

CHAPTER I

INTRODUCTION

Newmont Ghana Gold Ltd. (NGGL) is developing gold reserves at the Ahafo Project in the Brong Ahafo Region of Ghana, West Africa (**Figure I-1**). The Ahafo South Project (Project) is located on the southern end of a mineralized zone (Ahafo Project area) that extends approximately 70 kilometers (km) in the central portion of Ghana. The Project is a greenfield open pit operation in a remote area of southwest Ghana. The nearest industrial site or mine is the AngloGold Ashanti mine at Bibiani about 70 km southwest of Ahafo.

Ghana is located on the Gulf of Guinea between Côte d'Ivoire (Ivory Coast) on the west, Togo on the east, and Burkina Faso to the north. Approximately 21 million people inhabit Ghana, an area approximately 670 km north to south and 560 km east to west totaling 238,540 square kilometers (km²) (about the size of Great Britain).

The Ahafo Project is part of Newmont Mining Corporation's (Newmont) 2002 acquisition of Normandy Mining Ltd. In December 2003, Newmont formalized its involvement in the Project by gaining approval of its foreign investment agreement with the Government of Ghana. Newmont has three subsidiaries organized under the laws of Ghana (**Figure I-2**):

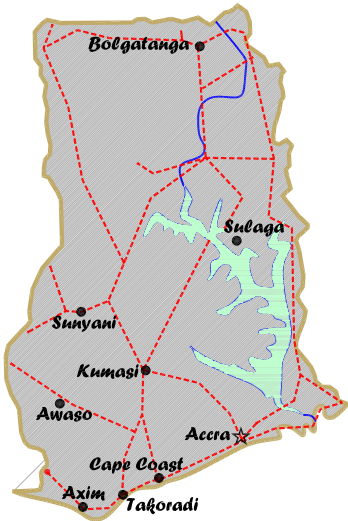
- Newmont Ghana Gold Ltd. (NGGL)
- Rank Mining Company Ltd. (Rank)
- Golden Ridge Resources Ltd. (GRRL)

STRATEGIC JUSTIFICATION FOR THE PROJECT

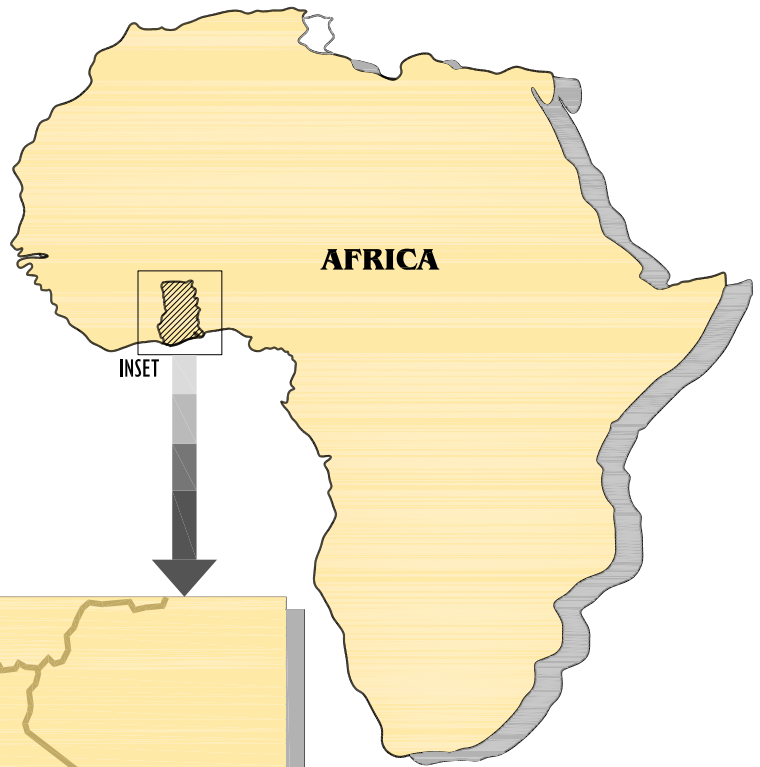
Extractive industries (such as mining) are of vital importance to developing countries in terms of growth and poverty reduction. Various metals generated through mining are needed to meet world demand and to sustain evolving economies and standards of living for developed and developing countries.

Mining in Ghana has occurred for hundreds of years and has included production of gold, bauxite, and manganese. Recent expansion of mining has been attributable to revised mining codes adopted by the Ghanaian government in 1984.

Ghana was ranked 8th in the world in 2000 for gold production (Chamber of Mines of South Africa 2005). In 2002, mines in Ghana produced 2,241,125 ounces of gold, down 8 percent from production experienced in 2000. The Ghana Minerals Commission reports that revenues generated by gold mining in Ghana in 2002 (the last year of complete annual data) was \$646 million (US) with royalties of ₵142,587,137,200 (\$15,843,015 in 2004 US). Gold accounted for almost 93 percent of the total mineral royalties collected during 2002. Over 12,900 people were employed by gold mining in Ghana in 2002, and corporate taxes from large scale mining equaled ₵8,227,057,875 (\$914,118 in 2004 US) (Ghana Minerals Commission 2005). Mining and quarrying accounted for 4.72 percent of the national Gross Domestic Product and contributed nearly \$620 million (US) to the balance of payments in 2002.



Ghana Road Map



AFRICA

INSET



BURKINA FASO

IVORY COAST

PROJECT LOCATION

ATLANTIC OCEAN

Bolgatanga

Sunyani

Awaso

Cape Coast

Axim

Kumasi

Lake Volta

DIGYA NATIONAL PARK

Akosombo Dam

Accra

Takoradi

Bolgatanga

Sulaga

BUI NATIONAL PARK

Sunyani

Kumasi

Awaso

Cape Coast

Axim

Takoradi

Accra

Sulaga

DIGYA NATIONAL PARK

Akosombo Dam

Accra

Cape Coast

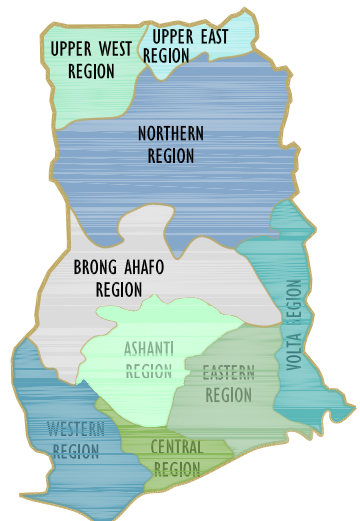
Axim

Takoradi

BENIN

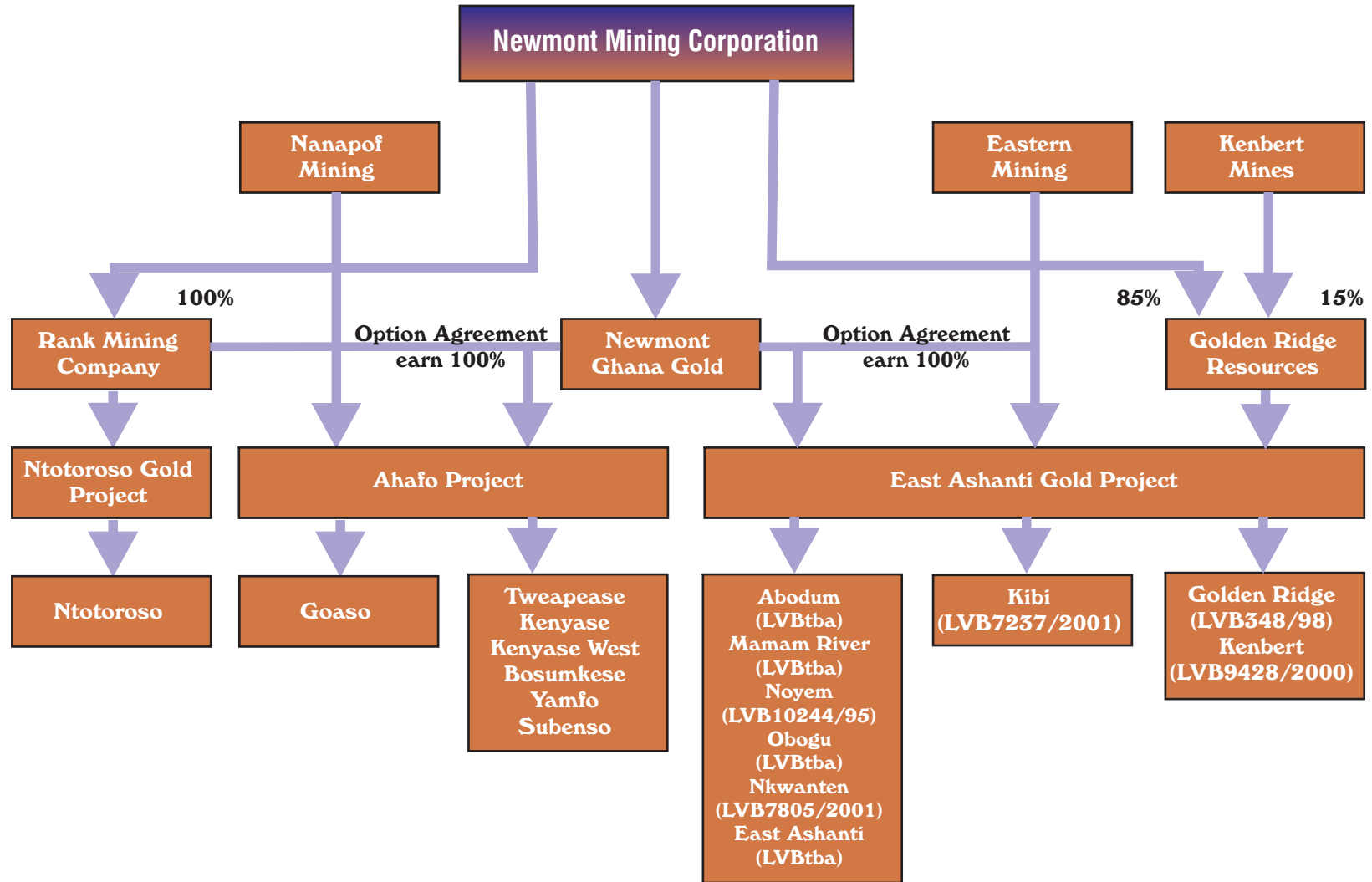
TOGO

NIGERIA



Ghana Region Map

General Location Map
Ahafo South Project
Brong Ahafo Region, Ghana
FIGURE 1-1



Newmont Ghana Gold Ltd. Ownership Structure
 Ahafo Project - South Phase
 Brong Ahafo Region, Ghana
 FIGURE 1-2

The Ahafo South Project is projected to add an additional 6.8 million ounces to Ghana's overall export of gold. Compared to the number of total ounces exported in 2002, the addition of the Ahafo South Project would add approximately 500,000 ounces per year (an additional 22 percent above the 2002 volume). Long-term operations employment in the gold mining sector is expected to grow. Royalties generated by the project would also increase over the life of the Project.

Besides strengthening Ghana's position in the international and national gold arena, NGGL's Ahafo South Project will strengthen revenues of the Brong-Ahafo Region and the Asutifi District governments as well as increasing the income of local residents. Approximately 97 percent of households in the Project area were engaged in farming as their primary livelihood activity prior to Project construction activities. Only 6 percent were salaried employees. Local residents have been employed in the construction effort and up to 750 local residents will be able to find long-term employment with either NGGL or a contractor when the mine is operational.

NGGL recognizes the effects extractive industries have had on sites around the world. In some cases, impact from mining has resulted in environmental problems that stem from inadequate design of facilities, operational mishaps, major spills or leaks from processing facilities, accidents at mine sites or along transportation corridors, and other factors that have affected specific projects. NGGL also acknowledges that the mining industry cannot continue to develop projects as has been done historically. The industry must continue to evolve to meet higher standards of performance involving specific approaches to poverty reduction, governance, transparency in project development, revenue management, energy consumption, and other factors that affect projects worldwide. NGGL endorses and supports specified standards for these components and will implement programs to meet these goals in a credible, timely, and accountable fashion.

NEWMONT CORPORATE SOCIAL RESPONSIBILITY POLICY

NGGL, as a subsidiary of Newmont Mining Corporation, will develop and operate the Ahafo South Project under the Newmont Corporate Social Responsibility Policy and Five Star Management System, which includes management systems and discipline specific standards on Community and External Relations (Newmont 2003).

Each year, the operation will be assessed against the above standards and the management systems standard by external social assessors. As such, the Ahafo Project will operate in full compliance with all applicable Ghanaian regulations pertaining to its local stakeholders. Furthermore, in recognition of the evolving state of the regulatory structure in Ghana, and of ever-increasing requirements from shareholders and financial institutions, the facility will operate in accordance with generally accepted International Standards and Practices that relate to social issues. Consideration of these objectives will be included in planning and implementation of all aspects of the operation.

Management and employees will be informed of responsibilities to external stakeholders through training and supervision. All levels of development and operation will consider the needs and interests of local stakeholders in the decision process. Through awareness of social responsibility and cooperation from employees, Newmont will develop and maintain its social responsibility in Ghana.

In accordance with Five Star Management System requirements, periodic auditing and reviews will be conducted by internal/external auditors to verify environmental conformance and confirm management responsibilities are in accordance with External Affairs procedures.

PROJECT HISTORY

The current resource is the result of exploration by various interests, which were consolidated by NGGL following a merger with Normandy Mining Limited and purchase of Moydow Mines International, Inc. interests in Rank in 2003. As a result, NGGL holds mining licenses LVB 7523/2001 Area A, LVB 7523/2001 Area B, and LVB 7524/2001; prospecting license PL 151 and prospecting license applications Deyem, Goa, and Bonsu, which cover approximately 270 km² needed for project development. The Ahafo Project includes the area covered by these leases, which grants NGGL the right to mine and extract gold over a period of 30 years. Lease areas are shown on **Figure I-3**.

Obtaining an Environmental Permit is a prerequisite to a Mining Lease and requires approval of an Environmental Impact Statement (EIS). The government of Ghana has granted mining leases to NGGL and Rank (Ahafo and Rank Mining Leases, respectively). The Ghanaian Environmental Protection Agency (EPA) guidelines for the approval process are shown in **Figure I-4**.

In April 1999, Centenary Gold Mining Company Ltd submitted a Scoping Study and Draft Terms of Reference for the Sefwi Belt Gold Project (Yamfo – Sefwi) to the Ghana EPA. The Scoping Study and Draft Terms of Reference for the Environmental Impact Assessment were accepted by the EPA with comment on additional information that would be required before authorization for preparation of an Environmental Impact Assessment (EIA) was granted. The Draft EIS was submitted in March 2000 (SGS 2000a). The review process, which included two public hearings, one each in the “north” and “south” of the Project area gave rise to a number of comments and concerns. The final EIS addressed those concerns and Environmental Permit No. 0043 was issued by the Ghanaian EPA for the Sefwi Belt Gold Project in October 2000.

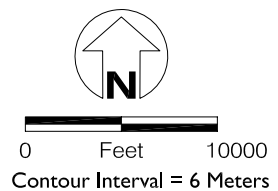
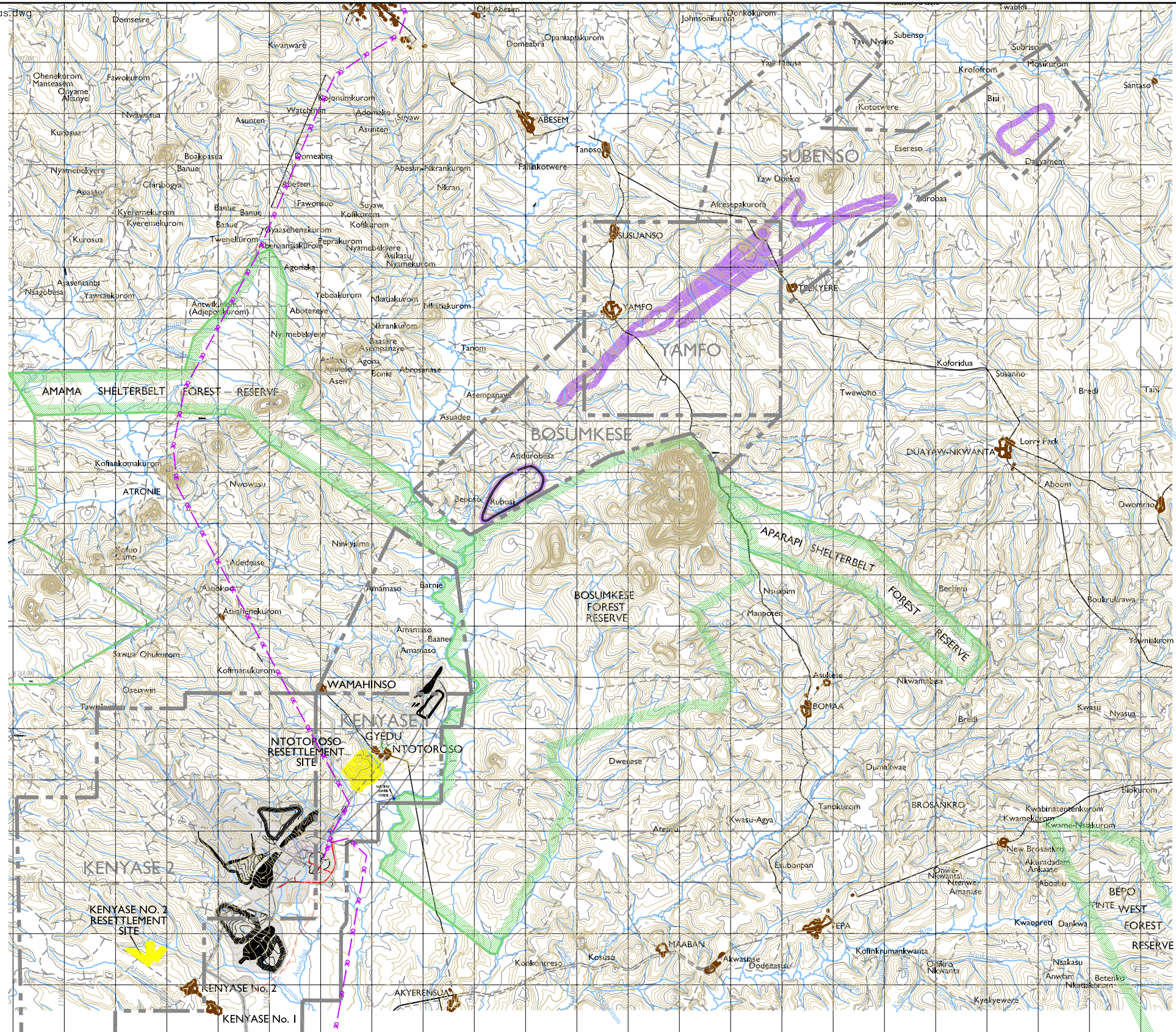
In November 2000, following environmental baseline studies of the Project area, Rank submitted a Scoping Study and Draft Terms of Reference for the EIA of the Ntotoroso Gold Project. The report was duly reviewed by the Ghanaian EPA and permission for preparation of a draft EIA was granted. Rank presented a draft EIA to EPA in December 2000 (SGS 2000b). Environmental Permit No. 0041 was issued by EPA for the Ntotoroso Gold Project in February 2001.






Through merger and acquisition, NGGL has obtained the right to develop the Ntotoroso and Sefwi Belt Projects. NGGL evaluated mining leases acquired from previous owners and determined that development of the Ahafo Project would be modified from previously approved plans. As a consequence, NGGL has separated the Ahafo Project into two components; Ahafo South Project and Ahafo North Project. The Ahafo South Project is the subject of this Environmental and Social Impact Assessment (ESIA). The Ahafo North Project is considered to be reasonably foreseeable future development within the Ahafo Project area and is described in *Chapter 4 – Affected Environment and Human/Environmental Impacts*.

In March 2004, Ghana EPA (2004) informed NGGL that changes arising from integration of the two projects and revised Project design as a result of NGGL studies would require submittal of an updated Environmental Impact Assessment that incorporated the changes.

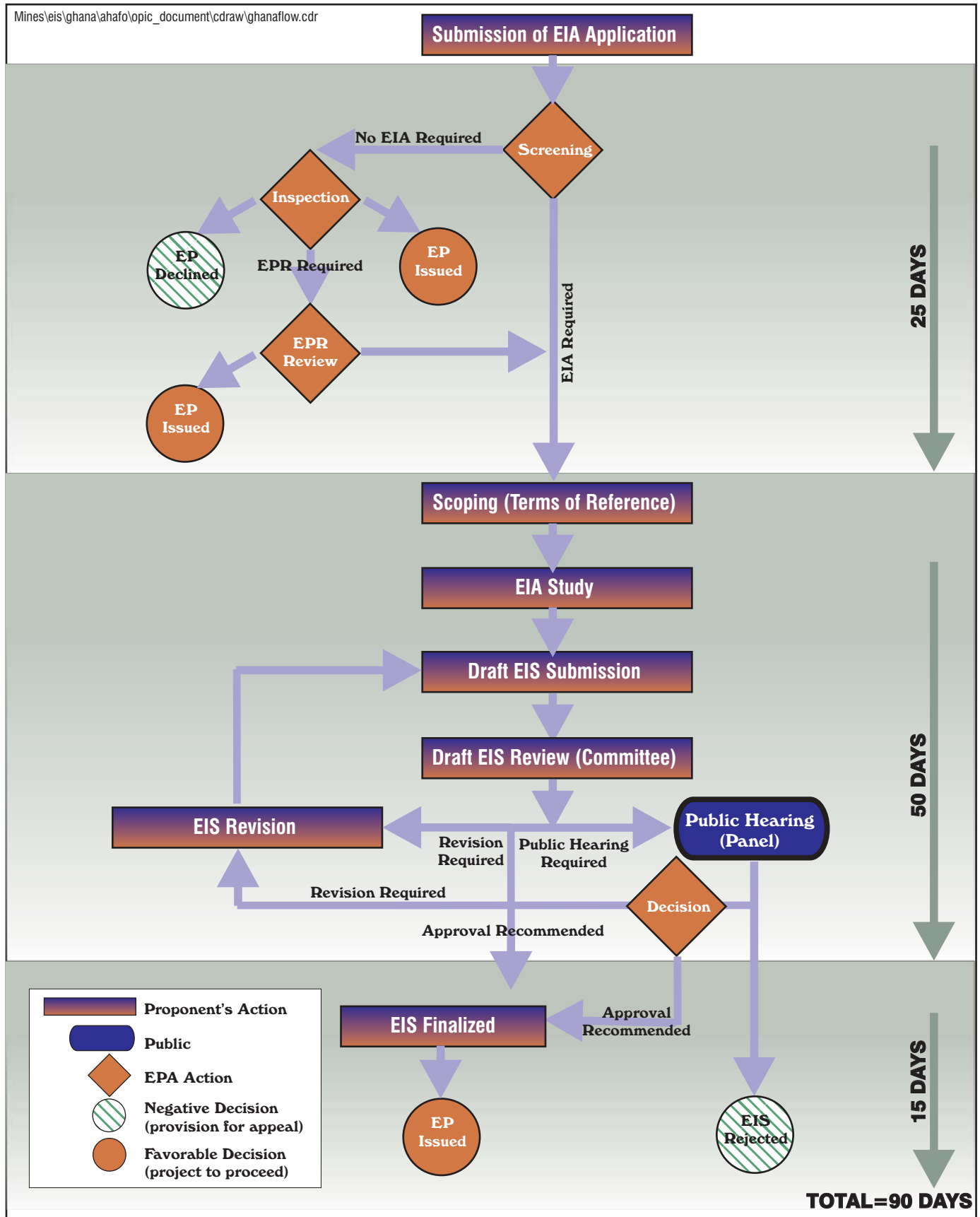
Proposed changes include:

- Integration and development of the two projects into one entity



-  Lease Boundary
-  Forest Reserve Boundary
-  Mineralized Zones and Exploration Areas
-  Proposed Mine Disturbance
-  Urban Area

Lease Areas
 Ahaho South Project
 Brong Ahafo Region, Ghana
 FIGURE 1-3



EIA=Environmental Impact Assessment
 EP=Environmental Permit
 EIS= Environmental Impact Statement

EPA Guidelines for Approval Process
 Ahafo Project - South Phase
 Brong Ahafo Region, Ghana
 FIGURE 1-4

- Rerouting access to the site
- Increased surface disturbance from development of additional pits
- Relocation of the processing facility
- Additional water storage capacity
- Improvements to the tailing storage facility

Such modification will address additional resource information collected since transfer of ownership to NGGL and NGGL's interest in seeking increased efficiency in overall project development. An EIS addressing these changes was prepared by SGS Environment (SGS) and submitted to the Ghanaian EPA in September 2004 (SGS 2004a). Ghana EPA's decision regarding this EIS is pending.

PROJECT DESCRIPTION

The Ahafo Project area is located approximately 300 km northwest of the capital city, Accra, 107 km northwest of Kumasi, and 40 km south of the regional capital of Sunyani. NGGL's life-of-mine plan for the Ahafo South Project involves development of four mine pits to produce and process approximately 7.5 million tonnes (Mt) of ore annually over a 15-year period. Current resources are estimated at 105 Mt of ore containing 6.8 million ounces of gold. Initial development (Project area) involves approximately 2,174 hectares (ha) for construction and operation of mine facilities.

Construction of the Project is scheduled to occur over a 29-month period and employ approximately 1,200 nationals. The anticipated workforce once mining operations begin will total about 620 permanent Ghanaian workers. An additional 350 contractors will augment this workforce to provide security, laboratory, vehicle and equipment maintenance, catering, and transport services.

Open pits (Amama, Awonsu, Apensu, and Subika formerly Bosumkese, Kenyase East, Kenyase Central, and Area E, respectively) will be developed and supply ore during the initial phase, after which additional deposits to the northeast are planned for development during subsequent phases. The Ahafo South Project is separated from future North Area development by the Bosumkese and Amama Shelterbelt Forest reserves.

FOREST RESERVES

Areas of Productive Forest Reserves have been designated in the vicinity of proposed mine development areas. These areas include the Bosumkese Forest Reserve and the Amama Shelterbelt Forest Reserve. The Ahafo South Project is not expected to directly impact the Bosumkese or Amama Shelterbelt Forest reserves; however, NGGL recognizes that future actions, indirect impacts, or induced impacts may result from mine development, but will not permit significant conversion or degradation of any critical natural habitat. Development of Ahafo South will be in accordance with IFC Natural Habitats Policy OP4.04.

The Forest Reserve areas are important to the Ahafo Project because the areas are located in close proximity to the mine area. Even though the Ahafo South Project mine area does not encroach on or directly affect the Forest Reserve areas, NGGL recognizes that attention must be focused on activities

associated with mine development to ensure that the Forest Reserves are protected from adverse impacts.

Although previous permits issued by EPA include construction of a haul road through the Bosumkese Forest Reserve to future development areas in the Ahafo North Phase. NGGL will not develop the road until further baseline surveys are conducted to assess potential impacts to the Bosumkese Forest Reserve. NGGL has developed a Biodiversity Management Program to address conservation and restoration of Forest Reserves. The Biodiversity Management Plan will comply with IFC Operational Policy 4.04 – Natural Habitats and focus on the following activities:

- On-Site Biodiversity Management
 - Interim Reclamation and Management
 - Final Reclamation and Management

- Off-Site Biodiversity Management
 - Natural Habitat Biodiversity Improvement
 - Natural Habitat Conservation Management
 - Biodiversity Offset Projects (Forest Reserve Impact Mitigation)

NGGL has established a partnership with Conservation International, an internationally recognized non-government organization (NGO), to collectively explore opportunities for integrating biodiversity management into the Ahafo South Project. A more detailed discussion of the Biodiversity Management Plan is contained in Chapter 4 - *Affected Environment and Environmental and Social Impacts*

POLICY, LEGAL, AND ADMINISTRATIVE FRAMEWORK

This section provides a comprehensive overview of the institutional and legal framework guiding preparation of the ESIA.

GENERAL INSTITUTIONAL FRAMEWORK

NATIONAL GOVERNMENT

The President, elected for a maximum of two 4-year terms, heads the National Government and serves as Head of State. The President exercises executive authority under the provisions of the Constitution, extending to the execution and maintenance of the Constitution and all laws made under or continued in force by the Constitution.

The Cabinet, made up of the President, the Vice-President, and not less than 10 and not more than 19 Ministers of State, assists the President in the determination of general policy of the Government.

The 200-member unicameral parliament elected for 4-year terms exercises legislative power in Ghana. The primary function of the Parliament, in addition to enacting laws for the good governance of the country, is approval of Ministerial appointment and oversight of the Ministries, Departments and Agencies to ensure their effective management. Parliament also controls and regulates the finances of

state through the passage of law to raise revenue and to authorize the expenditure. The following Ministries are involved in various aspects related to the Project:

- Ministry of Environment, Science and Technology
 - Environmental Protection Agency
 - Town & Country Planning
- Ministry of Lands, Forestry and Mines
 - Lands Commission
 - Forestry Commission
 - Land Valuation Board
 - Stool Lands Administration
 - Minerals Commission
 - Mines Department
- Ministry of Local Government and Rural Development
- Ministry of Economic Planning
 - National Development Planning Commission
- Ministry of Manpower Development & Social Welfare
- Ministry of Health

REGIONAL GOVERNMENT

Ghana is divided into 10 administrative regions, including Project-host Brong-Ahafo. The capital of Brong-Ahafo Region is Sunyani. The regional government of Brong-Ahafo includes the following administrative units, under the Office of the Minister for Brong-Ahafo:

- Regional Ministry of Environment, Science & Technology
 - Environmental Protection Agency
 - Town and Country Planning
- Regional Ministry of Lands, Forestry, and Mines
 - Lands Commission
 - Forestry Commission
 - Land Valuation Board
 - Stool Lands Administration
 - Minerals Commission
 - Mines Department

- Regional Ministry of Manpower Development & Social Welfare
 - District Labour Office
- Regional Ministry of Health

LOCAL GOVERNMENT

Brong-Ahafo Region is divided into 13 administrative districts. The Project falls within Asutifi District. The twin towns of Kenyase (Kenyase 1 and Kenyase 2) are the administrative capital of the Asutifi District and are its commercial centers.

The highest administrative and political authority in the District is the District Assembly, headed by a District Chief Executive appointed by the President with the approval of two-thirds of the District Assembly. The District Assembly, which includes two Members of Parliament, a number of elected members as well as government appointees, exercises deliberative, legislative and executive functions, and is also responsible for overall district development through preparation of development plans.

The executive committee comprises the following sub-committees:

- Social Service
- Economic Development Planning
- Works
- Justice and Security
- Finance and Administration

The expanded District Planning and Coordinating Unit (DPCU), headed by the District Coordinating Director who serves as the senior civil servant in the district, direct district planning efforts. The DPCU executive assisted by specialists from a variety of departments, co-ordinates and collates the development proposals of Town/Area and Zonal councils and DPCU committees.

Administrative decentralization introduced under the Local Government Act 462 (1993) created the following district level departments:

- Central Administration
- Education Youth and Sport
- District Health Administration
- Disaster Prevention Management
- Agriculture
- Controller and Accountant General's
- Social Welfare and Community Development
- Physical Planning
- Works
- Trade and Industry
- Specialized Units (Births and Deaths, Statistical Information Service)

ROLE OF TRADITIONAL AUTHORITIES

Traditional authorities possess considerable institutional relevance, particularly at the rural level where traditional status continues to command respect. The Project falls within the Ashanti Kingdom, the seat of which is in Kumasi. The Ashanti King, Otumfuo Osei-Tutu II, recognizes a number of Paramount Chiefs, each of whom administers a stool. Within the Study area, Kenyase 1 and Kenyase 2 is host to Paramount Chiefs. There are also Divisional, or Autonomous, Chiefs within the Study area, in Ntotoroso, Gyedu, and Wamahinso.

Paramount and divisional chiefs exert control over various sub-chiefs that represent major communities within their respective stools, and village chiefs that represent smaller communities. At the village level, sub-chiefs or village chiefs, in consultation with elders, typically resolve disputes. Chiefs also play an important role in land allocation in their stool lands.

GENERAL LEGAL FRAMEWORK

Various provisions of Ghanaian law pertaining to surface ownership, resettlement, and compensation are relevant to this Project.

THE CONSTITUTION OF GHANA

The Fourth Republican Constitution promulgated in 1992, recognizes the right to private property and to protection by the State of property. Article 18 (1) states that:

- Every person has the right to own property either alone or in association with others.
- No person shall be subjected to interference with the privacy of his home, property, correspondence or communication except in accordance with law and as may be necessary in a free and democratic society for public safety or the economic well-being of the country, for the protection of the rights or freedoms of others.

Article 20 protects Ghanaian from arbitrary expropriation of property. It states:

1. No property of any description, or interest in or right over any property shall be compulsorily taken possession of or acquired by the State unless the following conditions are satisfied:
 - a. Taking of possession or acquisition is necessary in the interest of defense, public safety, public morality, public health, town and country planning; and
 - b. Necessity for acquisition is clearly stated and is such as to provide reasonable justification for causing any hardship that may result to any person with interest in or right over the property.
2. Compulsory acquisition of property by the State shall only be made under a law, which provides for:
 - a. Prompt payment of fair and adequate compensation; and

- b. Right of access to the High Court by any person with interest in or right over the property whether direct or on appeal from any other authority, for the determination of their interest or right and the amount of compensation to which they are entitled.
3. Where a compulsory acquisition or possession of land affected by the State in accordance with clause (1) of this article involves displacement of any inhabitants, the State shall resettle the displaced inhabitants on suitable alternative land with due regard for their economic well-being and social and cultural values.
4. Nothing in this article shall be construed as affecting the operation of any general law so far as it provides for the taking of possession of acquisition of property:
 - a. By way of vesting or administration of trust property, enemy property or the property of persons adjudged or otherwise declared bankrupt or insolvent, persons of unsound mind, deceased persons or bodies corporate or un-incorporated in the course of being bound up;
 - b. In the execution of a judgment or order of a court;
 - c. By reason of its being in a dangerous state or injurious to the health of human being, animals or plants;
 - d. In consequence of any law with respect to the limitation of actions; and
 - e. For so long as may be necessary for carrying out work on any land for the purpose of the provision of public facilities or utilities, except that where any damage results from any such work there shall be paid appropriate compensation.
5. Any property compulsorily taken possession of or acquired in the public interest or for a public purpose shall be used only in the public interest or for the public purpose for which it was acquired.
6. Where the property is not used in the public interest or for the purpose for which it was acquired, the owner of the property immediately before the compulsory acquisition, shall be given the first option for acquiring the property and shall, on such re-acquisition refund the whole or part of the compensation paid to them as provided for by law or such other amount as is commensurate with the value of the property at the same time of the re-acquisition.

STATE LANDS ACT (1963)

Section 6(1) provides that any person whose property is affected by a public project is entitled to compensation, and provides mechanisms through which people not satisfied with compensation may seek redress. Dissatisfied compensation claimants may seek redress by first notifying the Minister who refers the case to a tribunal consisting of three persons appointed by the President. Notwithstanding existence of these legal safeguards, according to the World Bank, the records indicate that in the past Government has defaulted in most cases and failed to pay full compensation or provide assistance for relocation of displaced persons.¹

¹ World Bank/Republic of Ghana Ministry of Lands, Forestry, and Mines Ghana Land Administration Project, Resettlement Policy Framework (page 10).

GHANAIAN ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY REGULATIONS

An EIA for developments, projects or undertakings has been a requirement in Ghana since 1989. In June 1995, the Ghana EPA established new procedures for EIA's involving gradual phases depending upon the nature, complexity and location of the undertaking (Ghana Environmental Impact Assessment Procedures, 1995). Between 1995 and 1999, the EPA reviewed and revised the aforementioned procedures. In June 1999, the revised procedures were adopted and passed by Parliament as Legislative Instrument 1652 Environmental Assessment Regulations (L.I. 1652). These procedures require that the resultant EIS be submitted to the EPA for review and be approved in order to obtain an Environmental Permit, which allows the Project to proceed on environmental grounds.

Numerous methods are used to collect vegetation and wildlife information based on site conditions, nature of the local biota, and concerns to be addressed. There are few standards or protocols, especially in regard to collection and analysis of biological resource information, as these resources relate to mining. Ghana's Wildlife Conservation Regulations, First and Second Schedule, identify wildlife species with protected status and define the level of protection. First Schedule animals are completely protected and the hunting capturing, or destroying of these species is prohibited. Second Schedule wildlife species cannot be hunted, captured, or destroyed between August 1 and December 1. Hunting, capturing, or destroying young or adults accompanied by young are prohibited.

MINERALS AND MINING LAW (1986)

The legislative framework for mining in Ghana is stated in the Minerals and Mining Law, 1986, PNDCL 153 (Law 153) as amended by the Minerals and Mining Amendment Act (MMA) 1992, and modified by the provisions of the Constitution of 1993 (the Constitution). Within this legal framework, the State is the owner of all minerals occurring in their natural state within Ghana's land and sea territory, including its exclusive economic zone. All minerals in Ghana are vested in the President on behalf of and in trust for the people of Ghana. Thus, regardless land ownership upon or under which minerals are situated, the exercise of any mineral right requires, by law, a license granted by the Minister of Lands, Forestry, and Mines (the sector Minister) acting as an agent of the State for the exercise of powers relating to minerals.

Mineral rights are legally defined to include the rights to reconnoiter, prospect for, and mine minerals. The sector Minister is also authorized to exercise, within defined limits, powers relating to the transfer, amendment, renewal, cancellation and surrender of mineral rights. The powers conferred upon the Minister must be exercised contingent upon the advice of the Minerals Commission (MINCOM), which has the authority under the Constitution to regulate and manage the use of mineral resources and coordinate policies in relation to minerals.

Lawful occupants retain the right to use the land within lease areas (i.e., graze livestock, cultivate crops) provided such use does not interfere with mining operations. Occupants must obtain permission from the mining company to erect any building or structure on leased land.

A mineral rights holder must compensate for any disturbance to the rights of owners or occupiers and for damage done to the surface of the land, buildings, works or improvements, livestock, crops or trees in the area of mineral operations. However, the Act does not provide compensation for the land itself.

According to the MMA, the amount of compensation is determined by agreement between the parties concerned, with the approval of the Land Valuation Board (LVB). In practice, this agreement involves a broad section of stakeholders, including affected farmers and local traditional and political leaders. If an agreement cannot be reached, the Minister of Lands, Forestry, and Mines arbitrates.

MMA states that mineral right holders should affect as little as possible the interest of any lawful occupier of the land. Mining leases also state that a mining company shall not hinder or prevent members of the local population from exercising certain customary rights and privileges such as hunting game, gathering firewood for domestic purposes, collecting snails, cultivating farms, and observing rites in respect of graves and other areas held to be sacred.

The Minerals and Mining Law provides that efforts should be made to settle disputes amicably. In the event that this fails, then arbitration will be the available dispute resolution mechanism. Such arbitration may be in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law; or within the framework of any bilateral or multilateral agreement on investment protection to which the Government and the USA are parties; or in accordance with any other international machinery for the settlement of investment disputes agreed to by the parties. In the event that neither of the mechanisms is considered satisfactory, the judicial process may also be used.

According to Mining and Environmental Guidelines (1996), mining houses must pay compensation for damage to land, land uses and structures according to a schedule of compensation rates provided in the EIA / EAP using LVB rates. In practice these rates are only available if LVB is contracted to undertake the assessment.

The Mining and Environmental Guidelines also provide for resettlement:

- Any pre-existing settlement located close to mining operations where the pre-existing inhabitant's public safety is at risk, or where the inhabitants are subjected to unreasonable nuisance, shall be resettled at a more distant site with at least an equal standard of accommodation and services at the cost of the company.
- Proposed amendments to the Minerals and Mining Law were introduced in 2003 in an effort to address, among other issues, ambiguities related to compensation rules and procedures. It is understood that the proposed amendments are now with the Attorney General awaiting submission to Parliament.

Other legislation and/or regulation relevant to the Project include:

- Environmental Protection Law
- EPA Act 490 (1994)
- Environmental Assessment Regulations (1999)
- Planning Standards for All Settlements in Ghana
- District Assembly Planning Guidelines

- National Development Planning Act (1994)
- Housing Standards, Building Code
- Local Planning Requirements.

GUIDELINES FOR EXPLORATION AND MINING IN FOREST RESERVES

The Ghanaian Forest Reserve concept was established in 1927 when the state approved the Forest Ordinance forming the Forest Service Division, which received powers to reserve forest areas for specific management. Existing legislation has resulted in the creation of 282 Forest Reserve areas in Ghana. The majority of Forest Reserves are divided into Conversion, Production and Protection Areas which are defined below.

1. **Conversion Forest Reserve Areas:** Those areas which have undergone previous degradation and have been targeted for replanting.
2. **Production Forest Reserve Areas:** Those areas from which timber extraction is permissible following strict logging and other controls.
3. **Protection Forest Reserve Areas:** Those areas which represent contiguous blocks of forest set aside under the following designations.
 - ***Special Bio-Diversity Areas*** – A contiguous portion of the Forest Reserve set aside for the protection of biodiversity. These are usually areas with a high concentration of rare plants or of an unusual forest type.
 - ***Provenance Protection Areas*** – These areas are set aside for the protection of specific species provenance (economic gene banks) or as a provenance of a threatened ecological zone.
 - ***Institutional Research Plot*** – These area areas of the forest in which research is on-going. There are seven areas under the Forestry Research Institute of Ghana. Each Forest Reserve also has a maximum of one hectare set aside as a Permanent Sample Plot (PSP).
 - ***Hill Sanctuary*** – All contiguous forested areas with a slope greater than 15 percent are protected as a Hill Sanctuaries, in order to reduce soil erosion etc. The threshold of a 15 percent slope is often extended to cover all watersheds or areas where a number of rivers are sourced.
 - ***Community Sacred Groves*** – Community worship or taboo sites.

Areas of Productive Forest Reserves have been designated in the vicinity of proposed mine development areas. These areas include the Bosumkese Forest Reserve and the Amama Shelterbelt Forest Reserve. The Forest Reserve areas are important to the Ahafo Project because the areas are located in close proximity to the mine area. Even though the Ahafo South Project mine area does not encroach on or directly affect the Forest Reserve areas, NGGL recognizes that attention must be focused on activities associated with the mine development to ensure that the Forest Reserves are protected from adverse impacts.

The Bosumkese and Amama Shelterbelt Forest Reserves contain remnants of the Eastern Guinean Forest that at one time covered extensive areas of central Ghana including the Project area. Typically, forest communities are characterized by a three-story canopy structure with emergent tall trees often exceeding 50 m in height, with the uppermost canopy having a mixture of evergreen and deciduous species.

The western side of the Bosumkese Forest Reserve is extensively degraded, but a reforestation program is underway to restore portions of the degraded forest (SGS 2005). Crops are being grown in degraded parts of the forest reserve and two fast-growing trees, *Cedrela odorata* and *Tectona grandis* have been planted.

On the basis of open canopies and low timber volume the Bosumkese Forest Reserve is rated as forest Condition 5 (SGS 2005) (Table I-1). Vegetation surveys conducted in the Bosumkese Forest Reserve recorded from 25 to 36 species distributed among 16 to 20 families (SGS 2005). Common species include *Griffonia simplicifolia*, *Antiaris africana*, and *Baphia nitida*.

According to Hawthorne and Abu-Juam (1995), the Bosumkese Forest Reserve had a Condition 4 forest; however, SGS (2004) reports that the forest reserve has degraded over the last ten years and only a small patch is Condition 4, with most being Condition 5 or 6 (Table I-1).

Score	Description
1	EXCELLENT: with few signs (<2 %) human disturbance, with good canopy and virgin or late secondary forest throughout
2	GOOD: with <10 % heavily disturbed. Logging damage restricted or light and well dispersed. Fire damage none or peripheral.
3	SLIGHTLY DEGRADED: Obviously disturbed or degraded and usually patchy, but with good forest predominant; maximum 25 % with serious scars and poor regeneration; maximum 50 % slightly disturbed, with broken upper canopy.
4	MOSTLY DEGRADED: Obviously disturbed and patchy, with poor quality forest predominant; 25-50 % with serious scars; maximum 75 % disrupted canopy or forest slightly burned throughout.
5	VERY POOR: forest with coherent canopy < 25 % or more with half the forest with serious scars and poor forest regeneration; or almost all heavily burned with conspicuous pioneer species throughout.
6	NO SIGNIFICANT FOREST LEFT: Almost all deforested with savanna, plantation, or farm; <2 % good forest; or 2-5 % very disturbed forest remaining; or 5-10 % left in extremely poor condition.

Source: Hawthorne and Abu-Juam 1995

Vegetation surveys in the Amama Shelterbelt Forest Reserve identified areas disturbed by agriculture and introduction of non-native *Cedrela odorata*; however, nearby areas of good quality forest dominated by primary and secondary forest species were also observed (SGS 2005). This forest was Condition 3 or 4 because it has a partially closed overstory canopy and a predominance of native tree species.

The forest zone in which the Project area occurs is considered one of the most productive in Ghana in terms of economic values associated with timber production (Hawthorne and Abu-Juam 1995); however, within the Project area itself, outside of the Forest Reserves, there are only a few isolated trees of merchantable size and quality.

In 1996, the Ministry of Lands, Forestry, and Mines placed a moratorium on mineral exploration in Forest Reserves as a result of growing concern over illegal logging, encroachment by farming communities, and potential mine development. The moratorium was subsequently revised in February 2003 and exploration was allowed to resume, but was limited to less than a total of 2 percent of productive Forest Reserve areas at any one time. Seventeen companies, whose cumulative permitted area was less than the required 2 percent, were invited to reapply for Forestry Entry Permits under new “*Operational Guidelines for Mineral Exploration in Forest Reserves for Selected Companies*” developed by the Ministry for Lands, Forestry, and Mines and the Chamber of Mines (January 2001, Draft Document).

In 1999, several companies that had been granted permits to explore were in a position to propose potential mining operations on their exploration properties (concessions) within Forest Reserves. At that time, the Ghana Chamber of Mines commissioned the preparation of *Environmental Guidelines for Mining in Productive Forest Reserves* (the Guidelines). After analysis and debate the Guidelines were issued in a format acceptable to the interested parties and stakeholders. One of the conclusions reached in the Guidelines document was that only the actual mines themselves (open pits or underground access) could be located within Reserve areas and that all other mine support facilities would need to be located outside the Forest Reserve boundary. In February of 2003, the Government approved the granting of mining leases and identified the process required to develop prospective deposits within the forest reserves as mines. Currently five advanced projects are seeking approval to mine within Forest Reserves.

The Ahafo South Project is not expected to directly impact the Bosumkese or the Amama Shelterbelt Forest reserves; however, NGGL recognizes that future actions, indirect impacts, or induced impacts may result from mine development, but will not permit significant conversion or degradation of any critical natural habitat (see *Cumulative Effects* section of Chapter 4).

The Ahafo South Project will be designed to ensure that with respect to the Bosumkese or other Forest Reserve areas, NGGL's policy on such reserves will be complied with throughout the life of the Project and future foreseeable actions which may encroach upon established Forest Reserve areas. NGGL will comply with IFC Operational Policy 4.04 – Natural Habitats and not support any development which adversely impacts Forest Reserves in a manner inconsistent with either its policy or IFC Natural Habitats Policy.

LAND TENURE IN GHANA

Land tenure and title in Ghana is governed by a complicated web of common law and customary land law, from which have emerged the following categories of landholdings:²

- Customary owned
- State owned
- Customary owned but State managed land (also known as vested land).

² The following draws heavily from the aforementioned World Bank Resettlement Policy Framework and is extracted from pA 2004.

Customary Ownership

Customary ownership occurs where the right to use or to dispose of use-rights over land is governed by the customary laws of the land owning community, based purely on recognition by the community of the legitimacy of the holding. Rules governing the acquisition and transmission of these rights, which vary from community to community depending on social structures and customary practices, are normally not documented but are generally understood by community members.

The Allodial title, equivalent to common law freehold rights, forms the basis of all land rights in Ghana. Allodial rights are vested either in a stool, a clan, a family, an earth priest or a private individual person. Lesser interests, such as tenancies, licenses and pledges, emanate from the Allodial title.

Customary lands are managed by a custodian (a chief or a head of clan or family) together with a council of principal elders appointed in accordance with the customary law of the land owning community. They are accountable to the members of the land owning community for their stewardship. All grants of land rights by the custodian require the concurrence of at least two of the principal elders for the grant to be valid. Customary ownership predominates in the Project area, which is legally vested in the Government.

State Land

State land includes tracts specifically acquired by government under an appropriate enactment using the state powers of eminent domain. Currently the principal acquiring legislation is the State Lands Act of 1962, Act 125, for public purposes or in the public interest. Under such ownership, *Allodial* rights become vested in government who can then dispose of the land by way of leases, certificate of allocations, and licenses to relevant beneficiary state institutions as well as private individuals and organizations. The boundaries of these land parcels are cadastrally surveyed and are scattered throughout the country.

Vested Land

Vested land is owned by a chief, but managed by the State on behalf of the land owning stool or skin. Under such ownership, legal rights to sell, lease, manage, or collect rent is taken away from the customary landowners by application of specific laws on that land and vested in the State. Landowners retain equitable interest in the land (i.e., the right to enjoy the benefits from the land). This category of land is managed in the same way as State land. Unlike State land however, the boundaries are not cadastrally surveyed and they are usually larger, covering wide areas.

Other Land

As all land is “owned” in Ghana, and as State and vested land is formally documented, all other land for which formal documentation does not exist can be considered customarily held. Unfortunately, the customary practice of land allocation by traditional authorities has become distorted over time. Chiefs today typically exercise their power of allocation in pursuit of maximum personal gain instead of communal betterment. As a result, land is often provided to a variety of users through a range of mechanisms. Sometimes, the same piece of land is allocated to two or more users. Trying to identify the true owner of any piece of land can be challenging. There is improper record keeping of judgments, dispositions, and other records relating to the land by the custodians.

The result is many disputes, much uncertainty, and ponderous dispute resolution. There are three typical mechanisms for resolving disputes: customary arbitration, application by chiefs of customary law, and state courts and land administration institutions. Even when disputes are resolved the results are often ambiguous. Conflict between these systems results in uncertainty and lack of authority, and there is a lack of enforcement.

The Government has sought to formalize the process of land tenure, including the definition of land titling processes and the establishment of a series of land administration institutions, such as the Lands Commission, Land Title Registry, Survey Department, Land Valuation Board, Department of Town and Country Planning, and Office of the Administrator of Stool Land. Despite these efforts, there is still no systematic mapping, registration, and titling program in Ghana. In addition, there are few records and no appropriate mechanisms for coordination of policies, plans and programs.

There have been numerous, largely unsuccessful, attempts to resolve the issues described above, and efforts continue. The World Bank, most notably, launched a five year Land Administration Project in 2003, the objective of which is to stimulate economic development, reduce poverty and promote social stability by improving security of land tenure, simplifying the process for accessing land and making it fair, transparent and efficient, developing the land market and fostering prudent land management. The project, implemented through Ghana's Ministry of Lands, Forestry and Mines, seeks to:

- Harmonize land policy and the legislative framework with customary law for sustainable land administration.
- Undertake institutional reform and capacity building for improvement in the land administration system.
- Establish an efficient, fair and transparent system of land titling, registration and valuation.

Eminent Domain

Colonial government introduced the doctrine of eminent domain, which gives the Government the power to seize private property – including stool, skin or family land – for public use, by proving that doing so will be in the best interests of its citizens. The Government has used the power in the past to establish state farms, for the massive Volta Lake project, and for innumerable other infrastructure plans. Under eminent domain legislation and the Constitution (Article 20), the Government is required to pay compensation for improvements to land, but not for land itself, or for associated inconvenience. This directly contradicts the customary land tenure system described above, which provides immutable rights to land, the productive asset of rural Ghanaians. The practice commonly employed by mining companies, whose lease rights supersede those of local land users, is to provide one-time payments for surface rights.

INTERNATIONAL AGREEMENTS, POLICIES, AND STANDARDS

Newmont is a founding member of the International Council on Mining and Metals (ICMM). As such, the Ahafo South Project will adhere to ICMM's principles for sustainable development throughout the life of the Project. Newmont is a signatory to the International Cyanide Management Code (ICMC) and

will comply with ICMC requirements. In addition, Newmont is a signatory to the United Nation's Global Compact and will comply with World Bank Group's (WBG) draft guidelines for Precious Metal Mines and applicable WBG policies and guidelines.

INTERNATIONAL CYANIDE MANAGEMENT CODE (ICMC)

The ICMC is a voluntary industry program for companies involved in the manufacture and transport of cyanide and the production of gold. The objective of ICMC is to improve management of cyanide used in gold mining beyond the requirements of governments and regulatory agencies and, thereby, reduce risks to workers, the environment and communities, and to reduce community concern in relation to cyanide management. The ICMC was developed by a multi-stakeholder Steering Committee under the guidance of United Nations Environmental Program (UNEP) and International Council of Mining and Metals (ICMM). The committee was comprised of participants selected from government, non-government organizations, cyanide producers, labor, financial institutions and the gold mining industry.

The ICMC covers the lifecycle of cyanide management and defines a series of principles and objectives which cover production of cyanide, transportation, handling and storage, operations, decommission of facilities, worker safety, emergency response, training and communications with the public. For gold mining operations to be certified as being in compliance with ICMC, they must first be signatories and undergo a third party audit, every three years, to demonstrate compliance.

Newmont recognizes that to ensure continuity of cyanide supply into the future, the gold mining industry and associated companies, manufacturers and transportors, must be able to demonstrate responsible management of cyanide. Newmont believes that ICMC provides the necessary framework to publicly demonstrate responsible cyanide management. Newmont is working towards ensuring all of its operations are in compliance with ICMC and is designing future operations to be in compliance. Newmont is also working in partnership with manufacturers and transportors to ensure responsible management of cyanide. The Ahafo South Project will implement requirements of ICMC once operations are initiated. ICMC has been utilized to ensure proper considerations are identified and incorporated into the design and facilities construction.

WORLD BANK/INTERNATIONAL FINANCE CORPORATION GUIDELINES

The following IFC/World Bank Operational Policies (OP) and guidelines are relevant to the Ahafo South Project. The IFC is currently reviewing policies and guidelines which are applicable to this Project. It is NGGL's intent to comply with future revised policies and guidelines pending outcome of the review process.

World Bank, International Finance Corporation (IFC), and World Health Organization (WHO) Standards – World Bank projects must address effects of the project on biodiversity. Biodiversity is defined at three levels (ecosystem, species, and genetic) and is often interpreted as a measure of biological complexity and variation within Project areas. Although there is little specific regulatory guidance on methods of assessing and monitoring biodiversity, the concept is widely interpreted, especially internationally, as a measure of ecosystem integrity and stability. Following the Convention on Biological Diversity at the 1992 United Nations Environmental Programme Earth Summit, international projects funded by the World Bank and many other large lending institutions are required to undergo biodiversity assessment and monitoring. There are general standards for reclamation and requirements for submittal of annual monitoring reports.

Key principles defined within both set of guidelines are as follows:

- Physical and economic dislocation should be avoided or minimized as much as possible.
- Unavoidable displacement should involve the preparation and implementation of a Resettlement Action Plan, which demonstrates how international best practices have been/will be met and defines a detailed approach and work plan to guide implementation, handover, and monitoring and evaluation.
- Resettlement should be viewed as a sustainable development program designed to improve the quality of life of those affected.
- Legal standing is not synonymous with eligibility: even those people with no recognizable legal right or claim to the land they are occupying should be considered eligible for resettlement assistance.
- Resettlement should be a consultative and participatory process: affected people should be consulted thoroughly, participate in the definition of resettlement policies and procedures, and in the end choose for themselves from among acceptable and clearly defined alternatives.
- **OD 4.30 – Involuntary Resettlement:** International best practice for private sector-related resettlement is commonly defined by the June 1990 World Bank Operational Directive 4.30. This Operational Directive is applied around the world by private investors to govern involuntary resettlement associated with natural resource and infrastructure development. The Directive sets the benchmark against which such projects are gauged by international financial institutions, both private and multi-lateral. Operational Directive 4.30 is internationally acknowledged as one of the most comprehensive and efficient set of international standards with respect to the protection of the rights of affected people.

The key principles of this policy are:

- Physical and economic dislocation should be avoided or minimized where feasible;
- Unavoidable displacement should involve the preparation and implementation of a resettlement plan. All involuntary resettlement should be conceived and executed as development programs, with resettlers provided with sufficient investment resources and opportunities to share in project benefits;
- Displaced persons should be (i) compensated for their losses at full replacement cost prior to the actual move; (ii) assisted with the move and supported during the transition period in the resettlement site; and (iii) assisted in their efforts to improve their former living standards, income earning capacity, and production levels, or at least to restore them. Particular attention should be paid to the needs of the poorest groups to be resettled;
- Community participation in planning and implementing resettlement should be encouraged. Appropriate patterns of social organization should be established, and existing social and cultural institutions of resettlers and their hosts should be supported and used to the greatest extent possible;
- Resettlers should be integrated socially and economically into host communities so that adverse impacts on host communities are minimized; and

- Land, housing, infrastructure, and other compensation should be provided to the adversely affected population. The absence of legal title to land should not be a bar to compensation.
- **OP 4.01 – Environmental Assessment:** All projects proposed for IFC financing require an Environmental Assessment (EA) to ensure that they are environmentally and socially sustainable. Instruments used to perform the EA may include an environmental impact assessment, an environmental audit, a hazard or risk assessment, and an environmental action plan. All IFC projects must be categorized. This policy also sets forth the minimum requirements for public consultation and public disclosure for projects.
- **OP 4.04 – Natural Habitats:** This policy affirms IFC’s commitment to promote and support natural habitat conservation and improved land use, and the protection, maintenance, and rehabilitation of natural habitats and their functions in its project financing. IFC does not support projects that involve significant conversion or degradation of critical natural habitats.
- **OP 4.09 – Pest Management:** This policy outlines IFC’s support of the use of biological or environmental control methods instead of pesticides where there is a need for pest management. Criteria for the use of pesticides, when required, are described.
- **OP 4.11 - Safeguarding Cultural Property:** International best practices with respect to safeguarding cultural property in IFC-financed projects includes sites having archaeological (prehistoric), paleontological, historical, religious, and unique natural values. Operational Policy (OP) 4.11 specifies that the general policy of the World Bank is to assist in preserving cultural properties and to seek to avoid their elimination.
- **OP 4.37 – Safety of Dams (September 1999 draft):** IFC requires that dams be designed and constructed by experienced and competent professionals. For dams that are over 15 meters high, and dams between 10 and 15 meters that present special design complexities, IFC requires reviews by a panel of independent experts, preparation of detailed plans, and periodic safety inspections. The policy covers mine tailing dams as well as water storage dams.
- **OPH 11.03 – Management of Cultural Property:** IFC projects must comply with World Bank’s OPH 11.03, *Cultural Property*, as appropriate in a private sector context.
- **1995 – Open Pit Mining/Milling:** The open pit mining and milling guidelines describe requirements for tailing disposal, liquid effluent discharge, and air pollution control (including workplace air quality compliance). In addition, other general requirements are included for erosion and sediment control, development of a mine reclamation plan, sewage sludge and solid waste disposal management, workplace noise, confined space, hazardous material handling and storage, sanitation, worker safety, employee training, and record-keeping and reporting.
- **1995 – World Bank Environment, Health and Safety Guidelines:** These guidelines for mining and milling at open pit mines include information for tailings disposal, liquid effluents, ambient and workplace air quality, erosion and sediment control, mine reclamation, sewage sludge disposal, solid waste disposal, workplace noise, work in confined spaces, hazardous material handling and storage, general health and safety, training, and record keeping and reporting.

- **1998 – Disclosure Policy:** IFC is open about its activities and welcomes input from affected communities, interested members of the public, and business partners and will seek out opportunities to explain its work to the widest possible audience. This policy was developed in recognition of the importance of accountability and transparency in the development process.
- **1998 – General Environmental Guidelines:** For financed projects in which no other specific environmental guidelines have been developed, general environmental guidelines may be used. These guidelines emphasize pollution prevention, and are intended to minimize resource consumption, including energy use, and to eliminate or reduce pollutants at the source. General Environmental Guidelines include requirements for air emissions, liquid effluents, hazardous chemicals and wastes, solid wastes, and ambient noise.
- **1999 – Child Forced Labor Statement:** IFC will not support projects that use forced or harmful child labor. Forced labor, as defined in the policy statement, consists of all work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty. Harmful child labor consists of employment of children that is economically exploitive, or is likely to be hazardous to, or interfere with, the child's education, or to be harmful to the child's health, or physical, mental, spiritual, moral, or social development.
- **2001 – Hazardous Materials Management Guidelines:** Requirements of this guideline include screening to determine characteristics and threshold quantities for hazardous materials, development of a Hazardous Materials Management Program, and community involvement and awareness.
- **2003 – IFC Environmental Guidelines for Occupational Health and Safety:** This guideline covers general aspects of occupational health and safety and would be supplemented, as needed, with the appropriate national or international standards. Under this guideline, an Occupational Health and Safety Management System are required. Such a system would require provisions for ensuring an organizational framework to support the occupational health and safety program, a hazard prevention program, performance monitoring, and evaluation.

NATIONAL POLICIES

Ghana has enacted local laws and signed several environmental regulations and international treaties or conventions, which seek to maintain the functional integrity of the environment. The following treaties and conventions have been ratified by Ghana:

Convention on Biological Diversity (CBD) – The CBD is an international convention that seeks to conserve biological diversity on earth. The relevance of the CBD to the Ahafo Project stems from the fact that development activities may adversely impact fauna and flora. If adequate mitigation measures are not implemented, biological diversity in the Project Area could be threatened and possibly lost.

Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention) – The objectives of the Ramsar Convention are to ensure the wise use of wetlands through stemming the progressive encroachment on and loss of wetlands now and in the future, while recognizing fundamental ecological functions, and economic, cultural, scientific, and recreational value.

Convention Concerning the Protection of Workers Against Occupational Hazards in the Working Environment due to Air Pollution, Noise, and Vibration (ILO 148) – The convention applies to all branches of economic activity, except where special problems of a substantial nature exist. Participating parties accept the obligations of this convention separately in respect to air pollution, noise, and vibration. National laws and regulations shall prescribe measures instituted to prevent and control air pollution, noise, and vibration, as well as protect workers against occupational hazards associated with these impacts. Criteria for determining hazards of exposure to air pollution, noise, and vibration in the working environment and exposure limits on the basis of these criteria shall be established by competent authority.

Ghana Environmental Protection Agency (EPA) has established Ambient Noise Level Guidelines for residential areas with negligible or infrequent transportation at 55 decibels (dB) between 0600-2200 hours and 48 dB between 2200-0600 hours. The GEPA (2004) asserts that noise levels above 45 dB may impair sleep while 70 dB leads to emotional upset, irritability and other tensions. The generally accepted standard regulation in most countries, including Ghana, is that a noise level of more than 85 dB for an 8-hour daily exposure is potentially damaging. In Ghana, there is no law governing workers' exposure to hazardous noise levels in mining companies. However, the mine's inspectorate uses a noise level of greater than 85 dB for an 8-hour daily exposure as the standard when advising mining companies on the importance of hearing conservation (Amedofu 2002).

World Health Organization (WHO 1999) has established Noise Level Guidelines for various Land Uses. For residential dwellings or areas used for human habitation and sleep, WHO recommends that sound levels be no higher than 50-55 dB for 16-hours of exposure during daytime hours and 45 dB for 8-hours of exposure at night. WHO also recommends that persons should never be exposed to a maximum sound level (fast Lmax) greater than 110 dB or a peak sound pressure level (instantaneous, not fast Lmax) greater than 140 dB for adults and 120 dB for children.

African Convention on the Conservation of Nature and Natural Resources - The African Union took into force the protection of the natural environment. The main goals of the convention were to create a document that enhanced environmental protection fostered the conservation and sustainable use of natural resources, and brought together and coordinated policies in these fields. The states are to recognize the importance of the natural environment, and create laws and regulations that protect it.

Equator Principles – The Equator Principles represent an approach by financial institutions to determine, assess and manage environmental and social risk in project financing. The Principles were adopted in June 2003 by 10 of the world's leading financial institutions to ensure that projects financed are developed in a manner that is socially responsible and reflect sound environmental management practices. Some 25 banks in 14 countries have now adopted the Principles.

Adopting institutions undertake not to make loans directly to projects where the borrower will not or is unable to comply with environmental and social policies and processes outlined in the Principles. Compliance with host country legislation and, for project located in middle and low-income countries such as Ghana, relevant World Bank Safeguard Policies, including OP 4.12 (see Human Environment Section), is a pre-requisite. Public consultation and disclosure requirements are also stipulated in the Principles.

NEWMONT MINING CORPORATION POLICIES

FIVE STAR MANAGEMENT SYSTEM

NGGL has developed a Five Star Management System (Five Star) that includes an evaluation of successful implementation of each standard; evaluation criteria are described in **Table I-2**. Evaluation criteria include assessments of performance and general perception regarding the system.

NGGL will achieve consistent and disciplined management of social responsibility issues through Five Star. Five Star is a global management system developed in-house by Newmont and administered by the corporate office to drive outstanding performance and continual improvement in areas of Health, Safety and Loss Prevention and Environmental and Social Responsibility. Although Five Star is founded on internationally accepted management system principles (e.g., ISO14001), it is unique in that it also includes discipline-specific standards to manage Health Safety and Loss Prevention and Environmental Social Responsibility risks that are specific to the mining industry.

A global management system provides the foundation for achieving outstanding performance by establishing a culture of continual improvement based on planning, execution of plans, monitoring of plans to ensure they are on track, and timely response to correct actions that are off course. A global management system provides consistency through systematic and institutionalized processes of management.

Operational Elements

This section describes the operational elements of Five Star and sets forth a framework by which NGGL will achieve consistent and disciplined management of social responsibility issues. Implementation of Five Star will be influenced by varying needs of the organization, its particular objectives, its activities, and the processes and specific practices employed. Five Star is composed of the following primary components which are discussed in greater detail in subsequent sections:

- Standards and guidelines
 - Integrated management system standards
 - discipline-specific standards

TABLE I-2	
Newmont's Five Star Performance and Evaluation Criteria	
Systems	
1 Star	Standard has not been adopted.
2 Stars	Not all requirements within the standard have been assigned to a discipline specific manager or implemented by relevant functions.
3 Stars	All requirements within the standard have been assigned to the discipline specific manager and implemented by the relevant functions.
4 Stars	All requirements are implemented and they are audited and assessed for compliance.
5 Stars	Residual risk is evaluated, planned, and addressed through the risk assessment and planning process.

Source: Newmont 2003.

- Assessments
- Communications
- System reviews

Five Star is designed to encourage employees to develop a mindset of “Plan-Do-Check-Act”. Five Star is simple and practical enough to be understood and applied by non-technical and technical employees. Program coordinators involve people both inside and outside the company. Examples of internal/external involvement and participation are illustrated below.

- Employees - may help develop new Health, Safety and Loss Prevention and Environmental Social Responsibility procedures and implement action.
- Contractors or Vendors - will have similar involvement.
- Operators of joint ventures - will be encouraged to develop similar systems.
- Community members – will be kept informed and invited to participate in community investment and emergency planning.

The core of Five Star is its management system standards and discipline-specific standards. These standards establish minimum expected behaviors and actions in order to drive consistency and continual improvement throughout Newmont. The Five Star model shows how these standards drive this functionality.

Process Objectives

Implementation of Five Star is designed to achieve the following process objectives:

- Advance the understanding that only through our behaviors and actions can we demonstrate social responsibility and earn and maintain acceptance of our activities from our stakeholders.
- Implement a systematic approach to managing safety, environmental and community relations affairs across Newmont’s global operations.
- Promote strategic planning at the operational level that is consistent with corporate strategic plans for safety, environmental and community relations management.
- Effectively manage both operation-specific and global risks.
- Establish a process that drives continuous improvement throughout the organization.

The process is designed to identify and manage risks and encourage planning and focus on changing behavior to promote effective management.

Outcome Objectives

Five Star is ultimately focused on achieving specific desired outcomes related to Health, Safety and Loss Prevention and Environmental Social Responsibility. Specific outcome objectives of programs which will be implemented at the Ahafo project are:

- Reduce actual impacts to employee health and safety, the environment, and communities in which Newmont operates.
- Prevent or manage future potential impacts.
- Ensure legal compliance.
- Maximize all opportunities to develop and maintain our reputation as a leader in health and safety, environmental stewardship, and social responsibility.
- Establish mutually beneficial relationships with communities in which Newmont works.

Roles and Responsibilities

To achieve the objectives, employees at all levels of the business must be involved in Five Star through clearly defined roles and responsibilities. Effective implementation is dependent on demonstrated commitment of senior management. This “upper level” commitment will drive elements of the management system down through the workforce, encourage behavioral changes and ultimately develop a workplace culture that demonstrates leadership in safety, environmental and social responsibility through on-the-ground performance. Functional responsibilities of the various levels of support are summarized below:

Executive Steering Committee – comprised from selected Executive Management, Vice-Presidents, Directors, and senior representation from Operations.

- Champion the value creation of Five Star through strategic direction.
- Communicate Five Star program structure and organization to all levels throughout the company.
- Ensure consistency in design modifications and implementation of Five Star.
- Participate in management review sessions to evaluate the effectiveness of Five Star and to implement improvements.
- Promote Five Star during site visits.
- Provide oversight and guidance for Collegiates to incorporate Five Star into their activities.

Regional/General Management

- Lead implementation of Five Star at the operational level through personal involvement and commitment.
- Support the formation and resource of collegiate members to actively participate in Five Star.
- Participate in review of Five Star.
- Engage and communicate relevant Five Star activities through to the Executive Steering Committee.

Corporate Five Star Managers – comprised of Directors/Managers of the Social Responsibility disciplines.

- Facilitate implementation for continual improvement to the Five Star program.
- Coordinate regular assessments, as relevant to the function.
- Coordinate the annual Five Star standards review process.
- Communicate relevant changes/ modifications to the Five Star program.
- Maintain appropriate surveillance to ensure accurate and functional application of Five Star is understood and applied.
- Provide functional support, training and awareness as appropriate.
- Facilitate information exchange within Newmont and to/from relevant external bodies (meetings, networks, workshops, review, and electronic media).
- Support Executive Steering Committee members in promoting and managing Five Star.
- Manage budget and resources for Five Star.
- Coordinate and manage a central data system for Five Star.
- Leadership/Sponsorship of the Five Star program within those Collegiates or other Corporate discipline-specific initiatives.

Collegiates – each functional department will assign their collegiate members, as appropriate, to actively participate in the design modifications, implementation and management of Five Star.

- In addition to their primary responsibilities, collegiate members will participate in the implementation, monitoring and feedback of Five Star.
- At selected and agreed time throughout the year, collegiate members will meet face-to-face to workshop initiatives and take on a consistent, team approach to five star systems management.

Standards

The Five Star system consists of both management and discipline specific standards for Health, Safety and Loss Prevention, Environmental and Community Relations. The following section identifies Five Star standards that will be implemented at the Ahafo South Project.

Integrated Management System Standards

Nineteen Integrated Management System Standards have been developed that outline requirements for systematically identifying, managing, monitoring, tracking and minimizing risks specific to individual

operations. As part of systematically managing risks, Integrated Management System Standards also define requirements for incident investigation and reporting, document control and record management, internal and external communications, emergency response, inspections and auditing, contractor and employee management, and review of the system. The Integrated Management System Standards have been designed with a similar framework to internationally recognized standards such as ISO 9001 (Quality Management) and ISO 14001 (Environmental Management).

Each standard includes a set of criteria, called Five Star criteria, by which Five Star Assessors score the site's implementation of requirements of management standards and the effectiveness of that implementation. Integrated Management System Standards are:

- Program Commitment and Leadership
- Risk and Opportunity Management
- Management System Documentation, Document Control and Management
- Legal and Other Requirements
- Organization and Responsibility
- Training, Competency and Awareness
- Internal Communications and Reporting
- External Stakeholder Engagement and Reporting
- Accident-Incident Reporting and Investigation
- Emergency Preparedness and Response
- Standard Operating Procedures
- Inspections
- Monitoring and Measurement
- Audits and Assessments
- Corrective and Preventative Action
- Change Management
- Contractor Selection and Management
- Behavior and Observation
- Management Review

Discipline-Specific Standards

In early 2003, following an extensive consultative development and review process within Newmont, discipline-specific standards (Health, Safety and Loss Prevention, Environmental, and Community and External Relations) were developed for recurring risks and opportunities that occur across Newmont's operations. In some cases, international initiatives relevant to the manner in which these issues are managed have been adopted; for example, cyanide management and human rights.

Five Star maintains discipline specific standards for Community and External Relations; Environmental; and Health, Safety and Loss Prevention. The discipline specific standards are presented below.

Community and External Relations Standards

1. Management of Sites with Cultural or Religious Significance
2. Management of Heritage Sites
3. Land Access and Acquisition
4. Local Community Investment
5. Indigenous Employment and Business Support
6. Media Relations
7. Staff and Contractor Behavior
8. Government Relations
9. Social Impact Assessments
10. Human Rights Awareness
11. Local Employment and Business Support
12. Security Forces Management
13. Closure

Environmental Standards

1. Hydrocarbon Management
2. Chemical Management
3. Cyanide Management
4. Mercury Management
5. Tailing Management
6. Waste Rock Management
7. Waste Management
8. Water Management
9. Air Quality Management
10. Closure and Reclamation Planning
11. Heap Leach Facilities Management

Health, Safety and Loss Prevention Standards

1. Occupational Health and Hygiene
2. Hazardous Materials
3. Surface Ground Control
4. Underground Ground Control
5. Surface Fire Prevention

6. Underground Fire Prevention
7. Remote Control Equipment
8. Energy Isolation
9. Mobile Equipment
10. Electrical Safety
11. Work Permit Systems
12. Machine Guarding and Conveyors
13. Explosives
14. Light Vehicles and Road Safety
15. Working at Heights
16. Pressurized Systems
17. Cranes and Lifting Equipment
18. Medical Programs

Five Star Assessments

A Five Star Assessment is conducted annually at each operation, in accordance with the Five Star Assessment Schedule, to provide an indication on how effectively Five Star has been implemented. Stringent assessment procedures and scoring criteria ensure a consistent and rigorous approach to the assessments. Use of external, independent assessors provides a credibility that enables Newmont to demonstrate our performance to external stakeholders while also providing accurate information to enable us to internally identify the strengths and weaknesses of the Management System.

Communicating Results

Internal Communication

Five Star Assessment results are documented in the Five Star Assessment Reports which are posted on the GoldNet for access by all Newmont employees. A summary of the Assessment results from all operations are compiled in the Annual Summary Report in November and December. This report is presented to the Board of Directors and the Environment and Health and Safety Committee.

External Communication

Five Star Assessment scores are published in the annual *Now and Beyond* public reports. *Now and Beyond* is distributed to identified external stakeholders and at the Annual General Meeting. The *Now and Beyond* reports are also available on Newmont's internet website (Newmont.com). In addition, following each Five Star assessment, a Community and External Relations Five Star extract report is provided to the external stakeholders interviewed during the assessment.

SOCIAL RESPONSIBILITY POLICY

NGGL's demonstrated commitment to demonstrating social responsibility assures adherence to Ghanaian legislation and international best practice. The standards summarized below apply to all Newmont managed facilities and are designed to ensure Newmont's long-term commitment to social responsibility is secured.

Management of Sites with Cultural and/or Religious Significance to Indigenous People (NEM-CER-S.020)

– The purpose of this standard is to ensure that each Newmont managed facility properly respects and adequately protects all sites with cultural or religious significance for indigenous people in the facility's sphere of influence.

Management of Heritage Sites (NEM-CER-S.021) – The purpose of this standard is to ensure that each Newmont managed facility takes the necessary steps to properly respect and adequately protect all sites with heritage significance or potential heritage significance within the facility's sphere of influence. These steps should reduce actual or potential harm to sites by staff and contractors, in accordance with the cultural norms of relevant stakeholders.

Land Access and Acquisition (NEM-CER-S.022) – This purpose of this standard is to ensure the necessary permits, permissions, and land titles are acquired before any exploration, mining, or other related activity commences and that such permission is obtained honoring the principle of prior informed consent.

Local Community Investment (NEM-CER-S.024) – The purpose of this standard is to ensure that each Newmont managed facility has a strategic program based on a needs analysis for financial and in-kind assistance that delivers sustainable benefits to the local communities.

Indigenous Employment and Business Support (NEM-CER-S.025) – The purpose of this standard is to ensure proactive steps are taken to provide employment and business opportunities to local indigenous stakeholders, thereby ensuring inclusion, wherever possible, in opportunities provided by the facility's presence. This standard applies in addition to the Local Employment and Business Support standard.

Human Rights Awareness (NEM-CER-S.033) – The purpose of this standard is to ensure that Newmont managed facilities have processes for raising human rights awareness, including identification of human rights issues and impacts

Local Employment and Business Support (NEM-CER-S.034) – The purpose of this standard is to ensure that proactive steps are in place to provide employment and business opportunities to local stakeholders thereby ensuring their inclusion, wherever possible, in opportunities because of the facility's presence.

NGGL is in the process of developing a standard related to resettlement that will be consistent with IFC OP 4.12. NGGL is committed to minimizing disruption to the community; sustaining existing and supporting re-establishment of lost livelihoods, and ensuring properly administered land transactions defined in consultation with stakeholders (MacDonald 2004).

NGGL will develop and operate the Ahafo South Project under the Newmont Corporate Social Responsibility Policy, which includes management systems and discipline specific standards on Community and External Relations. Key aspects of Newmont's Social Responsibility policy include:

- Develop and use systems to identify and manage risks, and provide accurate information to support effective decision making.
- Train people and provide resources to meet our social responsibility objectives and targets.

- Respect the Universal Declaration of Human Rights in its business operations.
- Respect the social, economic and cultural rights of indigenous people.
- Adopt policies and standards and operating practices that ensure ongoing improvement.
- Wherever appropriate and feasible, set operating standards that exceeds requirements of the local law.
- Assess our performance against our policies and standards.
- Demand leadership in social responsibility from all our people.
- Seek to share our success by partnering with stakeholders in appropriate community development programs.
- Consult stakeholders in matters that affect them.
- Strive to communicate our performance in an accurate, transparent and timely manner.

ENVIRONMENTAL EXCELLENCE POLICY STATEMENT

Newmont's Environmental Mission Statement (Newmont 1991) states in part that Newmont and its affiliates intend to set standards of excellence with regard to environmental matters. The following policies provide definition to the Environmental Mission Statement that reflects challenges faced by Newmont as a global business in the 21st century:

- Newmont will, at all times, operate its facilities in compliance with applicable laws and regulations.
- Newmont will adopt and adhere to standards that are protective of both human health and the environment at facilities it builds and operates.
- Each Newmont operation will develop, during the design phase, and implement during operations and closure, a closure and reclamation plan that provides for long-term environmental stability and suitable post-mining beneficial land uses.

In addition, Newmont will:

- Commit necessary human and financial resources to support activities necessary to achieve compliance with the environmental mission statement and policies.
- Motivate and reinforce behavior in their employees (including contractors) that support the environmental mission statement and policies, including compensation programs linked to annual environmental performance targets.
- Operate and maintain pollution control equipment and facilities to minimize upsets or malfunctions and demonstrate a record of continuous improvement in this regard.

- Establish an audit program to systematically evaluate compliance of operating facilities with applicable federal, state, and local rules and regulations, as well as corporate policy, which includes a corrective action process to address deficiencies that arise.
- Hold employees accountable for ensuring equipment, facilities, and resources are managed to comply with this policy and minimize environmental risk.

As such, the Ahafo South Project will operate in full compliance with all applicable Ghanaian environmental regulations. Furthermore, in recognition of the evolving state of the regulatory structure in Ghana, and in recognition of ever-increasing requirements from shareholders and financial institutions, the facility will operate in accordance with generally accepted International Environmental Standards and Practices. Consideration of these objectives will be included in planning and implementation of all aspects of the operation.

Management and employees will be informed of environmental management responsibilities through training and supervision. All levels of development and operation will consider environmental factors in the decision process. Through awareness of environmental responsibility and cooperation from employees, Newmont will develop and maintain its social license to operate in Ghana.

In accordance with Five Star Environmental Management System requirements, periodic auditing and reviews will be conducted by internal/external auditors to verify environmental conformance and confirm management responsibilities are in accordance with environmental procedures.

OCCUPATIONAL HEALTH AND SAFETY POLICIES

NGGL's on-site staff is responsible for ensuring that health and safety policies and procedures are properly implemented and recorded. Policies and procedures are specified in a manual that is updated annually, or as necessary, based on site-specific requirements. Detailed descriptions are provided to all employees and contractors prior to initiating work-related activities. Key components of the manual include: policies, prevention programs, procedures, health/hygiene, and required authorizations. Health, safety and loss prevention standards are listed previously in the Five Star Program section.

REQUIREMENTS OF POTENTIAL INVESTORS, LENDERS, AND INSURERS

Lenders to the Ahafo project, agencies and/or commercial banks, will likely require Newmont to adhere to the Equator Principles and Ghanaian environmental regulations. During the tenure of any loan agreement, lenders may require annual environmental health and safety and social performance reporting.

Newmont will comply with the insurance regulations of the Government of Ghana. Insurers will require ongoing underwriting information which includes; feasibility studies and updates, capital cost estimates and actual reconciled costs, risk assessments, technical engineering data, and details of cargo movements. In addition, periodically, insurers will visit the site to perform their own internal due diligence.

Insurance policies would cover contract works, third party liability, and marine cargo under an Owner Controlled Insurance Program. Certain ancillary insurances, as required by Ghanaian law, will be insured by Ghanaian licensed insurers.

When construction is completed Newmont would include Ahafo within its corporate global insurance program. Ancillary insurances that are required by law to remain with Ghanaian licensed insurers will remain so.