BUSI 3500 B

Live Case Study

Kirkland Lake Gold Inc.

Dr. Isaac Otchere

KIRKLAND LAKE GOLD INC.

Group Members & Declaration of Academic Integrity

By signing this statement, we are attesting to the fact that we independently have reviewed not only our own work, but the work of my colleagues. I attest to the fact that my own work and, as far as I can infer, that of each of my colleague, in this project meets all of the rules of quotation and referencing in use at Carleton University, as well as adheres to the Academic Integrity policies as outlined in the Student Affairs site of the university (http://www1.carleton.ca/studentaffairs/academic-integrity/). Any evidence contradicting my declaration above may be held against me and/or the group.

Kory Davis _____ 100817660 _____
Name Student number

_____ December 4th, 2013 ___
Signature Date

Robert Sparks _____ 100821790 _____
Name Student number

_____ December 4th, 2013 ___
Signature Date

Philip Niedzwiadek _____ 100818033 _____
Name Student number

_____ December 4th, 2013 ___
Signature Date

Jahn Parmar _____ 100817191 _____
Name Student number

_____ December 4th, 2013 ___
Signature Date

Keith Boudreault _____ 100826478 __ _____
Name Student number

_____ December 4th, 2013 ___
Signature Date

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Introduction - What is Kirkland Lake Gold?

Kirkland Lake Gold Inc. (KL Gold) is an operating and exploration gold company based in Kirkland Lake, Ontario. The company operates in the Southern Abitibi gold belt. KL Gold acquired 13,000 acres of five bordering gold mines in 2001, which had historically produced 21 million ounces of gold. (Kirkland Lake Gold 2013) Currently, the focus of KL Gold is on expanding gold production.

Kirkland Lake Gold is currently traded on the Toronto Stock Exchange (TSX: KGI) and the London stock exchange (AIM: KGI). KL Gold is a relatively small mining company when compared to the Canadian giants of the industry such as Goldcorp, and Barrick Gold. KL Gold is a relatively new player in the Gold mining industry in Canada.

Kirkland Lake Gold plans to expand by increasing production capacity of its mines to 2,200 tons of ore per day. (Kirkland Lake Gold 2013) Production costs will decrease by realizing the economies of scale associated with that higher production capacity. KL gold is also concerned with maintaining gold reserves sufficient to sustain a mine life well in to the future.

Part I - Corporate Governance Analysis

Corporate Governance Analysis

The CEO: Who is Brian A. Hinchcliffe?

The President and CEO of Kirkland Lake Gold is Brian A Hinchcliffe. Mr. Hinchcliffe has been a part of the mining and natural resources sector for nearly 20 years. He spent the first ten years of his career working at Goldman Sachs, where he was responsible for the mining industry sector. Mr. Hinchcliffe founded American Pacific Mining with Harry Dobson, and then Jordex Resources. Mr. Hinchcliffe is currently serving on three boards of directors including the board of directors for Kirkland Lake Gold. Mr. Hinchcliffe holds a BA from the State University of New York, and attended graduate school at the Hagan Business School at Iona College. (Reuters 2012)

Board of Directors: Separation between Management and Ownership

(See appendix 1 for overview of the Board of Directors)

KL Gold has a board of directors consisting of nine directors with differing backgrounds all within the mining industry. Of the nine directors, four are non-executive directors and five are a part of the executive management team of KL Gold. This is a potential corporate governance issue due to the conflict resulting from role duality for the majority of the members of the board. Since the majority of the directors are not non-executive directors it is important that the remaining four directors are looking out for the needs of the shareholders.

Three of the directors are the companies CEO, CFO, and COO. Brian A. Hinchcliffe, is currently acting as the President and CEO, John Thompson is currently CFO and Mark

Tessier is currently COO. Having active members of the Board of directors in top management positions could result in conflict of interest as they may be looking out for their own well being before the well being of the stock holders. (Reuters 2012)

D. Harry W. Dobson and Brian A. Hinchcliffe, two of the directors, co-founded of American Pacific together. Claude F. Lemasson and Mark S. Tessier were both working at Goldcorp's Red Lake Mine in the past. (Kirkland Lake Gold 2013) Many of the directors are multiple directors as well as executives for other corporations, some of which are in the mining industry. With this information it is possible to suspect interlocking directorate taking place within the mining industry.

Although there are many questionable links within the KL Gold board of directors, concerning the conflict of interest, there is evidence that the board does act in the best interest of the share holders as they are also share holders in the company as they are issued stock options as a form of additional compensation. Compensating members of the board in stock options ensures that the directors will be actively ensuring that management is looking out for the best interest of the share holders because they are shareholders themselves. It has been released that 7% of the stock of KL Gold was held by the directors as of July 2013. The large amount of stock being held by the directors can be seen as a good thing as it indicates that the directors will be looking out for the interests of the stockholders, as they themselves are stockholder.

Out-Standing Debt: Bond Holder Concerns

Kirkland Lake Gold issues corporate bonds that can be publicly traded. KL Gold currently has $126,500,000 in convertible bonds and $14,827,000 in capital leases

outstanding. (Kirkland Lake Gold 2013) As of July 2013 their debt to equity ratio was approximately 81.4%. KL Gold has been increasing its level of debt significantly since 2012. The outstanding bonds offered today are all convertible in to equity. The total amount of debentures is convertible into 8.87 Million common shares.

Financial Markets: Interactions and releasing information

Kirkland Lake Gold has been traded on the Toronto Stock Exchange (TSX: KGI) and the London stock exchange (AIM: KGI) since 2002. KL Gold had 70,150,912 common shares outstanding as of July 2013 and currently has a trading volume of around 139,294. (Kirkland Lake Gold 2013) As a company KL Gold releases information to the public on its website. KL Gold makes detailed information on its current projects, progress with its mining operations, as well as current financial statements open to the public in the form of readily available .PDF files downloadable directly from its website. This readily available information allows anyone who holds an interest in KL Gold to get updated information on its operations. Without insider knowledge it is unclear whether KL Gold holds on to bad news to release at a more favourable time, and is quick to release good news. From the website and detailed reports it is clear that KL Gold has an open book policy and is not reluctant to release information giving the market, stakeholders and any other interested party access to current detailed information. KL Gold is also subject to frequent audits which are carried out by KPMG LLP. (Kirkland Lake Gold 2013) Since KL Gold is audited and openly releases information it is safe to assume that financial markets are getting correct, and timely information to base decisions on.

KL Gold's stock is covered by multiple analysts including Paolo Lostritto at National Bank Financial, Joe Fazzini at Dundee Securities, Cosmos Chiu at CIBC World Markets, Michael Siperco at Macquarie Capital Markets, Adam Melnyk at Desjardins Securities, Brian Quast at BMO Capital Markets, Christopher Welch at Ocean Equities, Richard Morgan at Mirabaud Securities, Alison Turner at Panmure Gordon & Co, and Hunter Hillcoat at Investec Bank. (Kirkland Lake Gold 2013)

Society: Relationships and Responsibility

Kirkland lake gold is a relatively young company that is dependent on its social responsibility and relationship to grow and be sustainable into the future.

KL Gold displays a commitment to hiring workers from the community. The Company is committed to paying competitive industry wages in a low cost environment with affordable housing and supporting infrastructure. As well, the company provides a company physician and full-time nurse who are committed to the health and wellness of all employees and their families.

Within the mining industry environmental legislation is constantly changing and enforcing new policies, stricter standards and higher penalties for non compliance. Because of the environment that KL Gold is operating it is important for the company to be sure to abide by all rules and regulations concerning the environmental externalities of gold production. In accordance with a mine closure plan filed with the MNDM, the Corporation has posted a letter of credit to secure the costs of rehabilitating the Macassa Mine and three of the other non-operating mines and the properties

surrounding the. The Corporation is liable for the full costs of the rehabilitation of all mines and mining properties it operates. (Kirkland Lake Gold 2013)

Part II - Stockholder Analysis

The Average Investor: Significant Share Holders

(See appendix 2 for chart of major shareholders)

Stocks of Kirkland Lake Gold are currently traded on the Toronto Stock Exchange (TSX: KGI) and the London Stock Exchange (AIM: KGI) which means that at any time any interested party can purchase a stake in KL Gold. Outstanding share capital was 70,150,912 common shares as of July 2013. There are no preferred shares in their share structure but there are convertible debentures outstanding which could be converted into shares at the discretion of the bondholders. These debentures are convertible into 8.87 Million common shares. Currently 42.65% of the outstanding common shares are held by six major shareholders. The Significant shareholders of KL Gold as of July 2013 were: Sprott Asset Management LP, Resolute Funds Ltd., Van Eck Associates Corporation, Columbia Wanger Asset Management, D. Harry W. Dobson (Insider - Chairman of the Board of Directors), and I.A. Michael Investment Counsel Ltd.. (Kirkland Lake Gold 2013) Most of these large shareholders are mutual funds or other asset management firms who use KL Gold's stock as a part of their investment vehicles. Their stock is normally pooled with other junior miner gold stocks which are then sold as a single investment vehicle. This is quite similar to what happens to other mining companies with a similar size and degree of specialization as KL Gold. As of July 2013, 7% of KL Gold Shares were held by the company's directors. The remaining 57.35% of stock is held by individual investors, funds, or corporate investors in small amounts (less than 3% of the common shares outstanding). (Kirkland Lake Gold 2013)

Based on the list of significant investors it is clear that the majority of the shares are held by institutional investors.

Marginal Investor

The marginal investor is the investor who is most likely to be trading at the margin, and who therefore has the most influence in the pricing of its equity. (Damonodaran 2011) According to the data on the significant stock holders of KL Gold, five of the six largest investors are institutionalized, and the other is an insider. Based on this information it is safe to assume the marginal investor will be an institutional investor who will also carry a well diversified portfolio. This information is important as we can use it to assume that the marginal investor is the investor who will have the largest influence on pricing the equity of KL Gold. It is important to assume that the marginal investor is diversified since diversification reduces exposure to systematic risk. The equity price will therefore be solely based on the firm specific risk of KL Gold.

Part III – Risk and Return

Preferred Shares

As of the completion of this report, Kirkland Lake Gold has not issued any preferred shares.

Debt

After-tax Cost of Debt Capital = Yield-to-Maturity on long-term debt x (1 – Marginal Tax Rate)

In Note 10 (Loans and Borrowings) of its financial statements we see that KLG has long-term debts totalling $117,494,000 comprised of two components, convertible debentures and finance lease liabilities.

1. Regular debt. Kirkland has $126,500,000 of "convertible debentures through 2017 with interest rates ranging from 6% on $57.5 million issued on July 19, 2012 and 7.5% on $69 million issued on November 7, 2012." We can calculate that weighted average of this range equals 6.825%. We can also calculate that Kirkland's Convertible Debentures of $126,500,000 comprises 89% of the company's total debt of $141,327,000.
2. Capital Leases. Kirkland also has $14,827,000 in "capital leases." A capital lease is a debt-like agreement in which a firms agrees to pay fixed amounts to someone who leases them land or equipment. Note 10 will tell us that this debt-equivalent capital lease has interest rates ranging 2.05% - 8.47%. We can calculate that the middle of this range equals 5.26%. Capital leases comprise of 12.62% of the company's long-term debt.

Because there are two kinds of debt with different interest rates, we have to weigh the different interest rates associated with each kind of debt by the relevant proportion of debt that each comprises. In this case, the pre-tax cost of debt would be equal to 6.64%.

Pre-tax Cost of Debt = (weight of debentures) x (cost of debentures) + (weight of capital leases) x (cost of capital leases)

Note 20 Specifies a combined federal and provincial tax rate of 22.5%

Pre-tax Cost of Debt = (87.38%) x (6.825) + (12.62%) x (5.26)
Pre-tax Cost of Debt = 6.64%

After-Tax Cost of Debt = Yield-to-Maturity on Long Term Debt x (1 – Marginal Tax Rate)
After-Tax Cost of Debt = 6.56% x (1 – 0.225)
After-Tax Cost of Debt = 5.14%

Equity

(*see appendix 3 for full calculations of cost of equity)*

(see appendix 4 for regression analysis of Kirkland Gold's Beta)

Kirkland Lake Gold has, as of the writing of this report, 70,150,912 common shares outstanding. After normalizing the stock price over the past 5 years (*see appendices for full calculations*), we shall use a normalized stock price of $10.06 per share. We are normalizing the share price in order to account for such things as a sudden increase or decrease in the stock price; normalizing the stock price allows us to get a more accurate value of the stock over the period being analyzed. As such, the market value of Kirkland Gold's common shares is $705,718,174.72.

Please note that we as a group decided to use monthly stock prices for all of the following calculations, as monthly stock prices were the best indicator of how a stock was faring; as opposed to the more volatile daily and weekly prices. Also, please note that we are utilizing data from November 2008 until October 31st 2013, in order to gain an accurate depiction of the prices that we are using. Lastly, please note, that whilst the geometric average is preferable to use in this situation, some of the monthly returns were in fact zero; having a zero return would have skewed the entire geometric average, and, as such, we are forced to use the arithmetic average. We had considered removing the zero return data points, but felt that this would lead to inaccurate results.

Returning to our analysis of Kirkland Gold's equity, one may assume that this is the value of Kirkland Gold's equity; however, Kirkland Lake Gold currently has tens of millions of dollars in convertible debentures outstanding. These debentures can be converted into common stock at any time until their maturity. Each of these debentures can be converted, assuming a face value of $1,000, into 72.997 shares at $13.70 per share. However, as will be further explained below, no rational investor would exercise the option to convert the bond into stock, as such; the entire weight of the debenture is accounted for as debt, as shown above.

We are using a risk free rate of 3%, as this was the Canadian long term bond yield at the time of analysis.

The cost of equity is the rate of return that investors require to invest in the equity of a firm. The cost of equity is derived from the following formula:

$$\boldsymbol{Ke = Rf + Beta(Rm - Rf)}$$

Where *Ke* represents the cost of equity, *Rf* is the risk free rate, *Beta* is the risk of the stock/project in comparison of market risk, and *Rm* is the market rate of return on the Toronto Stock Exchange. The reason we used the returns on the TSX as our market rate is because Kirkland Gold stocks and debentures are listed on the TSX and they only operate in Canada. Please note, that we are using this equation from a long term perspective. We feel that Kirkland Gold needs to look at its cost of equity through a long term perspective. As many large firms are, or should be, concerned with, Kirkland Gold should focus on long term growth and success as opposed to short term results.

In order to find the beta of the Kirkland Gold stock, we had to compute a regression analysis of the returns of the market, the TSX, over the returns of KGI (Kirkland Gold's stock). Please see the appendices for the full regression analysis.

After completing the regression analysis, we found that the beta for Kirkland Gold was a high 1.65. This relatively high beta highlights the volatility of the firm and its stock prices, as Kirkland Gold is 1.65 times more volatile than the market.

In order to calculate the risk premium, we computed the average returns of the TSX, and subtracted from it the risk free rate mentioned earlier. As each of the returns are monthly; we then had to convert these monthly results into a annual risk premium, which gave us an annual risk premium of 12.64%.

As shown in the calculations (*please see appendices*), Kirkland Gold's cost of equity is quite risky when compared to the market. The risk free rate alone demonstrates this risk; Kirkland Lake Gold's risk premium is over 12% above the risk free rate, obviously showing how investors require a large premium in order to invest in Kirkland Gold.

**Sourced from 4Traders*

As can be seen from the above chart of Kirkland Gold stock prices, over the last while, KGI stock has been very sporadic with periods of high growth followed by periods of equally high losses. As such, this chart shows the volatility of KGI stock; which, translates into a relatively high beta of 1.65 (*see appendices for full calculations*). Of course, this high beta will naturally lead to a higher cost of equity, which in turn leads to a more risky cost of equity for Kirkland Gold.

According to 24 Hour gold, which is a site dedicated to gold investors, there are three risks that any investor must be aware of prior to investing in equity in any mining

company: country risk, status risk, and resource risk[1]. As all of KGI's production is based in Canada, its country risk, meaning the risk of political, legal and currency threats, is very low. In addition to a low country risk, Kirkland Gold also has a low status risk; meaning the risk associated with the status of the property, from exploration to production. As Kirkland Gold only has properties with proven reserves, and is not exploring but actually engaged in production, therefore the status risk is very low. Finally, the last risk associated with mining companies is the resource risk. This is the risk associated with the status of the resources: with inferred resources being quite risky and proven resources being quite low . In this regard, Kirkland Lake Gold is faced with far more risk than its other two risk factors. Whilst all of its mines are in the production phase, much of the resources that Kirkland Gold claims to have are *inferred* resources; gold stocks which are not yet *proven* to be in existence. As such Kirkland Lake Gold has a relatively high resource risk. It is these risks, and particularly the high resource risk, which contributes to KGI Gold's relatively high cost of equity of 23.86%.

One may be quick to judge management for the sporadic nature of KGI stock, and how, since early 2012, when KGI stock hit its peak, Kirkland Lake Gold stock has fallen steadily. However, one would be incorrect to assume that this is entirely the management's fault. Due to the high nature of fixed costs associated with being a mining company, much of Kirkland Gold's cost are fixed in nature; the land as well as the vast amounts of equipment needed for the operations. "*A firm that has high operating leverage (i.e high fixed costs relative to total costs) will also have higher variability in operating income than would a firm producing a similar product with low*

[1] (24 Hour Gold 2013)

operating leverage. Other things remaining equal, the higher variance in operating income will lead to a higher beta for the firm with high operating leverage" (Damodaran 2011). This is obviously the case for Kirkland Gold, as mining companies, especially junior ones such as Kirkland Gold, has to invest heavily in capital equipment such as; the mine itself, the machines to extract the ore, the machines to process the ore, etc... As such, this leads to Kirkland Gold having much higher fixed costs compared to variable costs.

The graph below shows the stock performance of Barrick Gold over the same time period as Kirkland Lake Gold.

**Sourced from 4Traders*

As can be seen above, Barrick, similarly to Kirkland Lake, has been steadily declining since its peak, late 2011 to early 2012. Indeed, if we examined other gold companies operating in Canada, such as IAMGold, and even companies on the NYSE, such as

GoldCorp, they all show a steady decline since their peaks; all within the timeframe of late 2011 to early 2012. Because of the nature of the costs associated with gold production, there is more variability in operating income, which can also lead to increased variability in stock prices, as seen above.

As far as returns on the stock go, had an investor purchased KGI stock in November of 2008, they would have done so at $4.70, and held onto it until today, let us say, October 26th 2013, an investor could have sold said stock for $4.09 per share, a loss of 12.9%. However, this may be only one part of the story, as astute investors may have had the foresight to sell at a time when the stock was at its highest, say in January of 2012, when the stock was selling for $18.60 per share. Overall, the stock's return was 1.21388%, using the arithmetic average.

During the same period, an investor who placed money in the TSX would have invested into the market at 9270.6 in November of 2006; and, assuming said investor would have held onto this investment until now, say October 2013, the investor would have received a value of 13399.4; an overall return of 44.53%. On average, an investor would have experienced returns of 0.695%.

Upon first glance, an investor may believe that KGI must have outperformed the market since its average returns over the five years is higher than that of the TSX index. However, in order to get a true sense of whether KGI stock outperformed the market, we must delve a little deeper.

In order to examine whether the KGI stock fared better than expected, we must compare the intercept of the regression analysis to Rf(1-Beta); in other words, find

Jensen's Alpha. The intercept of the regression analysis is -0.10703. Rf is 0.03 and Beta is 1.65. Computing Rf(1-Beta) we get negative 0.01950, which is lower than our intercept of -0.10703. This means that the KGI stock did better than expected during the regression period; November 2008-October 2013. Thusly, KGI stock did in fact outperform the market over said five year period.

As such, comparing the average returns of KGI stock and the returns on the TSX market as a whole, an investor in KGI stock would theoretically, on average, outperform the market. Of course, one must take into account the high risk associated with this stock, as demonstrated by its high beta. One may then wonder, how much of this performance can be contributed to management, and how much to the business conditions of this firm? Naturally, if much of this performance is attributed to management, then, theoretically, shareholders may have a good and strong management team in place.

The overall risk in the company is representative by the levered beta; which takes into account the total risk of a firm. As will be mentioned in the following sections, Kirkland Gold does indeed have debt; as such, the Beta which we found via regression analysis, 1.65, is the total risk of the firm. The risk of the firm alone is attributed to the unlevered Beta, which can be found via the following equation:

$$B_U = \frac{B_L}{[1 + (1 - T_C) \times (D/E)]}$$

In order to calculate the unlevered beta, we must include a marginal tax rate 22.5% (Kirkland Lake Gold 2013), an equity value of $705,718,174.72, and a debt value of $141,327,000. Solving for the unlevered beta, we get 1.43; which indicates that of the

total beta, or in other words, the total risk, 1.65, 1.43 or 87% percent of the risk is attributable to the firm specific risk and 13% attributable to is attributed to market risk.

Sourced from: 4Traders

As can be seen from the above graph, in recent years Kirkland gold has not fared well in regards to its overall operations, with a large negative profit in 2009-2010, and once again falling below profitability in 2013. Of course, the firm expects, with its new production goals (as will be explained further in later sections) it foresees profits increasing in the near future, at a more constant level. However, from the shape of the graph alone, any investor can see the variability of Kirkland Gold's earnings. This graph merely summarizes what we have been discussing in this last section; that Kirkland Gold's equity is in fact, quite risky, for many reasons; high beta, high fixed costs, etc... What this tells us is that any investor, who may consider investing in Kirkland Gold,

would need a high return on their investment in order to be convinced to place their capital in this risky venture.

WACC

Cost of Debt

At the time of our analysis, the share price of KGI stock was only $3.04. As the debenture specifies that holders can convert to shares priced at $13.70 per share, bondholders will not convert the debenture due to this loss in value (assuming all investors are rational). As such, the equity weight for the debentures is zero, and the entire weight of the debentures are placed into debt. Therefore, the total market value of debt is $141,327,000. In order to find the overall cost of debt, we must take the aggregate average of the coupons paid off of the two debentures and the capital leases that Kirkland Gold has. The equation below shows the total cost of debt when averaging out the individual coupon payments and interest payments.

Kd = 0.40486 (0.06) + 0.48823(0.75) + 0.10491(0.526)

Kd = 6.64%

(This is the pre-tax cost of debt. For full calculations please see cost of debt section above)

The weighted average cost of capital formula is as follows:

WACC = WeKe + WdKd(1-T)

WACC = (70,150,912 (10.06)/847,045,174.7) (23.86) +
(141,327,000/847,045,174.7) (6.64(1-0.225))

WACC = 0.20738 or 20.738%.

(Note: Kirkland Lake Gold has no preferred shares)

This WACC of 20.738% is quite high. As the WACC is simply a reflection of the amount of debt vs the amount of equity in the company, and since the equity portion of Kirkland Gold is nearly 90% of the total firm value, the WACC will be closer in value to the cost of equity. It is still dragged down slightly due to the low cost of debt, yet WACC is still relatively high at over 20%. This again emphasizes what we have discovered about Kirkland Gold in our analysis, that Kirkland Gold is a very volatile firm, with highly volatile earnings. Although many investors may prefer high volatility, as more risk leads to more reward, investors still demand the high return of 20.738% in order to invest their capital in such a volatile firm.

Part IV - Measuring Investment Returns

Types of Projects

Kirkland Lake Gold Inc.'s typical investments include short-term investments in Canadian T-Bills and long-term investments in long-term deposits, purchase of mineral properties, and purchases for proper, plant and equipment. As per the note 24, detailing capital management policies, management primarily uses equity issuances in order to raise funds as required with excess funds being invested in highly liquid interest bearing instruments until require (Kirkland Lake Gold 2013). Note 22, detailing commitments, shows that current long-term projects consist of: i) mill upgrade project, ii) hoisting upgrade project, and iii) mobile underground equipment required for maintaining and supporting higher production levels. In the case of the short-term investments, these investments are meant to keep excess funds growing and a stable rate in a safe and highly liquid manner so that they can be used as required by the firm. The firm's long-term investment projects are intended to increase production levels by upgrading mining equipment with cutting edge technology. With these investments, KLG expects economies of scale effect as they will be able to perform operations more efficiently at a higher volume with the better technology.

KLG's investments in short-term or long-term assets depend mostly on the price of gold. The company's president and CEO, Brian Hinchliffe, stated that "KLG's management studies commodities cycles and determines when the market considers a metal out of favour. If the supply/demand fundamentals of the metal indicate spot prices have bottomed and are positioned for a rally, this allows the company to purchase assets at a

discounted price,[2]" Excess funds and funds that are not needed are then placed into short-term investments. This strategy allows the company to acquire equipment at a lower price and then take advantage of an upswing in gold prices, meanwhile earning interest on funds that aren't being used. [3]

Performance of Projects on the Books

A good measure for the performance of KLG's projects would be its return on assets (ROA) as they do not have a lot of equity investments and much of their revenue is generated from sales of goods produced by their assets. The following information is based on the firm's 2013 financial statements.

Year	ROA[4]	WACC	Spread
2013	-0.81%	20.74%	-21.55%

The large negative spread indicates that the projects KLG currently have are not too good as their return on assets are negative, implying a negative net income, and are way below the minimum required return as indicated by the firm's WACC of 20.74%. However, given the company's earnings are highly volatile as they are closely tied to the price of gold, which has decreased constantly over the past year, and their investment strategy to invest while gold prices are low; it is understandable that their ROA would be negative. As a result of this, the spread calculated may not truly represent the profitability of KLG's current projects.

[2] White, Carrie. "Kirkland Lake Gold: A golden opportunity in Northern Ontario". Proactive Investors. 08/11/2012.
[3] Kirkland Lake Gold Financial Statements 2013
[4] Kirkland Lake Gold Financial Statements 2013

Future Projects

As Kirkland Lake Gold Inc. is a gold mining company that is not diversified, its earnings are highly correlated with the price of gold. Over the past year, the price of gold has been in a constant decline, which can help explain KLG's decrease in net income between 2012 and 2013 and their negative ROA. As per their investment strategy, as the price of gold continues to decline, KLG will invest heavily in their equipment, and mineral properties so as to align themselves properly in such a way that they will be able to take full advantage of gold prices once they begin increasing.

Part V - Capital Structure Choices

Financing Mix

Kirkland Lake Gold uses a mix of both debt and equity in order to finance its operations. According to the April 30th, 2013 financial statements the firm's capital structures consists of 44.88% in debt, as well as 55.12% in equity, which indicates that their debt-to-equity ratio at this time must be 81.4%. Kirkland Lake Gold has $201,423,000 outstanding debt; this includes convertible debentures, financial leases, provisions, promissory notes and other short-term debt. The convertible debentures were issued twice. The first issue on July 19th, 2012 and these debentures come with annual interest rate of 6%, are convertible to 3,833,333 common shares each at $15 per share and are only available to large institutional investors (they are rule #14a debentures). The second set of convertible debentures were issued on November 7th, 2012, come with an annual interest rate of 7.5%, and are convertible to 5,036 496 common shares each at $13.70. After contacting RBC Investment Help-Desk the broker claimed that there is no rating available on the bonds; this is due to the low trade frequency of these debentures. The company has 70,150,912 common shares outstanding selling at $3.38 per share on April, 30th, 2013 leaving them with a total market value of equity of $237,110,083. Kirkland Lake Gold does not have any preferred shares outstanding but does have employee stock options which can explain the varying book value of $247,359,000.

Advantages of Debt

TAX ADVANTAGE

Kirkland Lake Gold is subject to provincial income, federal income, and provincial mining taxes by each government at hand. The company is taxed at an annual effective tax rate of 22.5% which is a considerably low rate for Canadian corporate income tax. This can further be shown by comparing KLG's annual effective tax rate to a key competitor in the industry, Barrick Gold, who has a tax rate of about 30%, which is substantially higher (Barrick Gold 2013). KLG, unlike other large mining corporations, takes advantage of the lower tax rates that are available to corporations which only mine within Ontario (Kirkland Lake Gold 2013).

Kirkland Lake Gold benefits from the tax savings that is provided to them because of the debt they have taken on. With an effective tax rate of 22.5%, Kirkland Lake Gold will have tax savings of $2.018 M (Tax Rate 22.5% x Finance Expense $8.97M). Since KLG has a slightly lower tax rate as compared to its competitors, and therefore a lower tax savings, we would expect that this would drive them to have a lower D/E ratio.

DEBT MAY MAKE MANAGERS MORE DISCIPLINED

With additional debt comes higher accountability and responsibility from management. This can commonly be exhibited through the necessity of heightened management honesty and increased management efficiency. Furthermore, debt also limits free cash flow a firm can have; this greatly limits the riskiness of the projects that management could take on. When a corporation has debt, it needs to make sure that it can make its interest payments and therefore has a reason to not take on too many risky projects. Additionally, with an increase in debt levels, bondholders will start monitoring the

company a lot more closely and this can keep managers in line and force them to not invest in too many risky projects.

In the situation that Kirkland Lake Gold is in, the advantages from debt to discipline management is not overly beneficial. This is primarily due to the short distance between management and shareholders. Since KLG is still a relatively new company and they have many large institutional shareholders, there is already a great amount of supervision of management by the shareholders and therefore additional supervision by bondholders is not entirely needed. Additionally, most of the debentures that KLG has issued are held by their institutional investors further limiting the advantages of debt.

Disadvantages of Debt

Bankruptcy Costs

It has long been known that alongside a firm's increase in borrowing there is also an increase in the expected costs of bankruptcy that the firm must endure. An increase in debt brings about a lowering in the overall cost of capital for a firm, but it also increases the likelihood that a firm's cash flows will not be sufficient enough to meet its debt obligations and therefore is known as the probability of bankruptcy. For a gold mining company, this probability of bankruptcy is even higher due to the volatile nature of gold prices. The KLG's bankruptcy costs can be attributed to the both the direct and indirect costs associated with bankruptcy. The main area where indirect bankruptcy costs would come from is the decrease in investor confidence that would arise if KLG was a going concern risk. Kirkland Lake Gold relies heavily on financing from outside sources. If they were to exhibit this they would be in considerable trouble due to the increased difficulty of raising new capital. Alternatively, most of the indirect costs of bankruptcy

that most companies incur would not apply to KLG because they sell a commodity. It does not have any main customers and its products will never need to be maintained by the company. As for the direct costs, these would mainly consist of the legal costs of bankruptcy and would all be incurred after the company had gone under. Overall, KLG has somewhat high bankruptcy costs mainly due to their high need for investment from outside sources as well as their high probability of default which comes as a result of the gold mining industry.

AGENCY COSTS

In general, debt creates agency problems through equity holders demanding more residual claims on cash flows and thereby increasing the risk that bondholders will not receive there promised payment. The equity holders commonly control management as well as key decision making, which cause them to act with great bias toward their own interests. When a firm chooses to borrow it must accept that this will increase interest rates and will cause a loss in shareholders' decision marking ability due to the additional stake in the organization; this proves very true in an organization like KLG with a debt-to-equity ratio of 81.4%. The areas where both shareholders and bondholders encounter conflict are on deciding what projects to take on, choosing how to finance them, and determining dividend payout. If equity holders decide to take on a risky project or finance with additional debt it increases the risk to bondholders and therefore lowers the value of their current holdings. KLG has done a fair job of mitigating the risk of conflict between bondholders and shareholders by giving its debentures the option to convert to equity; meaning that if a bondholder is unsatisfied with their holdings then they too have the option to convert their debt to equity.

Loss of Future Financial Flexibility

Debt often limits a company's ability to invest in new projects. By constantly taking on more debt there is less capital available to a company for new projects. Lenders will only offer companies a limited amount of debt based on their net assets available to use as collateral in case of bankruptcy. If a company uses all of the debt it has taken on, then it will not be able to take on more debt in the future to fund other projects. In the case of Kirkland Lake Gold, they have recently used up what appears to be most of their available debt and this will limit their ability to raise new future debt in. In summary, if KLG sees an opportunity in the market and wants to start any new projects then they will need to raise capital through other means; this can be extremely costly.

Does KLG have too much or too little debt?

Kirkland Lake Gold is a company that is still within its growth stages (*see Part IIX – Valuation, for explanation)*. Debt is an attractive option for companies to use in this stage of their live cycle. This can provide for quick cash, which is much cheaper than equity, to use in financing their new operations. Debt allows companies like KLG to expand their operations rapidly in prosperous times but it may also hurt them when the price of their commodity drops.

KLG's success, at the present moment, is partly due to the extremely high price of gold as a commodity. KLG's business becomes very risky once debt is brought into the picture because not only is the price of their only product inversely related to the performance of the economy, interest rates are directly related to the performance of the economy so therefore whenever the price of gold falls, interest rates should, theoretically, rise. KLG has somewhat protected themselves from this issue by only

issuing fixed rate debentures but should they ever need to issue more debt this could become costly. The advantage of debt, with regards to disciplining management, does not apply to KLG due to the close proximity of many of its large shareholders to management and majority of the disadvantages of debt are only amplified by the riskiness of the gold industry. Many junior miners have far less long term debt than KLG (see Appendix 5), this is likely due to the riskiness associated with gold industry. It would have been beneficial if they would have limited their growth and issued less debt than they currently have. As a result, we have determined that KLG has too much debt on its books compared to what it can reliably support.

VI. Optimal Capital Structure

KLG is a young gold mining company in the rapid expansion growth stage of its life cycle but ready to transition into the high growth stage. The gold industry, arguable the one of the eldest of all commodities, is a risky, competitive industry that typically moves against the market; as per nature of the gold commodity. KL Gold, a growing firm, has much potential for future expansion due to the constant demand for gold as well as perpetually increasing prices. While these gold prices continue to rise, the costs associated with additional production are minimal giving KLG an excellent opportunity to become a key player in the future of the industry.

KL Gold's recent acquisition of long-term debt in 2011 and 2012 is an indication that they are moving into a high growth stage of their life cycle. Currently KLG is being financed with $132.8 million debt, which is 31% of their total financing ($132.8 million/$426.8 million). Some other gold miners, such as Lake Shore Gold Corp. or Briugus Gold Corp., have debt ratios ranging from 19% to over 53%, respectively, making it quite difficult to compare KLG's amount of debt to other firms in the industry. The high variation in debt ratios is primarily based on future prospects, planned future growth, and ultimately the firm's stage within its life cycle. Overall, in comparison to the industry's junior miners it would appear that KL Gold has somewhat of an average level of debt. The reason as to why certain firms have greater or less lesser amounts of debt is likely due to the benefits, or lack of benefits, that are receive from debt. Unlike many firms within the sector, which have more expanded operations overseas, KLG only operates in Canada. In short, this means that they do not receive the advantage of having varying tax rates on their operations but are required to use the domestic tax

rate. Depending on what country, or even what province, a firm is operating in it might be more or less beneficial for them to use debt due to the varying tax rates in those jurisdictions.

While it's not overly favourable for KLG to bear much debt, they do reap significant benefits from the debt tax shield. In comparison to other firms in the industry KLG has significantly less depreciation expense and therefore does not receive a depreciation tax benefit. In order to compensate for their lack of depreciation tax shield they may have taken on a higher level of debt as an alternative.

KLG does not have an overly large amount of short-term debt currently on its books but this has not always been the case. On their most recent cash flow statement there was a large repayment of $30 million in promissory notes, which would have offered KLG a cheaper financing alternative before engaging in further growth.

In order to determine if debt is beneficial to KLG, we first need to see if the return on assets (capital) will exceed the after tax cost of debt. Since their return on capital (ROC) is 0.8653% (see appendix 7 for ROC/ROA calculation) and the after tax cost of debt is 5.15% [6.64% x (1 - 22.5%)], we can clearly see that it is not beneficial for KLG to have any debt in its capital structure. To support this claim we will use the cost of capital approach to estimate the optimal debt level. This method will recalculate the overall weighted average cost of capital for the company at a number of pre-specified levels of debt. Thereafter we will compare the costs of capital at each level to determine where it is minimized. The table below outlines the finding after using the cost of capital approach (further calculations will be included in the appendices):

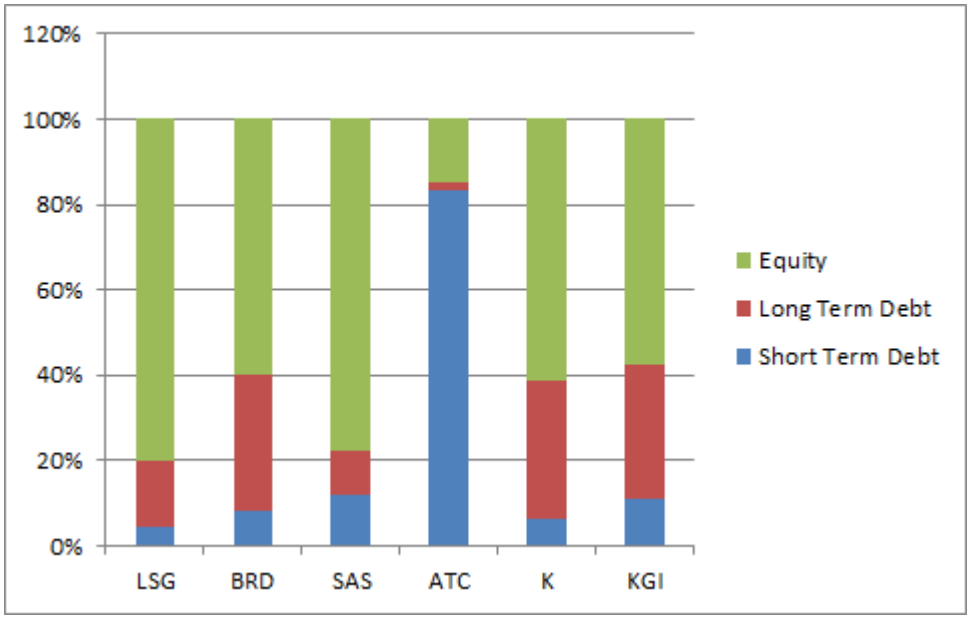
(see appendix 6 for data behind this table)

Debt to Capital Ratio = D/(D+E)	Beta	Cost of Equity	Rating	Cost of Debt	After Tax Cost of Debt	WACC
0%	1.43	21.05%	AAA	3.40%	2.635%	21.05%
10%	1.55	22.61%	D	15.00%	11.625%	21.51%
20%	1.71	24.55%	D	15.00%	11.625%	21.97%
30%	1.90	27.05%	D	15.00%	11.625%	22.42%
40%	2.17	30.38%	D	15.00%	11.625%	22.88%
50%	2.54	35.05%	D	15.00%	11.625%	23.34%
60%	3.09	42.04%	D	15.00%	11.625%	23.79%
70%	4.01	53.70%	D	15.00%	11.625%	24.25%
80%	5.86	77.02%	D	15.00%	11.625%	24.70%

Based on the cost of capital approach we determined that KLG's optimal debt ratio is 0%. At this point within its life cycle we believe that KLG is entering too aggressively into a high growth stage and should still remain as an all equity firm as it was a couple of years ago. The reason why KL Gold should not have any debt is due to the junk bond rating on their debentures. With an interest coverage ratio below 0.49 the firm is only able to have a synthetic rating of "D" on its debentures, rendering them a very risky and, for many investors, a worthless investment. In light of this, it is clear as to why all KLG's debentures are owned by institutional investors. Since the cost of equity increases as the debt ratio increases it is best that the debt is kept to an absolute minimum. The price of KL Gold is already quite volatile, equity holders may not agree to the increased debt due to adverse effects to the stock price.

If KLG does in fact choose to move to its optimal debt ratio, it would not be an easy task. Since KLG chose to issue non-callable bonds they must wait until the bonds mature or until bondholders exercise their conversion option in order to adjust to their optimal debt ratio. Furthermore, KLG needs all of the capital they currently have in order to continue expanding their operations. It is extremely unlikely that shareholders would approve an issue of additional shares due to the negative effect it would have on their current holdings. This leaves KLG with issuing debt as its last option in order to raise capital. We believe that moving toward an all equity firm at this point is simply not a feasible option and KLG should therefore continue using the debt at this point in time in order to finance their operations.

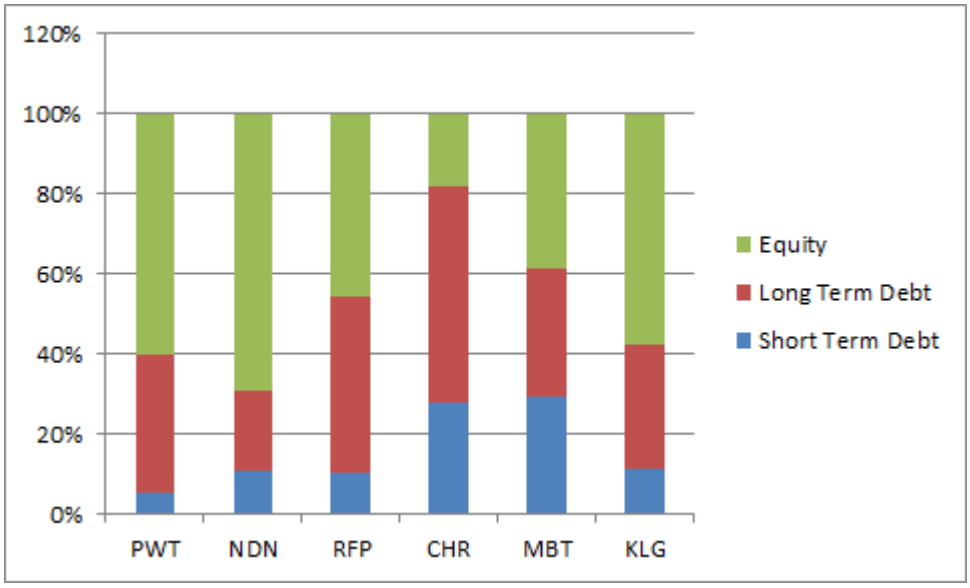
Kirkland Lake Gold vs. Sector



It is evident that from the "Kirkland Lake Gold vs. Sector" graph that KLG has a comparably average amount of debt within the industry. It is important to notice that the stage of lifecycle that each company exhibits is relatively the same, the rapid expansion

to high growth stage. Although each firm is within the same stage, they all seem to have varying levels of each type of financing. This can be highly attributed to the vast array of different scenarios, situations and projects each firm encounters.

Kirkland Lake Gold vs. Firms in Other Industries



Similar to the previous graph, the "Kirkland Lake Gold vs. Firms in Other Industries" chart also shows that KLG has a quite similar level of debt to firms in other industries. These variations are largely caused due to the needs of each firm, for instance, Nordion (NDN), a tech company, will not require nearly as much capital to finance its operations as an airline company such as Chorus Aviation (CHR). Overall, KLG seems to be financed with a very comparable amount of long-term debt as other Canadian companies within different industries. In this comparison it is also important to note that these companies are also in varying periods of their life cycle but still provide a reasonable comparison.

Part VII – Mechanics of Moving to the Optimal

As stated in the previous section, KLG is over-levered far beyond its optimal level of debt but attempting to reduce this would prove to be difficult if immediate action would be required. Although there may not be a great amount of information available to the public in regards to KL Gold's over leverage situation, it is still worth discussing as to why they are not currently operating at the optimal level of debt and how it could be achieved. The first thing the firm would have to decide is if they would like to engage in a gradual or a sudden shift toward their optimal level of debt. If they decide to move toward the optimal level with a rapid adjustment to their financing mix, they run the risk of poor execution resulting in a potential value decreasing error. The short term benefits of a sudden shift to the optimal level of debt are swifter observable results. On the other hand, if the firm gradually implements the optimal level of debt it will have to be more patient in order to observe any positive change. This will result in them suffering some of the downsides of not being at the optimal for a longer period of time but they will have far less risk of making errors during the transition.

The trade-off between shifting to the optimal level of debt gradual or suddenly is still very unclear. Before committing to a decision KLG is going to require further in depth analysis of each alternative. Their decision to move quickly or slowly will highly depend on the accuracy of their estimates, other industry counterparts, and most importantly their probability of bankruptcy. KLG should make sure to accurately estimate all the factors for the switch to the optimal level of debt as this will ensure a smoother transition. If a firm's debt levels are similar to other companies found within its sector than there is less of a hurry to shift to its optimal level of debt. The final aspect to

consider is KLG's probability of bankruptcy, which generally judging from their "C" debenture rating is relatively high. Since KLG has a greater than desired probability of bankruptcy there is an incentive to make a quick shift towards their optimal level of debt.

It is evident from the cost of capital approach, analyzed in the previous segment that the optimal debt level would be to have KLG as an all equity firm. This would mean that the firm would have been best left unlevered (i.e. have a 0% debt ratio). Since the debentures are not callable this leaves KLG with two ways to move towards their optimal debt level. The firms can either choose to repurchase the debt at a premium, which could prove to be quite costly, or it could just allow its current bonds to mature.

In conclusion, it would be best for KLG to move toward its optimal debt ratio gradually. KLG must consider that repurchasing debentures at a premium would be extremely costly and their cash would best be spent on future growth and additional operations. As mentioned previously, KLG has an average debt level compared to other firms within its sector, and therefore management will be in no hurry to move quickly. The greatest benefit from moving toward its optimal debt gradually must be that no estimate is perfect, meaning that there may be errors it has made when calculating the optimal debt ratio. In order to recognize these errors without incurring serious losses and still having the ability to act on them in a timely manner, KLG should gradually implement their optimal debt. Above all, the best method to reach its optimal debt would be to be patient and allow the debt to mature. With this method KLG would potentially be able to expand its operations and allow for future growth. This growth will offer some additional stability several years from now, resulting in their level of debt being more favourable than it is now.

Part VIII - Dividend Policy

Kirkland Lake Gold Inc.'s annual information form for the year ended April 30th 2013 states that "Investors cannot expect to receive a dividend on their investment in the foreseeable future, if at all. Accordingly, it is likely investors will not receive any return on their investment in the Corporation's securities other than possible capital gains." (Kirkland Lake Gold 2013) The corporation is also prohibited from paying any dividend which would render it insolvent. KLG's no dividend policy is ideal given the speculative and high risk nature of the mining industry. These risks include the company's current exploratory mining operations, as they the exploration is subject to little or no mineralization or deposits that may not be economical to mine. There are a number of economic factors that contribute to the risk that KLG faces such as electricity costs and high industry competition in the mining sector. Earnings are also highly volatile as they are heavily correlated with the price of gold.

Kirkland Lake Gold has never repurchased shares or spun off new assets. It is expected that KL Gold would not have been in the position to implement either method of returning cash to the shareholders as it is a relatively new, small, gold mining company. In its current position we do not recommend that KLG takes any action to return cash to its shareholders, as it has very low volatile cash flows due to the nature of its business. KLG currently does have some cash on hand but it is needed for the future expansion of their mining properties. We recommend that they continue their practise of investing these excess funds in highly liquid instruments that can be called upon as needed.

The current shareholders do not currently have any expectations that KLG will pay

dividends, and the price reflects this. The only way in which KLG would return value to shareholders in the near future would be through capital gains. If shareholders were in need of cash then they could sell some of their shares to create an artificial dividend. In the future, if KLG has large amounts of cash on its books and does not have any projects it thinks are worthy of their investment, then it could consider offering a dividend (whether a one time dividend or a recurring dividend) but this would be in the far future. As of now it is not recommended for KLG to pay out dividends, repurchase stock, or return any cash to its shareholders.

Part IX - Valuation

Appropriate Discount Rate

The type of cash flow that we would use to discount Kirkland Gold is the Free Cash Flow to the Firm model. We as a group decided that utilizing FCFF would grant us with a truer value of the firm as a whole. Unlike free cash flows to equity, the FCFF is the amount that is generated for the firm once other expenses and taxes are reduced from the cash flows. The FCFE, on the other hand, is the amount that is left for SHAREHOLDERS once debt payments and other capital expenses are deducted from net income. Examining this more specifically, FCFF is the total amount left for both bondholders and stockholders; keep in mind that bondholders are paid first. Contrarily, FCFE is the amount left only for stockholders; after all other obligations are met. Because Kirkland Gold does in fact have other obligations to meet, capital leases and two different bondholder classes to pay, since there are two different debenture offerings, it is in our opinion that free cash flows to the firm gives us a better value of the firm, one which includes debt, than the free cash flow to equity does. Furthermore, because Kirkland Gold has issued convertible debentures, it is possible that some of the debt holders can eventually become equity stakeholders, and as such, it is important to have the amount of cash available after the debt holders have been paid; especially if the amount of payments to debt holders are changing. Lastly, we also concluded, as has been explained in previous sections, that Kirkland Gold will be taking on more debt as it enters into its high growth period. As such, with the debt increasing, it will once again be important to differentiate total cash flows prior to paying bondholders, in order to judge the success of taking on more debt; the FCFF value enables us to do this.

Growth Model

(See Appendix 7 for length of growth calculations)

From observations of KL Gold it can be assumed that there is a 3 stage growth model associated with KL Gold and other Junior Minors. We believe the first stage is characterized by high growth as well as high capital expenditure. In this first stage everything grows rapidly including production, expenditure, and revenues, but profits do not grow due to the large costs of start-up. The second stage of growth is where the firm begins to become more profitable as much of the capital expenditure is done the expenses on capital will fall to a level of maintaining what is currently being used for production. In this stage production continues to rise as well as working capital expenses and other production related expenses. The third stage of growth is the stable stage, this is when the firm will go to its optimal D/E ratio, minimising WACC. It is common practice to assume that the growth rate will fall to the growth rate in the economy at the time.

In valuing KL Gold one of the most important factors is determining the relevant growth rate for the firm for the high growth and stable periods as well as determining the length of the high growth period.

In determining the length of the second high growth period we had to decide how long KL Gold will continue to be growing in to the future before its stable phase. Our first indication that this high growth would not last forever was, in the annual report, where they mentioned that “Kirkland Lake Gold’s corporate goal is to create a self-sustaining and long lived intermediate Gold Mining Company based in the historic Kirkland Lake Gold Camp. The Company plans to do this by increasing production capacity to 2,200

tons of ore per day…" From this statement it is reasonable to make the assumption that once daily production reaches 2200 tons per day (or 792,000 tons per year) KL Gold will stabilize its production, and thereby ratcheting back its growth. To arrive at this number we multiplied 2200 tons per day by 360 days per year, to account for holidays and other down days throughout the year. By plotting past production of ore on a graph we have extrapolated a trend line (see appendix) allowing us to make the reasonable estimation that the target daily production will be met between 2021 and 2022.The past production grew at an average of 11.69%, we then took this average and plotted it into an exponential function. We used an exponential function to extrapolate the production into the future for two reasons. The first reason is that after plotting past data that is the general shape that was beginning to take place and the second reason is that within gold production, there exists an economy of scale, especially with greater production. We found that this is a reasonable assumption for the length of the high growth period as it is based on management's targets as well as past production capacity.

Since July 31st 2013 the Ore production was approximately 304,062 tons per year and we believe it will not be until approximately January 1st 2022 when Kirkland Gold reaches the desired 792,000 tons per year; the high growth period will last approximately 8.5 years which we believe to be a reasonable estimation based on a junior mine the size of KL Gold.

Free Cash Flows to Firm Value

(See appendix 7 for FCFF calculations)

As of 2013, we calculated the free cash flows to the firm to be $ 77,320,002, after discounting the FCFF from the high growth period, lasting until 2020, and the subsequent terminal value. This free cash flow to the firm indicates the level of profitability of the firm after all expenses and reinvestments have been accounted for. This is effectively the cash that is left over for the company. What is interesting to note is, that this number is in fact, much lower than the value of the firm that we calculated earlier on in this report. In order to find the equity value of the firm, according to the FCFF, we must subtract the market value of debt from the FCFF. As previously mentioned, the market value of debt is $141,327,000; the reader must now see an interesting dilemma; this market value of debt is in fact, higher than the free cash flow to the firm that we calculated. As such, this means that equity is in fact a negative amount. According to this equation, the equity of Kirkland Gold is negative $64,006,980. Earlier in the report, we calculated the market value of equity to be, utilizing a normalized share to rid ourselves of variations in the stock, $705,718,174.72. Naturally then this level of discrepancy is shocking, and may be alarming if one does not look upon Kirkland Gold stock prices *of the past.*

*Sourced from YahooFinance

The above graph shows the past prices of Kirkland Gold's stock from January 2012, to November 26th 2013. It is obvious from a quick glance at the graph that Kirkland Gold's stock has dropped dramatically, from a high of $20 per share in 2012, to the shocking low of $2.83 per share; a dramatic drop of nearly 700%! We as a group wondered if this, perhaps, played a role in our negative value of equity; the answer, is yes. Whereas when calculating the market value of equity, we could normalize the stock price in order to avoid these variations, we cannot do such a thing in our calculations of equity through FCFF. In fact, this negative number for equity is, in all actuality, indicative of the loss of equity value of the company. As shown above, the stock price has plunged dramatically since 2012; any shareholder who held stock since this time frame would have seen the value of their holdings fall substantially, and, as such, they would have a negative return. Because the market value of Kirkland Gold's debt remains unchanged at

$141,327,000 regardless of the stock price, and yet the value of equity will vary depending on the very same stock prices, a negative value is plausible, and in this case, a fact. In fact, this equity is not merely the value of equity, but the cash flow to equity; this means that this is the dollar amount that remains for shareholders. Since this value is a cash flow, and since the stock price has been falling recently, this once again makes sense. These discrepancies highlight the differences between merely calculating the market value of equity, and calculating the same equity through the FCFF equation. Whereas the market value of equity will always be positive, the value of equity according to FCFF can be negative, because it takes into account the stagnancy of debt and the volatility of equity. Since Kirkland Gold's beta is rather high at 1.65, as found earlier,

Growth: The key variable

(See appendix 7 for calculation of growth)

The key variable driving this valuation is Kirkland Gold's growth rate; specifically in regards to its increase in production as Kirkland Gold continues to strive for its target production capacity of 792,000 tonnes per year. As previously mentioned, we have two differing values for Kirkland Gold's growth rate; its stable period growth rate and its high period growth rate. From observation of the many recent capital acquisitions of KL Gold and its lack of any sign of large future capital expenditures; it is being assumed that KL Gold is about to enter in to the second stage, high growth phase, of its growth cycle. It can be assumed that KL Gold will be in this high growth rate for a number of years, eight to be specific, and then transition to a stable phase of growth.

During this high growth period, Kirkland Gold's production will be growing at a far larger pace than during its more stable phase. Therefore, it is important to properly identify the firm's growth rate during this period. In order to achieve this, we have assumed that the high growth period will have differing effects on three areas of Kirkland Gold's operations; revenues/EBIT, the growth in capital expenditure, and the growth in working capital. Because of the nature of this ambitious undertaking, these three values, which are key in properly valuing Kirkland Gold's FCFF for the period, will grow at very differing rates.

Growth in revenues, we determined, will be determined by a 2 factor model; since KL Gold produces a commodity which has a fluctuating price. The revenue will be affected by the price of gold, as well as KL's Gold production. In order to determine this number we will calculate an average annual growth in past production, which was calculated to be 11.69%, as well as expected future production until the target set by management is reached, 24.8%. The factor related to price of gold, will be determined by taking the average annual price of gold in the past and determining a normalized rate of growth for it. By adding the expected rate of growth in production to the expected growth in the price of gold we will be able to arrive at a rate that revenue will be expected to grow at. As the reader will see, in the attached appendices, we concluded that Kirkland Gold will grow at an average rate of 17.45%. Its growth rate in the high period will be a higher average of 24.8%; this period lasts from 2013 to 2020.

With increased production the production expenses will also increase. Since production expenses incurred by KL Gold are directly affected by the level of production it can be estimated that all costs will increase at the same rate as production.

Together the increase in revenue and cost of goods sold will have an effect on the EBIT that will be used to calculate the FCFF for KL Gold during its high growth period.

(See appendix 7 for full calculations of CAPEX Growth Rate)

In regards to capital expenditure, as KL Gold relies heavily on its capital expenditure as a mining company, it is understandable that their current cash outflow of capital expenditure is very high. KL Gold has recently purchased new mines and, along with this comes high expenditures. As lecture notes state (Slide 23 lecture 6&7) capital expenditure will be much lower in the stable period. Through observations of KL Gold's recent acquisitions of new mines it can be assumed that the majority of capital spending is done and should now decrease to a maintenance level where it will stay for the stable period. What these observations mean is that for this phase the capital expenditure will be growing at a negative rate. From the appendix, we determined that the amount of CAPEX needed after the conclusion of the high growth period was merely $5,595.00, since the mills and other major costs would have been completed by this point, after capacity production has been reached; in order to reach this amount, capital expenditures would have to decrease by an average rate of 18.75%.

We have determined that since depreciation is based on the capital that is purchased with capital expenditure, the rate that depreciation will grow at for this phase will be the same as the capital expenditure.

(S*ee appendix 7 for working capital)*

Lastly, we must consider working capital, as working capital expenditure is directly related to the production level we think it is fitting that the rate of working capital grows

at the same rate as production. Since we want the change in working capital to determine FCFF we will assume that if the rate of growth for of production is constant the change in working capital from period to period should remain at an approximately stable level.

(See appendix 7 for calculations of reinvestment rate "ROC")

Whilst there were easier and more standard formulas available to use in order to calculate the growth rate, as a group we have decided that using the formula G=Reinvestment Rate*ROC is not adequate to determine the growth rate of KL Gold as it has many complexities as a junior minor. The growth rate determined by that formula was .008653 (.8653%) which is less than the growth in the economy and not an appropriate high growth period rate, as we do believe that KL Gold is in a period of high growth based on recent acquisitions. Therefore, we utilized the exponential function that we described earlier.

Part X – Possible Restructuring

After doing an in depth analysis of KL Gold, it is time to determine whether they would be a viable target for a takeover. It is a common occurrence that firm's with free cash on hand, such as KLG, are prime targets for buyouts. In addition, KLG happens to be perched in a perfect, up and coming, gold mining region with great mineral properties. Within the mining industry, firm's that own mining properties in great mineral regions are good targets for buyouts due to the high potential for future cash flows. Since KLG is a relatively small firm they still require one head office for the one mining operation, which does incur unnecessary overhead costs. From the perspective of a larger mining company, this would be beneficial in a takeover situation due to the costs that could be saved by eliminating KLG's current office and using the larger buyer's current office. KLG has done a good job at abiding by all the rules, regulations and legislations spelt out for gold mining and have avoided all major potential lawsuits. This means that it is, yet again, a tempting target for buyouts due to lack of future legal liability. Furthermore, KLG's current management is not nearly as experienced as management in other major mining corporations. This means that a more experienced executive management team could optimize their operations and procedures much more efficiently. In summary, KLG would truly be the optimal takeover target to the appropriate buyer.

Overall KL Gold does not have a great amount of financial stress which can be highly attributed to their institutional investor base. KL Gold has been fortunate to have large institutional investors as its shareholders; this has left them with a great amount of capital on their books. Although they are currently running a loss, this has been

forecasted to end soon and the firm will not require much further investment into large projects in order to achieve its operational goals.

Throughout this analysis it has been determined that KL Gold does in fact have too much debt and should currently be an all equity firm. Unfortunately, KLG's debt cannot be eliminated or reduced in a cost effective way. Since similar firms within the sector share a congruent amount of debt within their financial mix, there is no panic to immediately diminish the debt. Our overall recommendation in regards to level of debt is to gradually shift to an all equity firm by allowing the current debentures to expire.

KLG does not require a change in its business mix since it is only operating one Gold mining operation in Kirkland Lake, Ontario. KLG has all of its operating mines in the one complex but has many additional mineral properties throughout the region. Divestiture for KLG, at this current time, is not a good idea if they would like to meet future production goals and should focus on manageable growth. Furthermore, KLG does not have any reason to acquire additional mines since it is still trying to optimize production at its current location. KLG is already the owner of several other mineral properties within Ontario where they can expand to in the future and ensure future growth. KLG could use all the financing it currently receives in order to expand its mining operations and meet production goals. We recommend that KLG does not change its business mix with the near future.

The changes that are required to be made for KL Gold can fortunately be made without any changes to management or to the control of the company. The majority of changes that KLG requires are modifications to their debt ratio in order to further it toward their

optimal financial structure, which does not involve relevant changes to their management. Typically a change in financial structure will cause a significant change in control but since most of KLG's shareholders and bondholders are institutional investors, control should mostly be unaffected. In summary, the changes we have proposed will neither affect management nor control of the company.

If we were to assume leadership over the firm we would continue to follow the same route that KL Gold's current management has chosen to follow. In light of KLG's past decisions, our team would not have purchased so many mining properties outside of the current Kirkland Lake mining complex but would have focused on the development of the current site and selected few nearby sites. Overall, we are relatively satisfied with KLG's current operations. Although they are not currently operating at their optimal level of debt, it is certain that their management team has an understanding of the burdens of future growth. KLG is simply willing to cut a loss in the short term in order to achieve future economic prosperity. KL Gold is definitely in a good position based on their pure play gold mining company status, within the commodity industry, that has a constantly very high demand and operates in a resource-rich region. KLG should continue to keep furthering their mining operations within Canada, since it minimizes legal issues. This is contrary for junior mining operations that operate abroad in countries which do not have as well defined laws as Canada.

Conclusion

In conclusion, Kirkland Lake Gold, a pure play junior gold miner in Northern Ontario, is currently a rapidly growing firm which is far safer than many of its junior mining counterparts. Although KLG has issues with its debt and less experienced management team, it greatly benefits from its shareholders and, recently, bondholders who are very closely involved with the firm. This close supervision provides the firm with an extremely healthy balance sheet and overall financial position. We have determined that KL Gold will definitely be a successful gold mining firm for plenty of years to come. With their institutional shareholders constantly working with their management to ensure optimal efficiency, KL Gold in not only a financially growing firm but is also a great contributor of Canada's healthy yet still growing future within the gold sector.

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Appendix 1 - Board of Directors

D. Harry W. Dobson

Chairman

A mining industry veteran, Harry Dobson was the Chairman and the co-founder of American Pacific Mining, along with Brian Hinchcliffe. American Pacific Mining purchased for $15 million and successfully re-opened the El Mochito zinc and silver mine in Honduras. The El Mochito mine was re-opened and due to cost re-structuring, operating costs were reduced so that the mine operated in the lowest third of the industry. American Pacific Mining sold for more than $100 million within three years of having been founded.

He has served as a director and the Chairman of the Board of Directors of Kirkland lake Gold since October 11, 2001. In addition to his activities with the Corporation Mr. Dobson engages in various merchant banking and venture capital activities in North America and Europe. Mr. Dobson was formerly Deputy Chairman of Lytton Minerals Limited (publicly traded diamond exploration company) and Glenmore Highlands (publicly traded mineral exploration company).

Brian A. Hinchcliffe

Director

Mr. Hinchcliffe has decades of experience in the development of mining projects and mine finance. Brian spent the first ten years of his career working at the J. Aron trading arm of Goldman Sachs, where he was responsible for the mining industry sector, working in both New York and London. Following this, Mr. Hinchcliffe was the founder of American Pacific Mining with Harry Dobson, and then Jordex Resources. Jordex acquired the previously explored Loma de Hierro nickel laterite deposit in Venezuela, which is located, with excellent infrastructure, 65 kilometers southwest of Caracas. Jordex re-verified the reserves and the overall commercial viability of the project, and sold 85% of the deposit to Anglo American Corporation for $65 million with Anglo assuming the responsibility for project financing, development and management. The Loma de Hierro mine was built at a cost of US$500 million and commenced commercial production as a low cost, long-term producer early in 2001.

Mr. Hinchcliffe received a BA from the State University of New York, and attended graduate school at the Hagan Business School at Iona College.

Mr. Hinchcliffe is a member of the Health, Safety and Environmental and Operations Committees.

Claude F. Lemasson

Lead Director

A graduate of the Kellogg-Schulich EMBA program, Mr. Lemasson is a mining executive, director, and professional engineer with 25 years of experience in open pit and underground gold mining and the development of production expansion programs in North and South America. Mr. Lemasson previously spent six years as the Mine General Manager at Goldcorp's Red Lake mine where he worked closely with Kirkland Lake Gold's current Chief Operating Officer, together overseeing production growth to 600,000 ounces per year and putting the mine's high-grade zone into production. While with Goldcorp, Mr. Lemasson also spent time as General Manager of Projects for Canada and the US where he was responsible for all project management activities including environmental, exploration, technical studies, community relations and economic analysis. Most recently he was the President, Chief Operating Officer, and Director of Guyana Goldfields Inc.

Mr. Lemasson is Chair of the Heath, Safety, and Environmental Committee and Operations Committee.

Mark S. Tessier

Director

Mr. Tessier has over thirty years of experience in underground mining in various ascending positions, including seven years overseeing the initial underground mine expansion project and subsequent underground mine operations at Goldcorp's Red Lake Mine between 1999 and 2006. That operation produced over 600,000 ounces in 2005, and over 2,800,000 ounces from 2000 to 2005.

In Ontario, Mr. Tessier has also worked in operations, engineering, or management at the Denison Mine in Elliot Lake, the Dome Mine in Timmins, the Golden Giant Mine at Hemlo, and for JS Redpath Limited out of North Bay. Mark earned a B. Sc. in Mining Engineering with honors from Queen's University, and is also a graduate of the Mining Technologist Program at the Haileybury School of Mines.

Mr. Tessier is a member of the Health, Safety and Environmental and Operations Committees.

John Thomson

Director

John S. Thomson, a Chartered Accountant from Scotland who has also studied at INSEAD, has worked internationally in a variety of senior roles for companies including PepsiCo. Most recently, Mr. Thomson has built up a successful consulting business providing advice to institutional shareholders and management teams in the media, minerals and technology sectors. He is a non-Executive Director of Parragon Publishing Ltd., a successful international publisher with operations in Europe, India, the UK and USA.

Mr. Thomson is a member of the Operations Committee.

Pamela Klessig
Non-Executive Director

Ms. Klessig has over 27 years of experience in global mineral exploration, development and production. She was a founder and former President and CEO of Western Uranium Corp and continues to serve as a director. Ms. Klessig began her career with Homestake Mining Company as the mine geologist at the company's uranium Pitch Mine in Colorado. Throughout her career she worked for a number of the large mining firms including Cyprus Minerals, Amselco, BP Minerals, Kennecott and Gencor where she held positions ranging from exploration geologist to exploration manager. In addition to her considerable exploration experience, Pamela has participated on a number of feasibility teams on a variety of projects reviewed by Amselco and BP Minerals. She also worked for Indochina Goldfields, now Ivanhoe Mines, during its Initial Public Offering as the Vice President of Investor Relations. As a complement to her technical expertise she was a stockbroker for four years with A.G. Edwards and Sons, Inc., now Wells Fargo Investment Advisors. Pamela holds a Bachelor in geology from Western State College, is a Certified Professional Geologist and a qualified person as defined by NI 43-101 standards.

Ms. Klessig is the Chair of the Compensation Committee and a member of the Audit, Nominating and Governance, and Operating Committees.

Brian E. Bayley
Non-Executive Director

Mr. Brian Bayley is a director and Co-Chairman of Quest Capital Corp., a publicly traded mortgage investment corporation listed on the TSX, Amex and AIM. He is also a director and President of Ionic Management Corp. (formerly Quest Management Corp.), a private management corporation.
Mr. Bayley is a member of the Audit, Compensation, and Nominating and Governance Committees.

Trevor M. Gabriel
Non-Executive Director

Mr. Gabriel is a resident of Monaco where he is the principal and managing director of SCS Trevor Gabriel et Cie, a real estate brokerage firm. He has had an extensive and varied career in the accounting, corporate finance and international business fields. Mr. Gabriel is also a director of Yachting Riviera, a yacht brokerage company.

He is a non-executive director of Kirkland Lake Gold Inc. and a member of the Audit Committee.

Mr. Gabriel is the Chair of the Audit Committee and a member of the Operations, Nominating and Governance, and Compensation Committees.

Dawn Whittaker, LL.B

Non-Executive Director

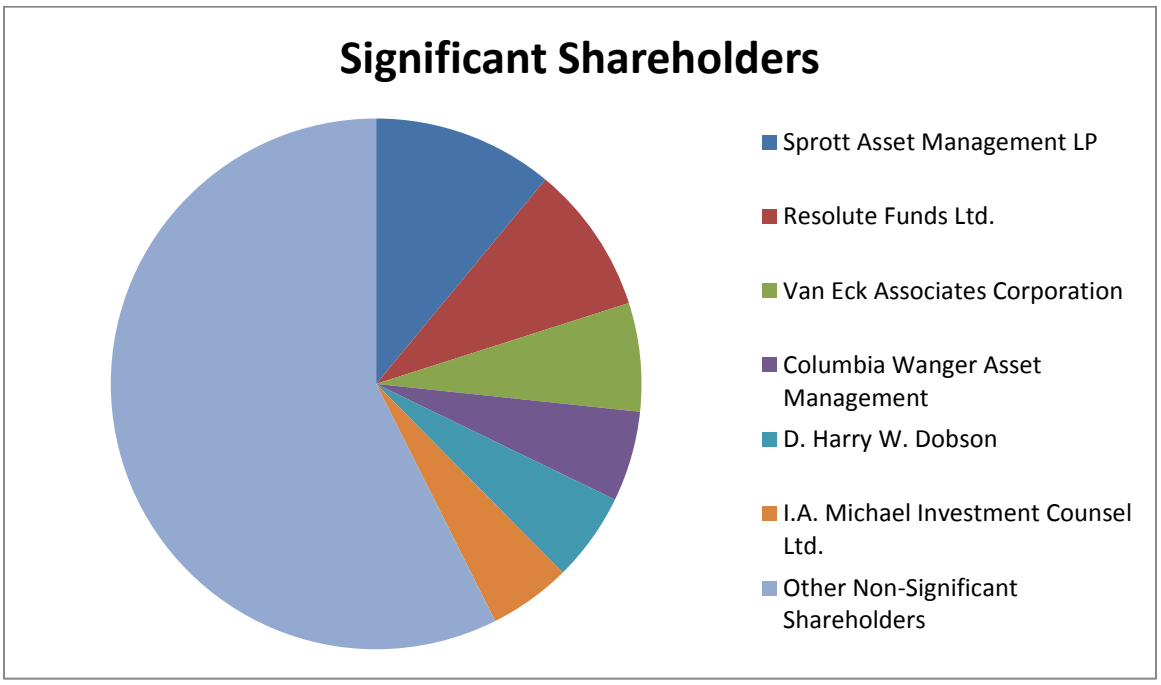
Dawn Patricia Whittaker is a partner of Norton Rose Canada LLP and a senior member of the law firm's Toronto business law group. Ms. Whittaker is Norton Rose's Canadian Mining and Commodities Leader. She has over 20 years experience providing corporate finance, M & A, corporate governance, disclosure, reporting and executive compensation advice to mining and resource companies. Dawn is also a member of the Prospectors and Developers Association of Canada, a former member of each of the Ontario Securities Commission's Continuous Disclosure Advisory Committee and the Canadian Institute of Investor Relations' Issues Committee.

Ms. Whittaker is the Chair of the Nominating and Governance Committee.

Appendix 2 - Significant Shareholders

Name	No. of Shares	Percentage
Sprott Asset Management LP	8,143,466	11.1%
Resolute Funds Ltd.	6,350,000	9.05%
Van Eck Associates Corporation	4,643,659	6.6%
Columbia Wanger Asset Management	3,875,000	5.5%
D. Harry W. Dobson, Insider (Chairman of the Board of Directors)	3,765,500	5.4%
I.A. Michael Investment Counsel Ltd.	3,230,500	5.0%

Significant shareholders >3% of our issued share capital



Appendix 3 – Cost of Equity Calculation

Normalized price per share= $10.06

Beta = 1.65, with regression analysis

Historical Risk Premium = Average return on stock index - Average return on risk free asset

Average monthly returns on Canada Bonds = - 0.302%

Average monthly returns on TSX = 0.69513%

Risk premium= .99713 monthly

Annual risk premium = (1+monthly excess return)^12 - 1= 12.64%

Risk Free rate = 3%

Ke = Rf + Beta(Risk Premium)

= 0.03 + 1.65 (.1264)

= .2386 = 23.86% ---> High cost of equity, shows volatility of firm

Appendix 4 – Beta Information & Regression Analysis

TSX

Date	Close	Volume	Adjusted Close	Returns
01/10/2013	13399.4	159431700	13399.4	4.7876
03/09/2013	12787.2	136404900	12787.2	1.0534
01/08/2013	12653.9	119793100	12653.9	1.3398
02/07/2013	12486.6	34380300	12486.6	2.9475
03/06/2013	12129.1	2002800	12129.1	-4.121
01/05/2013	12650.4	1940200	12650.4	1.5566
01/04/2013	12456.5	1846100	12456.5	-2.301
01/03/2013	12749.9	1920500	12749.9	-0.561
01/02/2013	12821.8	1855000	12821.8	1.0768
02/01/2013	12685.2	1759000	12685.2	2.0244
03/12/2012	12433.5	1878000	12433.5	1.5859
01/11/2012	12239.4	1651100	12239.4	-1.477
01/10/2012	12422.9	1511900	12422.9	0.8557
04/09/2012	12317.5	2022900	12317.5	3.0814
01/08/2012	11949.3	1451900	11949.3	2.4398
03/07/2012	11664.7	1662200	11664.7	0.5872
01/06/2012	11596.6	2060700	11596.6	0.7244
01/05/2012	11513.2	2017700	11513.2	-6.341
02/04/2012	12292.7	1903300	12292.7	-0.803
01/03/2012	12392.2	2350700	12392.2	-1.991
01/02/2012	12644	2216500	12644	1.5403
03/01/2012	12452.2	2110900	12452.2	4.1581
01/12/2011	11955.1	13395600	11955.1	-2.04
01/11/2011	12204.1	2126300	12204.1	-0.392
03/10/2011	12252.1	2532800	12252.1	5.4053
01/09/2011	11623.8	2559800	11623.8	-8.966
02/08/2011	12768.7	2657600	12768.7	-1.366
04/07/2011	12945.6	1869800	12945.6	-2.671
01/06/2011	13300.9	2126200	13300.9	-3.637
02/05/2011	13802.9	2015600	13802.9	-1.018
01/04/2011	13944.8	33234500	13944.8	-1.214
01/03/2011	14116.1	2411100	14116.1	-0.144
01/02/2011	14136.5	2469200	14136.5	4.313
04/01/2011	13552	2479500	13552	0.8093
01/12/2010	13443.2	133180700	13443.2	3.7853
01/11/2010	12952.9	227234700	12952.9	2.1828
01/10/2010	12676.2	206617100	12676.2	2.4861
01/09/2010	12368.7	218367000	12368.7	3.8174

03/08/2010	11913.9	197665600	11913.9	1.7117	
02/07/2010	11713.4	181475900	11713.4	3.7098	
01/06/2010	11294.4	207271300	11294.4	-3.984	
03/05/2010	11763	233091800	11763	-3.666	
01/04/2010	12210.7	198691100	12210.7	1.4372	
01/03/2010	12037.7	187124000	12037.7	3.5091	
01/02/2010	11629.6	173905200	11629.6	4.825	
04/01/2010	11094.3	154547900	11094.3	-5.549	
01/12/2009	11746.1	146082700	11746.1	2.6111	
02/11/2009	11447.2	181996000	11447.2	4.9162	
01/10/2009	10910.8	202934000	10910.8	-4.249	
01/09/2009	11395	228214400	11395	4.8472	
04/08/2009	10868.2	186087300	10868.2	0.7509	
02/07/2009	10787.2	179047800	10787.2	3.974	
01/06/2009	10374.9	226378000	10374.9	0.0463	
01/05/2009	10370.1	250482100	10370.1	11.21	
01/04/2009	9324.8	243552300	9324.8	6.9309	
02/03/2009	8720.4	275558500	8720.4	7.3544	
02/02/2009	8123	264754700	8123	-6.577	
02/01/2009	8694.9	239750700	8694.9	-3.258	
01/12/2008	8987.7	278508300	8987.7	-3.052	
03/11/2008	9270.6	307831500	9270.6		41.013

KGI Stock

Date	Low	Close	Volume	Adjusted Close	Return
01/10/2013	3.11	4.09	239100	4.09	17.867
03/09/2013	3.26	3.47	381900	3.47	-23.06
01/08/2013	2.78	4.51	474900	4.51	29.598
02/07/2013	3.14	3.48	549200	3.48	-21.27
03/06/2013	3.95	4.42	811100	4.42	-19.05
01/05/2013	2.83	5.46	607500	5.46	61.538
01/04/2013	2.64	3.38	737200	3.38	-37.17
01/03/2013	5.11	5.38	425800	5.38	-12.09
01/02/2013	5.79	6.12	474800	6.12	1.157
02/01/2013	5.98	6.05	354600	6.05	3.4188
03/12/2012	5.11	5.85	861300	5.85	-32.29
01/11/2012	8.46	8.64	382700	8.64	-12.37
01/10/2012	9.09	9.86	512100	9.86	-17.28
04/09/2012	11.05	11.92	563400	11.92	-12.55
01/08/2012	11.45	13.63	252900	13.63	16.695
03/07/2012	10.2	11.68	283700	11.68	6.5693
01/06/2012	10.62	10.96	289400	10.96	2.4299

01/05/2012	9.83	10.7	342000	10.7	-17.05	
02/04/2012	11.8	12.9	350400	12.9	-10.54	
01/03/2012	12.91	14.42	446500	14.42	-13.24	
01/02/2012	16.17	16.62	279100	16.62	-6.786	
03/01/2012	15.57	17.83	230900	17.83	15.629	
01/12/2011	14.22	15.42	292300	15.42	-14.33	
01/11/2011	16.39	18	215600	18	-3.382	
03/10/2011	14.79	18.63	258100	18.63	9.6527	
01/09/2011	15.96	16.99	308900	16.99	-15.01	
02/08/2011	13.99	19.99	268100	19.99	21.816	
04/07/2011	15.08	16.41	256500	16.41	7.9605	
01/06/2011	13.48	15.2	204800	15.2	3.9672	
02/05/2011	13.16	14.62	288400	14.62	3.8352	
01/04/2011	13.25	14.08	159200	14.08	4.065	
01/03/2011	12.5	13.53	203800	13.53	-6.818	
01/02/2011	13.45	14.52	164400	14.52	6.4516	
04/01/2011	12.48	13.64	226000	13.64	-14.59	
01/12/2010	13.36	15.97	458200	15.97	9.9105	
01/11/2010	10.88	14.53	358600	14.53	29.041	
01/10/2010	8.55	11.26	448900	11.26	29.873	
01/09/2010	7.69	8.67	419600	8.67	0	
03/08/2010	7.96	8.67	135600	8.67	6.12	
02/07/2010	7.71	8.17	113600	8.17	-3.656	
01/06/2010	8.17	8.48	180800	8.48	2.5393	
03/05/2010	7.12	8.27	203400	8.27	6.0256	
01/04/2010	7.37	7.8	199600	7.8	2.7668	
01/03/2010	6.91	7.59	186200	7.59	8.7393	
01/02/2010	6.25	6.98	252500	6.98	-3.056	
04/01/2010	7.15	7.2	245400	7.2	-19.64	
01/12/2009	8.34	8.96	111700	8.96	-12.24	
02/11/2009	8.19	10.21	193600	10.21	21.548	
01/10/2009	8.15	8.4	127000	8.4	-8.696	
01/09/2009	8.36	9.2	163500	9.2	-3.056	
04/08/2009	8.08	9.49	154000	9.49	7.5964	
02/07/2009	7.37	8.82	333400	8.82	-9.072	
01/06/2009	8.65	9.7	57200	9.7	1.9979	
01/05/2009	8.43	9.51	126300	9.51	10.581	
01/04/2009	6.5	8.6	104900	8.6	13.158	
02/03/2009	4.8	7.6	108600	7.6	42.056	
02/02/2009	4.95	5.35	97800	5.35	-1.835	
02/01/2009	3.72	5.45	104100	5.45	22.472	
01/12/2008	3.2	4.45	168900	4.45	-5.319	
03/11/2008	2.95	4.7	143600	4.7		71.619

Selected Bond Yield

Monthly series: 2008-11-01 - 2013-09-01
V122487 = Government of Canada marketable bonds
- average yield - over 10 years

Summary	Date
Average	2008-11-01 - 2013-09-01

Date	V122487		Date	V122487	
2013-09	3	0	2011-02	3.69	-0.53908
2013-08	3	4.166667	2011-01	3.71	5.698006
2013-07	2.88	-0.68966	2010-12	3.51	-2.5
2013-06	2.9	16.93548	2010-11	3.6	6.508876
2013-05	2.48	13.24201	2010-10	3.38	4
2013-04	2.19	-6.41026	2010-09	3.25	-4.12979
2013-03	2.34	-2.09205	2010-08	3.39	-8.62534
2013-02	2.39	-3.23887	2010-07	3.71	3.342618
2013-01	2.47	8.810573	2010-06	3.59	0.27933
2012-12	2.27	3.181818	2010-05	3.58	-10.2757
2012-11	2.2	-3.0837	2010-04	3.99	0
2012-10	2.27	1.339286	2010-03	3.99	0.251256
2012-09	2.24	-1.75439	2010-02	3.98	1.530612
2012-08	2.28	6.542056	2010-01	3.92	-3.92157
2012-07	2.14	-4.46429	2009-12	4.08	6.25
2012-06	2.24	1.818182	2009-11	3.84	-3.51759
2012-05	2.2	-13.7255	2009-10	3.98	2.842377
2012-04	2.55	-0.39063	2009-09	3.87	-2.27273
2012-03	2.56	3.225806	2009-08	3.96	-3.41463
2012-02	2.48	-2.7451	2009-07	4.1	3.535354
2012-01	2.55	5.371901	2009-06	3.96	-3.64964
2011-12	2.42	-7.27969	2009-05	4.11	10.48387
2011-11	2.61	-10.3093	2009-04	3.72	2.479339
2011-10	2.91	6.20438	2009-03	3.63	-1.89189
2011-09	2.74	-8.66667	2009-02	3.7	-1.06952
2011-08	3	-8.53659	2009-01	3.74	8.405797
2011-07	3.28	-5.4755	2008-12	3.45	-13.75
2011-06	3.47	1.759531	2008-11	4	
2011-05	3.41	-7.08447			-17.8387
2011-04	3.67	0.273224			
2011-03	3.66	-0.81301			

Regression Analysis

Regression Statistics	
Multiple R	0.352241
R Square	0.124074
Adjusted R Square	0.108432
Standard Error	16.59724
Observations	58

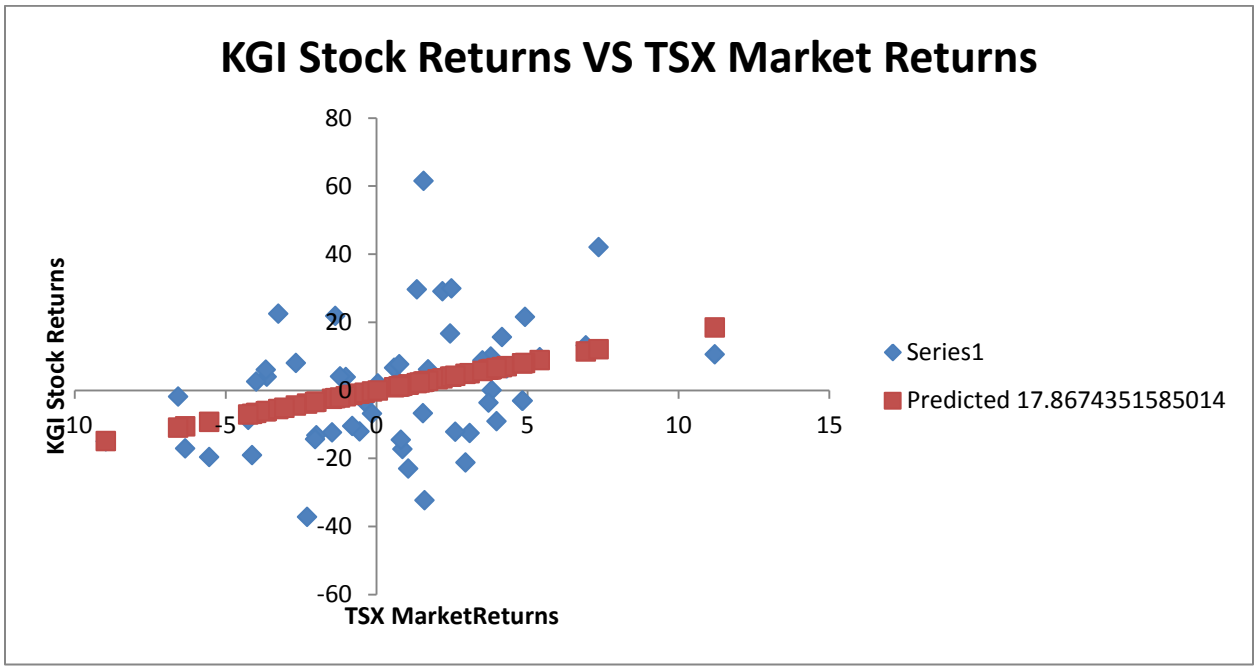
RESIDUAL OUTPUT

Observation	*Predicted 17.867*	*Residuals*	*Observation*	*Predicted 17.867*	*Residuals*
1	1.636593	-24.6965	30	-2.11561	6.180651
2	2.110648	27.48705	31	-0.34588	-6.4723
3	4.771558	-26.0385	32	7.031813	-0.5802
4	-6.92775	-12.1199	33	1.232564	-15.8224
5	2.46946	59.069	34	6.158266	3.752264
6	-3.91593	-33.2588	35	3.50596	25.53489
7	-1.0352	-11.0563	36	4.00795	25.86518
8	1.67535	-0.51832	37	6.211458	-6.21146
9	3.243678	0.175126	38	2.726176	3.393775
10	2.517866	-34.8095	39	6.033382	-9.68904
11	-2.55192	-9.8213	40	-6.70075	9.240053
12	1.309301	-18.5912	41	-6.17569	12.20134
13	4.993179	-17.539	42	2.271723	0.495075
14	3.931358	12.76385	43	5.701263	3.037992
15	0.864964	5.70438	44	7.87924	-10.9348
16	1.091964	1.337943	45	-9.29178	-10.3511
17	-10.6028	-6.45144	46	4.214856	-16.4578
18	-1.43602	-9.1049	47	8.030242	13.51738
19	-3.40326	-9.8338	48	-7.1403	-1.55536
20	2.442436	-9.22875	49	7.915934	-10.9718
21	6.775328	8.853726	50	1.135833	6.460539
22	-3.4841	-10.8492	51	6.470701	-15.5429
23	-0.75548	-2.62616	52	-0.03042	2.028313
24	8.839726	0.813011	53	18.44742	-7.86602
25	-14.9482	-0.05933	54	11.36485	1.793042
26	-2.36882	24.18479	55	12.06591	29.99017
27	-4.52844	12.48897	56	-10.9939	9.159015
28	-6.1268	10.09397	57	-5.49927	27.97118
29	-1.79132	5.626546	58	-5.15796	-0.16119

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2185.108	2185.11	7.93233	0.006694
Residual	56	15426.24	275.469		
Total	57	17611.34			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	-0.10703	2.210019	-0.04843	0.96155	-4.53423	4.32017
4.7876	1.655185	0.587687	2.81644	0.00669	0.477907	2.832464



Appendix 5 – Long Term Debt among Other Junior Gold Miners

Kirkland Lake Gold (KGI)	about $130M of their $449M in liabilities and equity is long term debt
Lake Shore Gold Corp. (LSG)	about $109M of their $823M in liabilities and equity is long term debt
Brigus Gold Corp. (BRD)	about $75M of their $418M in liabilities and equity is long term debt
St Andrew Goldfields Ltd. (SAS)	about $25M of their $220M in liabilities and equity is long term debt
ATAC Resources Ltd. (ATC)	only debt they have is DIT so $0 of their liabilities and equity is long term debt at all

Appendix 6 – Optimal Debt Ratio Calculations

Beta Calculation

Current Tax Rate	**22.5%**
Current D/E Ratio	**20%**
Current Beta (Numerator)	**1.65**
Denominator	1.1552015
Unlevered Beta	1.428322245

Lever Beta at following D/(D+E) Ratios

D/(D+E)	Comparable D/E Ratio	Levered Beta
0.0%	0.0%	1.43
10.0%	11.1%	1.55
20.0%	25.0%	1.71
30.0%	42.9%	1.90
40.0%	66.7%	2.17
50.0%	100.0%	2.54
60.0%	150.0%	3.09
70.0%	233.3%	4.01
80.0%	400.0%	5.86

Cost of Equity Calculation

Risk Free Rate	**3.00%**
Market Risk Premium	**12.64%**

D/C Ratio	Risk Free Rate	Beta	Risk Premium	Cost of Equity (rf + Beta (RP))
0.0%	3.00%	1.428322	12.64%	21.1%
10.0%	3.00%	1.551317	12.64%	22.6%
20.0%	3.00%	1.70506	12.64%	24.6%
30.0%	3.00%	1.902729	12.64%	27.1%
40.0%	3.00%	2.166289	12.64%	30.4%
50.0%	3.00%	2.535272	12.64%	35.0%
60.0%	3.00%	3.088747	12.64%	42.0%
70.0%	3.00%	4.011205	12.64%	53.7%
80.0%	3.00%	5.856121	12.64%	77.0%

Cost of Debt

Value of Kirkland Lake Gold = Current market value of equity + current market value of debt

Tax Rate	22.5%
MV Equity	$ 705,718,175.00
MV Debt	$ 141,327,000.00
MV Firm	$ 847,045,175.00
KLG EBIT 2013	$ 5,011,000.00

D/C Ratio	$ Debt at that ratio	Interest Rate on Debt	Tax Rate	After Tax Cost of Debt	Rating
0.0%	$ -	3.40%	23%	2.635%	AAA
10.0%	$ 84,704,517.50	15.00%	23%	11.625%	D
20.0%	$ 169,409,035.00	15.00%	23%	11.625%	D
30.0%	$ 254,113,552.50	15.00%	23%	11.625%	D
40.0%	$ 338,818,070.00	15.00%	23%	11.625%	D
50.0%	$ 423,522,587.50	15.00%	23%	11.625%	D
60.0%	$ 508,227,105.00	15.00%	23%	11.625%	D
70.0%	$ 592,931,622.50	15.00%	23%	11.625%	D
80.0%	$ 677,636,140.00	15.00%	23%	11.625%	D

Interest Coverage Ratio

Interest Coverage Ratio Table (Stern January 2013)			
http://pages.stern.nyu.edu/~%20adamodar/New_Home_Page/datafile/ratings.htm			
Range			
less than or equal to	greater than	Rating is:	Default Spread is:
100,000.00	12.50	AAA	0.40%
12.49	9.50	AA	0.70%
9.49	7.50	A+	0.85%
7.49	6.00	A	1.00%
5.99	4.50	A-	1.30%
4.49	4.00	BBB	2.00%
3.99	3.50	BB+	3.00%
3.49	3.00	BB	4.00%
2.99	2.50	B+	5.50%
2.49	2.00	B	6.50%
1.99	1.50	B-	7.25%
1.49	1.25	CCC	8.75%
1.24	0.80	CC	9.50%
0.79	0.50	C	10.50%
0.49	- 100,000.00	D	12.00%

0% Rate

	D/C Ratio	$ Debt at that ratio	Rate	Interest Expense	ICR	Fit?
AAA	0.0%	$ -	3.40%	$ -	99999	TRUE
AA	0.0%	$ -	3.70%	$ -	99999	FALSE
A+	0.0%	$ -	3.85%	$ -	99999	FALSE
A	0.0%	$ -	4.00%	$ -	99999	FALSE
A-	0.0%	$ -	4.30%	$ -	99999	FALSE
BBB	0.0%	$ -	5.00%	$ -	99999	FALSE
BB+	0.0%	$ -	6.00%	$ -	99999	FALSE
BB	0.0%	$ -	7.00%	$ -	99999	FALSE
B+	0.0%	$ -	8.50%	$ -	99999	FALSE
B	0.0%	$ -	9.50%	$ -	99999	FALSE
B-	0.0%	$ -	10.25%	$ -	99999	FALSE
CCC	0.0%	$ -	11.75%	$ -	99999	FALSE
CC	0.0%	$ -	12.50%	$ -	99999	FALSE
C	0.0%	$ -	13.50%	$ -	99999	FALSE
D	0.0%	$ -	15.00%	$ -	99999	FALSE

10% Rate

	D/C Ratio	$ Debt at that ratio	Rate	Interest Expense	ICR	Fit?
AAA	10.0%	$ 84,704,517.50	3.40%	$ 2,879,953.60	1.74	FALSE
AA	10.0%	$ 84,704,517.50	3.70%	$ 3,134,067.15	1.599	FALSE
A+	10.0%	$ 84,704,517.50	3.85%	$ 3,261,123.92	1.537	FALSE
A	10.0%	$ 84,704,517.50	4.00%	$ 3,388,180.70	1.479	FALSE
A-	10.0%	$ 84,704,517.50	4.30%	$ 3,642,294.25	1.376	FALSE
BBB	10.0%	$ 84,704,517.50	5.00%	$ 4,235,225.88	1.183	FALSE
BB+	10.0%	$ 84,704,517.50	6.00%	$ 5,082,271.05	0.986	FALSE
BB	10.0%	$ 84,704,517.50	7.00%	$ 5,929,316.23	0.845	FALSE
B+	10.0%	$ 84,704,517.50	8.50%	$ 7,199,883.99	0.696	FALSE
B	10.0%	$ 84,704,517.50	9.50%	$ 8,046,929.16	0.623	FALSE
B-	10.0%	$ 84,704,517.50	10.25%	$ 8,682,213.04	0.577	FALSE
CCC	10.0%	$ 84,704,517.50	11.75%	$ 9,952,780.81	0.503	FALSE
CC	10.0%	$ 84,704,517.50	12.50%	$ 10,588,064.69	0.473	FALSE
C	10.0%	$ 84,704,517.50	13.50%	$ 11,435,109.86	0.438	FALSE
D	10.0%	$ 84,704,517.50	15.00%	$ 12,705,677.63	0.394	TRUE

20% Rate

	D/C Ratio	$ Debt at that ratio	Rate	Interest Expense	ICR	Fit?
AAA	20.0%	$ 169,409,035.00	3.40%	$ 5,759,907.19	0.87	FALSE
AA	20.0%	$ 169,409,035.00	3.70%	$ 6,268,134.30	0.799	FALSE
A+	20.0%	$ 169,409,035.00	3.85%	$ 6,522,247.85	0.768	FALSE
A	20.0%	$ 169,409,035.00	4.00%	$ 6,776,361.40	0.739	FALSE
A-	20.0%	$ 169,409,035.00	4.30%	$ 7,284,588.51	0.688	FALSE
BBB	20.0%	$ 169,409,035.00	5.00%	$ 8,470,451.75	0.592	FALSE
BB+	20.0%	$ 169,409,035.00	6.00%	$ 10,164,542.10	0.493	FALSE
BB	20.0%	$ 169,409,035.00	7.00%	$ 11,858,632.45	0.423	FALSE
B+	20.0%	$ 169,409,035.00	8.50%	$ 14,399,767.98	0.348	FALSE
B	20.0%	$ 169,409,035.00	9.50%	$ 16,093,858.33	0.311	FALSE
B-	20.0%	$ 169,409,035.00	10.25%	$ 17,364,426.09	0.289	FALSE
CCC	20.0%	$ 169,409,035.00	11.75%	$ 19,905,561.61	0.252	FALSE
CC	20.0%	$ 169,409,035.00	12.50%	$ 21,176,129.38	0.237	FALSE
C	20.0%	$ 169,409,035.00	13.50%	$ 22,870,219.73	0.219	FALSE
D	20.0%	$ 169,409,035.00	15.00%	$ 25,411,355.25	0.197	TRUE

We are not going to show what happens beyond the 20% D/C ratio but it should be quite clear by this point that the debentures are always rated D beyond this point

Appendix 7 – Growth and Valuation Calculations

(Note: all dollar values presented in this appendix are in Thousands of CAD)

Year	Gold Production (Ounces)	Ore Production (Tons)	Growth of Production	Change in growth	
2023	663,375.50	2,198,300.71	34.05%		Expected
2022	494,868.77	1,639,901.33	30.60%		
2021	378,920.89	1,255,672.05	27.50%		
2020	297,197.49	984,856.19	24.71%		
2019	238,309.19	789,711.49	22.21%		
2018	195,005.72	646,212.01	19.96%		
2017	162,565.07	538,709.83	17.93%		
2016	137,845.44	456,793.69	16.12%		
2015	118,714.36	393,396.89	14.48%		
2014	103,697.12	343,632.60	13.01%		
2013	91,756.00	304,062.00	-8.50%	-137.77%	Actual
2012	100,275.00	281,634.00	22.50%	-67.38%	
2011	81,860.00	199,902.00	68.97%	517.69%	
2010	48,447.00	118,307.00	11.17%	-203.82%	
2009	43,581.00	106,424.00	-10.76%	-2.66%	
2008	48,833.00	119,250.00	-11.05%	94.04%	
2007	54,899.00	119,345.00	-5.69%	-121.15%	
2006	58,214.00	158,155.00	26.92%		
2005	45,865.00	155,652.00			
Average of Actual	**63,747.78**	**173,636.78**	**11.69%**	**11.28%**	
Average of All			**17.45%**		

- Based on production projections High growth will last until 2020 at an average rate of 17.45%; When Ore Production is at 2200 Tonnes per Day (2200*360=792,000).
- Assume 360 Days per year to allow for holidays and down time due to weather and extraneous circumstances

- Based on a growth rate of 11.28% for the average growth rate of 11.69% (Historic average) we can assume that the growth rate in production for 2014 will be 11.69%, and grow from there at 11.28% per year.

G = Reinvestment Rate*ROC	**KL Gold pays no Dividends so Reinvestment Rate is 100%**		
Return on Capital Calculation			
EBIT(1-T)	3,884		
Book Value Equity		247,359	
Current Liabilities	71,565		
Non-Current Liabilities	129,858		
Book Value Debt	201,423	201,423	
Total Book Value		448,782	
ROC	0.8653%		ROC = (EBIT(1-T)) / (Book Value Equity + Book Value of Debt)
Reinvestment Rate	100.0000%		
G	0.8653%	- This G is too low and not appropriate to use	

Solving for G under Multi Factor Model

Growth Rate Revenue	Growth Expected Growth Rate in Production	17.45%
	Expected Growth in Price of Gold	9.07%
	Total	26.52%
Growth Rate in Production Expenses	Growth Expected Growth Rate in Production	17.45%
Growth Rate in Working Capital	Growth Expected Growth Rate in Production	17.45%
	Total	17.45%

EBIT For High Growth Period	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Revenue From Gold Sales	$ 151,692.00	$ 191,922.76	$ 242,823.26	$ 307,223.26	$ 388,703.01	$491,792.28	$ 622,222.21	$ 787,243.92
Production Expenses	$ 124,002.00	$ 145,642.02	$ 171,058.51	$ 200,910.53	$ 235,972.12	$277,152.43	$ 350,656.99	$ 411,851.35
General Administrative Expenses	$ 5,582.00	$ 5,582.00	$ 5,582.00	$ 5,582.00	$ 5,582.00	$ 5,582.00	$ 5,582.00	$ 5,582.00
Exploration	$ 17,097.00	$ 17,097.00	$ 17,097.00	$ 17,097.00	$ 17,097.00	$ 17,097.00	$ 17,097.00	$ 17,097.00
EBIT	$ 5,011.00	$ 23,601.74	$ 49,085.75	$ 83,633.73	$ 130,051.89	$ 191,960.85	$ 248,886.22	$ 352,713.57
EBIT (1-T)	$ 3,883.53	$ 18,291.35	$ 38,041.46	$ 64,816.14	$ 100,790.21	$ 148,769.66	$ 192,886.82	$ 273,353.01

- Combined federal and provincial tax rate= 22.50%

REVENUE FROM GOLD SALES	$ 151,692.00
PRODUCTION EXPENSES	$ 124,002.00
GROSS PROFIT	$ 27,690.00
OTHER EXPENSES	
General and administrative (Note 17 – 2013 Financial Statements)	$ 5,582.00
Exploration	$ 17,097.00
EBIT	$ 5,011.00
EBIT(1-T)	$ 3,883.53

CHANGES IN NON-CASH WORKING CAPITAL ITEMS	2012	2013	Change in Working Capital	
Cash and cash equivalents	$ 25,014.00	$ 76,784.00	$ 51,770.00	
Short-term investments	$ 5,158.00	$ 182.00	-$ 4,976.00	
Accounts receivable	$ 6,724.00	$ 14,171.00	$ 7,447.00	Current Assets
Inventory	$ 14,118.00	$ 14,978.00	$ 860.00	
Prepaid expenses	$ 1,244.00	$ 1,570.00	$ 326.00	
Accounts Payable (& Accrued Liabilities)	$ 22,073.00	$ 33,495.00	$ 11,422.00	Current Liabilities
Current Portion of Finance Lease	$ 2,940.00	$ 6,244.00	$ 3,304.00	
Total	$ 2,231.00	-$ 8,838.00	-$ 11,069.00	

Change in Working Capital	2012	2013	2014	2015	2016	2017	2018	2019	2020
Working Capital	$ 2,231.00	-$ 8,838.00	-$ 10,380.35	-$ 12,191.86	-$ 14,319.50	-$ 16,818.45	-$ 19,753.50	-$ 23,200.75	-$ 27,249.59
Change in Working Capital		-$ 11,069.00	-$ 1,542.35	-$ 1,811.51	-$ 2,127.64	-$ 2,498.95	-$ 2,935.05	-$ 3,447.25	-$ 4,048.84

Capital Expenditure

- Additions to mineral properties = $221,320

Increase to reach capacity
52%
Cost of mill when at capacity
$ 131,297.52
CAPEX needed to reach that cost
$ 44,760.52
How many years will we grow for?
8
CAPEX needed per year (for the mill)
$ 5,595.06

Solve for growth rate	
FV =	$5,595.00
PV =	$29,502.00
n =	7
PMT =	0
solve for r =	-20.76%

Free Cash Flows To Firm FCFF								
	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
EBIT (1-T)	$ 3,883.53	$ 18,291.35	$ 38,041.46	$ 64,816.14	$ 100,790.21	$ 148,769.66	$ 192,886.82	$ 273,353.01
Depreciation	$ 19,803.00	$ 15,691.90	$ 12,434.26	$ 9,852.91	$ 7,807.44	$ 6,186.62	$ 4,902.28	$ 3,884.56
CAPEX	$ 221,320.00	$ 175,373.97	$ 138,966.33	$ 110,116.92	$ 87,256.65	$ 69,142.17	$ 54,788.25	$ 43,414.21
Change in WC	-$ 11,069.00	-$ 1,542.35	-$ 1,811.51	-$ 2,127.64	-$ 2,498.95	-$ 2,935.05	-$ 3,447.25	-$ 4,048.84
FCFF	-$ 186,564.48	-$ 139,848.37	-$ 86,679.11	-$ 33,320.23	$ 23,839.95	$ 88,749.15	$ 146,448.10	$ 237,872.21

WACC Current	20.74%
Terminal Value	Will grow at REAL rate of economy indefinitely after 2018 <http://www.central1.com/sites/default/files/uploads/files/analysis_report/report_file/ea%202013_ont03.pdf>
Projected Growth Rate in Canada 2018	3.20%
WACC in Stable Period	21.05% (See calculation in part 6)
FCFF 2020	$237,872.21
Terminal Value	$1,187,399.21 [= (FCFF 2021(1+WACCstable))/ WACCstable - Gstable]

Firm Valuation	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Terminal Value**
$ 77,320.02	-$ 154,520.10	-$ 95,933.32	-$ 49,247.31	-$ 15,679.49	$ 9,291.49	$ 28,648.40	$ 39,153.98	$ 52,673.46	$ 262,932.90

- Firm Value for years 2013 – 2020 is calculated by the following formula: $\frac{\text{FCFF}}{(1+\text{WACCcurrent})^t}$
- Terminal Value is calculated by the following formula: $\frac{\text{Terminal Value}}{(1+\text{WACCcurrent})^t}$