

**INTER-AMERICAN DEVELOPMENT BANK**



***BRAZIL***

***GERDAU AÇOMINAS INVESTMENT PROGRAM  
(BR-L1118)***

***ENVIRONMENTAL AND SOCIAL MANAGEMENT REPORT  
(ESMR)***

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## I INTRODUCTION

- 1.1 *Gerdau Açominas S.A.* (“Gerdau Açominas”, or the “Company”, or the “Borrower”), a company incorporated in Brazil, is the country’s largest operation of the Gerdau group of companies (the “Gerdau Group”). The Company has been implementing a US\$ 1.5 billion capital expenditure program aimed at increasing its production capacity at the Ouro Branco Mill (or “Industrial Complex”) located in the State of Minas Gerais, Brazil (see **Annex I**). As part of this program, the Company is undertaking an investment program of approximately US\$ 370 million that comprises the installation of: (i) a new continuous slab casting equipment to produce raw material for flat steel production; (ii) a vacuum degassing unit to improve steel quality; (iii) gantry cranes and ancillary equipment; and (iv) water-based cooling towers and water recirculation system (together the “Investment Program” or “Project”). This Investment Program is being considered for possible support by IDB. The main equipment to be installed will be state-of-the art in the industry, and will result in significant improvements in the operations of the Company.
- 1.2 The Ouro Branco Mill has an annual production capacity of 3.0 million tons of steel per year. The Investment Program, together with other improvements being made at the plant, will increase its capacity by 50 percent to 4.5 million tons of steel per year. The expansion of the Company’s capacity is focused on meeting the demands of the international market, which accounts for more than 70 percent of their production.
- 1.3 The Company is a closed capital company incorporated in Brazil and controlled by Gerdau, which owns 92.16 percent of its total and common shares. The remainder of its common shares is owned by *Metalúrgica Gerdau S.A.* (0.67%), and others (7.17%).
- 1.4 The Ouro Branco Mill (formally named “*Usina Presidente Arthur Bernardes*”) started operations in 1986, and produces steel billets, slabs, blooms, wire rod and structural profiles, which are sold in over 40 countries, in addition it generates carbon compounds and by-products used in the metal and chemical industries and in road paving. It sells its products to rolling mills and to companies that use slabs, billets, blooms and ingots as raw material for their finishing lines such as shipbuilding, forging and mechanical. It also produces its own finished products such as high quality wire rod and sections.
- 1.5 The industrial complex was previously owned by Aço Minas Gerais S.A. (Açominas), which started activities in 1986. In November 2003, the industrial facility was acquired by Gerdau Group, the current owner and renamed to Gerdau Açominas S.A.
- 1.6 Taking into account the potential environmental and social impacts and mitigation measures associated with the Project, as per IDB’s OP 703 Environment and Safeguards Compliance Policy, the Project has been classified as a Category B operation.
- 1.7 The Environmental and Social Due Diligence (“ESDD”) performed by the Bank involved also inspection of Gerdau Açominas main industrial facilities in Ouro Branco, to assess adequacy of existing procedures and management systems to address environmental, social, health, safety and labor issues.

## II PROJECT DESCRIPTION

### A. Existing Operations and Facilities

- 2.1 The Ouro Branco Mill is located between the cities of Ouro Branco and Congonhas, in the State of Minas Gerais, Brazil, and about 100 km to the southeast of the state capital, Belo Horizonte, and the entire area of the property extends over one thousand hectares. The vicinity of the Industrial Complex can be described as grassed and forested areas that compose a buffer zone around the mill. The nearest residential area is located approximately 3 km to the east. The nearest watercourse is the Gurita Creek that is located approximately 1.4 km of the Ouro Branco Mill to the north and the Cuiabá Passagem located approximately 1.2 km to the south. The Industrial Complex employs approximately 5600 staff people and there are additionally around 3400 subcontractors involved in activities related to production, cleaning, food preparation and transport.
- 2.2 The Ouro Branco Mill current production capacity is of 3 millions tons of liquid steel. The sintering plant has a production capacity of around 13 thousand tons per day and the process consists of agglomerating the iron ore and raw materials such as limestone, serpentinite and wastes from the iron production to obtain the sinter to be then used in the blast furnace. The existing coke plant has a production capacity of 1.14 millions tons per year of coke; in the coking process the mineral coal is transformed in coke that will also be used in the blast furnace. The blast furnace has a capacity of producing around 7.7 thousand tons per day of pig iron, which is obtained from the reduction of the iron ore in the blast furnace. The steelmaking plant, where the pig iron is converted into steel, consists of two converters.
- 2.3 The mill has also a ladle furnace, which is responsible for guaranteeing a continuous flow in the steel production, to maintain the steel temperature and also allows that final adjustments can be done in the chemical composition of the steel before ingoting. The molten steel is then sent for the production of blocks or the rolling mills for the production of steel billets, slabs, blooms, wire rod and structural profiles.
- 2.4 The Industrial Complex integrates also a carbo-chemical plant that uses by-products from the coke plant to produce chemicals that are commercialized. A thermal power plant uses metallurgical gases (from blast furnace, coke plant and steel making plant) for electricity generation to supply the Industrial Complex.
- 2.5 The main water source of the Industrial Complex is the Soledade Reservoir, located approximately 4 km to the north of the Industrial Complex boundaries. As the mill is equipped with water recirculation systems that allow the reuse 95 percent of the water, the current average water withdrawal rate for the Ouro Branco Mill is on the order of 0.8 m<sup>3</sup>/s (or around 2.9 thousand m<sup>3</sup>/h or 69 thousand m<sup>3</sup>/day).
- 2.6 There are six different discharge points for both stormwater runoff and treated wastewater from different areas of the Industrial Complex. All discharge points are included in a monthly monitoring report that is submitted to the State Environmental Agency ("FEAM"). Sanitary wastewater generated in all areas of the Industrial Complex is sent to a biological treatment system before the final discharge.
- 2.7 The potential impact regarding the iron metallurgy activities is the particulate matter discharge into the atmosphere. To reduce emissions of air contaminants (essentially

particulate matter and gases) the mill has air emission control systems such as electrostatic precipitators, bag-filters and gas scrubbers.

- 2.8 There is an industrial waste storage area, currently operated by a third party where 4.5% of the generated wastes are stored for subsequent off-site disposal. Reportedly, the remaining amount of wastes generated within the Industrial Complex are reused in the process or sold to other companies for re-use or recycling.
- 2.9 To increase the steel production from 3 million tons to 4.5 million tons per year Gerdau is also implementing an expansion of other units within the complex. The expansion consists of the installation of a new sintering unit (#2), blast furnace (#2), ladle furnace (#2), as well as expansion of the coke oven plant and thermal power plant.
- 2.10 The present sintering plant has a capacity of approximately 12.8 thousand tons per day and the expansion will add approx. 6.8 thousand tons of capacity per day. The new coke oven plant will have the capacity of 0.63 million of coke per year. The blast furnace is projected to have a capacity of 4.2 thousand tons per day of pig iron. A new warehouse will be built to store the raw materials for the blast furnace and it will consist of 8 silos for ferrous materials, 4 silos for diverse materials and 5 coke silos.

## **B. Investment Program Proposed Components**

- 2.11 The Investment Program that is being considered for possible support by IDB is composed of the following units: (i) a new continuous slab casting equipment to produce raw material for flat steel production; (ii) a vacuum degassing unit to improve steel quality; (iii) gantry cranes and ancillary equipment; and (iv) water-based cooling towers and water recirculation system (together the “Investment Program” or “Project”).
- 2.12 The Project will be installed within the Industrial Complex, in an area adjacent to the steelmaking plant. Recently, this area was being used as an industrial support area for the steel mill. The continuous slab casting and the vacuum degassing units will occupy an area of approximately 4.2 hectares. In a first phase, it will produce 1.5 million tons of slabs per year and 3.0 million tons per year in a second phase. The vacuum degassing plant will produce 2.5 million tons per year of liquid steel of ultra and extra low de-hydrogenated carbon.
- 2.13 The continuous slab casting will consist of a sustenance tower for the ladle furnaces, gantry cranes and ancillary equipment, distributor, secondary refrigeration area, reconditioning and expedition area, central lubrication system, water recirculation unit, steam collection and exhaust system, electric substation, metallographic laboratory, among other utilities.
- 2.14 The vacuum degassing plant will consist of the following systems: to promote the transference of the ladle furnaces, move the vacuum camera, vessel vacuum, oxygen injection, alloy and additive storage, pre heating with coke gas (CGO), liquefied petroleum gas (LPG) and oxygen supply.
- 2.15 The new installations will have utilities such as air blowers, pipelines (for oxygen, LPG, water, compressed air, steam and condensed), systems for temperature measurement and steel sample, gantry cranes and ancillary equipment, electric systems, metering, dust control, and direct and indirect systems for water recirculation and cooling.

- 2.16 The main raw materials that will be used in the continuous slab casting will be molten steel, water, electric energy, coke gas, argon, compressed air, and flux materials<sup>1</sup>. The vacuum degassing's main raw material will be molten steel, oxygen, water, electric energy, iron-manganese alloy, limestone and fluorite.
- 2.17 The finished products of continuous slab casting will be stored in an unsheltered area that will be built in the continuous slab casting area. The treated steel from the vacuum degassing plant will be used in the steelmaking plant before following to the continuous slab casting unit.

### ***B.1 Slab casting***

- 2.18 *Indirect water system:* The continuous slab casting equipment will use on the order of 1.5 thousand m<sup>3</sup>/h of water in the water cooling system that will be sent to the indirect closed system. In the indirect water closed system, the water will be refrigerated in cooling towers and pumped back to the process to be used in equipment cooling. The cooling water will be treated by adding biocide and anticorrosive in the cooling towers basin.
- 2.19 *Direct water system:* The continuous slab casting second cooling system will use water in a average rate of approx. one thousand m<sup>3</sup>/h. The water will be used in an air-mist spray in direct contact with the ingot. Due to the direct contact of the water with the ingot a metal dust (“*carepa*”) will be generated, which will be washed away together with oil and then sent to a retention tank (“*poço de carepa*”) where the solids and the oily water will be separated by gravity. From the retention tank, the oily water will be then pumped to a direct recirculation system, where the remaining contaminants will be removed and the treated water recirculated.

### ***B.2 Vacuum degassing unit***

- 2.20 *Treated water:* The approx. 340 m<sup>3</sup>/h of treated water used in the vacuum degassing unit will be provided by the slab casting system. There will be a demineralization system for obtaining such treated water.
- 2.21 *Indirect water system:* The water of the indirect system will be re-circulated and used for cooling the heat exchanger of the treated water direct system, at the vessel flanges and in air conditioning systems, with a maximum flow rate of approx. 340 m<sup>3</sup>/h. After cooling the equipment the water will reach a maximum temperature of about 50°C. It will be cooled and re-circulated in the indirect re-circulation system of the continuous slab casting.
- 2.22 *Direct water system:* The direct water system will be that used in the condensed system and will have a flow rate of approx. 1.8 thousand m<sup>3</sup>/h and will generate an effluent with a temperature of 50 °C and a concentration of 450 mg/l of suspend solids. The effluent will be treated in a dedicated system, refrigerated and re-circulated to the direct water system.

## **C. Project Workforce**

- 2.23 Project construction will involve around 800 subcontractor workers on average and 2000 at peak time. The operation of the facilities will require 200 people working on a three shift basis of 8 hours per day each, seven days per week.

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<sup>1</sup> Flux are substances or minerals, such as lime and fluorite, which are added for the purpose of aiding the removal of impurities and lowering the melting point of raw materials in steel production.

## **D. Project Alternative Analysis**

- 2.24 There has been no alternative location analysis as technical constraints indicated that the Project had to be installed in an available area close to the steelmaking plant.

## **III. ENVIRONMENTAL LICENSING COMPLIANCE**

### **A. Investment Program Proposed Components**

- 3.1 Brazilian and State of *Minas Gerais* environmental legislation usually foresees three sequential environmental licenses for large projects that are being planned to be installed in a new area: (i) a Preliminary License at planning stage; (ii) an Installation License to initiate construction; and (iii) an Operating License authorizing operation of the facility.
- 3.2 However, in case of some expansion projects, such as the ones involved in the Investment Program, the Preliminary License may not be required. In fact, the Minas Gerais State Environmental Agency (“FEAM”), responsible for the review and recommendation for the issuance of environmental licenses in the state, decided that the licensing process for the expansion of the Project would start with the Installation License, as it will be developed in an area inside the mill area and other industrial activities already licensed take place within the Industrial Complex. For the Installation License, FEAM requested the Company to present an Environmental Control Report (“RCA”) and an Environmental Management Plan (“PCA”). The Company prepared and submitted the applicable RCA and PCA to FEAM at the end of January 2007; the licensing inspection by FEAM was performed in May of the same year.
- 3.3 The Installation License for the Project was granted in August 2007 and is valid until August 2009. According to the license, the Investment Program projects must be developed in accordance with all the applicable country (national, state, and municipal) environmental, social, health and safety requirements (e.g., laws, regulations, standards, permits and authorizations), including compliance with local and/or federal standards.
- 3.4 In Brazil the environmental licenses are comprehensive and comprises all the environmental aspects and technical requirements regarding environmental issues associated with the operations covered by such licenses and for this reason, the Company does not need a specific permit to discharge the effluents, as the requirements are included in the environmental license. The quality of the water discharged will be monitored and the parameters that will be analyzed are: temperature, pH, suspended solids, ammonia, cyanide, oil and grease, DBO and DQO.

### **B. Existing Operations and Facilities**

- 3.5 The Company has received or has initiated the processes to obtain all environmental licenses for operation of the existing facilities that require environmental licensing. In Brazil in general, and in the State of Minas Gerais, the environmental licenses are comprehensive, i.e. they comprise all the environmental aspects and technical requirements regarding environmental issues associated with the operations covered by such licenses, including those related to wastewater discharges. The Company is required to be in compliance with the

technical requirements listed in all environmental licenses in order to avoid receiving infraction notices, fines or being barred from operating by FEAM.

- 3.6 Furthermore, according to State Decree 39424/98, that regulates State Law 7772/80, industrial activities installed before February 17, 1986 are required to obtain Corrective Operating License (*Licença de Operação Corretiva*), upon submittal of an Environmental Management Plan (“PCA”). Therefore Gerdau was requested by FEAM to obtain the Corrective Operating License for some of the units that were built before such date and also due to processes changes that have been occurring in the last years. The process to obtain such type of license is carryout separately for each main unit of the mill. The Company has already obtained or started procedures to obtain all the necessary Corrective Operating Licenses.
- 3.7 The Gerdau also holds a registration # 77861 with the Federal Environmental Agency (“IBAMA”). As part of the registration, the Company is required to report its activities including yearly generation rates regarding solid waste generation, air emission sources and effluent discharged to IBAMA by 31<sup>st</sup> March of every year. Furthermore, all companies registered with IBAMA must pay an environmental inspection fee (“TCFA” - *Taxa de Controle e Fiscalização Ambiental*) on a quarterly basis. Based on documents reviewed during the site visit, the Company is regularly paying the required environmental inspection fee on a quarterly basis and is sending the annual activity reports, as required by regulations.
- 3.8 The Company has also the appropriate permit to withdraw water from two nearby rivers. More information regarding this permit is indicated in **Paragraph 4.36** of this report.
- 3.9 The licensing process for other units that are being expanded in the mill, i.e. new sintering unit, blast furnace, ladle furnace, as well as expansion of the coke oven plant and thermal power plant have been carried out. In this case, the Company has been requested to develop an Environmental Impact Assessment (“EIA”) and respective Environmental Impact Statement (“RIMA”). These were submitted to FEAM in order to apply for the Preliminary License and Installation License. In accordance to FEAM, the Company applied to the Preliminary License together with the Installation License in a single process (since they refer to expansion of existing facilities and the location is already defined). FEAM issued the Installation License in October 2006. The documents and/or studies referring the expansion of these units were available to public consultation and public hearings were conducted in Ouro Branco and in Congonhas.

## IV ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS

### A. Potential Negative Impacts Associated with the Investment Program

- 4.1 The projects integrated in the Investment Program will be located in the existing steel mill complex, in an area adjacent to the main steel mill buildings. Hence, the potential negative environmental and social impacts and risks associated with ground preparation and overall implementation of the new facilities will be substantially reduced.
- 4.2 The Ouro Branco Mill facilities are located away from any conservation or indigenous areas, and the land acquisition and preparation process did not require or involve relocation of people. Thus, the Investment Program and the overall mill facilities and operations do not or will not: (i) convert or degrade critical natural habitats or damage critical cultural sites;



(ii) significantly convert or degrade natural habitats; (iii) raise any significantly negative indigenous issues; and (iv) generate any resettlement issues.

- 4.3 Moreover, the mill facilities are surrounded by a relatively wide forested buffer zone and there are no sensitive receptors or units nearby; these circumstances contribute to lower considerably the significance of impacts related to air and noise emissions.

#### ***A.1 Construction phase***

- 4.4 Potential negative impacts associated with construction of the projects integrated in the Investment Program will be those typical of works of this nature: (i) dust and noise emissions; (ii) increase in road traffic associated with the supply of construction materials and equipment during installation; and (iii) influx of workers to the region. However, these impacts will be limited in scale and temporary, and can be mitigated with the standard construction environmental management procedures established by the Company. Moreover, the significance of these impacts will be attenuated by the location of the new facilities in an existing industrial complex, as indicated in the paragraphs above.

##### ***A.1.1 Environmental***

- 4.5 Soil preparation and leveling at the construction site may cause an increase in solids suspended in the stormwater runoff during rain events, which eventually could cause an increase in water turbidity of nearby water bodies. However, as the site is located inside the complex, the runoff will be collected through the mill's drainage system, which has a mechanism to promote the retention of solids.
- 4.6 The main air emissions will be related to the construction activities generating fugitive dust emissions from heavy traffic on unpaved areas and vehicles combustion gas emissions. The Company will conduct water aspersion during construction activities in order to reduce fugitive dust emissions and will control the maintenance of the vehicles and equipments that will be used in the construction. During the ESDD site visit it has been possible to observe that some of the internal accesses were unpaved and being watered to reduce fugitive dust emissions.
- 4.7 The sanitary wastewater generated during construction will be collected by the sanitary wastewater drainage system of the Industrial Complex and will be treated in the existing on-site wastewater treatment plant. The increase in the sanitary wastewater flow to be treated in the wastewater treatment plant will not affect the treatment efficiency since the plant has plenty of hydraulic capacity to treat such flow increase. Current data shows that the sanitary wastewater treatment plant is operating at only 60% of its full capacity.
- 4.8 The main solid wastes to be generated during construction will be soil from the excavation activities and construction debris. These wastes will be separated and disposed in accordance with the waste management procedures by the Company. However, the Company do not have a structured program to manage the construction debris. It is recommended that the Company develop and implement such program to improve overall management of the wastes.
- 4.9 The use of machines and equipment and the traffic of construction-related vehicles will increase noise levels in the area where the construction will go on. However, workers will have available personal protective equipment ("EPI"), which will include hearing protection.

Outside the construction area the increase in noise level will not be significant and will be masked by the noise from other sources in the complex.

#### *A.1.2 Social*

- 4.10 For the construction of the projects integrated in the Investment Program the Company plans to have an average of 800 workers that could reach 2000 on peak periods. The construction phase is planned to take 17 months as a minimum. The workers will come mainly from nearby towns of Ouro Branco and Congonhas and transported to the construction site on a daily basis. However, the traffic increase associated with the Project will not be substantial when compared with the normal traffic to the Industrial Complex, and less when compared with that of the expansion of other units in the Complex. Due to the Industrial Complex overall expansion the local traffic has already been increased in the surrounding areas and, therefore, the impact related to the traffic increase due to the Investment Program is considered to be low.
- 4.11 In general, areas where large construction activities are implemented attract a large amount of workers during the mobilization period, before the construction. Specifically for the case of the Project, considering that the Industrial Complex overall expansion is already in process, this impact will have low magnitude since most of the workers are already living in neighboring cities.

#### *A.1.3 Health and safety*

- 4.12 The type of accidents that the construction workers might be at risk during the continuous slab casting and vacuum degassing construction activities are those typical of normal construction activities, such as lesions, electric shock or fall among others. However, the risks will be reduced as the Company is required to comply with the Brazilian health and safety regulations and standards to avoid accidents. Since the construction activities will be carried out mainly by third parties, the Company will have a team to supervise the health and safety practices of contractors.
- 4.13 According to information obtained during the due diligence the Company's safety team has a dedicated group of specialized personnel and an inspection program to manage contractor practices. In addition, the contract between the Company and the contractor contains a specific clause associated with the score results of the inspection program and payments may be suspended until a minimum performance (e.g., 90%) is achieved. During the ESDD site visit no non-compliances were observed in relation to the Brazilian Health and Safety regulations and standards.

### ***A.2 Operation phase***

- 4.14 The most relevant potential negative environmental and social impacts associated with the operation of the projects integrated in the Investment Program will be related to: (i) emissions of particulate matter generated at silos used to store flux materials; (ii) generation of liquid effluent from periodic purges at the water recirculation system; and (iii) noise emissions from various equipment. However, the new facilities will be provided with bag filters to retain most of the particulate matter coming from the silos, and press filters to clean the liquid effluent coming from water purges, and, as mentioned, the Industrial Complex is surrounded by a buffer zone so that noise emissions from the new facilities will not represent a significant

impact. The new facilities will also generate industrial solid wastes such as metal bits, dust cake from the bag filters and mud from the water purge filtering system; nevertheless, most of these solid wastes will be recycled at the mill facilities and, as consequence, there will be no significant environmental impacts associated with them. Therefore, most of the environmental and social impacts associated with the new facilities will be limited or controlled.

#### *A.2.1 Environmental*

- 4.15 The main source of air emissions from the Project will be particulate matter generated by supply and storage silos, dosage scale and in conveyor belts used to transport alloys and other raw materials during the operations. The particulate matter will consist mainly of iron, silicium, manganese, niobium, molybdenum, aluminum, calcium carbonate (all present in the metallic alloy), and raw materials that will be used in the production process. The area will be provided with an exhaust system and bag filters and a stack for appropriate discharge of air emissions to the atmosphere. Further details on the air emissions management by the Company are provided in **Section V.B.2.1** of this report.
- 4.16 The main use of water ion the operation of the Project will be for floor and equipment washing, cooling systems and human consumption purposes. The water for the Project will be supplied from the internal existing industrial and potable water distribution system. The amount of make-up water supplied will be on the order of one thousand m<sup>3</sup> per day (or approx. 0.01 m<sup>3</sup> per second). The Company already has a permit to withdraw water up to 4 m<sup>3</sup> per second (or approx. 346 thousand m<sup>3</sup> per day) and the current water withdrawal rate is approximately 0.8 m<sup>3</sup> per second (69 thousand m<sup>3</sup> per day). The future water use in the Project will be well below the permitted amount. More details on water use permit are presented on **Paragraph 4.36**.
- 4.17 The main types of wastewater generated at the Project will be runoff from stormwater system, sanitary wastewater and process water purges. The non-contaminated stormwater of the continuous slab casting and vacuum degassing areas will be discharged at one of the Complex's existing discharge points. This point has been included in the wastewater monitoring program and in accordance with the 2007 Self Monitoring Report and the analyzed parameters the quality of the discharge is in compliance with the limits set by the applicable legislation. Therefore no further treatment system is necessary before discharge.
- 4.18 The sanitary wastewater generated from the continuous slab casting and from the vacuum degassing will be connected to the sanitary wastewater system of the Industrial Complex and will be treated in the existing biological wastewater treatment plant. No upgrading in the wastewater treatment plant will be necessary to receive the sanitary wastewater generated from the continuous slab casting and from the vacuum degassing because the current wastewater rate flow treated in the existing wastewater treatment plant is approx. 3.6 thousand m<sup>3</sup> per day, which represents 60% of its total capacity. The estimated increase in the number of workers due to the Investment Program is of approx. 200 and those people will cause an increase the sanitary wastewater flow rate of approx. 20 m<sup>3</sup> per day or only 8% of the currently treated flow. Therefore, the existing wastewater treatment plant has more than enough capacity to treat the sanitary wastewater after the expansion and the installation of the continuous slab casting and vacuum degassing plant.
- 4.19 The Investment Program proposed will use water in two systems, direct and indirect water systems, as previously described in **Sections II.B.1 and B.2**. Essentially all the water used in

the process will be recycled, including the water that needs to be periodically purged from the water recirculation system, which will also be recycled after being treated by filtration.

- 4.20 The main types of solid wastes that will be generated in the continuous slab casting are the following: (i) scrap metal, 75 thousand tons per year, generated in the scrap sump and in the retention tank (“*Poço de Carepa*”) of the continuous slab casting; (ii) oil and grease, 18 tons per year, generated in the retention tank (“*Poço de Carepa*”) of casting and recirculation water system; and (iii) sludge from the filter press, approx 1.4 thousand tons per year, generated in the direct contact recirculation water system.
- 4.21 The main wastes that will be generated in the vacuum degassing are the following: (i) dust cake from the bag-filters, approx. 1.3 thousand tons per year, from the air pollution control device; and (ii) sludge from the filter press, approx. 1.3 thousand tons per year, generated in the water purge filtering system.
- 4.22 Nevertheless, most of these solid wastes will be recycled at the mill facilities and, as a result, there will be no significant environmental impacts associated with them.
- 4.23 In summary, the potential negative environmental impacts associated with the operation of the Project can be considered not significant, with the procedures and techniques that the Company has in place for other units of the Industrial Complex.

#### A.2.2 *Social*

- 4.24 The operation of the Project will increase the current level of noise within the industrial area. However, considering the area where the Industrial Complex is located, the buffer zone around it and the existing activities in this Complex, the noise generated in the continuous slab casting and vacuum degasification will not be significant for the external and internal population. For the internal population the noise levels are masked by other sources and personal protective equipment will be used in the units. Therefore, the potential negative social impacts associated with the operation of the Project are expected to be of low significance.

#### A.2.3 *Health and safety*

- 4.25 Also in relation to the operation of the new facilities, there may be some risks to workers in relation to possible accidents (*e.g.*, contact with hot surfaces and moving parts, fires, explosions, spills), as is expected in any typical industrial setting of this nature. However, the Company will adopt health and safety procedures, plans and protective equipment to both reduce the risks and consequences to worker’s health and safety, either at normal operation or in relation to accidents. It is important to mention that the Project is included in the existent Industrial Complex that already has an implemented and effective health and safety management system.

## **B. Potential Positive Impacts or Benefits Associated with the Investment Program**

- 4.26 Some of the potential positive environmental and social impacts associated with the Project include:
- (i) generation of employment and use of local workforce available in the nearby municipalities (estimated 2000 workers during peak of construction and 200 for operation);
  - (ii) stimulation of local economic activities in relation to the increase in demand for goods and services to satisfy the needs of the additional workers and families, as well as in association with higher availability of income as a result of the salaries paid to local workforce; and
  - (iii) growth of municipal revenue in association with increase in the collection of taxes levied on production and consumption, creating multiplying beneficial effects.
- 4.27 *Energy Efficiency and Carbon Emissions Assessment:* This Project has been framed within the Bank's Sustainable Environment and Climate Change Initiative (SECCI) (GN-2435-1), such that SECCI participates in the Project through a technical cooperation to perform an energy efficiency assessment in one of the steel mills of the Gerdau Group, to assess its overall energy efficiency characteristics, measure its carbon emissions levels, and propose measures to increase efficiency and reduce emissions, in a manner consistent with the Bank's goal to expand the development and use of renewable energy sources, energy efficiency technologies and practices, and carbon finance in the Region.

## **C. Potential Negative Impacts Associated with Existing Operations and Facilities**

- 4.28 The Industrial Complex is located in a favorable condition in relation to the surrounding area. There are approximately two thousand hectares of green area surrounding the site and the nearest homes are located at approximately 3 km to the east from the Industrial Complex. These circumstances contribute to lower considerably the significance of impacts associated with the Complex, particularly with respect to air and noise emissions.
- 4.29 Also, there have not been any significant environmental, social and health and safe issues such as unexpected air emissions, spill or leaks, fire, explosions, fatal accidents in the past 5 years.

### ***C.1 Air emissions***

- 4.30 The air emission control systems adopted in the existing facilities and operations include the following: (i) 4 electrostatic precipitators, used in rolling mills, sintering and calcination areas; (ii) 16 bag-filters, used in steel mill, blast furnace, coke plant and sintering areas; and (iii) 1 gas scrubber, used in coke plant area.
- 4.31 The Company has a monthly monitoring program comprising air quality parameters such as NO<sub>x</sub>, SO<sub>x</sub> and particulate matter. The results of the monitoring program are submitted on a regular basis to the State Environmental Agency ("FEAM"). The Company has also an internal program for monitoring black smoke from vehicles emissions from buses used for the employees' transportation.

- 4.32 The main air emissions that will be generated at the sintering #2 will be particulate material from handling coal and coke fine dust, iron ore, auxiliary raw materials, dust and sludge and the emissions from the sintering equipment that consists of smoke and gases containing particulate materials.
- 4.33 The main air emissions that will be generated at the blast furnace #2 will consist of particulate material from the transfer of coke, sinter, auxiliary raw materials and from the others blast furnace raw materials; air emissions from the blast furnace itself that consists of organic and inorganic compounds and particulate materials from the silos. The transportation belt and silos will generate fine dust.
- 4.34 The air emissions generated in the ladle furnace #2 will consist of particulate material and gases from the ladle furnace charging and discharging operations and from the heating and additional operations
- 4.35 The main air emissions generated at the expansion of the thermal power plant will consist of gases such as CO<sub>2</sub>, CO, N<sub>2</sub>, NO<sub>x</sub>, SO<sub>x</sub> resulting from combustion in the new boiler that will be fueled by a mixture of blast furnace gases (GAF), coke oven gases (GCO) and steelmaking plant gases (GAC).

## **C.2 Water supply**

- 4.36 Water for the entire industrial complex is currently withdrawn from the Soledade Reservoir. The Company has a permit to withdraw water from two nearby body of waters and the approved maximum withdrawal rate is 4 m<sup>3</sup> per second (or approx. 346 thousand m<sup>3</sup> per day) from Soledade Reservoir and 6 m<sup>3</sup> per second from the Maranhão River, and it is valid for 30 years, being due on 2010. It has to be updated in 2010 or when required by Minas Gerais Institute of Water, IGAM. Currently, the Company does not withdraw water from the Maranhão River. The current amount of water extracted from the Soledade Reservoir is approximately 0.8 m<sup>3</sup> per second (or approx. 69 thousand m<sup>3</sup> per day), which is far lower than the maximum allowed.
- 4.37 After withdrawal, the water is sent the company's water treatment plant. The treatment consists in coagulation, flocculation, sedimentation, filtration and pre-chlorination stages. After the treatment the water is stored in two reservoirs of 5 thousand m<sup>3</sup> each, before sending it by gravity to the Industrial Complex. For human consumption the water is further treated with chlorine before the actual consumption to ensure the appropriate chlorine concentration at the point use.
- 4.38 The treated water is also used in the direct and indirect water systems, for general use in the installations, consumption and water-fire fighting system. Currently, the 13 water recycling and treatment systems available in the mill ensure that 95% of the water consumed is recycled and/or reused in the industrial processes or other areas of the Complex.
- 4.39 The water from the indirect water systems (i.e. the water that does not have direct contact with the materials in the process), are used into dedicated cooling systems of coke, sintering, blast-furnace and steel mill areas, and are cooled and recirculated through the recirculation systems installed within these areas. The water used in the direct water systems is treated and recirculated in dedicated recirculation systems in the coke extinguishing area and slag granulation system.

- 4.40 A total of 10 indirect water systems are installed in the areas where the temperature is controlled and 6 direct water systems in areas where the suspended solids, oil and greases are controlled.

### **C.3 Wastewater**

- 4.41 The sanitary wastewater generated in the Industrial Complex is sent to the mill's sanitary wastewater collection system and then for treatment at the Company's biological wastewater treatment plant located in an area outside the main Industrial Complex, and approximately 3 km northwest of the main gate. The treatment consists of screening, sand trapping and two stabilization lagoons. The plant has an installed treatment capacity of 250 m<sup>3</sup> per hour and is presently treating only approximately 150 m<sup>3</sup> per hour and has enough extra capacity to assimilate the additional flows coming from the expansion of the steel mill and from the continuous slab casting and vacuum degassing. After treatment the sanitary wastewater is discharged at the Gurita Creek.
- 4.42 In addition, there is a gas scrubber to clean the gas generated in the coke oven plant. The wastewater from the gas scrubber, the ammonia effluent ("*Licor Amoniacal*"), is treated for ammonia removal (which is subsequently commercialized) before being sent to the Biological Treatment Station ("STB"), an activated sludge treatment system consisting of aeration, physical and chemical treatment, settling and filtration. After treatment the wastewater is discharged into one of the Complex's discharge points and the sludge is sent for internal soil application.
- 4.43 The STB is being expanded and adjusted to treat the current flow rate and that associated with the new expansion projects in accordance with the technical requirement of the Operating License. The STB renovation/improvement is scheduled to be completed by the end of December 2007.
- 4.44 The runoff from the stormwater drainage system is discharged at six different points and these discharge points are included in the monthly monitoring report. The storage yard and raw materials preparation areas are provided with drainage systems that include solid settling and oil and water separation devices before the discharging points.
- 4.45 The types of wastewaters to be generated in the expansion of other units of the Complex will be similar to the ones generated in the current operations and the existing wastewater treatment plant has enough capacity to receive and treat adequately the demand generated by the expansion project as already detailed in **Paragraph 4.18** of this report.
- 4.46 In Brazil the environmental licenses are comprehensive and comprises all the environmental aspects and technical requirements regarding environmental issues associated with the operations covered by such licenses and for this reason, the Company does not need a specific permit to discharge the effluents, as the requirements are included in the environmental license. The quality of the water discharged is monitored and the parameters that are analyzed are: temperature, pH, suspended solids, ammonia, cyanide, oil and grease, DBO and DQO.

#### ***C.4 Waste management***

- 4.47 The main solid wastes generated at the Industrial Complex are the following: (i) industrial wastes: composed of dust (22%), sludge (5%), crust and metal scrap (72%) and others (1%); and these represent 99% of the total wastes generated by the Industrial Complex operations; and (ii) domestic wastes: composed of paper (11%), wood (53%), glass, plastics and others (36%), which represent 1% of the total wastes generated by the Industrial Complex operations.
- 4.48 The Company has a specific area to segregate the industrial wastes generated in the Industrial Complex, before they are commercialized or sent to final disposal. This area is managed by a specialized company, which is also responsible for managing all the process for the waste final disposal, except for the coke oven acid sludge, steel mill fine sludge and STB sludge, which are stored or disposed by the Company in designated areas in the Industrial Complex.
- 4.49 Approximately 96% of the total industrial wastes generated in the Industrial Complex is recycled or commercialized, and only 4% is sent for final disposal in the designated areas in the mill site.
- 4.50 The Company sends the first-aid wastes (medical wastes) for incineration by a specialized and certified company. The Company sends the spent light bulbs containing mercury to a certified recycle company. The used lubricant oils are also sent for recycling by a specialized certified company.
- 4.51 The acid sludge from the coke oven plant is sent for disposal in a on-site area prepared for this purpose, designated as Industrial Waste Landfill (Class I - Hazardous Wastes) located in the Industrial Waste Storage area. The steelmaking plant fine sludge is also sent for disposal in the on-site Industrial Waste Storage area (Class IIA - non hazardous wastes). The hazardous waste landfill is operated in cells and as soon as they are complete, a new cell is prepared, opened and starts to receive waste. The hazardous waste, mainly acid sludge, is pre-treated with lime and slag before being disposed in the landfill cells. The hazardous waste landfill area is provided with three monitoring wells to detect any liquids that might be infiltrate on soil.
- 4.52 Furthermore, the Company has to submit bi-annually to FEAM the monthly reports with the inventory as well as with the control and disposal methods adopted for the solid wastes generated to confirm that they are in compliance with the requirements of the Operating License.
- 4.53 The main types of solid wastes to be generated in the expansion of other units in the Complex will be similar to the ones that are being generated by the current process and they will not have a significant impact in the systems in place to manage solid wastes generated in the Complex.

#### ***C.5 Environmental noise***

- 4.54 As mentioned, the Industrial Complex is located in a favorable condition in relation to the surrounding area. There are approximately two thousand hectares of green area surrounding the site and the nearest homes are located at approximately 3 km to the east from the



Industrial Complex. These circumstances contribute to lower considerably the significance of impacts associated with the Complex, particularly with respect to noise emissions. For the internal population personal protective equipment must be used in units where the levels are high.

#### ***C.6 Soil and groundwater***

- 4.55 The Company is currently carrying out soil and groundwater investigations to identify areas of potential environmental concern. The areas where the investigation is being carried out include the Industrial Waste Storage Area, the carbo-chemical plant and the steelmaking plant slag yard. These areas were chosen due to potential risks associated with the activities conducted there as well as to preclude any off-site contamination due to these activities.

### **V. ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY MANAGEMENT**

#### **A. Environmental and Social Mitigation Measures**

##### ***A.1 Planning, Design and Construction Phases***

- 5.1 Water aspersion will be conducted in the internal Industrial Complex roads near the construction site for the control of the fugitive dust emissions.
- 5.2 During the construction activities, management procedures and programs will be implemented to manage solid wastes.
- 5.3 Adjustments will be performed in the stormwater drainage system and sanitary wastewater collection system to maintain the discharge quality.
- 5.4 To attenuate the impacts on road traffic outside the Industrial Complex, the Company will establish and implement programs with municipal and state authorities to improve traffic signage (lights and signs) and material logistics.
- 5.5 The Company will continue with the implementation of the selection, training and capacity building programs to ensure that local workers are hired and qualified properly. A program of gradual demobilization will be implemented after the end of the construction phase.

##### ***A.1.2 Operation Phase***

- 5.6 To mitigate environmental and social impacts associated with the activities in the Industrial Complex, some pollution prevention actions were considered such as the location of the area to build the Complex, a safe distance from the environmental protected and residential areas. In addition, a green belt area was implemented surrounding the Industrial Complex and the areas where the main water supply sources (Soledade Reservoir) are located were acquired by the Company.
- 5.7 Furthermore the Company established and maintains the following green, preserved or Environmental Protected Area (“APA”):

- Greenbelt areas consisting mainly of savannah type vegetation and remainder of Atlantic Forest (*Mata Atlântica*): approx. 1.3 thousand hectares with an average width of 1.6 thousand hectares;
  - Easement areas: approximately 1.4 thousand hectares; and
  - Native forest on the side hill of Mountain Ridge of Ouro Branco: approx. 1.9 thousand hectares.
- 5.8 In addition, Gerdau requested on August 2007 to the State Forest Institute (“IEF”) the creation of a Private Environmental Reserve (“RPPN”) in Ouro Branco.
- 5.9 Essentially all the water used in the industrial process will be recycled, including the water that needs to be periodically purged from the water recirculation system, which will also be recycled after being treated by filtration.
- 5.10 The control of air emissions from the vacuum degassing will be done through an abatement systems consisting of exhaust system, bag filters, dust collector, a 6m<sup>3</sup> silo for dust storage and sufficiently high stack.
- 5.11 The flow rate at the entrance of the vacuum degassing air pollution abatement system will be approximately 57 thousand Nm<sup>3</sup>/h. The emissions of particulate matter to the atmosphere will be on the order of 30 mg/Nm<sup>3</sup>. In accordance with the COPAM (Environmental Policy Council) Normative Deliberation #11 of 1986 the maximum permitted emission level from a steel mill is 50 mg/Nm<sup>3</sup> and the CONAMA - (National Environmental Council) Resolution #382 of December 2006 allows particulate material emission of 40 mg/Nm<sup>3</sup>. Therefore, the emissions will be below the maximum limits allowed.
- 5.12 The wastes generated in the continuous slab casting and vacuum degassing unit will be non-hazardous (Class IIA), and will be recycled in the sintering plant or disposed of at the on-site non-hazardous waste landfill.
- 5.13 Oil and grease from scrap sumps and from recycling water system will be collected and reprocessed by specialized licensed companies.

## **B. Environmental and Social Monitoring Programs**

### ***B.1 Construction Phase***

- 5.14 The Company conducts periodic environmental and health and safety audits of the contracted companies’ activities that are working in the expansion construction. In case that they do not achieve an average of 90% performance score on the audit checklist, an action plan has to be developed and submitted to the Company. If the action plan is not accomplished, payment may be retained. These measures will also be adopted in the case of the constructions activities associated with the Project.

### ***B.2 Operation Phase***

#### ***B.2.1 Air Emission Monitoring***

- 5.15 The Company carries out periodic and systematic activities to monitor particulate matter and SO<sub>2</sub> in 23 points distributed in the Industrial Complex area. The results are presented to

FEAM on a yearly basis.

- 5.16 In addition, the Company has two stationary air quality monitoring stations located at Lobo Leite and Ouro Branco Municipalities. The parameters analyzed are SO<sub>2</sub>, NO<sub>2</sub> and particulate matter on a weekly basis. The reports regarding 2006 and August of 2007 analyses show that the results are in compliance with the Brazilian regulations (CONAMA Resolution #03/90).
- 5.17 To further monitor the air emissions, The Company will install an on-line opacity level monitor (“*opacímetro*”) in the air pollution control system to check the efficiency of the equipment and to measure the particulate matter emission levels.
- 5.18 Reportedly the stack of the air pollution control system will be in compliance with the requirements of Brazilian Association for Technical Standards (“ABNT”) - NBR 10701 - for sampling procedures, with regard to the minimum height of the sampling point and platform installation, among others.
- 5.19 The maintenance of this system will be incorporated in the Company’s procedures. The stack will be incorporated in the Company’s preventive maintenance inspection program, which consists of inspection, repairs and interventions in the electric, mechanical and instrument parts. The corrective maintenance will be done in case that an immediate intervention is required to restore the system operation.

#### *B.2.2 Wastewater Monitoring*

- 5.20 The Company carries out effluent monitoring in 16 points of the production areas. The frequency of analysis may be weekly, biweekly or monthly, depending on location and type of effluent. The parameters analyzed depend on the activities in the specific area and in general are: ammonia, cyanide, phenol, pH, soluble iron, oil and grease, COD, and suspended solids. The results are presented to FEAM on a monthly basis as part of a comprehensive monitoring report.

#### *B.2.3 Water Discharging Points Monitoring*

- 5.21 The Company carries out monthly water quality monitoring at all of the six discharging points and at the outlet of the wastewater treatment plant. The parameters analyzed are: ammonia, cyanide, phenol, pH, soluble iron, oil and grease, COD, suspended solids, benzene and manganese. The results are presented to FEAM on a monthly basis as part of a comprehensive monitoring report.

#### *B.2.4 Water Body Receptors Monitoring*

- 5.22 The Company analyzes weakly or monthly the quality of water at the four water body receptors. The parameters analyzed are: ammonia, cyanide, phenol, pH, soluble iron, oil and grease, COD, suspended solids, benzene and manganese. The results are presented to FEAM on a monthly basis as part of a comprehensive monitoring report.

#### *B.2.5 Groundwater Monitoring*

- 5.23 The Company has three monitoring wells located in the carbo-chemical, slag yard and industrial waste storage areas. The parameters analyzed are ammonia, cyanide, phenol, pH,

soluble iron, oil and grease, COD, suspended solids, benzene and manganese.

#### ***B.2.6 Waste Monitoring***

- 5.24 The Company has an on-line system to help manage the wastes generated in the entire Industrial Complex (designated by “SIA”), which includes information such as source, amounts generated, handling, final disposal, etc.
- 5.25 The Company is required to submit bi-annually reports to FEAM showing the control and final disposal information relating to the solid wastes generated, in compliance with the requirements in the Operating License.

### **C. Health and Safety Procedures and Measures**

- 5.26 The Company conducts health and safety audits of the contracted companies activities similarly as to environmental audits.
- 5.27 In addition, the Company has safety procedure #SAP 10000006689, issued on November 30<sup>th</sup>, 2005, regarding safety issues that the subcontractors are required to follow.
- 5.28 Company’s procedures and documentations are in accordance with Brazilian regulations and standards for health and safety issues and they are part of the Company’s Health and Safety Management System that is described in **Section V.F.2.**

### **D. Contingency Plan**

- 5.29 The prevention and emergency procedures for identified scenarios in the Environmental Control Report (RCA) are listed in the Environmental Control Plan (PCA) submitted to FEAM.
- 5.30 The Company has an Environmental Emergency Plan # SAP 10000005458 issued on November 1<sup>st</sup>, 2004 regarding actions that need to be taken in case of an environmental emergency situation.
- 5.31 The Company conducts drills dealing specifically with environmental emergency at least once a year, and has contracted a specialized environmental emergency response company to assist during emergencies.

### **F. Environmental, Health and Safety Management System**

#### ***F.1 Environmental and Social Management System***

- 5.32 The ultimate responsibility regarding environmental matters in the Company lies with the Environmental Manager.
- 5.33 The Company has an Environmental Department that responds to the Mine and Co-Products Director and is composed of: one environmental manager, seven environmental analysts, three environmental technicians, six general operators and two trainees.
- 5.34 The Company has developed an Environmental Policy in accordance with the ISO 14001

requirements and has an Environmental Management System (“EMS”) that is ISO 14001 certified since 2004.

- 5.35 The Company’s EMS shows some limitations such as the lack of a consistent integration between the activities and procedures, lack of a general upper management responsibility and accountability, and unclear definition of the reach of some procedures (e.g., corporate or local). The Company would benefit in bringing the responsibility and accountability for these issues to the highest management level and making sure that procedures become applicable to all operations, creating adequate standards and procedures for the entire Company. The Company should promote the up-streaming of responsibilities and accountability regarding environmental and social issues to upper management level.
- 5.36 The issues associated with social responsibility actions are treated in the realm of the Executive Vice President and Human Resources (HR) Planning Director, which are supported by the HR Department and Planning Director that coordinates the projects developed by the HR, Organization Development and the Social Communication Departments. The number of people involved depends on the specific project demand.

## ***F.2 Health and Safety Management System***

- 5.37 The Company has a Health and Safety Department and each operational department has a health and safety specialist. Furthermore there is an Internal Committee of Accident Prevention (“CIPA”) established in accordance with the occupational health and safety regulatory standards (NRs) of the Ministry of Labor. Employer and employee representatives compose the CIPA.
- 5.38 The ultimate responsibility regarding health and safety matters lies with the Occupational Health and Safety Manager. The Health and Safety Management System is composed of: one occupational safety manager, seven occupational safety engineers, 43 occupational safety technicians, five occupational physicians, three occupational nursing assistants, two health and safety helpers technicians, and two occupational health assistants.
- 5.39 The Company will allocate four occupational safety engineers and two occupational safety technicians working directly for the continuous slab casting and for vacuum degassing expansion project.
- 5.40 The Company has a Health and Safety Management System based on DNV standards. This system was developed to comply with the International Classification System for Safety and the Ordinance 3214 of the Federal Ministry of Labor, and it is part of the Company’s Quality Program.

## ***F.3 Environmental and Social Responsibility***

- 5.41 The Company has an Ethics Guideline of the Gerdau Group, which establishes the values and principles for the Company’s conduct. This Ethics Guideline is known as the Company Bluebook.
- 5.42 Some of the directives of the “Relation with Community” chapter of the Ethics code are:
  - (i) programs with the local communities to create responsible citizens incentives; and
  - (ii) equal treatment of all individuals, without discrimination due to the gender, race, age,

religion and sexual orientation.

- 5.43 However, the “Bluebook” does not comprise specific procedures to prevent discrimination during recruiting, selection, staffing and hiring of new employees. The “Bluebook” should be updated in order to incorporate such provisions.
- 5.44 The Company supports partnership projects in the social and cultural sectors with local communities in Ouro Branco, Conselheiro Lafaiete, Congonhas, Ouro Preto, São Brás do Suaçuí, São João Del Rey, Barbacena and Belo Horizonte.
- 5.45 Also related with actions to foster the economic development of the local communities and region, the Company develops projects with rural populations to take advantage of farming and reforestation in the Company’s property surrounding the Industrial Complex. Also, under a leasing regime the Company supports the installation of industries in the region, through the Congonhas, Ouro Branco and Conselheiro Lafaiete Development Agencies. Gerdau also qualifies regional suppliers for industry related purchase procedures.
- 5.46 In order to enhance the additionality of Bank’s participation, the IDB’s Project Team identified also opportunities for the Company to enhance their environmental and social responsibility standing through the development and implementation of environmental and/or social program(s) that will benefit the population of the region where the Project is located.

## **VI PUBLIC CONSULTATION**

- 6.1 The Company was not required by the environmental authorities to promote and participate in public consultations or hearings associated with the licensing process for the Project.
- 6.2 However, as per IDB’s request the Company performed public consultations with local population in the Municipalities of Ouro Branco and Congonhas using the environmental assessment reports prepared for the Investment Program to convey the necessary information. Furthermore, these environmental assessment reports were disclosed to the public at IDB’s Public Information Center in Washington, DC, and Country Representative Office, and at the Bank’s web site according to IDB’s OP-102 Disclosure of Information Policy.
- 6.3 In association with the licensing process for the expansion of other components of the steel mill, public hearings were conducted in Ouro Branco on October 25<sup>th</sup>, 2005 and in Congonhas on August 7<sup>th</sup>, 2006.

## **VII RECOMMENDATIONS**

- 7.1 IDB will require as part of the Loan Agreement that the Company and all portions of the Project shall, at all times during the life of the Loan Agreement, comply with each of the following:
  - 1. All applicable environmental, health and safety Brazilian regulatory requirements and all applicable IDB’s environmental and social policy and requirements.
  - 2. All requirements associated with any environmental, health and safety related permits, authorizations, or licenses that apply to the Project or the Company.

3. All environmental, health and safety requirements of the Project contracts, and any subsequent modifications.
4. All aspects and components of all of the Project environmental, health and safety documents.
5. Applicable aspects of the World Bank Iron and Steel Manufacturing Guidelines (Pollution Prevention and Abatement Handbook, 1998).
6. Applicable aspects of the World Bank General Environmental Guidelines (Pollution Prevention and Abatement Handbook, 1998).
7. Applicable aspects of the World Bank Monitoring Guidelines (Pollution Prevention and Abatement Handbook, 1998).
8. Applicable aspects of the International Finance Corporation Environmental, Health and Safety Guidelines for Integrated Steel Mills (2007).
9. Applicable aspects of the International Finance Corporation Health and Safety General Guidelines (2007).
10. Consult with IDB before approving or implementing any and all substantive changes to the Project or its timetable that could potentially have negative environmental, social, or health and safety effects.
11. Send written notice to IDB of any and all non-compliances with any environmental, social or health and safety requirement of the Loan Agreement and any significant environmental, social, or health and safety accident, impact, event, claim or material complaint.
12. Ensure that all companies contracted for construction and operation activities comply with the applicable environmental, social and health and safety requirements of the Loan Agreement.
13. Implement ongoing information disclosure and consultation activities related to environmental, social, and health and safety aspects of the Project, including, if applicable, information from environmental and social, health and safety monitoring reports prepared by external consultants, in compliance to Bank's OP-102 Disclosure of Information Policy.
14. Implement and/or maintain Environmental and Social, and Health and Safety Management Systems that are consistent with the principles of ISO 14001 and OHSAS 18001.

7.2 Prior to Financial Closure the Company shall submit an environmental, health and safety action plan ("EHSAP"), in form and substance satisfactory to IDB, properly addressing the environmental, social, health and safety improvement recommendations, as well as any relevant pending non-compliance and/or liability associated with the Project or the Company. This Action Plan shall clearly address the following aspects:

1. The proposed actions, programs and plans to be adopted to improve environmental, social, health and safety management procedures, and correct any pending non-compliance and/or liability, including: (i) reporting on the compliance with all applicable Brazilian environmental, health and safety regulations, and all applicable Bank environmental and social requirements; (ii) improve their Environmental and Social Management System promoting the up-streaming of responsibilities and accountability regarding environmental and social issues to upper management level;
2. A time schedule for implementing such proposed actions, programs and plans, including due dates and key milestones.

- 7.3 Prior to each disbursement, the Company shall certify compliance with all environmental social, and health and safety requirements in the Loan Agreement.
- 7.4 To enhance their environmental and social responsibility standing the Company shall allocate 5% of the proceeds of the A-Loan to fund environmental and/or social program(s) approved by IDB and that will benefit the population of the region where the Project is located.
- 7.5 During the life of the Loan Agreement, the Company shall present, in form and substance satisfactory to IDB, the applicable documents, reports and plans indicated in the EHSAP, and prepare and submit Environmental and Social Compliance Reports (ESCR), in form, substance and frequency satisfactory to IDB.
- 7.6 The Bank will monitor the environmental, social, health and safety aspects in the Loan Agreement via internal Bank supervision actions (e.g., site visits, review of documentation) and will contract an external independent Environmental and Social Consultant to perform more detailed supervision/monitoring actions during the life of the Loan Agreement. In addition, the Bank will have the right, as part of the Loan Agreement, to contract for the performance of independent environmental, health, and safety audits, if needed.



## Annex I: Project Location

### *Location of Gerdau Açominas Ouro Branco Steel Mill in Minas Gerais (Brazil)*

