpiling and drying of ore at the mine site, haulage, onshore drying of ore extracted from the mine and, finally, loading onto ore tankers.

- **Stripping.** This operation mainly consists of extracting material considered as barren and therefore unmarketable. It generally involves first removing the top soil layer, which is then deposited in a designated storage area for reuse in re-vegetation operations. All excavated tailings are removed by dumpers or trucks and stockpiled.
- **Extraction.** Commercially workable limonite and saprolite horizons are excavated using back diggers; extraction products are then transferred by truck to sorting areas (screening machines, grizzlies). Mine face sampling is carried out regularly to guide and optimise extraction. Inducer shot firing is sometimes carried out, particularly when mining non-soil saprolite horizons.
- **Sorting of workable ore.** Ore is sorted to obtain the required grain size. Rejects are either crushed, when they are mineral-bearing (saprolite), prior to mixing with sorted ore, or used in environmental structures (berms, water management structures, rock fill and consolidation of tailings piles).





- Mine site stockpiling and drying of ore. Sorted ore is stored in designated areas at the mine site, in the form of stockpiles or strips for drying. Samples are taken when ore is stockpiled (usually from loader buckets) to check on the chemical specifications of stockpiled ore before it is transferred to the coast.
- Haulage. Ore is transferred to the coast via mine haulage roads in 10 or 12 wheel trucks. Samples are taken from each truckload to ensure monitoring of the chemical properties (grading, moisture) of ore stocks delivered to the coast. Identification and characterisation of ore piles or strips enables separate loading to meet client requirements.
- Onshore stockpiling and drying of ore. Wet ore is stockpiled or stored in strips before being turned over and spread out to dry in the wind and sun. After drying, ore samples are taken to determine the effectiveness of the drying process. Tarpaulins are used to protect the dried ore from rain.
- Ship-loading. This operation requires land and marine resources to handle the loading of 27,000 to 72,000 tons capacity ore tankers anchored in the bays, at a minimum rate of 8,000 tons per day. Barge operations are carried out by SMSP subsidiary Cotransmine, a SMSP subsidiary with 404 direct and indirect jobs (daily rated and contractors). Loaders transfer the ore to trucks which then discharge their loads into the barges moored at the loading wharf. Tugboats subsequently tow the loaded barges into position alongside the hull of the ore tanker. Once the barges have been moored in place, the shipboard cranes scoop up the bulk ore in the barges and transfer it to the ship's holds. Samples taken from each truckload are made up into batches and sent for daily analysis at the mine centre laboratory to ensure constant monitoring of load quality. In addition, samples are taken from stockpiles before each loading operation and analysed at the central laboratory in Nouméa to determine the FMP (Flow Moisture Point), i.e. the statutory limit (above which ore is liable to liquefy) and to measure the TML (Transportable Moisture Limit), the allowable limit. All such measures are implemented to speed up issue of the Cargo Declaration Certificate and to meet the requirements laid down by the IMSBC Code, which ensures the safety of ore tanker crews and contributes to the ore quality assurance process.

5. ACTIONS UPGRADING THE QUALITY OF ORE AND ENSURING COMPLIANCE WITH INTERNATIONAL REGULATIONS

In order to supply the Gwangyang Plant with a quality ore and meet the requirement of international maritime regulations regarding transportation of nickel ore, new internal procedures applied in the SEBA approach (dry, sample, cover with tarpaulin, analyse) are established and implemented following the enter into force of International Maritime Solid Bulk Cargo Code in January 2011.

Furthermore, the constitution of Quick Six Sigma, a joint task force team, has brought in a significant increase in the loading efficiency, targeting key issues such as reducing ore moisture rate, granulometrics and nickel ore grade.

Indeed, the 5th cargo's quality loaded in Ouaco and Poya has enabled the Gwangyang port's team to definitely reach in 2011 its targeted daily unloading rate of 20,000 tons.





Health, safety and protection of environment

Health, safety and environment are permanent concerns of NMC Management. Health and safety programs as well as protection of environment policies are developed respectively by the company's HS and Environment services.

1. HEALTH MEASURES

The purpose is to assure safe and healthful working conditions, for NMC employees as well as other persons present at workplaces, from work related risks to their health, safety and well being.

- Medical examination is compulsory. Staff members are required to undergo Intercompanies' Labor Medical Examinations on various occasions: appointment, periodically, recovery, any other additional tests requested by the doctor, and in other circumstances prescribed by the company. The time spent on these various visits are being taken on working and paid hours. Refusal to undergo such required medical examination is a mistake, which if renewed, and after formal notice, takes a serious nature that may justify a disciplinary dismissal.
- Alcohol and illicit substances are banned in the workplace. It is forbidden to possess, consume, introduce and/or distribute alcohol or drugs in the workplace. Any violation of this section may result in a termination. For illicit drugs, the national police (gendarmerie) will be informed and legal proceedings will be initiated. The management may require an immediate suspension of employee, whose influence of alcohol constitutes a threat to himself, his/her colleagues or relatives. In accordance with the precautionary principle, the employee with positive declared tests, as the one the one who refuses to undergo tests, is temporarily suspended.

- Meals in the company. It is prohibited to take his/her meals in the workplace. Employees are required to use the company's premises designed for the purpose as dining hall or canteen. Services that do not have dining can be organized differently. Premises for breaks and lunches must be kept constantly clean and tidy and be maintained by employees who use them.
- **Personal items.** Cabinets and lockers, made available to some staff members, must be regularly kept cleaned and locked. In order to prevent risks of loss, theft or damage, no employee should drop his clothing, items and personal belongings outside the locker room.



2. SAFETY MEASURES

NMC is committed to implement rules designed to ensure the safety of its direct and indirect collaborators within the work area.

- Individual responsibility. Each staff member must ensure personal safety and that of others in accordance with the general and specific safety instructions in the workplace. He or she is required to read the safety instructions that are displayed on the workplace and/or which are given by management (even verbally) and must respect them. In addition, any employee who has reasonable grounds to believe that a work situation presents a serious and imminent threat to his/her life or health or that of another worker, must immediately notify his/her supervisor.
- Wearing of Personal Protective Equipments is compulsory. Each staff member is required to use the regulatory means of protection put at his/her disposal against accidents that is to say all Personal Protective Equipment: goggles, gloves, safety footwear, special clothing, etc.



Fire risks. It is strictly prohibited to smoke in the premises with the sign-board «no smoking» because of particular high fire risks, as well as in closed individual offices or collective areas. It is forbidden to neutralize any safety device or equipment, or to handle emergency devices such as fire extinguishers, fire hoses and emergency doors, outside their normal use and make their access difficult. Furthermore, it is not allowed to smoke in the machinery cabins.

- **Good general conduct.** It is not permitted for the company drivers, forklift drivers, crane operators, crane drivers, to transport in the company's vehicles or machinery outside persons, to use the company's vehicles or machinery for other duties than those assigned to by the company, or to borrow a vehicle from the company without prior authorization, and to disregard or ignore the dirty state of the vehicle; to cause or suffer an accident without informing the relevant supervisor (head of the center, technical management, general management).
- Taking care of work equipment and tools. Staff must maintain and keep in good condition the equipment entrusted to his care, in view of the performance of his duties and use it according to its purpose. The use of work equipment for personal purposes, outside working hours (weekends, holidays, etc.) is prohibited. At the end of the working hours, all electrical devices (lamp, air conditioner, typewriters, calculators, computers exceptions) must be turned off, and windows closed, except for special provisions.
- In case of accident report immediately. Any accident, even slight, occurred during the work or ride should be reported immediately, not later than within 24 hours, to the supervisor of the concerned individual. Any declaration of accident or incident must be done not later than 48 hours.
- **Protection against asbestos.** Protection against asbestos-contained dust from the mining land, building and public works is a collective general education involving employers, staff, occupational health and relevant technical and administrative services.

To pursue this goal, NMC is committed to achieve and implementing a comprehensive action plan in compliance with the regulations, provisioned by both Order No. 2010-4553/ GNC of 16th November 2010 and Deliberation No. 82 of August 25, 2010.

The general action plan focuses on risk assessment and prevention, as well as on



information, training and workers' medical check-up. This includes collective and individual protective measures, assessment of exposure to asbestos hazards maps (drawn by a trained geologists' team on all the company's mining centers), a prevention plan including asbestos procedures appendixes, related to the treatment of the cuttings and wastes containing asbestos, and in addition to this prevention plan, the PRA process (Professional Risks Assessment) which enables to reduce the exposure levels for individual work station. NMC Asbestos Management Plan integrates, in a consolidated form, all administrative and procedural documents, relating to the issue of asbestos dust of natural origin for mining activity.



TWO INSTITUTIONS MANAGE HEALTH AND SAFETY WITHIN THE COMPANY

The Health and Safety Service is currently composed of a Manager/HS Coordinator and a «Risk Management» Coordinator, both assisted by four relays HSE assigned to each of the four mining centers. The objectives of the Health and Safety Service are, among others, to develop the company's health and safety program, its implementation and promotion to all stakeholders (management, staff, contractors, subcontractors).

The C.H.S.C.T. (Comité d'Hygiène de Sécurité et des Conditions de Travail), that is to say the Health, Safety and Working Conditions Committee is composed of a chairman and six members, four representatives of the mining centers and two representatives of the Nouméa offices. They are elected by the members of the staff Representatives and the trade union representatives for two years' mandatory. Members of the CHSCT are required to take part in the development, the implementation and monitoring of all phases of the health and safety program and actions, including ensuring compliance with legislative and regulatory requirements. It may, for that purpose, carry out inspections at regular intervals, as well as investigations of work accidents or occupational diseases.

3. PRESERVATION AND PROTECTION OF THE ENVIRONMENT

NMC strives to do more than to simply comply with regulation's requirements to limit the impact of mining on environment. Anxious to develop friendly environmental exploration and exploitation techniques, NMC has anticipated some regulations now into force, with the promulgation of the new Mining Code as well as the Environment Codes of northern and southern provinces. 37 direct and indirect jobs are dedicated to the environment sector.

Compliance with legislation

The New Caledonian mining code provides that mining prospection, exploration and exploitation of new areas must be subject to authorization in the form of a Provincial Order that establishes duties for the operator to comply with.

NMC is working actively to comply with the new regulations into force since 2009, especially with the conformity of all its facilities and mining operations. The coming into force of the new Mining Code is in line with the development of environmental business and encourages job creation and new professions, during operations, as well as on closing of mines and even beyond.

The opening of access tracks to mining sites are subject to special care, including the choice of roads' profiles, guaranteeing stability of crossed lands, with systematic opening of natural barricade protection as well as the drainage and the settling of storm water. The barren rocky lateritic materials are treated with the same attention. On the said



controlled slopes, the embankments are protected against surface erosion by a recovery in rock blocs. Downstream these slopes, dams are built as substitute filter decanters. On the levels of quarries' exploitation, as on the access tracks, culverts are constructed to channel water's runoffs.

Regulate the flow of surface waters' runoff to favor their collections, as early as far upstream as possible, by building up anti-pollution structures, are priority tasks to which NMC is committed. The objectives are numerous: stop the natural erosive power but potentially polluting of rain water's runoff in order to preserve biodiversity; avoid







pollution of water streams or rivers and improve the quality of the access tracks for obvious security measures.

Surface waters' management

NMC policy is therefore to develop and implement run-off water management plans at all its mining sites and coastal facilities, in line with the company's short and medium term mine planning. Of course, areas earmarked for long terms mining operations are also concerned, particularly if they have been subject to exploitation in the past. Specialised consultants are regularly called in to carry out studies on the sensitive areas.

Such water management plans not only target the creation of new structures, but also the redesign of older structures, not in compliance with good practices as defined by the Mining Code drafting's process. Based on an annual schedule, monthly reviewed and updated before forwarded to the DIMENC, the environmental works are carried out with close follow-up by the decision-making authority and regular on-site monitoring by DIMENC inspectors. Mining commissions, organized at regular intervals by local authorities, in conjunction with DIMENC and the customary authorities, help to keep NMC in touch with the concerns of communities living in areas surrounding the mines, thereby

building up a relationship of mutual trust and establishing long term partnerships.

As part of this environmental approach, NMC adopts the environment "productive" process to promote as much as possible the handled products during rehabilitation works. So, products with low nickel content, derived from the clearing works, are upgraded by enrichment with fatal limonite's high nickel content. Excavated materials derived from redesign stockpiles and earthworks for water management structures are blended with mined mineral ores.

Clearing and cleaning pollution control structure works are key activities. Likewise, re-vegetation during mining operations or on mine closure is integrated, not only into the statutory plan but also into the

mine planning policy. Such clearing and revegetation works are generally assigned to neighbouring contractors and communities. The main techniques used are transplanting and hydroseeding.





The four NMC mining centres

Ouaco, Poya, Nakéty, Kouaoua

Mining centers are under the responsibility of a Head of Center who ensures the compliance with production targets and costs established by management.

1. OUACO MINING CENTRE: THE HISTORIC HEART OF NMC

Location

The Ouaco centre is located in the flatlands of New Caledonia's North West coasts, on Kaala-Gomen territories. The centre comprises:

- The Ouazanghou-Gomen mine deposit, 20 km and the Taom mine deposit 30 km distance far for the administrative centre of Ouaco village.
- The mineral tankers loading site, at the sea edge, is located 20 kilometres from Ouaco village.

Background

In 1990, SOFINOR (the Northern Province's semipublic Company) purchased 85% of SMSP shares and the entire village of Ouaco from Lafleur Family, following the signing of the Matignon and Oudinot Agreements. The company continued extraction of ore to supply the SLN and to export overseas customers.



The members a newly established 2009 association, under the name of «Association the historical of heritage of Ouaco and Kaala-Gomen» are organised themselves, through Heritage Days or special tours, to preserve and let the public know about Ouaco history (its old

buildings, its mines, its corned beef industry, and the first ever relay by phone cable with Australia...) as well as its important role in the New Caledonia's history heritage.

Mine operations

The Ouaco centre is managed by Gwenaël FREOUR. Ten quarries are operated on the Ouazanghou massif. The Taom massif was closed in 2001 following the drop in nickel's prices, and its operations have been resumed since 2004 on two major deposits. In 2012, the centre produced 717,118 tons of saprolite ore. In 2013, the centre produced 997,876 tons of saprolite ore.



Ore loading

The ore's loading site at the sea edge is located at Téoudié, on an NMC's property and extended partly into the maritime domain. Téoudié site has a fleet of 5 tugboats and 20 barges in-charge of Ouaco and Poya loadings of ore. The fleet is maintained by Cotransmine base at Numbo Bay in Nouméa. The loading operations involve seven companies for the haulage of the ore and loading of barges. For each shipment, forty casual workers are hired. The laboratory is equipped with a spectrometer (atomic absorption) and a potentiometer which ensures better control and follow-up of nickel grades during loading. Women's groups and sports associations provide catering for Téoudié workers.

Human resources

On December 31, 2013, Ouaco centre employed 222 members of staff among them a number working in mine operations. Two Koumac based companies are continuously called upon at all operated mine sites to deal with dynamiting requirements to enhance and facilitate progress in work sites. The work is carried out within a double shift process to meet the Gwangyang Plant's rise in production.

Infrastructures

Almost all the Ouaco village buildings including offices used by general management and the administrative section, maintenance workshops, industrial stores, laboratory and dock used by the



prospecting team and the industrial boiler belong to NMC. Houses are rented to the employees who come from remote municipalities and to the retired pensioners who chose to live on the spot. Several houses are used as the offices of management, reception-secretarial department, laboratory... There is no common dining hall but every service has a "cafeteria" room. It's the same for toilets and showers. A labour-union conference room is put at the disposal of the staff.

In 2009, improvement works on the Ouaco fixed facilities include in upstream, the upgrading of the

sorting grids (example of Taom grid: bulkheads, round bars with a separation based on the sorted ore variation (mineralization) and downstream, the restoration of the JK crusher in view of reducing into right granulometrics the sorted quality ore and the integration of two grasshoppers into the device to improve the management of flows to the mine storage zone.

2. POYA MINING CENTRE: STRADDLING ON TWO PROVINCES

Location

The Poya mining center has the unusual feature of being extended beyond the Northern and Southern provinces. It operates the Pinpin mine which culminates at 800 meters which is located at 27 kilometers of the sea edge - what is in fact a far distant supply - and more expensive in terms of transportation – compare to the Nakéty and Kouaoua centers on the East coast which are located hillside or solid mass of Ouazanghou-Gomen far for 20 kilometers of the Téoudié's port. However, the main problem encountered in working the Pinpin mine is that of the access track which is now too narrow to accommodate modern mine machinery.

Background

The Pinpin mine was operated by SLN from the 1960s onwards. It was closed in 1976 with the nickel's prices drop, making the mining unprofitable





due to the ore transportation costs, taking into account the long distance between the exploited mines and the loading site. The mining center has resumed operations in 1996 with the building of SMMO access track (present workshop site) from Doline to the present extraction mine. Pursuant to an agreement signed in 2000; SMSP and SLN exchanged the deposits of Pinpin and Konboye N'Goye at Thio. As there is a difference on the reserves metal grades between the two sites, NMC was committed to pay SLN a compensation.

Mine operations

Jean-Yves MY is responsible for Poya mining centre. In order to comply with the saprolite ore rise in production essentially exported to supply the SNNC processing plant in South Korea, the implementation of double shift in 2009. In 2012, the Poya centre produced 148,111 tons of saprolite ore. In 2013, the production hit the 181,087 tons of saprolite ore.

Ore loading

The coastal ship loading site is located on the maritime domain at Porwi Bay. The platform has a storage capacity of up to 100,000 tons of ore in four fallings chutes corresponding to different ore grades. The ore extracted is now shipped on small tankers of 45,000 tons capacity to load 33,000 tons of ore. Five barges and two tugs required for ship loading operations are provided from Téoudié

and Numbo. The laboratory is equipped with a potentiometer to monitor grades and regulate the quality of loaded ore.

Human resources

On December 31, 2013, Poya center employed 113 employees assigned to operations, maintenance, geology, environment, laboratory and administration. Moreover, in environment, watering tracks, track maintenance, staff transportation, ore haulage discharging and loading requiring around 30 to 35 people, 65 workers are call from 9 subcontractors. Work is carried out in double shift.

Infrastructures

The Poya centre arranges six houses rented in the lot FSH, any properties of the SOGENOR (a SOFINOR subsidiary company). These houses are of use to the administrative office (which also serves as dining hall), in the accommodation (Head of centre, flying teams or of passages) and for meetings or trainings.



3. NAKÉTY MINING CENTRE: A CONCENTRATED CENTRE

Location

The mineral deposits are adjacent to mining areas belonging to the Ballande Group so both Groups have their staff and facilities on the same massif and both use a section of the same track to access their respective mine's sites.

The Nakéty centre is located on the south shore of the eponymous bay in the municipality of Canala, 18 kilometres from the main village centre. The centre comprises Edouard and Eureka mines and Circée mine that was reactivated in September 2008 to supply the SNNC processing Plant in South Korea.



Background

The Nakéty mines were the first mines bought by SMSP in 1991 to Nouméa Nickel, at the historical start-up of the company in Ouaco region.

Mine operations

Nakéty centre is headed by Victor NIAMEI. The annual production capacity is in the order of 350 to 400,000 tons of ore. In 2012, the centre produced 255,507 tons of saprolite ore intended to supply the

SNNC and 188,232 tons of limonite ore intended to supply QN Australian smelter. In 2013, the centre produced 479,069 tons of saprolite ore and 108,017 tons of limonite ore.

Ore loading

The barges and tugboats needed for loading are provided by Kouaoua. Ore storage areas and coastal ship loading facilities are shared with the Ballande Company which mines ore bodies are located in the same sector. The laboratory is equipped with a potentiometer to optimise ore grade monitoring.

Human resources

On December 31, 2013, the Nakéty centre employed a staff of 81 mainly from the Nakéty district but also from other parts of Canala municipality. For the loading operations, Nakety Centre employs daily rated staff divided into two teams and managed by GIE Mitewa. The work is carried out within a double shift process to meet the Gwangyang Plant rise in production.

Various missions are assured by subcontractors; the haulage, the transport of the staff, the environmental works and the watering of tracks. The food is prepared and supplied by a licensed member of the district.

Infrastructures

The Nakéty centre premises are gathered near the seaside to accommodate administrative departments. There is no connection to the Enercal network: supply by generator sets. Also, there is no water supply. Water is supplied by bottles.

The centre counts a cafeteria room and a staff canteen which is entrusted to a manager who also takes in charge of the holding of bungalows allocated to workers in passage.

The maintenance workshop is located on the Circée's mine. The workers also arrange living zones, consisted of fitted out and arranged containers, for the taking up of posts (offices), break hours (meals, washes up) on the extraction sites and near the laboratory.





4. KOUAOUA MINING CENTRE: SMALL MINING CONCERN TO MAJOR PLAYER

Location

The office buildings are located around twelve kilometres from the village of Kouaoua, on the road leading to Poro. The mine centre comprises: The SMMO 36 (Kadjitra) mine and the Alice 18 currently on production, SMMO 37 mine and Claire Red mine currently inactive.

Background

The Company owning and working the Kouaoua mine, Nickel Mining Corporation, which was having financial difficulties, was bought by SMSP in 1998.

Mine operations

Jean GOUROU is responsible for Kouaoua mining centre. In 2012, the production reached 284,854 tons of saprolite ore and 154,945 tons of limonite entirely intended for export. The main saprolite ore customers were Japanese and Chinese companies. Australia used to be the sole limonite ore client. This changed in 2006 when the Chinese market opened up. Currently, the Kouaoua centre is essentially exporting saprolite ore to supply the SNNC processing Plant in South Korea and occasionally provide the Australian market with low grade limonite. In 2013, the centre produced 237,282 tons of saprolite ore and 127,268 tons of limonite ore.

Ore loading

The coastal facility accommodates Cotransmine, SMSP's subsidiary East Coast navigation fleet comprising 7 x 300-tonne barges and 4 tugboats. At peak East Coast loading periods, Cotransmine may sometimes hire barges from other operators or even contract out towage operations. In return, we may also rent out Cotransmine resources, particularly our barges, to such operators.

The onshore laboratory is equipped with a spectrometer (atomic absorption) and a potentiometer to optimise ore grade monitoring during loading operations.

Human resources

The Kouaoua centre employed 83 members of staff on December 31, 2013, coming mainly from the municipalities of Houaïlou, Kouaoua and Canala. Casual staffs are also employed for work on preparing samples for grain size analysis, barge moorage and supervision of quayside truck manoeuvres and ship handling and carnage during ship loading operations. The work is carried out within a double shift process to meet the Gwangyang Plant's rise in production.



Various missions are assured by subcontractors: the rolling, the transport of staff, cleanings, sorting of mines, sounding, the watering of track, the stake in stock and the sorting in the seaside, the provisioning in diesel oil and the preventive of trucks and mining machines.



NICKEL MINING COMPANY



Infrastructures

The centre of Kouaoua has rudimentary, ancient and scattered installations which it is intended to rehabilitate. The administrative premises and those of the mining camp at the foot of the massif are not linked with the network Enercal: supply by generating sets. The repair shop, situated at the top of Kagitra, also shelters a cloakroom for the staff and a store of storage of spare parts.

A zone of life was realized from containers fitted out in canteen, offices or toilets. This zone is equipped with the networks of water and electricity, with the tubs of storage of water, with sources of electric energy and with air conditioning installation.

The first operational tests of the scalper, replacing the Kouaoua's 30 years installed wobbler, have been satisfactory. The optimal use of this ad hoc tool improves the centre's productivity as well as the quality of ore intended to the Gwangyang Plant.





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