

YAMANA GOLD INC
Form 6-K
June 28, 2005

FORM 6-K

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Report of Foreign Issuer

**Pursuant to Rule 13a-16 or 15d-16 of
the Securities Exchange Act of 1934**

For the month of **June, 2005**

Commission File Number **001-31880**

Yamana Gold Inc.

(Translation of registrant's name into English)

**150 York Street, Suite 1902
Toronto, Ontario M5H 3S5**

(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F Form 40-F

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

Note: Regulation S-T Rule 101(b)(1) only permits the submission in paper of a Form 6-K if submitted solely to provide an attached annual report to security holders.

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):

Note: Regulation S-T Rule 101(b)(7) only permits the submission in paper of a Form 6-K if submitted to furnish a report or other document that the registrant foreign private issuer must furnish and make public under the laws of the jurisdiction in which the registrant is incorporated, domiciled or legally organized (the registrant's home country), or under the rules of the home country exchange on which the registrant's securities are traded, as long as the report or other document is not a press release, is not required to be and has not been distributed to the registrant's security holders, and, if discussing a material event, has already been the subject of a Form 6-K submission or other Commission filing on EDGAR.

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Indicate by check mark whether by furnishing the information contained in this Form, the registrant is also thereby furnishing the information to the Commission pursuant to rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes No

If is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b) 82

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Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

YAMANA GOLD INC.

/s/ Charles Main

Date: June 27, 2005

Name: Charles Main

Title: Vice President, Finance and Chief Financial Officer

**SÃO VICENTE GOLD PROJECT
MATO GRASSO STATE, BRAZIL**

TECHNICAL REPORT

**PURSUANT TO NATIONAL INSTRUMENT 43-101 OF
THE CANADIAN SECURITIES ADMINISTRATORS**

PREPARED FOR

YAMANA GOLD INC.

June 2005

1.0 Summary

The São Vicente Project, located in Mato Grosso, Brazil, about 560 km west-northwest of the state capital of Cuiaba, is being evaluated as an open-pit heap leach gold operation in conjunction with a gravity concentration circuit.

Independent Mining Consultants, Inc. (IMC) were commissioned by Santa Elina Desenvolvimento Mineral S.A. (Santa Elina or SEDM), a wholly owned subsidiary of Yamana Gold Inc. (Yamana), to prepare a Technical Report for the São Vicente Project. The Technical Report has been prepared for filing pursuant to Canadian National Instrument 43-101 and provides information with respect to mineral resource and mineral reserve estimates, technical studies, and economic analysis which have been performed on the São Vicente property.

This Technical Report is a summary of the key findings of a feasibility study developed by Minerconsult Engenharia Ltda (Minerconsult) of Belo Horizonte, Brazil. The title of their report document is São Vicente Project Feasibility Study Update , and is dated April 2005. It is reported to be an update to a study done in 1997.

In addition to Minerconsult, several other groups also participated in the feasibility study, and subsequently are also key sources of the information incorporated into this report.

The São Vicente property is located in the extreme western portion of Mato Grosso State in west central Brazil, close to the Bolivian border. It is about 560 km west-northwest of the state capital of Cuiaba and is about 90 km north-northwest of the town of Pontes e Lacerda. Figure 4-1 shows the location of the property. Currently the São Vicente property consists of three contiguous mining permits held by SEDM. Figure 4-2 shows the location of the mining concessions. São Vicente is also about 58 km from Yamana's São Francisco Project area via a gravel road.

Gold was first discovered in the area in the 1700's by the Portuguese. The area became the first significant gold mining district in Brazil and the nearby settlement Vila Bela was at that time named the capital of Mato Grosso State. The district reportedly produced and shipped to Portugal some 60 to 70 tonnes of gold between 1720 and 1830, much of which came from the nearby São Francisco site. Remnants of this period of mining activity can still be seen on the São Francisco property.

In the mid-1970s, garimpeiro activity began in the area, and in 1977, Santa Elina began acquiring property in the Santa Elina Gold Belt and commenced dredging/placer mining in 1983. Approximately 76,000 oz of gold was produced by placer mining at São Vicente. Hard rock open pit mining at São Vicente produced an additional 110,810 oz of gold by flotation and gravity methods in the period 1995 to 1997.

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In 1996, Santa Elina was taken private and entered into a joint venture with Echo Bay. The joint venture carried out a number of exploration programs including more detailed diamond

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and reverse circulation (RC) drilling of both the São Francisco and São Vicente deposits. Mineral resource and reserve estimates and associated preliminary feasibility studies were subsequently carried out.

In 1998, the ongoing metallurgical tests for heap leach processing were completed and indicated the process to be viable. In 2002, Santa Elina re-examined the 1997 studies for each property. That resulted in the CAPEX estimates being significantly reduced for each deposit, in large part because of currency devaluation.

The São Vicente ore deposit is a shear hosted lode gold deposit which appears to be epigenetic and structurally controlled and composed of narrow, 1 cm to 5 cm wide, quartz (sericite) veins containing free gold. The veins and vein system/stockworks are both parallel to and crosscutting the bedding planes and appear to be separate or multiple, but closely related, mineralizing events.

The mineral reserve and mineral resources are based on an ore reserve block model developed by Geoexplore Consultoria e Servicos of Belo Horizonte, Brazil. The model was completed in early 2005. 226 drillholes representing about 31,000 m of drilling, almost all from core, were used to develop the model. Yamana retained GeoSystems International, Inc. (GSI) to review the mineral resource estimates. This review was conducted in January and February 2005.

Table 1-1 reports the mineral reserve of the São Vicente Project based on the production schedule developed by IMC during the 1st quarter of 2005. Ore planned to be mined and shipped directly to the plant amounts to 5,881 ktonnes at 1.066 g/t gold. The IMC mine plan also results in 123 ktonnes of low grade ore at 0.298 g/t gold that will be stockpiled and potentially processed at the end of the mine life. This results in a total mineral reserve of 6,004 ktonnes at 1.050 g/t gold for 202,700 contained ounces of gold. The total material movement is 21.3 million tonnes for an overall strip ratio of 2.55 to 1. The mine plan is based on processing 1,800 ktonnes of ore per year for a total commercial pit life of 3.3 years.

This mineral reserve is based on open pit mining only and does not include any potential underground mining. In particular, there is additional resource, namely the Deep South resource, which could be incorporated into an open pit, but appears to be more profitably

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mined as an underground mining project. Studies are in progress to evaluate underground mining potential of resources not included in the above mineral reserve.

The final pit design for the project is based on a floating cone analysis assuming a gold price of US\$ 350 per troy ounce.

At a 0.3 g/t gold cutoff grade, GCS has tabulated measured and indicated mineral resources for São Vicente at 12,459 ktonnes at 0.99 g/t gold for 396,000 contained ounces. Table 1-2 shows this resource by category. There is an additional 207 ktonnes of inferred resource at 0.53 g/t gold.

Table 1-2: Mineral Resources at 0.3 g/t Gold Cutoff Grade

Resource Class	Ore Ktonnes	Gold (g/t)	Gold (koz)
Measured	6,431	1.03	213.0
Indicated	6,028	0.95	183.0
Measured + Indicated	12,459	0.99	396.0
Inferred	207	0.53	3.5

It is noted by IMC that this resource statement is simply a summation of model blocks above a 0.3 g/t cutoff grade. It is known to include some low grade material at depth that is unlikely to be extractable under current economic conditions. In addition, the mineral reserve of Table 1-1 uses lower cutoff grades than 0.3 g/t so the mineral reserve is not fully contained within the resource statement.

Previous hard rock mining activity at São Vicente Project was based on milling of the ores. The old facilities that treated the São Vicente gold ore consisted of crushing the run-of-mine to minus 9.5 – 12.7 mm (3/8 inches to 1/2 inches) and then grinding the crushed product to minus 2 mm in a rod mill. The ground ore was classified at 210 micrometer (65 mesh) in hydrocyclones with the underflow treated in a jigging circuit and the overflow in a froth flotation circuit. The coarse gold concentrate obtained in the jigging plant was sent directly to the gold shed for further treatment and the fine gold flotation concentrate was reground, thickened and treated in a CIL adsorption/ desorption/electrowinning circuit.

The process had a lot of operating and cost problems, including the following:

- Grinding costs were very high due to the high abrasiveness (more than 99.5% of quartz content).
- Inefficient hydrocyclone separation, which allowed a high amount of fine gold (chemical gold) to report to the cyclones underflow, there being lost in the jigging circuit tailings, thus reducing the overall recovery.
- Low available settling area for the flotation concentrate, which is a material that is difficult to settle. This led to high concentrate losses in the thickener overflow.

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Based on these facts, it was decided to investigate a more cost effective process suitable to treat the low grade São Vicente ores. Preliminary bottle rolls leaching tests were carried out with the fine fraction (-100 micrometer) of the ore showing that the ore was amenable to direct leaching by cyanide solution, with recoveries up to 90%.

Metallurgical test results obtained at Metago, by SEDM in house column tests, and also by Kappes, Cassidy & Associates indicated the possibility to increase overall plant recovery from the historic 67% to 81% if the introduction of a heap leach operation in the process was considered.

The adopted process method considers the following basic operations:

- ROM crushing in three stages until reaching 100% below 19mm.
- Wet screening of crushed ore on a 3mm mesh, with the fraction exceeding 3mm being directly sent to the leaching pile and the fraction smaller than 3mm being sent to jigging.
- Jigging of the fraction below 3mm in three successive stages, in existing jigs, until the concentrate is obtained for subsequent purification and smelting.
- Desliming of jigging tails at 57 microns, with the fraction exceeding 57 microns being dewatered and sent to the leaching pile, while the fraction below 57 microns is sent for thickening and subsequent leaching at the existing thickener and CIL unit.
- Ore exceeding 3mm, as well as deslimed and dewatered jigging tailings, are carried together by trucks to the leaching pile.
- CIC-type adsorption columns are used for recovery of gold from the leaching solution.
- Existing desorption, electrolysis, and smelting plants, after a few improvements have been introduced, are used in order to obtain gold ingots.

The plant design is sized to process 2,052 ktonnes per year of ore. This is based on open pit mine production of 1.8 million tonnes per year plus 252 ktonnes per year of existing tailings. Minerconsult estimates an overall metallurgical recovery of 81% of the gold feed grade based on their review of the testing data.

Capital and operating costs were developed by Minerconsult (process plant and infrastructure) and IMC (open pit mining) for financial modeling of the project. Initial capital costs for the São Vicente Project are summarized in Table 1-3.

Table 1-3: Summary of Initial Capital Costs (US\$x1000)

Mine Development	2,052
Mine Equipment	4,821
Process Plant/Infrastructure	12,809
Working Capital	500
Owners Cost	60
TOTAL	20,242

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In addition to these costs, additional plant capital of US\$ 692,000 in Year 1 and US\$ 59,000 in Year 2 has been allocated.

IMC and Minerconsult have estimated a salvage value of US\$ 2.5 million for mine and plant equipment at the end of the project to partially offset total life of project capital cost.

The capital cost estimate is in 1st quarter 2005 US dollars without escalation to the expected project start date. Items sourced in Brazil have been converted to US dollars at the rate of US\$ 1.00 = R\$ 3.00.

Table 1-4 summarizes the life of project operating costs for the São Vicente Project.

Table 1-4: Summary of Life of Project Operating Costs (\$US)

Description	Total Cost (US\$ x 1000)	Per Ore Tonne	Per Gold Ounce
Mining	12,004	1.652	68.83
Processing	13,029	1.794	74.71
G&A/Reclamation	1,126	0.155	6.46
Refining, Transport, Insurance	1,134	0.156	6.50
Royalty/CFEM Tax	654	0.090	3.75
TOTAL	27,947	3.847	160.25

Life of mine operating costs are US\$ 27.9 million or US\$ 3.85 per ore tonne. This amounts to US\$ 160.26 per troy ounce for the anticipated production of approximately 174,390 ounces.

Minerconsult performed a financial analysis of the São Vicente Project on an annual cashflow basis using a conventional pro-forma income statement format. A sensitivity analysis to key project parameters was also performed. The base case gold price used for the study was US\$ 375 per troy ounce. Recovered gold is estimated at 174,390 troy ounces for gross revenue of US\$ 65.4 million.

Table 1-5 shows the results of a before-tax cashflow analysis. The parameters shown are those normally of interest to the financial community.

Table 1-5. Financial Results for Before-Tax Cashflow Analysis (US\$ 375/Oz Au)

Internal Rate of Return	41.9%
Net Present Value at 5% Discount Rate	US\$ 14.8 million
Net Present Value at 10% Discount Rate	US\$ 11.5 million
Payback Period	1.5 years

The Minerconsult Feasibility Study Update demonstrates the technical feasibility of the São Vicente Project. Good recoveries of gold metal can be achieved and marketed. Previous mining activity has also demonstrated recoverable gold. The cost projections developed by this study, along with current gold prices, indicates a good possibility of financial success.

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A new exploration effort was commenced in early 2005 to 1) develop about 850 meters of underground drift to collect bulk samples from the Deep South orebody and also establish drill stations for 4500m of underground drilling, and 2) drill 4,000 meters of deep surface drilling to investigate potential gold mineralization in the contact between the metasediments and the volcano-sedimentary basement, below the pit and Deep South orebody. There appears to be good opportunities to expand the mineral reserve and mineral resource.

Yamana has also announced, in early May of 2005, that a formal construction decision on São Vicente has been deferred, pending further exploration results that are expected to be completed about July 2005.

It appears that the near term work to be done on the São Vicente Project is as follows:

- Complete the exploration work in progress.
- Update the resource block model.
- Develop an updated open pit production schedule and capital and operating costs.
- Perform a preliminary feasibility study on underground mining. This should include design of access and underground stopes, development of an underground mine production schedule, and estimation of capital and operating costs.

In addition, GSI recommends infill drilling in the higher grade zones prior to mining to improve the accuracy of short term mine plans.

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2.0 Introduction and Terms of Reference

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This Technical Report is a summary of the key findings of a feasibility study developed by Minerconsult Engenharia Ltda (Minerconsult) of Belo Horizonte, Brazil. The title of their report document is "São Vicente Project Feasibility Study Update", and is dated April 2005. It is reported to be an update to a study done in 1997. Minerconsult is responsible for metallurgical recovery estimates, process plant and infrastructure design and capital costs, and process and infrastructure operating costs.

In addition to Minerconsult, several other groups also participated in the feasibility study, and subsequently are also key sources of the information incorporated into this report.

Geoexplore Consultoria e Servicos (Geoexplore), also of Belo Horizonte, Brazil, was commissioned to develop the resource block model for the project. Their work is documented in the report "São Vicente Resources Estimate Update Report Revision 04", dated January 2005. An independent review of the resource model was provided by GeoSystems International, Inc (GSI). Based on this review, GSI is of the opinion that the resource model and the resource classification method used are in accordance with CIM guidelines and NI 43-101 standards. Their report is titled "São Vicente Gold Project Independent Review Report February 2005 Resource Model" and is dated March 2005.

In addition to this Technical Report, IMC was also commissioned to develop the mining portion of the project study. The IMC work included: 1) developing a mine plan and mine production schedule for the project, including the design of waste rock storage areas, 2) determining the mine equipment and labor requirements for the mine, and 3) estimating the mine capital and operating costs for the project. The details of this work are reported in the report "São Vicente Project, Brazil Mining Feasibility Study", dated March 2005.

Kappes, Cassidy & Associates (KCA) of Reno, Nevada performed much of the metallurgical testing that is used as the basis of this study. Their work is documented in the report "São Vicente Project Report of Metallurgical Tests", dated April 1998.

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Watts, Griffis and McOuatt Limited (WGM) developed a preliminary feasibility study of the project in 2003 for Santa Elina. This work is documented in "A Preliminary Feasibility Study of the Santa Elina Gold Project Composed of the São Francisco, São Vicente and Fazenda Nova/Lavrinha, Properties in Brazil for Santa Elina Mines Corporation", dated July 2003. WGM was not actively involved with this current study, but much of the background information for this current feasibility study, especially portions related to project history, exploration, geology, and nearby projects is drawn from the WGM report. In that report references to "Santa Elina" would not read "Yamana", given the acquisition of Santa Elina properties by Yamana in 2003.

Qualified Persons for this Technical Report include Michael Hester of IMC, and Ivan Machado of TechnoMine of Salt Lake City. Mr. Machado is fulfilling Qualified Person responsibilities for the Minerconsult portion of the study, including metallurgical recoveries and plant and infrastructure capital and operating costs. A site visit was conducted by M. Hester in November 2004. Mr. Machado conducted a site visit the week of June 13, 2005 to comply with NI 43-101 regulations. A site visit was also conducted by WGM senior personnel in March 2003.

The resource block model was developed by Porfirio Caballeiro of GCS. Mr. Caballeiro is a 25-year experienced professional engineer, and although qualified by education and experience, he does not have the membership in a professional organization outside Brazil. Mr. Caballeiro, along with Mario Conrado Reinhardt, a senior geologist from GCS, conducted a visit to the site in November 2004. Mario Rossi, Principal Geostatistician of GSI, and a Qualified Person under Canadian Securities regulations, reviewed the resource model prepared by Mr. Caballeiro and concluded that it can be used for long-term mine planning and is adequate to support the Feasibility Study Update.

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IMC, as principal author of this Technical Report, accepts the resource block model developed by GCS based on the following:

1. Acceptance of the review conducted by GSI. This included the development of an alternative model, based on different geologic assumptions, that obtained essentially the same results as the GCS model.
2. Acceptance of the QA/QC work done by Ken Lovstrom and Echo Bay during 1997. IMC has worked with Mr. Lovstrom on other projects and accepts his work. Echo Bay staff involved with the project in 1997 included John Witner and Leah Mach. IMC did extensive work on other projects with these Echo Bay technical staff personnel during the mid-1990 s and accepts the work done by them.
3. Demonstration by GSI that the model results are not overly sensitive to various geologic assumptions and interpretations.
4. The additional review work done by WGM.

In this report the abbreviations Santa Elina, SEDM and Yamana are used interchangeably to refer to the sponsor company for this project. In particular, Minerconsult tended to use SEDM in their report and most other project participants used Yamana. Many of the historic

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reports used the Santa Elina abbreviation. IMC, referencing several report sources to prepare this document, generally maintained the references of the source document.

This report is in metric units of measurement. Ktonnes is an abbreviation for 1000 metric tonnes. Linear measurements are expressed in meters or kilometers and liquid volumes are in liters or kliters (liters x 1000). Gold grades are report in grams per metric tonne. Quantities of gold metal are often abbreviated as koz for 1000 troy ounces.

All currencies are in US dollars as of about the first quarter of 2005.

3.0 Disclaimer

As discussed above, there has been participation from several different groups in the development of the São Vicente feasibility study. Each participant has carried out its work independently, and each directly for Yamana. They have not reviewed the work of the other participants and do not make any representation as to the accuracy of other s opinions or analyses.

IMC has exercised reasonable diligence in using data supplied by Yamana and the other project participants, and has no reason to believe that any data supplied are misleading or incorrect. However, IMC does not guarantee the accuracy of data supplied by others.

IMC also wishes to note the following items that were not specifically audited by any members of the current project participants:

The São Vicente sampling database is a historic database, developed fully by 1997. Neither Geoexplore, GSI, nor IMC have done any independent sampling or assaying or any other QA/QC reviews of the data. Instead, IMC has relied on an extensive QA/QC program conducted by Ken Lovstrom and Echo Bay in 1997, as well as some limited reviews done by WGM in 2003. There has

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not been any new sampling data added to the database since these audits were conducted.

The financial model includes the processing of a small amount of existing tailings material (1,260 ktonnes at 0.36 g/t gold) that is not included in the current mineral reserve or mineral resource statements. The quantity and grade of this material is estimated by Yamana and has not been audited.

The geologic model used to construct the resource block model was developed by Yamana personnel and has not been audited. However, GSI, in the course of their reviews developed a check block model, with different geologic assumptions, that got essentially the same results as the model based on Yamana geology.

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4.0 Property Description and Location

The São Vicente property is located in the extreme western portion of Mato Grosso State in west central Brazil, close to the Bolivian border. It is about 560 km west-northwest of the state capital of Cuiaba and is about 90 km north-northwest of the town of Pontes e Lacerda. Topographic coordinates of São Vicente are 14°32' S latitude and 59°17' W longitude. Figure 4-1 shows the location of the property.

Currently the São Vicente property consists of three contiguous mining permits held by Santa Elina Desenvolvimento, a Yamana Gold Company. The permits are registered with Departamento Nacional da Producao Mineral (DNPM) as process numbers 861.740/79, 861.810/79, and 861.809/79 and total 28,980 hectares. The mining permits are still in place from mining that was conducted at the site up until about 1996. Figure 4-2 shows the location of the mining concessions.

São Vicente is also about 58 km from Yamana's São Francisco Project area via a gravel road.

5.0 Accessibility, Climate, Local Resources, Infrastructure and Physiography

5.1 Access

Access to São Vicente is via the state capital of Cuiaba which has a population of more than 400,000. There are daily commercial jet flights to Cuiaba from São Paulo, Rio de Janeiro, and other major Brazilian cities.

There is good road access from Cuiaba to São Vicente. Pontes e Lacerda, the main city close to the site, is accessible by a 435 km paved highway from Cuiaba. The São Vicente property is 125 km from Pontes e Lacerda by road (90 km paved). Access is year round, and freight and other materials can be brought in relatively inexpensively.

5.2 Climate

The climate of the area is tropical to semi-topical with hot rainy summers, daily maximums in the range of 30°C to 35°C, and cooler dry winters with daily maximums in the range of 16°C to 20°C. The summer rainy period starts in December and continues through March.

The town of Pontes e Lacerda, with a population of 40,000, is the closest full service community. It has modern educational, medical, shopping, and banking facilities.

5.3 Local Resources

Other industries in the area include agriculture, cattle ranching, latex production for the rubber industry, tile and brick manufacturing, and small scale mining.

5.4 Infrastructure

National electrical service is not currently available at the project site. The closest national grid power source is at Pontes e Lacerda. Electrical power for previous mining at São Vicente was provided by diesel generators. For the implementation of the São Vicente Project, a 34.5 kV overhead line will be built from a new substation about 25 km from the project site.

Sixty homes, dormitories, a school and other basic facilities remain on site at São Vicente from the previous mining operation and are in serviceable condition but will be subject to certain rehabilitation work. A small number of care and maintenance personnel live at the site. It is proposed that the São Vicente mining facilities serve the combined São Francisco-São Vicente operation with daily travel to and from São Francisco.

Water is readily available at the project site both from streams and ground water. Santa Elina has permits in place for water use at São Vicente.

The property has an air strip for small planes.

Since the suspension of operations in 1997, some of the site production facilities have been removed to other projects. A small workforce is maintained at the townsite for care and maintenance of the remaining facilities as well as completion and support of the rehabilitation work that has been carried out since 1997.

There is some processing equipment still on the site from previous mining operations. This includes jigs, thickeners, and a carbon circuit from the milling operation. At the townsite, there are a maintenance garage, limited pilot test facilities and a laboratory, all of which will require upgrading to support future operations.

5.5 Physiography

The physiography of the project is characterized by a mountain range, part of the Aguapei Mobile Belt and Mafic Arc, that follows the Brazil-Bolivia border. In the vicinity of the project, the range forms a prominent ridge some 800 m elevation that strikes approximately N30°W and is some 20 km wide. The ridge stands out from the plains (at approximately 200 m elevation) with a gentle slope on the western side towards Bolivia and a vertical, to near vertical, cliff like escarpment on the east side. The cliff like escarpment extends for more than 200 km along the mountain/Aguapei Mobile Belt. Streams drain the ridge both to the east and to the west with several of the eastern draining streams forming spectacular water falls. Both properties are partially covered with scrub.

Vegetation on the project area consists of mixed forest, savannah and open fields.

6.0 History

Gold was first discovered in the area in the 1700 s by the Portuguese. The area became the first significant gold mining district in Brazil and the nearby settlement Vila Bela was at that time named the capital of Mato Grosso State. The district reportedly produced and shipped to Portugal some 60 to 70 tonnes of gold between 1720 and 1830, much of which came from the nearby São Francisco site. Remnants of this period of mining activity can be seen on the São Francisco property.

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In 2003, Watts, Griffis, and McOaut (WGM) was commissioned to conduct a technical review of three properties held by Santa Elina and prepare a NI 43-101 Technical Report. However, per WGM, since this was the first public announcement of Mineral Reserves for the properties, a Preliminary Feasibility Study was required. The properties reviewed included São Vicente, São Francisco and Fazenda Nova. This study included the following for each property:

- An examination of each property;
- Data compilation;
- Review and audit of mineral resources and reserve estimates;
- A review of the proposed mining plan, metallurgical processes, environmental status, closure issues, logistics and infrastructure;
- Capital and operating costs review, with economic analyses.

The WGM Study was completed in 2003.

Most recently, Minerconsult Engenharia Ltda. (Minerconsult), from Belo Horizonte, was commissioned to prepare an updated feasibility study for the São Vicente Project. This study is reported to be an update to a study done by Minerconsult in 1997 and was completed in April 2005.

7.0 Geological Setting

7.1 Regional Geology

This description of regional geology is excerpted from the WGM report.

The regional geological setting for the São Vicente mine and numerous other gold occurrences that comprise the Santa Elina Gold Belt of central west Brazil and east central Bolivia is the Aguapei Mobile and Mafic Arc Belt. This belt, or break, is a major crustal scale shear zone that separates the Archean Amazon Craton on the east from the Proterozoic Paragua Craton on the west. The belt extends for more than 600 km in a north-northwest direction (Figure 7-1). The belt is characterized by a prominent mountain range composed of a 1,200 m thick sequence of Proterozoic clastic sediments known as the Aguapei Group (Figure 7-2). The Aguapei Group, the host rocks for the gold mineralization, is a sequence of texturally and mineralogically supermature sediments made up of braided river facies, aeolitic, aeolitic dune facies and shallow marine platform facies. Southward along the belt, the lower part of the Aguapei Group contains interbedded volcanic units and basic sills and dykes (that may be thrust from the east).

The Aguapei Group overlies the central part of the Amazon Craton (Brazilian Precambrian Shield) unconformably. This part of the shield, known as the Xingu Complex, contains lower Proterozoic volcano-sedimentary belts elongated in a northwest-southeast direction. The belts are surrounded by Archean gneissic to migmatitic batholiths. Prolonged erosion of the older rocks was accompanied by the development of basins into which the Aguapei sediments were deposited. The flat area surrounding the mountain range is believed to be mainly underlain by the Xingu Complex, however, most of the area is covered by eluvial-lateritic soils with few outcrops and the geology is not well known. Prolonged and deep erosion of this continental mass occurred during Proterozoic time, and was accompanied by the development of intracratonic basins in which were deposited the 1,200 m thick Aguapei Group of sediments. The sediments are represented by predominantly meta-arenites with lesser amounts of metapelites and even less common lenses of metaconglomerate. The Aguapei Group has been mapped over a 30 km strike length in Brazil and continues southward into Bolivia for more than 200 km, where it is known as the Sunas Group, before passing again into Brazil.

Structurally, the Aguapei Group rocks have been subjected to northwest-southeast compressional forces that folded the eastern edge into broad to tightly folded anticlinal-synclinal sequences paralleling the axis (azimuth 150°) of the mobile belt. Faulting, fracturing and shearing have also developed parallel to and across this fold axis.

The mountain range is bounded on both sides by faults. The fault on the east dips away from the mountain range at a shallow angle and separates the Archean basement on the east from the Proterozoic metasediments on the west and is thought by WGM to be a thrust fault in the vicinity of São Vicente to Pontes e Lacerda.

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A well-developed northeast-southwest fracture system crosscuts the regional trend. The linear occurrences of the most deformed parts of the Aguapei Group form ridges such as the São Vicente, de Borda, Patrimônio, Cagado, Caldeirão, Pau-a-Pique, Aguapei and Caramujo. The internal part of the Brazilian Aguapei or Bolivian Sunsas mobile belts contains the extensive Aguapei metasediment plateaus which show little or no deformation, for example, the ridges of Ricardo Franco/Santa Barbara in Brazil or Huanchaca in Bolivia.

The Sunsas orogenic cycle in Bolivia involved erosion of older rocks, deposition of the Sunsas and Vibosi Groups and their subsequent deformation and Vibosi metamorphism. The orogenic stage was accompanied by basic igneous and granitoid phases including the generation of pegmatites. The Susasa and Vibosi Groups cover the basement with a marked unconformity outcropping as internal metamorphosed synformal folds within the Sunsas orogenic belt or as relatively undisturbed layer sequences over the adjacent Paragua Craton (Bolivia), which remained unaltered during the orogeny.

The known bedrock gold deposits and occurrences in Mato Grosso state are separated into two districts – the São Vicente/Borda district and the Pontes e Lacerda district (to the south of São Francisco).

7.2 Local Geology

Knowledge of the geology of the São Vicente deposit is based on 30,135 m of drilling, in 217 drill holes, and exposure in the existing open pit. The drilling, which is mostly diamond drilling, includes 318 m of reverse circulation drilling.

Again, this description of local geology is excerpted from the WGM report.

Tight, steeply dipping, isoclinally folded meta-arenites of the Fortuna Formation comprise the local host rocks. The meta-arenites are composed predominantly of fine to grit sized quartz grains with a small percentage of interstitial recrystallized sericite, muscovite and locally minor chlorite, the alteration products of a former argillaceous matrix. Cross-bedding is commonly observed. Intercalated with the meta-arenites are metaconglomerates traceable up to several hundred meters along strike and up to 20 or 30 m thick, particularly where the conglomerates form the basal units of depositional cycles. The metaconglomerates are composed of poorly sorted, subangular to rounded quartz and quartzite pebbles in what was generally an argillaceous groundmass. Lenticular, thin (centimeter to decimeter thick) bodies of purplish-colored metapelites, of limited areal extent, are also interbedded in the meta-arenite units, particularly in the upper portion of the depositional cycles.

The basement of the Aguapei Group is comprised of a lower to mid Proterozoic sequence of fine grained metasediments (sericite schists), acidic metatuffs, banded iron formation (BIF), phyllites and quartzites, all intruded by granitoids and mafic rocks.

Both sequences were subject to three major deformational events that progressively resulted in folding, faulting and shearing, and finally fracturing of the rocks. These events were

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related to northeast-southwest compressional forces that shortened and buckled the rock masses along the Aguapei Tectonic Front. Deformation initially resulted in large anticline-synclinal folds with axial planes striking 150o and plunging to the northwest and southeast. Folds are symmetrical and can be followed for hundreds of meters. Axial plane foliation is prominent. Along the fold limbs, tight, meter-sized folds with sub-vertical axial planes exhibit a similar degree and orientation as the larger folds. Progressive compression resulted in rupturing of the flanks of the folds and formation of major shear-mylonitized zones up to 60 m thick, which can be traced for hundreds of meters in a northwest-southeast direction, parallel to the fold axes. The final episode was the formation of extensive flat to gently dipping fractures that allowed the emplacement of the higher-grade auriferous quartz veins/silicified zones.

During the orogeny, the rocks of the Fortuna Formation were subject to low grade metamorphism. The metamorphism is evident in the recrystallization of the quartz grains and in the alteration of the argillaceous matrix minerals into sericite-muscovite assemblages.

The gold bearing quartz veins display sericite and minor chlorite alteration. There have been no microscopic or other studies of alteration. Significant weathering, caused by the penetration of surface waters along major structures, is occasionally visible to a 200 m depth.

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8.0 Deposit Types

This discussion of deposit type is from the WGM report.

São Vicente is a shear hosted lode gold deposit which appears to be epigenetic and structurally controlled and composed of narrow, 1 cm to 5 cm wide, quartz (sericite) veins containing free gold. The veins and vein system/stockworks are both parallel to and crosscutting the bedding planes

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and appear to be separate or multiple, but closely related, mineralizing events. While direct comparable examples of similar type deposits are not known to WGM, the deposits have some similarity to deposits in the Pontiac sediments of the Cadillac Break, Quebec, Canada and some similarity, at least lithologically, to the Witwatersrand gold deposits in South Africa.

9.0 Mineralization

The following discussion of mineralization is from the WGM report.

At São Vicente, gold mineralization occurs for more than 1,000 m in two parallel northwest trending zones along anticlinal flanks. These zones are located within a larger regional area of shearing 10 by 2 km wide and are characteristically proximal to the major regional shear zones.

Most of the gold occurs in millimeter to several centimeter-thick quartz veins which cut the host rocks in two prominent directions. One is sub-vertical in association with shear-mylonite zones sub-parallel to foliation in the meta-arenites. The other is flat to shallow dipping, crosscutting the foliation and bedding of the host rocks. The concentration of gold is directly related to the frequency of the two structures. Gold is intimately associated with quartz, to a lesser extent pyrite, and to a very small extent, arsenopyrite. Sericite and minor chlorite are common accessory minerals. Throughout the deposit, free gold is common and is visible as fine to coarse grains, some up to 10 mm in diameter. This gold is commonly described as gravimetric gold because of the historic gravimetric method used during the assaying for gold and for the mining method used to recover it. The fine gold that occurs in sericite, sulfides and silicates is collectively described as chemical gold. The contact between weathered (oxide-bearing) and unweathered (sulphide-bearing) rocks is highly irregular due to locally deep penetration of surface waters along major structural breaks.

In the south extension/east border area of the São Vicente pit there is potential for a higher gold grade underground resource coming from vertical dipping pods of quartz veins, rich in sulfides and sericite. This mineralized material occurs between elevation 240 m (top) and 50 m (bottom) covered by 120 m of barren rock. As defined by exploration drilling, the length is 300 m and it is open to the south. Geologic information indicates that the mineralization occurs as metric to decimetric lenticular pods paralleling foliation and up to 12 m thick. They plunge to the northwest following the fold axis of the host sediments. To date 21 core holes totaling 5,438 m have tested the area. Drillholes have cut 52 gold intersections at a

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grade over 1.0 g Au/t and 18 intersections over 4.0 g Au/t. Gold occurs largely as disseminated free coarse particles in the core samples.

10.0 Exploration

1990 to 1997: A considerable amount of diamond drilling was carried out during the period of mining operations at the site. The database used for geologic modeling contained 224 diamond drillholes totaling 30,672 m. Reserve circulation drilling totaled 2 holes and 318 m. There is no

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breakdown of drilling by year in the data supplied to WGM.

1994: During 1994 the gravity plant tailings area was tested by 100 by 25 m spaced drillholes.

1996 to 1997: Resource and reserve estimations were undertaken with the assistance of outside consultants and Echo Bay personnel. Concurrently, metallurgical testing (largely by KCA, with some by Santa Elina itself and some by METAGO) was carried out and a preliminary feasibility study produced. Echo Bay was involved in selecting consultants and provided certain in-house expertise for portions of the study. Minerconsult Engenharia Ltda. (Minerconsult), from Belo Horizonte, was also responsible for several aspects of the study.

1998: The KCA metallurgical testing was completed.

2005: A new exploration effort was commenced early in the year to 1) develop about 850 meters of underground drift to collect bulk samples from the Deep South orebody and also establish drill stations for 4500m of underground drilling, and 2) drill 4000 meters of deep surface drilling to investigate potential gold mineralization in the contact between the metasediments and the volcano-sedimentary basement, below the pit and Deep South orebody.

11.0 Drilling

Santa Elina drilled 30,996 m in 226 drillholes between 1990 and 1997. Part of this work was in support of ongoing production. 224 holes were diamond drillholes and the other two holes were drilled by reverse circulation, totaling 318 m. All the drilling was carried out on the deposit or the possible immediate extensions of it and was either NQ or HX size. Recoveries were above 95%. Drilling was carried out by Brazilian contractors.

Recovery and Rock Quality Determination (RQD) measurements were obtained from all drill core, with lithology, alteration and mineralization described prior to beginning the sampling process.

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12.0 Sampling

All the sampling information used to develop the São Vicente resource block model was from 226 drillholes discussed above. There was not any surface, trench, or channel samples from underground openings included.

The drill core was rigorously sampled on 2m intervals. For NQ core (47.6mm) the entire 2m core sample was used to provide approximately 9kg of material per sample. For HX core (76mm) half core was used, providing approximately 11kg per sample.

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Similar sampling procedures were carried out at São Vicente and at São Francisco.

13.0 Sample Preparation, Analyses and Security

The sample preparation and analyses procedures established by Santa Elina for both São Francisco and São Vicente are as follows:

Pre-1997: HX core was split and 11 kg samples were collected at 2 m intervals from one-half of the core. NQ core was also sampled at 2 m intervals but the whole core was used in order to provide an adequate sample size. This splitting procedure was also used in 1997.

The evident gold nugget effect led Santa Elina to develop specific protocols. On site, samples were crushed to quarter inch and pulverized to minus 2 mm in a hammer mill. A fraction (about one kilogram) was saved for ore characterization and the rest (seven to ten kilograms) was panned to remove the gravity gold (+150 mesh), which was amalgamated and assayed at the São Vicente mine facilities. The heavies which remained after amalgamation were assumed to contain no gold but were captured and saved. The entire pan tailings were collected, dried and split to a 1.8 kg sample and shipped to the NOMOS laboratory in Rio de Janeiro for gold analysis of a 50 g sample by fire assay with an AA finish. The value obtained from this assay was termed the fine, or chemical gold one. Therefore, each 2 m interval has two assays, gravity and chemical and the sum of them is the total gold grade.

1997: A QAQC audit by consultant Kenneth Lovstrom, while generally finding no fault with past procedures led to the introduction of a more industry standard protocol for the 1997 program. NOMOS set up a preparation and analytical lab on site and assaying was done on the entire samples using fire assay with an AA finish. In this sample stream there was no gravimetric gold assay. Almost two thousand 1997 samples were analyzed using both pre-1997 and 1997 protocols. It was concluded that results were comparable and that pre-1997 sampling data were reliable and by inference that the gravimetric step was not necessary. This subject is further discussed below.

Check assaying was carried out for Santa Elina by Bondar-Clegg in Vancouver and GeoLab in Brazil.

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Concerning sample security, the São Vicente sampling database was developed prior to 1997 and none of the reports available to IMC discuss any specific sample security procedures during sample preparation, analysis and/or transportation. There is a substantial amount of remaining drill core, sample pulps, and coarse rejects from both the São Vicente and São Francisco Projects stored under cover at the São Vicente Project site. There is opportunity to submit additional check samples if desired.

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14.0 Data Verification

14.1 Echo Bay Work

In mid-1996 Echo Bay purchased 43% of Santa Elina and became significantly involved in the evaluations of the São Francisco and São Vicente Project. In early 1997 Echo Bay retained Ken Lovstrom, a Tucson, Arizona, USA, geochemist, to conduct a detailed technical audit of the sampling and analytical procedures. This work included:

1. A review of sample preparation and analytical methods at the São Vicente preparation and analytical facilities. Recall from above that sample preparation and the assay of the coarse (gravimetric) fractions of the samples were done at São Vicente.
2. A review of the Nomos laboratory. They were doing the assays for the fine (chemical) fractions of the samples.

At this time a system of check sampling was introduced. It consisted of the introduction of blanks and standards (four of them prepared by Bondar-Clegg in a round robin process from material from Santa Elina's Fazenda Nova project) each 26 samples, duplicates each 10 samples and checks of 5% of the pulps at a second lab. The conclusion of Mr. Lovstrom in his January 1998 report was that the assay data were acceptable for use in resource estimates.

Also, as discussed above, 1995 samples were analyzed with both the amalgamation method and more convention fire assaying. Results compared well, giving confidence to the historic assaying method, and also demonstrating that more conventional methods should be acceptable.

14.2 WGM Work

The WGM report discusses some limited data verification done by them. The following is extracted from their report.

Notwithstanding this study, WGM has recently received some data obtained after January 1998 regarding a 50-sample set of pulps which were subjected to a metallic sieve assaying method followed by fire assay and a AA finish at the NOMOS Laboratory. These results were compared

with the historic results using the pre-1997 Santa Elina procedures and the procedures introduced following the QAQC audit noted above. While the small sample population does not allow for definite conclusions there is a large discrepancy between the metallic results and the historic ones. The metallic grades are much higher. In addition the same data notes that the pre-1997 Santa Elina procedures included deducting 8% from the gravimetric Au assay to account for Ag amalgamated with the Au. This deduction is corroborated by historical losses in gold refining at the São Vicente mine. Both issues raised by this 50-sample set should be further investigated.

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WGM Senior Geologist, Velasquez Spring, and Senior Associate Metallurgical Engineer, Ross MacFarlane visited the project sited between March 1 and 3, 2003. During the visit the geology was reviewed, drill core and logs examined and selected drill core collected and sent for assay to Lakefield Laboratories in Belo Horizonte, Brazil, to confirm the presence of gold as reported (Table 14-1). WGM selected and sampled half of the already half-sawn drill core (quarter core) from two holes of each of the São Vicente and São Francisco deposits. The samples were carried in person by WGM to the airline freight offices and shipped to Lakefield Research Laboratories in Belo Horizonte for analysis. The samples were prepared and analyzed by metallic screen fire assay with final AA determination and the results are as follows:

Table 14-1
ASSAY RESULTS

Hole No.	Interval (m)	WGM (g Au/t)	Santa Elina (g Au/t)
SF-24	234-236	3.8	8.48
SF-46	274-276	10.8	0.40
SV-69	12-14	0.03	1.36
SV-90	62-64	0.5	0.62

The samples all show various gold contents confirming the presence of gold in both deposits. WGM had selected the core from both high grade and low grade mineralization and although individual samples show considerable variance both the few numbers of samples collected and the probable cause of a nugget effect could explain the variance.

The site facilities, infrastructure and proposed open pit, heap leach pad areas were visited and the general environmental conditions examined at both properties.

14.3 IMC Comments

It should be noted that the duplicate assays and pulp check assays that were the basis of the Echo Bay QAQC evaluation were from São Francisco samples, not São Vicente samples, though the sampling and analytical procedures had been established based on São Vicente

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experience. Reports made available to IMC do not indicate any QAQC work done specifically at São Vicente. Note that São Vicente had been an operating hard rock mine, with verifiable gold production, prior to 1997. This would lessen the emphasis for sample validation at São Vicente.

Due to the inherent difficulty in sampling coarse gold, there is some suggestion that gold grades are understated as the historic assay methods may not have captu