

SOLITARIO EXPLORATION & ROYALTY CORP.  
Form 10-K  
March 08, 2013

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

**FORM 10-K**

(Mark One)

Annual report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the fiscal year ended December 31, 2012

or

Transition report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934  
For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission file number **001-32978**

**SOLITARIO EXPLORATION & ROYALTY CORP.**

(Exact name of registrant as specified in charter)

Colorado	84-1285791
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
4251 Kipling St. Suite 390, Wheat Ridge, CO	80033
(Address of principal executive offices)	(Zip Code)
Registrant's telephone number, including area code	<b><u>(303) 534-1030</u></b>

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of exchange on which registered
Common Stock, \$0.01 par value	NYSE MKT

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

YES [ ] NO [X]

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

YES [ ] NO [X]

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Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

YES  NO

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

YES  NO

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained to the best of registrant's knowledge in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.:

Non-accelerated Filer

Large accelerated filer  Accelerated filer  (Do not check if a smaller reporting company)  Smaller Reporting Company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act).

YES  NO

The aggregate market value of the voting and non-voting common stock held by non-affiliates of the registrant as of the last business day of the registrant's most recently completed second fiscal quarter, based upon the closing sale price of the registrant's common stock on June 30, 2012 as reported on NYSE MKT was approximately \$37,097,000.

There were 34,597,458 shares of common stock, \$0.01 par value, outstanding on February 28, 2013.

## DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive Proxy Statement for the Registrant's Annual Meeting of Shareholders, which is expected to be filed by April 30, 2013, have been incorporated by reference into Part III of this Annual Report on Form 10-K



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## **PART I**

This Annual Report on Form 10-K contains statements that constitute "forward-looking statements" within the meaning of section 27A of the Securities Act of 1933 and section 21E of the Securities Exchange Act of 1934. These statements can be identified by the fact that they do not relate strictly to historical information and include the words "expects", "believes", "anticipates", "plans", "may", "will", "intend", "estimate", "continue" or other similar expressions. These forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from those currently anticipated. These risks and uncertainties include, but are not limited to, items discussed below in Item 1A "Risk Factors" in this Form 10-K. Forward-looking statements speak only as of the date made. We undertake no obligation to publicly release or update forward-looking statements, whether as a result of new information, future events or otherwise. You are, however, advised to consult any further disclosures we make on related subjects in our quarterly reports on Form 10-Q and any reports made on Form 8-K to the United States Securities and Exchange Commission (the "SEC").

### **Item 1. Business**

#### The Company

Solitario Exploration & Royalty Corp. ("Solitario") is a development stage company (prior to February 22, 2012 we were an exploration stage company) with a focus on developing the Mt. Hamilton gold project, the acquisition of precious and base metal properties with exploration potential, and the development or purchase of royalty interests. We acquire and hold a portfolio of exploration properties for future sale, joint venture, or to create a royalty prior to the establishment of proven and probable reserves.

In August 2010 we signed a Letter of Intent related to the Mt. Hamilton project and in December 2010 we signed a Limited Liability Company Operating Agreement ("MH Agreement") to form Mt. Hamilton LLC ("MH-LLC"). Furthermore, we announced on February 22, 2012 the completion of a feasibility study on our Mt. Hamilton project (the "Feasibility Study"), prepared by SRK Consulting (US), Inc. of Lakewood, Colorado ("SRK"). As a result of the completion of the Feasibility Study, we earned an 80% interest in MH-LLC, the 100% owner of the Mt. Hamilton project, and we intend to develop the Mt. Hamilton project, subject to a number of factors including obtaining necessary permits and availability of required capital, none of which is currently in place. The Mt. Hamilton project, located in Nevada, is discussed below under "Ely Gold Investment and the Mt. Hamilton Joint Venture." However, we have never developed a mineral property. We are exploring on other mineral properties that may be developed in the future by us or through a joint venture. We may also evaluate mineral properties to potentially buy a royalty.

We have been actively involved in mineral exploration since 1993. During 2012 and 2011, we have recorded revenues from joint venture delay rental payments of \$200,000 for each year related to our Bongará project in Peru and recorded \$100,000 and \$42,000, respectively, of delay rental payment revenue related to our Mercurio project in Brazil. During June 2012 MH-LLC sold a royalty interest in our Mt. Hamilton project to Sandstorm Gold Ltd. ("Sandstorm") for \$10,000,000 of which \$6,000,000 was paid in June 2012 and \$4,000,000 was paid in January 2013. Previously, our last significant revenues were recorded in 2000 upon the sale of the Yanacocha property for \$6,000,000. Future revenues from the sale of properties, if any, will also occur on an infrequent basis. At December 31, 2012, in addition to our Mt. Hamilton Project, we had nine mineral exploration properties in Peru, Mexico and Brazil and our Yanacocha royalty property in Peru and our Mercurio royalty property in Brazil. We are conducting exploration activities in all of those countries either on our own, or through joint ventures operated by our partners.

Solitario was incorporated in the state of Colorado on November 15, 1984 as a wholly owned subsidiary of Crown Resources Corporation ("Crown"). In July 1994, we became a publicly traded company on the Toronto Stock Exchange (the "TSX") through our Initial Public Offering. On July 26, 2004, Crown completed a spin-off of its holdings of our shares to its shareholders as part of the acquisition of Crown (the "Crown - Kinross Merger") by Kinross Gold Corporation ("Kinross"). On June 12, 2008, our shareholders approved an amendment to the Articles of Incorporation of Solitario to change the name of the corporation to Solitario Exploration & Royalty Corp. from Solitario Resources Corporation.

Our corporate structure as of December 31, 2012 is as follows: All of the subsidiaries are 100%-owned, with the exception of Minera Chambara, which is 85%-owned by Solitario, and Mt. Hamilton LLC, which is 80%-owned by Solitario.

Solitario Exploration & Royalty Corp. [Colorado]

- Altoro Gold Corp. [British Columbia, Canada]

- Altoro Gold (BVI) Corp. [British Virgin Islands]

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- Minera Altoro (BVI) Ltd. [British Virgin Islands]
- Minera Andes (BVI) Corp. [British Virgin Islands]
  - Compañía Minera Andes del Sur S.A. [Bolivia]
- Minera Altoro Brazil (BVI) Corp. [British Virgin Islands]
  - Altoro Mineração, Ltda. [Brazil]
- Minera Chambara, S.A. [Peru]
- Minera Solitario Peru, S.A. [Peru]
- Minera Bongará, S.A. [Peru]
- Minera Soloco, S.A. [Peru]
- Mineração Solitario Brazil, Ltd [Brazil]
- Minera Solitario Mexico, S.A. [Mexico]
- Mt. Hamilton, LLC [Colorado]

General

We are currently working on development activities related to our Mt. Hamilton gold project that we intend to develop, subject to a number of factors including obtaining necessary permits and availability of required capital, none of which is currently in place. We have never developed a property in our history. As of December 31, 2012, we reported proven and probable reserves at Mt. Hamilton of 22,527,000 tons of ore at a grade of 0.022 ounces of gold per ton for 487,100 contained ounces of gold and a grade of 0.136 ounces of silver per ton for 3,028,200 ounces of silver as discussed below under Item 2, “Properties, The Mt. Hamilton gold property.” None of our other properties have reserves.

In addition to our activities at Mt. Hamilton, one of our primary goals is to discover economic deposits on our mineral properties and advance these deposits, either on our own or through joint ventures, up to the development stage (development activities include, among other things, completion of a feasibility study for the identification of proven and probable reserves, as well as permitting and preparing a deposit for mining). At that point, or sometime prior to that point, we would attempt to either sell our mineral properties, or pursue their development either on our own or through a joint venture with a partner that has expertise in mining operations, or create a royalty with a third-party that continues to advance the property.

In analyzing our activities, a significant aspect relates to results of our development activities at Mt. Hamilton and our exploration activities and those of our joint venture partners' on a property-by-property basis. When these activities, including drilling, sampling and geologic testing, indicate a project may not be economic or contain sufficient geologic or economic potential, we may impair or completely write-off the property. Another significant factor in the success or failure of our activities is the price of commodities. For example, when the price of gold is up, the value of gold-bearing mineral properties increases; however, it may also become more difficult and expensive to locate and acquire new gold-bearing mineral properties with potential to have economic deposits.

The potential sale, joint venture or development, either on our own or through a joint venture of our mineral properties will occur, if at all, on an infrequent basis. Accordingly, while we conduct exploration activities and planned development of the Mt. Hamilton project, we need to maintain and replenish our capital resources. We have met our need for capital in the past through (i) sale of our investment in Kinross common stock; (ii) borrowing in the form of short-term margin debt secured by our investment in Kinross; (iii) borrowing under our three-year Facility Agreement with RMB Australia Holdings Limited and RMB Resources Inc.; (iv) joint venture delay rental payments, including payments on our Bongará property and on our Mercurio project; (v) the royalty sale to Sandstorm Gold Ltd.; (vi) the sale of properties, which last occurred in 2000 with the sale of our Yanacocha property for \$6,000,000; and (vii) issuance of common stock, including the exercise of options. In the past and with the exception of the Mt. Hamilton project, we have reduced our exposure to the costs of our exploration activities through the use of joint ventures. We anticipate these practices will continue for the foreseeable future.

We operate in two segments, mining development at our Mt. Hamilton project and mineral exploration. We currently conduct exploration in Peru, Brazil and Mexico. See Note 13 "Segment Reporting" in Part II, Item 8, "Financial Statements and Supplementary Data" of this Form 10-K. As of February 28, 2013, we had six full-time employees, located in the United States and 12 full-time employees, located in Latin America outside of the United States. We extensively utilize contract employees and laborers to assist us in the exploration on most of our projects.

A large number of companies are engaged in the exploration and development of mineral properties, many of which have substantially greater technical and financial resources than we have and, accordingly, we may be at a disadvantage in being able to compete effectively for the acquisition, exploration and development of mineral properties. We are not aware of any single competitor or group of competitors that dominate the exploration and development of mineral properties. In acquiring mineral properties for exploration and development, we rely on the experience, technical expertise and knowledge of our employees, which is limited by the size of our company compared to many of our competitors who may have either more employees or



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employees with more specialized knowledge and experience.

### Governmental Regulations

Mineral development and exploration activities are subject to various national, state/provincial, and local laws and regulations, which govern prospecting, development, mining, production, exports, taxes, labor standards, occupational health, waste disposal, protection of the environment, mine safety, hazardous substances and other matters. Similarly, if any of our properties are developed and/or mined those activities are also subject to significant governmental regulation and oversight. We are required to obtain the licenses, permits and other authorizations in order to conduct our exploration program.

### Environmental Regulations

Our current and planned activities are subject to various national and local laws and regulations governing protection of the environment. These laws are continually changing and, in general, are becoming more restrictive. We intend to conduct business in a way that safeguards public health and the environment. We will be required to conduct our operational compliance with applicable laws and regulations.

Changes to current state or federal laws and regulations in each jurisdiction in which we conduct our exploration and development activities could, in the future, require additional capital expenditures and increased operating and/or reclamation costs. Although we are unable to predict what additional legislation, if any, might be proposed or enacted, additional regulatory requirements could impact the economics of our projects.

During fiscal 2012, we had no material environmental incidents or non-compliance with any applicable environmental regulations.

### Ely Gold Investment and the Mt. Hamilton Joint Venture

On August 26, 2010, we signed a Letter of Intent (“LOI”) with Ely Gold and Minerals, Inc., (“Ely”) to make certain equity investments into Ely and to joint venture Ely’s Mt. Hamilton gold project, which was wholly-owned by DHI-Minerals (US) Ltd. (“DHI-US”), an indirect wholly-owned subsidiary of Ely. On August 26, 2010 and October 19, 2010, we made private placement investments of Cdn\$250,000 each in Ely securities. We received a total of 3,333,333 shares of Ely common stock and warrants to purchase a total of 1,666,667 shares of Ely common stock (the

“Ely Warrants”) for an exercise price of Cdn\$0.25 per share, which expired two years from the date of purchase. The private placements were pursuant to the LOI to joint venture Ely’s Mt. Hamilton gold project. On November 12, 2010, we made an initial contribution of \$300,000 for a 10% membership interest in, upon the formation, of Mt. Hamilton LLC (“MH-LLC”), which was formed in December 2010. The terms of the joint venture are set forth in the MH Agreement. MH-LLC owns 100% of the Mt. Hamilton gold project. Pursuant to the MH Agreement, as a result of the completion of the Feasibility Study, Solitario has earned an 80% interest in MH-LLC, and indirectly, the Mt. Hamilton project. See a more complete discussion of Ely and MH-LLC below in Item 2, “Mineral Properties” below.

#### Investment in Kinross

We have a significant investment in Kinross at December 31, 2012, which consists of 670,000 shares of Kinross common stock. In August 2006, we received 1,942,920 shares in exchange for 6,071,626 shares of Crown common stock we owned on the date of the Crown - Kinross Merger. Subsequent to the Crown - Kinross Merger, we have sold 1,272,920 shares of Kinross common stock to fund our operations. As of February 28, 2013 we own 670,000 shares of Kinross common stock that have a value of approximately \$5.1 million based upon the market price of \$7.62 per Kinross share. Any significant fluctuation in the market value of Kinross common stock could have a material impact on Solitario's liquidity and capital resources.

#### Mineral Properties - General

We have been involved in the exploration for minerals in Latin America, focusing on precious and base metals, including gold, silver, platinum, palladium, copper, lead and zinc. We have held concessions in Peru since 1993 and in Bolivia and Brazil since 2000. However we terminated our mineral property activity in Bolivia during 2012. During 2004 we began a reconnaissance exploration program in Mexico and acquired mineral interests there in 2005. In 2010 we acquired a 10% interest in MH-LLC with an option to earn up to the 80% interest which we now hold as a result of completion of the Feasibility Study. MH-LLC owns the Mt. Hamilton mining claims located in Nevada, USA.

#### Financial Information about Geographic Areas

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Included in the consolidated balance sheets at December 31, 2012 and 2011 are total assets of \$1,433,000 and \$2,251,000, respectively, related to Solitario's foreign operations located in Brazil, Peru, and Mexico, including our investment in Pedra Branca do Mineração, a Brazilian entity.

Available Information

We file our Annual Report on Form 10-K, our quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports electronically with the SEC. The public may read and copy any materials we file with the SEC at the SEC's public reference room at 100 F Street NE, Washington, DC 20549 or by calling the SEC at 1-800-SEC-0330. In addition the SEC maintains an internet website, <http://www.sec.gov>, which contains reports, proxy information and other information regarding issuers that file electronically with the SEC.

Paper copies of our Annual Report to Shareholders, our Annual Report on Form 10-K, our quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports are available free of charge by writing to Solitario at its address on the front of this Form 10-K. In addition, electronic versions of the reports we file with the SEC are available on our website, [www.solitarioresources.com](http://www.solitarioresources.com) as soon as practicable, after filing with the United States Securities and Exchange Commission.

**Item 1A. Risk Factors**

In addition to considering the other information in this Form 10-K, you should consider carefully the following factors. The risks described below are the significant risks we face and include all material risks. Additional risks not presently known to us or risks that we currently consider immaterial may also adversely affect our business.

*During 2010 we entered into an agreement with Ely Gold and Minerals, Inc. ("Ely") and as a result of completion of the Feasibility Study in February 2012 have earned an 80% interest in the Mt. Hamilton project through our membership interest in MH-LLC. We currently intend to develop this property. The potential development of the Mt. Hamilton project adds new risks to Solitario including permitting, finance, mining operations and closure, for which Solitario has limited experience, resources and personnel. Failure on any of these or other components of the planned development of the Mt. Hamilton project could contribute to our inability to profitably develop, operate and close the Mt. Hamilton project, which could result in the loss of our investment in MH-LLC, and the loss of all or a significant portion of our financial reserves.*

The development of mining properties involves a high degree of risk including the requirement to obtain permits, the need for significant financial resources for the construction and development of an operating mine, operational expertise and reclamation. Permitting of a mine for development can be an expensive and uncertain endeavor, with no assurance of receiving required permits in a timely manner, if ever. We do not have a history of developing or operating mines and may not be able to acquire the additional personnel to adequately manage such operations. In addition, the financial resources required to put a mine into production and to sustain profitable operating mines are significant and far exceed our existing financial resources and there can be no assurance that we will be able to obtain such financial resources. We are permitting the Mt. Hamilton Project under an Environmental Assessment (“EA”) with the United States Forest Service (the “Forest Service”). The Forest Service is currently allowing this as the appropriate regulatory process for permitting the Mt Hamilton project. However, the Forest Service could reverse its position and require the completion of an Environmental Impact Statement (“EIS”), or a court could be petitioned to force Solitario to complete an EIS, even after approval of an EA. If such an event were to occur, it would significantly lengthen the permitting process and delay the start-up of a mine. Should we fail to timely complete any of the activities required for the planned development of the Mt. Hamilton project, or if upon completion of the development of the Mt. Hamilton project we are unable to operate the project profitably, it could result in the loss of our investment in MH-LLC, the loss of all or a significant portion of our financial reserves and be a detriment to our other exploration assets. The failure to permit, develop, operate and close the Mt. Hamilton project on a timely and profitable basis could negatively affect our stock price and our financial position and operational results.

***Our development and operational plans for Mt. Hamilton as well as projected economic results rely substantially upon the Feasibility Study prepared by SRK Consulting (US). The Feasibility Study makes certain assumptions regarding the mining, processing and environmental reclamation parameters, as well as estimates for capital costs to build the mine, costs to operate the mine, environmental regulations to build, operate and reclaim the mine, and revenues generated based upon the assumed grade of ore, recovery of gold and silver, as well as future market price of gold and silver. There are significant risks that the assumptions made in the Feasibility Study may not be accurate when, and if, we build and operate the mine, or that we may not be able to achieve the results anticipated in the Feasibility Study.***

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The Feasibility Study relies substantially upon many assumptions, including, but not limited to, the accuracy of the estimated proven and probable reserves, the estimated versus actual recovery of gold and silver, the requirements and timing for environmental approvals, the cost to build the mine and processing plant, the cost of operating the mine, closure costs, and availability of necessary personnel to operate the mine. We can give no assurance the assumptions built into the Feasibility Study are achievable now or in the future. Costs estimated in the feasibility will change with time, and historically have escalated. Environmental requirements also will change, and usually requirements have become more strict and costly. Should we fail to timely complete any of the development components recommended in the Feasibility Study, or if upon completion of the development of the Mt. Hamilton project we are unable to operate the project as described in the Feasibility Study, it could result in the loss of our investment in MH-LLC, the loss of all or a significant portion of our financial reserves and could negatively affect our stock price, our financial position and operational results.

***Our mineral exploration activities involve a high degree of risk; a significant portion of our business model envisions the sale or joint venture of mineral property, prior to the establishment of reserves. If we are unable to sell or joint venture these properties, the money spent on exploration may never be recovered and we could incur an impairment on our investments in our projects.***

The exploration for mineral deposits involves significant financial and other risks over an extended period of time. Few properties that are explored are ultimately developed into producing mines. Major expenses are required to determine if any of our mineral properties may have the potential to be commercially viable and be salable or joint ventured. Prior to completion of the Feasibility Study, we never established reserves on any of our properties. Significant additional expense and risks, including drilling and determining the feasibility of a project, are required prior to the establishment of reserves. It is impossible to ensure that the current or proposed exploration programs on properties in which we have an interest will be commercially viable or that we will be able to sell, joint venture or develop our properties. Whether a mineral deposit will be commercially viable depends on a number of factors, some of which are the particular attributes of the deposit, such as its size and grade, costs and efficiency of the recovery methods that can be employed, proximity to infrastructure, financing costs and governmental regulations, including regulations relating to prices, taxes, royalties, infrastructure, land use, importing and exporting of gold or other minerals, and environmental protection.

We believe the data obtained from our own exploration activities or our partners' activities to be reliable; however, the nature of exploration of mineral properties and analysis of geological information is subjective and data and conclusions are subject to uncertainty. Even if our exploration activities determine that a project is commercially viable, it is impossible to ensure that such determination will result in a profitable sale of the project or development by a joint venture in the future and that such project will result in profitable commercial mining operations. If we determine that capitalized costs associated with any of our mineral interests are not likely to be recovered, we would incur an impairment of our investment in such property interest. All of these factors may result in losses in relation to amounts spent, which are not recoverable. We have experienced losses of this type from time to time including during 2012 when we wrote down our investments in our Excelsior, Triunfo and Espanola projects recording mineral property impairments totaling \$31,000 and during 2011 when we wrote down our investment in our Paria Cruz project, recoding mineral property impairment of \$10,000.

***We have a significant investment in Kinross Gold Corporation (“Kinross”) common stock. We have no control over fluctuations in the price of Kinross common stock, and reductions in the value of this investment could have a negative impact on the market price of our common stock.***

We have a significant investment in Kinross as of February 28, 2013. A significant fluctuation in the market value of Kinross common stock could have a material impact on the market price of our common stock and our liquidity and capital resources.

***Our substantial debt could adversely affect our financial condition; and our related debt service obligations may adversely affect our cash flow and ability to invest in and grow our businesses.***

We have, and for the foreseeable future will continue to have, a significant amount of indebtedness. As of December 31, 2012 we had \$4,664,000 in short and long term indebtedness, including \$1,500,000 in indebtedness pursuant to the Facility Agreement. Subsequent to December 31, 2012 we borrowed an additional \$1,000,000 pursuant to the Facility Agreement and as of February 28, 2013 we have \$3,500,000 of short and long term indebtedness. We likely will seek to draw down additional amounts under the terms of the Facility Agreement. Amounts outstanding under the Facility Agreement incur interest at the 90-day LIBOR rate plus 5% with interest being payable quarterly. Accordingly, if the LIBOR rates increase the corresponding interest rate under the Facility Agreement will increase. The servicing of this debt will require the Company to devote a substantial portion of its financial resources to its repayment, and as a result such funds will not be available to use in future operations, or investing in our businesses. Further, loans extended under the Facility Agreement are secured by substantially all of the Company’s assets and therefore if the Company defaults under the Facility Agreement it could result in the lender attempting to foreclose on those assets to satisfy the Company’s debt obligations.

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***During 2012 and 2011 we have borrowed money using short-term margin accounts, secured by our investment in Kinross. In the event this borrowing increases, or the price of a share of Kinross common stock decreases, we may be subject to a margin call against our investment in Kinross.***

As of February 28, 2013, we have outstanding borrowing of \$1,500,000 in a short-term margin loan, secured by our investment in Kinross. These margin accounts provide that if the net equity in our investment in Kinross, defined as the market value our equity holdings, consisting primarily of Kinross common stock, falls below a minimum margin equity level, the lenders of the short-term margin loans may demand immediate payment or sell as much Kinross stock as necessary to repay the margin loans (a "Margin Call"). A significant decline in the market value of Kinross could result in the sale of some or all our investment in Kinross at a steep discount to the current investment balance. Such a Margin Call could have a negative effect on our liquidity, capital resources and results of operations.

***The market for shares of our common stock has limited liquidity and the market price of our common stock has fluctuated and may decline.***

An investment in our common stock involves a high degree of risk. The liquidity of our shares, or ability of a shareholder to buy or sell our common stock, may be significantly limited for various unforeseeable periods. The average combined daily volume of our shares traded on the Toronto Stock Exchange and NYSE MKT during 2012 was approximately 54,000 shares, with no shares traded on many days. The market price of our shares has historically fluctuated within a wide range. The price of our common stock may be affected by many factors, including an adverse change in our business, a decline in gold or other commodity prices, and general economic trends.

***Our mineral exploration and development activities are inherently dangerous and could cause us to incur significant unexpected costs including legal liability for loss of life, damage to property and environmental damage, any of which could materially adversely affect our financial position or results of operations.***

Our operations are subject to the hazards and risks normally related to exploration or development of a mineral deposit including mapping and sampling, drilling, road building, trenching, assaying and analyzing rock samples, transportation over primitive roads or via small contract aircraft or helicopters and severe weather conditions, any of which could result in damage to life or property, environmental damage and possible legal liability for such damage. Any of these risks could cause us to incur significant unexpected costs that could have a material adverse effect on our financial condition and ability to finance our exploration and development activities.

***We have a history of losses and if we do not operate profitably in the future it could have a material adverse effect on our financial position or results of operations and the trading price of our common stock would likely decline.***

We have reported losses in 17 of our 19 years of operations. We reported losses of \$3,297,000 and \$3,377,000, respectively, for the years ended December 31, 2012 and 2011. We can provide no assurance that we will be able to operate profitably in the future. We have had net income in only two years in our history, during 2003, as a result of a \$5,438,000 gain on derivative instrument related to our investment in certain Crown Resources Corporation warrants and during 2000, when we sold our Yanacocha property. We cannot predict when, if ever, we will be profitable again. If we do not operate profitably, the trading price of our common stock will likely decline.

***Our operations outside of the United States of America may be adversely affected by factors outside our control, such as changing political, local and economic conditions, any of which could materially adversely affect our financial position or results of operations.***

Our mineral properties located in Latin America consist primarily of mineral concessions granted by national governmental agencies and are held 100% by us or in conjunction with our joint venture partners, or under lease, option or purchase agreements. Our mineral properties are located in Peru, Mexico and Brazil. We act as operator on all of our mineral properties that are not held in joint ventures. The success of projects held under joint ventures that are not operated by us is substantially dependent on the joint venture partner, over which we have limited or no control.

Our exploration activities and mineral properties located outside of the United States of America ("United States") are subject to the laws of Peru, Brazil and Mexico, where we operate. Exploration and potential development activities in these countries are potentially subject to political and economic risks, including:

- cancellation or renegotiation of contracts;
- disadvantages of competing against companies from countries that are not subject to US laws and regulations,



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- including the Foreign Corrupt Practices Act;
- changes in foreign laws or regulations;
- changes in tax laws;
- royalty and tax increases or claims by governmental entities, including retroactive claims;
- expropriation or nationalization of property;
- currency fluctuations (particularly related to declines in the US dollar compared to local currencies);
- foreign exchange controls;
- restrictions on the ability for us to hold US dollars or other foreign currencies in offshore bank accounts;
- import and export regulations;
- environmental controls;
- risks of loss due to civil strife, acts of war, guerrilla activities, insurrection and terrorism; and
- other risks arising out of foreign sovereignty over the areas in which our exploration activities are conducted.

Due to ongoing uncertainty regarding Bolivian mining law and mining rights, during 2012 we decided to cease operations in Bolivia and wrote-off our two Bolivian properties, Triunfo and Espanola, recording a mineral property write-down of \$25,000. We do not anticipate returning to do exploration in Bolivia in the near future.

Accordingly, our current exploration activities outside of the United States may be substantially affected by factors beyond our control, any of which could materially adversely affect our financial position or results of operations. Furthermore, in the event of a dispute arising from such activities, we may be subject to the exclusive jurisdiction of courts outside of the United States or may not be successful in subjecting persons to the jurisdictions of the courts in the United States, which could adversely affect the outcome of a dispute.

***We may not have sufficient funding for exploration and development, which may impair our profitability and growth.***

The capital required for exploration and development of mineral properties is substantial. We have financed operations through utilization of joint venture arrangements with third parties (generally providing that the third party will obtain a specified percentage of our interest in a certain property or a subsidiary owning a property in exchange for the expenditure of a specified amount), the sale of interests in properties or other assets, the sale of strategic investments in other companies such as Kinross, short-term margin loans, a three year credit facility and the issuance of common stock. At some point in the future, we will need to raise additional cash, or enter into joint venture arrangements, in order to fund the exploration activities required to determine whether mineral deposits on our projects are commercially viable and in the case of MH-LLC, potential funding for development activities to place the project into production. New financing or acceptable joint venture partners may or may not be available on a basis that is acceptable to us. Inability to obtain new financing or joint venture partners on acceptable terms may prohibit us from continued exploration or development of such mineral properties. Without successful sale or future development of our mineral properties through joint ventures, or on our own, we will not be able to realize any profit from our interests in such properties, which could have a material adverse effect on our financial position and results of

operations.

***Our investment in MH-LLC includes the obligation to make payments necessary to provide Ely with the funds to repay a long-term loan secured by the assets of the Mt. Hamilton project; failure to make all of the payments associated with MH-LLC including those due to underlying leaseholders may result in losing all of our interest in the Mt. Hamilton project.***

In connection with the formation of MH-LLC, the Mt. Hamilton properties contributed by DHI-US to MH-LLC were subject to a security interest granted to Augusta Resource Corporation ("Augusta") related to Ely's acquisition of the Mt. Hamilton properties. Pursuant to the MH Agreement of MH-LLC, as part of our earn-in, as of December 31, 2012, we agreed to make cash payments of \$2,500,000 of that in the form of private placement investments in Ely common stock. These payments to Ely are being made to provide Ely with the funds necessary for Ely to make the loan payments due to Augusta. Failure to make any of the payments or investments necessary to provide Ely with funds to make the required payments due to Augusta may result in the loss of our majority interest in the Mt. Hamilton project. In addition we have agreed to make additional payments to of \$1,000,000 DHI-US in Cash, of which we paid \$250,000 in February 2013, and to deliver 200,000 shares of our common stock to DHI-US, of which we delivered 50,000 shares of our common stock in February 2013, and to certain payments to underlying holders of leases at Mt. Hamilton as further described below in Item 2 "Mineral Properties." Failure to make any of these additional payments to either Ely, DHI-US or to underlying leaseholders may result in our losing all or part of our 80% interest in MH-LLC and the Mt. Hamilton project.

***A large number of companies are engaged in the exploration and development of mineral properties, many of which have substantially greater technical and financial resources than us and, accordingly, we may be unable to compete effectively***

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***in the mining industry which could have a material adverse effect on our financial position or results of operations.***

We may be at a disadvantage with respect to many of our competitors in the acquisition and exploration and development of mining projects. The marketing of mineral properties is affected by numerous factors, many of which are beyond our control. These include the price of the raw or refined minerals in the marketplace, imports of minerals from other countries, the availability of adequate milling and smelting facilities, the number and quality of other mineral properties that may be for sale or are being explored. Our competitors with greater financial resources than us will be better able to withstand the uncertainties and fluctuations associated with sustained downturns in the market. In addition, we compete with other mining companies to attract and retain key executives and other employees with technical skills and experience in the mineral exploration business. We also compete with other mineral exploration and development companies for exploration projects. There can be no assurance that we will continue to attract and retain skilled and experienced employees or to acquire additional exploration projects. The realization of any of these risks from competitors could have a material adverse effect on our financial position or results of operations.

***The title to our mineral properties may be defective or challenged which could have a material adverse effect on our financial position or results of operations.***

In connection with the acquisition of our mineral properties, we conduct limited reviews of title and related matters, and obtain certain representations regarding ownership. These limited reviews do not necessarily preclude third parties from challenging our title and, furthermore, our title may be defective. Consequently, there can be no assurance that we hold good and marketable title to all of our mineral interests. If any of our mineral interests were challenged, we could incur significant costs in defending such a challenge. These costs or an adverse ruling with regards to any challenge of our titles could have a material adverse effect on our financial position or results of operations.

***We have no reported mineral reserves, other than at our Mt. Hamilton project, and if we are unsuccessful in identifying mineral reserves in the future, we may not be able to realize any profit from these property interests.***

None of our Latin American projects have reported mineral reserves. Any mineral reserves on these projects will only come from extensive additional exploration, engineering and evaluation of existing or future mineral properties. The lack of reserves on these mineral properties could prohibit us from sale or joint venture of our mineral properties and we would not be able to realize any profit from our interests in such mineral properties, which could materially adversely affect our financial position or results of operations. Additionally, if we or partners to whom we may joint venture these mineral properties are unable to develop reserves on our mineral properties we may be unable to realize any profit from our interests in such properties, which could have a material adverse effect on our financial position or results of operations.

***Our operations could be negatively affected by existing as well as potential changes in laws and regulatory requirements that we are subject to, including regulation of mineral exploration and land ownership, environmental regulations and taxation.***

The exploration and development of mineral properties is subject to federal, state, provincial and local laws and regulations in the countries in which we operate in a variety of ways, including regulation of mineral exploration and land ownership, environmental regulation and taxation. These laws and regulations, as well as future interpretation of or changes to existing laws and regulations, may require substantial increases in capital and operating costs to us and delays, interruptions, or a termination of operations.

In the countries in which we operate, in order to obtain permits for exploration or potential future development of mineral properties, environmental regulations generally require a description of the existing environment, both natural, archeological and socio-economic, at the project site and in the region; an interpretation of the nature and magnitude of potential environmental impacts that might result from such activities; and a description and evaluation of the effectiveness of the operational measures planned to mitigate the environmental impacts. The total expenditures on our Mt. Hamilton project are budgeted to be approximately \$2,042,000 during 2013, which are directly and indirectly related to permitting, and could increase as a result of permitting delays or challenges in the years to come, which we cannot accurately predict. Currently the expenditures to obtain exploration permits to conduct our exploration activities are not material to our total exploration cost.

The laws and regulations in all the countries in which we operate are continually changing and are generally becoming more restrictive, especially environmental laws and regulations. As part of our ongoing exploration activities, we have made expenditures to comply with such laws and regulations, but such expenditure could substantially increase our costs to achieve compliance in the future. Delays in obtaining or failure to obtain government permits and approvals or significant changes in regulation could have a material adverse effect on our exploration activities, our ability to locate economic mineral deposits,

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and our potential to sell, joint venture or eventually develop our properties, which could have a material adverse effect on our financial position or results of operations.

***Occurrence of events for which we are not insured may materially adversely affect our business.***

Mineral exploration is subject to risks of human injury, environmental liability and loss of assets. We maintain limited insurance coverage to protect ourselves against certain risks related to loss of assets for equipment in our operations; however, we have elected not to have insurance for other risks because of the high premiums associated with insuring those risks or for various other reasons including those risks where insurance may not be available. There are additional risks in connection with investments in parts of the world where civil unrest, war, nationalist movements, political violence or economic crisis are possible. These countries may also pose heightened risks of expropriation of assets, business interruption, increased taxation and a unilateral modification of concessions and contracts. We do not maintain insurance against political risk. Occurrence of events for which we are not insured could have a material adverse effect on our financial position or results of operations.

***Severe weather or violent storms could materially affect our operations due to damage or delays caused by such weather.***

Our exploration and development activities in Peru, Brazil, Mexico and Mt. Hamilton (Nevada) are subject to normal seasonal weather conditions that often hamper and may temporarily prevent exploration or development activities. There is a risk that unexpectedly harsh weather or violent storms could affect areas where we conduct these activities. Delays or damage caused by severe weather could materially affect our operations or our financial position.

***Our business is extremely dependent on the market price of gold and other commodities and currency exchange rates over which we have no control.***

Our operations are significantly affected by changes in the market price of gold and other commodities since the evaluation of whether a mineral deposit is commercially viable is heavily dependent upon the market price of gold and other commodities. The price of commodities also affects the value of exploration projects we own or may wish to acquire or joint venture. These prices of commodities fluctuate on a daily basis and are affected by numerous factors beyond our control. The supply and demand for gold and other commodities, the level of interest rates, the rate of inflation, investment decisions by large holders of these commodities, including governmental reserves, and stability of exchange rates can all cause significant fluctuations in prices. Currency exchange rates relative to the United States dollar can affect the cost of doing business in a foreign country in United States dollar terms, which is our functional currency. Consequently, the cost of conducting exploration in the countries where we operate, accounted for in United States dollars, can fluctuate based upon changes in currency exchange rates and may be higher than we anticipate in terms of United States dollars because of a decrease in the relative strength of the United States dollar to currencies of

the countries where we operate. We currently do not hedge against currency fluctuations. The prices of commodities have fluctuated widely and future significant price declines could have a material adverse effect on our financial position or results of operations.

***Our business is dependent on key executives and the loss of any of our key executives could adversely affect our business, future operations and financial condition.***

We are dependent on the services of key executives, including our Chief Executive Officer, Christopher E. Herald, our Chief Financial Officer, James R. Maronick, and our Chief Operating Officer, Walter H. Hunt. All of the above named officers have many years of experience and an extensive background in Solitario and the mining industry in general. We may not be able to replace that experience and knowledge with other individuals. We do not have "Key-Man" life insurance policies on any of our key executives. The loss of these persons or our inability to attract and retain additional highly skilled employees may adversely affect our business, future operations and financial condition.

***In addition to our Mt. Hamilton project, we may look to joint venture with another mining company in the future to develop and/or operate one of our foreign projects; therefore, in the future, our results may become subject to additional risks associated with development and production of our foreign mining projects.***

We are not currently involved in mining development or operating activities at any of our properties located outside of the United States. In order to realize a profit from these mineral interests we either have to: (1) sell such properties outright at a profit; (2) form a joint venture for the project with a larger mining company with greater resources, both technical and financial, to further develop and/or operate the project at a profit; (3) develop and operate such projects at a profit on our own; or (4) create and retain a royalty interest in a property with a third party that agrees to advance the property toward development and mining. In the future, if our exploration results show sufficient promise in one of our foreign projects, we may either look to form a joint venture with another mining company to develop and/or operate the project, or sell the property outright

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and retain partial ownership or a retained royalty based on the success of such project. Therefore, in the future, our results may become subject to the additional risks associated with development and production of mining projects in general.

***In the future, we may participate in a transaction to acquire a property, royalty or another company that requires a substantial amount of capital or Solitario equity to complete. Our acquisition costs may never be recovered due to changing market conditions, or our own miscalculation concerning the recoverability of our acquisition investment. Such an occurrence could adversely affect our business, future operations and financial condition.***

We have been involved in evaluating a wide variety of acquisition opportunities involving mineral properties and companies for acquisition and we anticipate evaluating potential acquisition opportunities in the future. Some of these opportunities may involve a substantial amount of capital or Solitario equity to successfully acquire. As many of these opportunities do not have reliable feasibility-level studies, we may have to rely on our own estimates for investment analysis. Such estimates, by their very nature, contain substantial uncertainty. In addition, economic assumptions, such as future costs and commodity prices, also contain significant uncertainty. Consequently, if we are successful in acquiring any new acquisitions and our estimates prove to be in error, either through miscalculations or changing market conditions, this could have a material adverse effect on our financial position or results of operations.

***Failure to comply with the United States Foreign Corrupt Practices Act (FCPA) could subject us to penalties and other adverse consequences.***

As a Colorado corporation, we are subject to the FCPA and similar worldwide anti-bribery laws, which generally prohibit United States companies and their intermediaries from engaging in bribery or other improper payments to foreign officials for the purpose of obtaining or retaining business. Foreign companies, including some that may compete with our company, are not subject to U.S. laws and regulations, including the FCPA, and therefore our exploration, development, production and mine closure activities are subject to the disadvantage of competing against companies from countries that are not subject to these prohibitions.

In addition, we could be adversely affected by violations of the FCPA and similar anti-bribery laws in other jurisdictions. Corruption, extortion, bribery, pay-offs, theft and other fraudulent practices may occur from time-to-time in the countries outside of the United States in which we operate. Our mineral properties are located in countries that may have experienced governmental corruption to some degree and, in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices. Our policies mandate compliance with these anti-bribery laws; however, we cannot assure you that our internal controls and procedures always will protect us from the reckless or criminal acts committed by our employees or agents. We can make no assurance that our employees or other agents will not engage in such conduct for which we might be held responsible. If our employees or other agents are found to have engaged in such practices or we are found to be liable for FCPA violations, we could suffer severe criminal or civil penalties or other sanctions and other consequences that may have a material adverse effect on our business, financial condition and results of operations.

**Item 1B. Unresolved Staff Comments**

None

**Item 2. Properties**

**Joint Ventures and Strategic Alliance Properties**

**Mt. Hamilton Gold Project (Nevada, USA)**

1. Property Description and Location

The consolidated Mt. Hamilton project property consists of 290 unpatented mining claims, 9 patented mining claims and 241 acres of fee land. Two hundred seventy eight of these claims and 121 acres of the private surface rights are subject to underlying leases. The unpatented claims are also subject to the US Mining Law of 1872 and US Department of Agriculture - Forest Service administration. The property is located in White Pine County, eastern Nevada.

On August 26, 2010, we signed the LOI with Ely to earn up to an 80% interest in DHI-US's Mt. Hamilton property. In December 2010, we entered into the MH Agreement with DHI-US with respect to MH-LLC, which now holds the Mt.

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Hamilton project assets. Per the terms of the MH Agreement, DHI-US contributed all of its interests in the Mt. Hamilton project to MH-LLC for a 90% initial interest in MH-LLC and Solitario had a 10% initial interest in MH-LLC by virtue of its initial \$300,000 advance royalty payment in November 2010 to one of the underlying property owners. On signing the LOI, Solitario subscribed for a private placement of 3,333,333 units of Ely at a price of CDN\$0.15 per Unit for an aggregate consideration of approximately CDN\$500,000. Each unit consists of one common share and one-half share purchase warrant entitling the holder of a whole warrant to purchase an additional share of Ely for CDN\$0.25, such warrants have subsequently expired. The private placement consisted of two tranches. The first tranche of CDN\$250,000 was funded on August 31, 2010, and the second tranche of CDN\$250,000 was funded on October 19, 2010. Solitario also committed to spend \$1.0 million on exploration and feasibility work during the first year and met this spending requirement as of February 28, 2011. Solitario may elect to terminate its interest in the Mt. Hamilton project at any time and have no further earn-in obligations on the project.

Solitario earned an 80% interest in the project, through its ownership in MH-LLC, upon completion of the Feasibility Study in February 2012. During 2012 Solitario, Ely and DHI-US revised the MH Agreement to require the royalty reduction payments to be made as described in the table below. Previously, the MH Agreement obligated Solitario to make the continuing payment obligations to CMC of \$3,500,000 on or before November 13, 2013 and \$1,500,000 on or before November 13, 2014. In addition, Solitario Ely and DHI-US revised the LOI to clarify the timing and pricing of the payments due to Ely under the private placement as further described in Note 10 “Ely Gold investment and the Mt. Hamilton joint venture” in Part II, Item 8 “Financial Statements and Supplementary Data” of this Form 10-K. To maintain our interest in MH-LLC, Solitario is further required to make all of the payments listed below, pursuant to the MH Agreement and the LOI.

Year	Cash Payments to DHI-US	Private Placement Funding to Ely(1)	Shares of Solitario Stock Issued to DHI-US	Cash payments to Royalty Owner (2)
2013	\$500,000	\$750,000	100,000	\$300,000
2014	\$500,000	\$750,000	100,000	\$300,000
2015		\$1,000,000		\$300,000
				Royalty reduction (6.0% to 1.00 NSR) payment paid prior to commencement of commercial production
				\$5,000,000

(1) Payments are to enable Ely to make payment to Augusta for long-term debt; see Note 4, to the consolidated financial

statements, in Item 8, below.

(2) Annual minimum advance royalty payments are due through production.

Upon completion of a bankable feasibility study, all construction and permitting costs will be shared pro-rata. However, DHI-US notified Solitario that it had exercised its option of having Solitario contribute DHI-US' share of costs through commercial completion as a loan, with such loan, plus interest at 8%, being repaid to Solitario from

80% of DHI-US's share of distributions from MH-LLC. During 2012, Solitario loaned DHI-US \$127,000 for its share of costs subsequent to the completion of the Feasibility Study. However, subsequently, DHI-US repaid Solitario \$131,000 for the remaining balance due on the loan from Solitario, including interest, and has no balance due to Solitario as of December 31, 2012.

All currently stated reserves lie within the Centennial Minerals Company LLC ("Centennial") underlying mining lease that originally had an 8.0% Net Smelter Return ("NSR") Royalty. In April 2010, Ely amended the lease to allow for a reduction in the NSR Royalty from 8.0% to 3.0% by staging cash payments totaling \$5.0 million (see above chart of payments we are required to make) to Centennial. In May 2011, MH-LLC purchased an additional 2.0% of the NSR royalty for \$1.52 million in cash and 344,116 shares of Solitario. In June 2012, MH-LLC sold a 2.4% NSR royalty to Sandstorm on gold and silver production for \$10 million in cash, in which \$6.0 million was received on signing and the remaining \$4.0 million was received in mid-January 2013. Assuming the 5.0% NSR Royalty is purchased, the effective NSR Royalty rate on the currently defined reserves will be 3.40%, less advanced royalties already paid.

We are the manager of MH-LLC under the terms of the MH Agreement, which provides that with a few limited exceptions that require unanimous consent, we will control all decisions under the MH Agreement, as a result of our ownership of a majority of the voting membership interests in MH-LLC.

## 2. Accessibility, Climate, Local Resources, Infrastructure and Physiology

Access to the Mt. Hamilton project is relatively good from either of the two closest towns, Ely or Eureka, Nevada. From Ely, the property is accessed by traveling 45 miles west on paved Highway 50 and then traveling 10 miles south via a County

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maintained gravel road. From Eureka, the property is accessed by traveling 50 miles east on Highway 50 and then traveling 10 miles south via a County maintained gravel road.

The climate is typical for high-desert, semiarid regions of Nevada with summer high temperatures averaging around 85° F and the winter lows averaging 10° F. Average precipitation is approximately 10 inches per year, and occurs mainly in the winter and spring seasons. Ely, the County Seat of White Pine County, has a population estimated at about 4,000 and offers the most services to the project area, with sufficient housing, schools, hospital and commercial business capable of servicing the needs of a mine at Mt. Hamilton. Quadra FNX Mining operates the Robinson open pit copper mine with over 500 employees eleven miles east of Ely. Additionally, Eureka, Nevada with a population of about 2,000, offers services and is also host to other mining operations.

With the exception of relatively good road access to the Mt. Hamilton property, and existing water wells with sufficient water to supply anticipated processing needs, there is no other infrastructure at the project site. The nearest power line to the property is approximately 17 miles away.

The property lies within the Basin and Range physiographic province of Nevada on the western flanks of the White Pine Mountains and the eastern margin of the topographically flat and broad Newark Valley. The Centennial ore body and Seligman gold deposit, which constitute the main area of interest, are situated at elevations of about 8,600 feet. The location of the proposed heap leach pads is located about one mile southwest of the Centennial gold deposit at an elevation of approximately 7,400 feet in a relatively flat area.

### 3. History

The general area reportedly produced 20 to 40 million ounces of silver and a limited amount of gold from 1868 to 1880. Phillips Petroleum acquired the property in 1968 and explored for tungsten, molybdenum and copper. In 1984 Westmont Gold Inc. entered into a joint venture with Phillips and Queenstake Resources Ltd. and commenced a large-scale exploration program focused on gold. In 1993 the property was fully transferred to Westmont. In June 1994 Rea Gold Corp. (“Rea”) acquired the property and began production of the NE Seligman deposits in November 1994. Rea mined five small Seligman area deposits to June 1997, when Rea suspended mining. Rea filed for bankruptcy in November 1997.

In 2002 the US Bankruptcy Trustee abandoned all of the unpatented claims allowing them to lapse for failure to pay the annual maintenance fees. Centennial Minerals Company LLC (“Centennial”) staked the claims covering the Centennial and Seligman deposits in late 2002, and in 2003 purchased all of the patented and fee lands. Augusta acquired a 100% leasehold interest in the property, subject to an underlying royalty, from Centennial in late-2003. In November 2007, Augusta sold to Ely 100% of the shares of DHI Minerals, Ltd., of which DHI-US, its wholly-owned subsidiary held the Mt. Hamilton property. From 2008 through August 2010, Ely engaged SRK Consulting (US), Inc.

("SRK"), an independent full-service mining engineering consulting company, to complete a NI 43-101 compliant Preliminary Economic Assessment Study of the Centennial gold and silver deposit. The study was completed in May 2009, and updated in July 2010. In August 2010, Solitario signed the LOI to joint venture the Mt. Hamilton property with Ely, through DHI-US. In December 2010 Solitario and Ely formed MH-LLC, a limited liability company which now holds 100% of the Mt. Hamilton project assets, and signed the MH Agreement. In February 2012, the Mt. Hamilton Feasibility Study was completed.

#### 4. Geologic Setting

The Mt. Hamilton property is located near the southern end of the Battle Mountain Gold Trend, a northwest-oriented trend that contains several major gold mines as well as dozens of smaller mines and prospects. The property's underlying geology is dominated by Cambrian-age sedimentary rocks that include the Eldorado Dolomite, Secret Canyon Shale and Dunderberg Shale. The sedimentary sequence has been intruded by two igneous stocks of Cretaceous-age: the Seligman granodiorite stock and the Monte Cristo granite stock, both of which are slightly over 100 million years in age. These two stocks variably altered the surrounding sedimentary rocks by metamorphic processes to skarn (calc-silicate mineral assemblage) and hornfels.

#### 5. Prior Work

Prior to 1968, very little is known about exploration activities on the property. Phillips Petroleum acquired the property in 1968 and drilled over 100,000 feet by the early 1980's. The focus of Phillips' work was to evaluate tungsten-molybdenum-copper mineralization in a skarn geologic setting. Westmont Gold Inc. from 1984 to 1994 commenced a large-scale exploration program focused on gold. By early 1989, this work defined the NE

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Seligman deposits and the Centennial deposit. Westmont conducted feasibility and permitting studies from 1990 through 1994. Rea Gold Corp. focused on placing the NE Seligman deposits into production and mining activities from 1994-1997. Augusta Resources conducted a limited confirmation drilling program and pre-feasibility related studies on the property from 2003-2007. Ely conducted a limited amount of confirmatory infill drilling in 2008. The Centennial gold and silver ore body has been defined by 306 reverse circulation (“RC”) drill holes totaling approximately 138,440 feet and 28 core holes totaling 13,411 feet. RC recovery averages in excess of 90% and core recovery is generally near 100%, with few exceptions. The Seligman gold and silver ore body has been defined by 484 RC drill holes for 142,896 feet and 61 core holes totaling 32,775 feet. Core and RC recoveries are generally in excess of 90%.

6. Mineralization

There are two primary styles of mineralization at Mt. Hamilton: early skarn-hosted tungsten +/- molybdenum +/- copper (“WQ-Mo-Cu”) style, and a later-stage epithermal gold style of mineralization. The likely source for both the  $WO_3$ -Mo-Cu skarn mineralization and precious metal bearing late-stage hydrothermal fluids was the Seligman granodiorite stock that is Cretaceous in age (105 million years). Early metasomatic alteration converted shales to hornfels and silty carbonates to calc-silicate skarn. Mineralization is primarily hosted in a 200-300 foot thick skarn horizon and the margins of the Seligman granodiorite stock.

Mineralization at Mt. Hamilton is controlled by stratigraphy, structure and magmatic hydrothermal alteration. Gold and silver in the Centennial ore body are concentrated along two shallowly dipping sub-parallel faults and associated multiple fracture zones that penetrate the skarn horizon and provided pathways for hydrothermal fluids from the Seligman stock situated to the north. The faulting also appears to have controlled oxidation of the gold zone. The Centennial gold ore body is a north-south oriented body that is about 2,200 feet long, approximately 1,200 feet wide and ranges from 20 feet to over 350 feet in thickness. Gold and silver mineralization in the Seligman deposit is controlled by both vertical and sub-horizontal structures, resulting in a more complex geometry than at Centennial.

7. Drilling

The Centennial gold and silver ore body is defined by 306 reverse circulation (“RC”) drill holes totaling approximately 138,440 feet and 28 core holes totaling 13,411 feet. RC recovery averages in excess of 90% and core recovery is generally near 100%, with few exceptions.

Drill data included in resource and reserve modeling by SRK utilized historical data generated by Phillips Petroleum, Westmont Gold Inc. and Rea Gold. SRK concluded, with confirmatory drilling by both Ely and Solitario, that the data from all three previous operators of the project to be valid and sufficiently well documented to provide a reasonable representation of the Centennial gold deposit and sufficiently verifiable for use in a mineral resource

estimate and classification of resources in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves: Definitions and Guidelines, dated November 27, 2010 and valid for reserve estimation in accordance with SEC-Guide 7 guidance. Solitario completed three rounds of infill and extension drilling from 2010- 2012, as well as geotechnical, metallurgical and hydrologic drilling for feasibility-related issues. The 2012 drilling campaign was primarily directed at gathering information necessary to incorporate the Seligman deposit into our mine plan and to estimate reserves.

#### 8. Sampling, Analysis and Sample Security

SRK reviewed in detail procedures utilized by all prior managers of the project for drill hole sampling methods, including RC and core splitting, and sample preparation and analyses, including check assay procedures and qualifications of the laboratories used for assay analyses. Methodology used by previous project managers included check assays by a second laboratory, insertion of standard and duplicate samples to the assay lab, and photography of core samples. SRK also undertook an independent evaluation to verify data. This program consisted of field verifications, independent assay analysis, comparison of electronic drill-hole data to paper data, and checking the electronic assay database against original assay certificates.

SRK opined that the sampling and analyses methodology utilized for both RC and core drilling were appropriate for the style of mineralization at the Centennial gold deposit and of sufficient quality to incorporate into a NI 43-101 compliant resource estimate. Furthermore, SRK believes the Centennial gold deposit drill hole assay database has been verified with substantial QA/QC checks, by both the original project managers and SRK's independent work, including the location of drill cuttings, core, analytical laboratory assay certificates, and that all aspects of the database are satisfactory for use in resource and reserve estimation.

Because much of the work at Mt. Hamilton was conducted prior to chain-of-custody/sample security methodology becoming an integral part of standard industry practice quality control procedures, it is difficult to assess pre-1998 sample

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security. However, Solitario believes that no serious sample security breaches occurred or are known to have occurred based upon other sample quality control procedures that all past project managers employed, such as splitting of core and splitting of RC course rejects and pulp samples to allow for subsequent new independent assay verification.

9. Feasibility Study

MH-LLC engaged SRK to complete the Feasibility Study on the Centennial gold and silver deposit located on the Mt. Hamilton property. Work began in November 2010 and the Feasibility Study was completed in February 2012. The Feasibility Study projects positive economic returns under a recommended development plan of the Centennial gold-silver deposit by conventional open pit mining followed by crushing and then heap leach processing for both gold and silver. The economic analysis in the Feasibility Study assumes a declining price curve for gold and silver. Realized gold/silver prices are assumed to be \$1,600/\$35.45 per ounce for the first year of production, \$1,420/\$28.25 for the second year, and \$1,280/\$23.90 per ounce for all subsequent years. These prices are based on the 12-month, 24-month and 36-month trailing average of gold and silver prices, respectively. This declining gold price scenario results in an average life-of-mine price of \$1,323 per ounce for gold and \$25.34 per ounce for silver.

The Feasibility Study assumes the following mining methods. Mining within the open pit will be conducted on 20-foot high benches with a 50° high wall. Mining will utilize five 100-ton haul trucks and a 14 cubic yard shovel and loader for loading. The waste to ore ratio is 2.4 tons waste to 1.0 ton ore. Non-mineralized rock will be hauled to a permanent storage area approximately 1,000 to 3,000 feet north of the open pit. Ore will be hauled approximately 2,000 feet to the southwest to the primary crusher. After crushing to minus-4 inch, the ore is dropped down a 350-foot vertical shaft onto a 3,400-foot long underground conveyor. Just outside the conveyor tunnel the ore is then fed into a secondary crusher that crushes the rock to 80% passing minus-¾ inch. From the secondary crusher the ore is conveyed 500 to 1,000 feet to the heap leach pad where it is stacked and then subjected to a weak-cyanide solution that dissolves the gold and silver. The solution from the heap leach is piped to a standard ADR-processing plant where the precious metals are recovered by a conventional carbon tank circuit. A gold-silver doré will be produced on the property and shipped to a refiner periodically. The Feasibility Study also developed a comprehensive reclamation plan designed to conform with current environmental regulations, both on the operational side and mine closure issues.

Reserves were estimated using a \$1,200 per ounce gold price and a \$20 per ounce silver price. A cutoff grade of 0.006 opt gold was utilized based on a breakeven economic analysis. Key economic results of the Feasibility Study include:

**Feasibility Study Highlights:**

- Production Rate: 8,500 tons ore per day
- Mine Life: 8.0 years

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- Average Gold Recovery: 79% (70% of recoverable gold recovered in the first 30 days )
- Average Silver Recovery: 90% of soluble silver (~ 36% of total contained silver)
- Life of Mine Strip Ratio: 2.4:1.0 (waste:ore)
- Initial Capital Cost: \$71.9 M (including \$6.3 M contingency)
- Sustaining Capital: \$35.3 M (including \$4.3 M contingency and \$10.3 M end-of-mine closure costs)
- Working Capital: \$7.1 M
- Operating Cash Costs per Gold-Equivalent Ounce Recovered: \$535\* (Mining: \$5.75/t ore; Processing: \$3.89/t; G&A: \$0.69/t);
- Total Cash Costs per Gold-Equivalent Ounce Recovered: \$589\* (includes operating cash costs, royalty, refining and transportation and Nevada Net Proceeds and property taxes)
- Average Annual Gold Production: 48,000 ounces
- Average Annual Silver Production: 330,000 ounces
- Average Annual Gold-Equivalent Production: 54,000 ounces (at a 52:1 silver to gold ratio)

\*With the subsequent sale of the 2.4% NSR royalty to Sandstorm Gold, Solitario has estimated the Operating Cash Cost and Total Cash Cost will increase by approximately \$37 per ounce of gold equivalent recovered.

### 10. Mineral Proven and Probable Ore Reserves

Recoverable proven and probable reserves summarized below have been calculated as of February 22, 2012, in accordance with Industry Guide 7 as required by the Securities Exchange Act of 1934 and Canadian National Instrument 43-101 "Standards of Disclosure for Mineral Projects." The reserves were estimated by SRK as part of the Feasibility Study.



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SRK is an independent and internationally recognized mine engineering firm with experts in mining, geology and reserve determination.

Proven and probable reserves were determined by the use of mapping, drilling, sampling, assaying and evaluation methods generally applied in the mining industry, as more fully discussed below. The term “reserve,” as used in the reserve data presented here, means that part of a mineral deposit that can be economically and legally extracted or produced at the time of the reserve determination. The term “proven reserves” means reserves for which (1) quantity is computed from dimensions revealed in outcrops, trenches, workings or drill holes; (2) grade and/or quality are computed from the results of detailed sampling; and (3) the sites for inspection, sampling and measurements are spaced so closely and the geologic character is sufficiently defined that size, shape, depth and mineral content of reserves are well established.

The term “probable reserves” means reserves for which quantity and grade are computed from information similar to that used for proven reserves but the sites for sampling are farther apart or are otherwise less adequately spaced. The degree of assurance, although lower than that for proven reserves, is high enough to assume continuity between points of observation. Our reserve estimates are based on the latest available geological and geotechnical studies. In the future, we may periodically conduct studies of our ore bodies to optimize economic values and to manage risk. We may revise our mine plans and estimates of recoverable proven and probable mineral reserves as required in accordance with the latest available studies and commodity price assumptions.

Mineral reserves were estimated from a pit design based on \$1,200/oz. gold and \$20/oz. silver prices, which at the time were approximately the average prices of gold and silver over a three-year look-back period. The cutoff grade used to estimate reserves was 0.006 oz/t gold equivalent (0.20 grams/tonne) and is the internal cutoff grade. Equivalent gold grade was calculated using a 52:1 silver to gold ratio. Multiple pit scenarios were evaluated using these criteria under a range of gold prices to determine the most favorable pit design for both optimal resource extraction and cash flow.

Below is a summary of the mineral proven and probable ore reserves as of February 22, 2012.

**Mineral Reserves Statement, Centennial Gold-Silver Deposit,**

**White Pine County, Nevada**

**SRK Consulting (Inc.)**

Reserve Category	Tons (millions)	Gold Grade oz/ton	Silver Grade* g/tonne	Contained Gold (koz)**	Contained Silver
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							(koz)**
Proven	0.923	0.032	1.10	0.155	5.31	29.3	142.7
Probable	21.604	0.021	0.72	0.134	4.59	457.8	2,884.3
Proven + Probable	22.527	0.022	0.75	0.136	4.66	487.1	3,028.2

\*Reported silver grade is cyanide soluble. \*\* Some numbers may not add due to rounding

## 11. Mining Operations

No mining operations have occurred on the project within the past 15 years.

## 12. Permitting

In November 2012 MH-LLC filed the Centennial-Seligman Mining Project, White Pine County, Nevada, Mine Plan of Operations (“PoO”) with the United States Forest Service (“USFS”) – Humbolt-Toiyabe National Forest for operating a gold and silver mine at Mt. Hamilton. The PoO describes the activities and facilities that are proposed on USFS administered lands. The USFS is the primary regulatory agency responsible for managing the permitting process. The major components described in the PoO are mining activities from two open pits (the Centennial and Seligman deposits), a waste disposal area, ore stockpiles and crushing facilities, transfer of ore off-site to private property (owned by MH-LLC) for processing via underground conveyance, mine operations office and truck shop facilities, access and haul roads, power lines, water supply well and associated infrastructure including pipelines, and exploration drill roads. Total proposed surface disturbance on USFS lands is currently estimated at 406.21 acres.

In addition to the proposed mining activities on USFS land MH-LLC has applied for a right of way from the Bureau of Land Management (BLM) for access to facilities planned for construction on private land owned by MH-LLC. These facilities include administrative infrastructure for the Mt. Hamilton Project and a processing facility to treat ore from the Centennial-Seligman Mining Project. These facilities, planned for construction on private land, are being permitted through the Nevada

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Division of Environmental Protection (NDEP). In addition, an application for a reclamation permit for the processing facility was filed with the NDEP in December 2012.

13. Planned Exploration, Development and Permitting

Solitario's focus for 2013 is to advance environmental permitting for the project. The most important component of permitting will be approval of the Plan of Operations. The Plan of Operations is currently being reviewed by the USFS to determine its completeness, and then to develop and manage the appropriate permitting path and activities for the project. It is planned that an application for a Water Pollution Control Permit will be filed with the NDEP in the first quarter of 2013.

Other planned activities for 2013 are additional drilling south of the Centennial reserves in an area called Wheeler Ridge, metallurgical testing of Seligman mineralization to determine gold and silver recoveries, additional reserve and resource modeling of both the Centennial and Seligman deposits incorporating the 2012 drilling and 2013 metallurgical results, and an update of the project's economic model.

**Bongará Zinc Project (Peru)**

1. Property Description and Location

The Bongará project consists of 16 concessions comprising 12,600 hectares of mineral rights granted to Minera Bongará S.A., a subsidiary of ours incorporated in Peru. The property is located in the Department of Amazonas, northern Peru. On August 15, 2006 Solitario signed a Letter Agreement with Votorantim Metais Cajamarquilla, S.A., a wholly owned subsidiary of Votorantim Metais (both companies referred to as "Votorantim"), on Solitario's 100%-owned Bongará zinc project. On March 24, 2007, Solitario signed a definitive agreement, the Framework Agreement for the Exploration and Potential Development of Mining Properties, (the "Framework Agreement") pursuant to, and replacing, the previously signed Bongará Letter Agreement with Votorantim Metais. Solitario's and Votorantim's property interests are held through the ownership of shares in Minera Bongará S.A., a joint operating company that holds a 100% interest in the mineral rights and other project assets. Solitario currently owns 100% of the shares in Minera Bongará S.A.

Votorantim can earn up to a 70% shareholding interest in the joint operating company by funding future annual exploration and development expenditures until a production decision is made or the agreement is terminated. The

option to earn the 70% interest can be exercised by Votorantim at any time by committing to place the project into production based upon a feasibility study and making certain minimum annual exploration and development expenditures. Through December 31, 2012, Votorantim has met all minimum annual exploration and development commitments. Votorantim is the project manager. Votorantim, in its sole discretion, may elect to terminate the option to earn the 70% interest at any time. In addition, Votorantim is required to make annual delayed rental payments of \$200,000, until Solitario receives notice that certain expenditure minimums have been met or a production decision is made. Once Votorantim has fully funded its \$18.0 million work commitment and committed to place the project into production based upon a feasibility study, it has further agreed to finance Solitario's 30% participating interest through production. Solitario will repay the loan facility through 50% of Solitario's cash flow distributions from the joint operating company.

According to Peruvian law, concessions may be held indefinitely, subject only to payment of annual fees to the government. In June 2013 payments of approximately \$99,000 to the Peruvian government will be due in order to maintain the mineral rights of Minera Bongará. Votorantim is responsible for paying these costs as part of its work commitment. Peru also imposes a sliding scale net smelter return royalty (NSR) on all precious and base metal production. This NSR assesses a tax of 1% on all gross proceeds from production up to \$60,000,000, a 2% NSR on proceeds between \$60,000,000 and \$120,000,000 and a 3% NSR on proceeds in excess of \$120,000,000.

Votorantim signed a new surface rights agreement with the local community in 2009, which controls the surface of the primary area of interest of our Bongará joint venture. This agreement provides for an annual payment of approximately \$31,000 and funding for mutually agreed social development programs in return for the right to perform exploration work including road building and drilling. From time to time Votorantim enters into surface rights agreements with individual landowners or communities to provide access for exploration work. Generally, these are short-term agreements.

Environmental permits are required for exploration and development projects in Peru that involve drilling, road building or underground mining. The requisite environmental and archeological studies were completed for all past work, but new studies are ongoing to allow for the expanded activities planned for future years. Although we believe that these permits

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will be obtained in a timely fashion, the timing of government approval of permits remains beyond our control.

2. Accessibility, Climate, Local Resources, Infrastructure and Physiology

The Bongará property is accessed by the paved Carretera Marginal road, which provides access from the coastal city of Chiclayo. The nearest town is Pedro Ruiz located 15 kilometers southeast of the property, and the Carretera Marginal is situated approximately eight kilometers south of the deposit. The area of the majority of past drilling and the most prospective mineralization, Florida Canyon, is currently inaccessible by road, the work to date having been done by either foot or helicopter access. Votorantim began construction of a 40-kilometer road to the deposit in October 2010 and has completed 23-kilometers of its length. Completion of the road is anticipated in the second half of 2013. Votorantim maintains project field offices in Pedro Ruiz and a drill core processing facility and operations office in the nearby community of Shipasbamba. The climate is tropical and the terrain is mountainous and jungle covered. Seasonal rains hamper exploration work for four to five months of the year by limiting access. Several small villages are located within five kilometers of the drilling area.

3. History

We discovered the Florida Canyon mineralized zone of the Bongará Project in 1996. Subsequently, we optioned the property in December 1996 to Cominco (now Teck Resources). Cominco drilled 80 core holes from 1997-2000. Cominco withdrew from the joint venture in February 2001. We maintained the claims from 2001 to 2006, until the Votorantim Letter Agreement was signed. Votorantim has conducted surface drilling on an annual basis from 2006 to present and underground tunneling underground drilling from 2010 to present. All significant work on the property has been conducted by Cominco, and more recently by Votorantim, and is described below in Section 5, "Prior Exploration."

4. Geological Setting

The geology of the Bongará area is relatively simple consisting of a sequence of Jurassic and Triassic clastic and carbonate rocks which are gently deformed. The Mississippi Valley type zinc-lead mineralization occurs in the carbonate facies of the Chambara (rock) Formation. This sedimentary sequence is part of what is referred to as the Pucura Group that hosts mineral deposits throughout Peru.

5. Prior Exploration

We conducted a regional stream sediment survey and reconnaissance geological surveys leading to the discovery of the Florida Canyon area in 1996. The discovered outcropping mineralization is located in two deeply incised canyons within the limestone stratigraphy.

Subsequent to our initial work, Cominco conducted extensive mapping, soil and rock sampling, stream sediment surveys and drilling. This work was designed to determine the extent and grade of the zinc-lead mineralization, the controls of mineral deposition and to identify areas of potential new mineralization. Votorantim began work in the fall of 2006 and has worked continuously on the project since then. All work performed by us, Cominco or Votorantim was done by direct employees of the respective companies with the exception of the drilling, underground tunneling, helicopter services and road building, all of which were performed by third-party contractors under the direction of Votorantim.

## 6. Mineralization

Mineralization occurs as massive to semi-massive replacements of sphalerite and galena localized by specific sedimentary facies (rock strata) within the limestone stratigraphy and by structural feeders and karst breccias. A total of eleven preferred beds for replacement mineralization have been located within the middle unit of the Chambara Formation. Mineralization is associated with the conversion of limestone to dolomite, which creates porosity and permeability within the rock formations, promoting the passage of mineralizing fluids through the rock formations forming stratigraphically controlled near-horizontal manto deposits and structurally controlled near-vertical replacement deposits. Drilling of stratigraphic targets has shown that certain coarser facies of the stratigraphy are the best hosts for mineralization.

Karst features are localized along faults and locally produce "breakout zones" where mineralization may extend vertically across thick stratigraphic intervals along the faults where collapse breccias have been replaced by ore minerals. Mineralized karst structures are up to fifty meters in width. The stratigraphically controlled mineralization is typically one to several meters in thickness, but locally attains thicknesses of eight to ten meters. Generally the stratigraphic mineralization, while thinner, is of higher grade and laterally more extensive. Evidence for these breakout zones is provided by the following drill holes from various locations on the property:

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Breakout	Drill Hole	Intercepts	Zinc	Lead	Zinc+Lead
Zone Name	Number	(meters)	%	%	%
Sam	GC-17	58.8	12.0	2.8	<b>14.8</b>
	FC-23	81.5	4.8	0.8	<b>5.6</b>
Karen	A-1	36.2	12.8	2.7	<b>15.5</b>
North Zone	V-21	92.0	5.5	1.7	<b>7.2</b>
	V-44	28.3	15.2	0.8	<b>16.0</b>
South Zone	V-169	51.6	7.1	0.7	<b>7.8</b>
San Jorge	V-297	56.6	22.6	1.15	<b>23.84</b>

The middle unit of the Chambara formation, where mineralized, is commonly dolomitized within the zone of highest permeability. Dolomitization reaches stratigraphic thicknesses in excess of 100 meters locally. This alteration is thought to be related to the mineralizing event in most cases and is an important exploration tool. Continuity of the mineralization is thought to be demonstrable in areas of highest drilling density by correlation of mineralization within characteristic sedimentary facies typical of specific stratigraphic intervals or within through-going observable structural zones in drill core.

## 7. Drilling

From 1997 through 2001, Cominco drilled 80 surface core holes totaling 24,696 meters. From 2006-2012, Votorantim completed 248 surface core holes totaling 69,648 meters. From 2011-2012, Votorantim completed 70 underground core holes totaling 12,328 meters. The majority of Votorantim's surface drilling was infill drilling designed to demonstrate the continuity and geometry of mineralization, and to a lesser extent, test for extensions of known mineralization. The underground drilling was conducted from eight drill stations at approximately 40-meter centers and entirely within the San Jorge mineralized zone. Anywhere from two to fourteen holes were drilled from each of the eight drill stations. The underground drilling was tightly spaced and designed to allow for feasibility-level reserve estimation.

All drilling conducted is within a footprint measuring approximately 2.5 kilometers long in a north-south direction and a little over a kilometer in an east-west direction. The entire drill pattern is within what we have informally labeled the Florida Canyon district. Within this district, several zones of strong zinc mineralization have been defined. The two zones with the most amount of drilling are the San Jorge and the Karen-Milagros zones. Drilling indicates that, for the most part, the entire Florida Canyon district remains open to expansion.

## 8. Sampling, Analysis and Security of Samples

Core samples were transported from the drill by helicopter in sealed boxes to the processing facility in Shipasbamba where they were split by a diamond saw. Half of the core was taken of intervals selected according to

geologic criteria under the supervision of the geologist in charge and shipped in sealed bags by land. Cominco used SGS Laboratories and Votorantim used ALS-Chemex, both in Lima, Peru, where all samples were analyzed by ICP. Any samples that contained greater than 1% zinc were then analyzed by wet chemistry assay for zinc and lead to provide a more accurate analysis of grade.

Since August 2006, Votorantim has been in control of all field activities on the project and is responsible for the security of samples. Votorantim has indicated to us that there have been no breaches in the security of the samples. We have reviewed Votorantim's sampling procedures and believe that adequate procedures are in place to ensure the future security and integrity of samples. No breaches of security of samples are known to have occurred prior to Votorantim's work on the project.

#### 9. Pre-Feasibility Studies

Votorantim, either through its engineering staff, or contracted independent mining engineering firms has conducted prefeasibility-level studies to provide estimates of deposit size and grade, sizing of appropriate scale of operations, infrastructure design, and capital and operating cost estimates. Votorantim has engaged an independent metallurgical testing firm to evaluate metal recoveries and various processing options for mineralized material at Florida Canyon. Based upon 2012 test work, the recommended processing method consists of a combination of standard flotation recovery and heavy media separation that is capable of recovering both sulfide and oxide mineralization. Recovery optimization testing will continue in 2013.

#### 10. Reserves and Resources

There are no reported mineral reserves or resources.



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11. Mining Operations

No commercial mining operations to recover metals have occurred on the project. However, in September 2010 Votorantim initiated an underground tunneling program to access mineralization. As of December 31, 2012, 590 meters of tunneling were completed.

12. Planned Exploration and Development

Work in 2013 will focus on activities necessary to complete a prefeasibility study and then to transition to feasibility-level work for 2014. As part of this program, permitting for a new 700-meter long tunnel to provide underground access and drilling platforms in the Karen-Milagros zone of the Florida Canyon deposit is planned, as well as permitting an extension of the existing San Jorge tunnel a further 300 meters to the south to test for the continuation of high-grade mineralization. Detailed drilling from both these tunnels will provide feasibility-level reserve information. Construction of these new tunnels is currently scheduled for 2014. A total of 15,000 meters of both surface and underground drilling is scheduled this year. Other work scheduled includes additional metallurgical testing, more detailed engineering of site infrastructure, update the deposit model, additional hydrologic and geotechnical studies, and continued access road construction to the mine site. Permitting and social development activities with surrounding communities will also continue throughout 2013.

**Pedra Branca Platinum-Palladium Metals Project (Brazil)**

1. Property Description, Location and Physiography

The Pedra Branca platinum-palladium (“PGM”) project consisted of 57 exploration concessions totaling approximately 70,000 hectares in Ceará State, Brazil. The property is held 100% by Pedra Branca do Mineração S.A. (“PBM”), a Brazilian entity. We hold a 49% interest in PBM and Anglo Platinum Ltd. (“Anglo”) owns a 51% interest as of December 31, 2012. Eldorado Gold Corporation is entitled to a 2% NSR royalty on 10 of the concessions totaling 10,000 hectares.

On January 28, 2003, we entered into a Letter Agreement with Anglo whereby Anglo could earn various incremental interests in PBM up to a 65% interest. On July 14, 2006, we signed the Pedra Branca Framework Agreement with Anglo that specified actions we and Anglo would take to establish and govern PBM, and the mechanics for Anglo's continued funding of Pedra Branca operations. On April 24, 2007, we signed the definitive Shareholders Agreement with Anglo for the exploration and development of the Pedra Branca Project.

Anglo earned a 51% interest in PBM by funding \$7.0 million as of July 21, 2010. Anglo can earn an additional 9% interest in PBM (for a total of 60%) by completing either (i) a bankable feasibility study or (ii) spending an additional \$10.0 million on exploration or development, whichever comes first. Anglo can also earn an additional 5% interest in PBM (for a total of 65%) by arranging for 100% financing to put the project into commercial production. In 2012 Anglo assumed management of all administrative and operational functions at PBM. Previously, Solitario was the project manager.

The mineral interests currently held by PBM are subject to the mining regulations of Brazil that provide for annual lease payments to the government and a royalty of 0.2% on the sales proceeds for precious metals, excluding gold, which is subject to a 3% royalty. PBM's land payments for 2013 are projected to be approximately \$135,000 including annual claim maintenance payments to the government and smaller surface rights payments to local landowners. Prior to mining on the claims PBM must reach an agreement with the surface rights owners of the affected land.

Access to the project is by paved road from the deep-water port city of Fortaleza and by local farm roads. Local access is constructed where necessary. The largest towns in the immediate vicinity of the project are Pedra Branca and Boa Viagem. A field camp is located at the small community of Capitao Mor. The climate is warm and dry for eight months of the year with a warm wet season prevailing for the remaining four months (December-March). Year-round operations can be conducted. The topography is rolling to flat and vegetation is sparse to heavy brush. The elevation ranges from 500 to 800 meters.

## 2. History

In the 1980's Rio Tinto Ltd., ("Rio Tinto") and Gencore, Ltd. ("Gencore") performed exploration work, including drilling, on part of the project now operated by us. In October 2000, we completed a Plan of Arrangement whereby we acquired Altoro Gold Corp. ("Altoro"). We have since acquired additional concessions through our subsidiary Altoro Mineração, Ltda. to cover extensions of the mineralized trend.

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Altoro, prior to the Plan of Arrangement with us, conducted surface work, drilled 18 core holes and entered into a Joint Venture agreement with Rockwell Ventures, Inc. ("Rockwell") of Vancouver, British Columbia. Rockwell conducted further surface exploration and drilled an additional 31 holes. Rockwell terminated its agreement with us in June 2001. From July 2001 until late 2002, we conducted geochemical sampling and geophysical surveys and independently drilled 22 diamond drill holes. From January 2003 to date, Anglo has funded six drilling programs that focused on better defining the Esbarro and Curiu deposits, further testing the Cedro, Trapia and Santo Amaro prospects, and initial drill testing of 20 other target areas.

3. Geological Setting and Mineralization

The project lies within an Archean-aged block in the Brazilian shield, which is characterized by amphibolite grade metamorphic rocks of various compositions. The most common rock types in the area are unmineralized intermediate to felsic composition gneisses and granitic intrusive phases. All of the rocks have been folded and faulted to differing degrees during dynamic metamorphism. PGM mineralization occurs in specific stratigraphic intervals within a segmented mafic-ultramafic layered complex. The mineralized intervals comprise concordant layers, originally of composition varying from peridotite to dunite that have been variably altered to serpentine, amphibole and talc. These layers contain chromite and/or minor sulfides of iron, copper and/or nickel. In many cases the PGM mineralization is associated with the mineral chromite. In other areas the PGM is more closely related with minor sulfide concentration. Within PGM-enriched ultramafics, grade and thickness can vary considerably. Widths encountered vary from less than a meter to tens of meters in interpreted true thickness. A number of separate ultramafic bodies have been delineated, some of which contain the PGM-bearing stratigraphic intervals. Approximately 26 prospects have been located within the project area. All of these identified prospects display either anomalous PGM values in soils or rocks and/or magnetic signatures indicating the presence of magnetic minerals. Drilling has intersected significant mineralization on 13 of the prospects.

4. Prior Exploration and Drilling

Surface exploration conducted, initially by Altoro, and subsequently by Rockwell, us and then PBM, has generally been focused to identify outcroppings of ultramafic rocks, detect anomalous concentrations of PGM in soils or rocks, and magnetic geophysical surveys to detect magnetic minerals often associated with PGM mineralization. Detailed geologic mapping has been conducted over some of the known ultramafic rock outcroppings to determine the source of anomalous PGM values and to plan the specific locations for drill testing.

Through the end of 2012, a total 354 holes totaling 26,391 meters of core drilling were completed on the project. The table below summarizes the various drilling programs conducted on the property.

Operator	Year	Number of Holes	Meters Drilled
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Rio Tinto, Gencore	Pre-1999	50	3,320
Altoro	1999-2000	18	1,200
Rockwell	2001	31	2,132
Solitario	2002	22	2,363
PBM-funded by Anglo	2003-2012	233	17,376
Project Total		354	26,391

The Esbarro prospect, with 107 holes, has the largest database of information of the drilled prospects. Drilling was conducted on approximately 30 to 50-meter spaced centers. The Curiu prospect is the second most detailed prospect drilled with 50 holes completed to date. Drilling was conducted on generally 25-meter spaced centers. Additional drill holes have been completed at Santa Amaro, at Trapia I, at Trapia West and on the Cedro I through Cedro IV prospects. Drill spacing on these latter prospects range from 50 to 200 meters. Although significant mineralized material was encountered in many of the drill holes within these nine deposits, PBM has not undertaken a formal estimate of reserves or resources as PBM believes additional work is required to make such an estimate. Based on drill results to date, PBM believes the prospects Esbarro, Cedro I, II, III and IV, Curiu, Trapia I, Trapia West and Santo Amaro exhibit results that may warrant further definition drilling. We believe that sampling and sample security procedures implemented by us or by others that generated project data, meets or exceeds industry and regulatory quality control standards.

#### 5. Mineral Reserve Estimations and Mining Operations

There are no reported reserves and no current mining operations associated with this project.

#### 6. Planned Exploration

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Anglo will plan and manage the 2013 work program. Anglo has indicated the program will consist of helicopter-borne geophysics on closely spaced flight lines traversing areas potentially underlain by ultramafic rocks. Ultramafic rocks are highly magnetic and detectable by geophysics. Ultramafic rocks are also the host to all PGM mineralization identified on the property. Anglo has indicated it will re-log selected drill core to better interpret the geology and geometry of the mineralization. If the geophysical program is successful in identifying new ultramafic bodies, Anglo has indicated PBM may also drill certain areas at Pedra Branca during late-2013 or in the first half of 2014.

**Pachuca Norte Silver-Gold Property (Mexico)**

1. Property Description, Location and Physiography

As of year-end 2012, the Pachuca Norte property (formerly referred to as “Pachuca-Real”) consisted of approximately 19,048 hectares of mineral rights encompassing about 10% of the historic Pachuca Norte del Monte silver-gold mining district of central Mexico, but mainly areas situated to the north and northwest of the historic district, termed the North District, and areas east of the historic district. Solitario owns 100% of the property, except for the 6,240-hectare El Cura claim, that is subject to an Option to Purchase Agreement (the “Agreement”) with a private Mexican party signed in May 2006. The Agreement, as subsequently amended, requires Solitario to pay \$15,000 every six months, starting in May 2012, to the underlying owner to keep the option in good standing. By October 2014, Solitario must either exercise the option to acquire 100% interest in the concession by paying the underlying owner \$500,000, or the option will terminate. Solitario may terminate its option at any time without any further costs. Concession fees due to the government of Mexico are expected to total approximately \$95,000 in 2013 and option payments to private individuals are expected to total approximately \$40,000 in 2013 to keep properties in good standing.

In March 2013 we signed a binding Letter of Intent (“LOI”) with Minera Hochschild Mexico S.A. de C.V. (“Hochschild”), a wholly owned subsidiary of Hochschild Mining plc. The LOI provides for Hochschild to earn a 51% interest in the property by funding the following exploration commitments from the signing of a definitive agreement:

Due Dates Expenditures (US\$)

18 months \$ 2,000,000

36 months \$ 3,000,000

60 months \$ 5,000,000

Total \$10,000,000

Hochschild will have the option to earn an additional 19% (total interest 70%) by funding all project expenditures necessary to complete a positive feasibility study. Hochschild will manage the operations and has the right to terminate the joint venture at any time. Currently, we are working on negotiating a definitive joint venture

agreement with Hochschild. There can be no assurance that such an agreement will ultimately be signed.

The project is located about 80 kilometers north of Mexico City near the city of Pachuca. Access is excellent throughout much of the project area with moderately maintained gravel roads. The city of Pachuca, with excellent modern infrastructure, lies in the southern portion of the property. The project topography ranges in elevation from 2,100 to 3,000 meters. The climate ranges from semi-arid in the lower elevations, which tend to be sparsely vegetated; to temperate in the higher elevations, that tend to be well-forested.

## 2. History

The Pachuca district has a long, nearly unbroken history of silver and gold production beginning somewhere around 1550 by the Spaniards. Total silver production during this five and a half-century period is estimated at approximately 1.4 billion ounces of silver and more than seven million ounces of gold. Nearly 80% of its total production occurred during a 60-year period from 1900 to 1960. Mining in the old district ceased in 2004 due to the depletion of ore reserves. Our claim position, predominantly situated north of the historic district, was held by the Mexican government from 1947 to the early 1990's, whereupon the concessions were sold to a private Mexican company and held by that same company until early 2006, when the land became free to staking. We immediately applied, and were granted, title to the concessions.

Solitario conducted surface exploration work during the first half of 2006 identifying a number of silver-gold vein targets. On September 25, 2006, we signed a definitive venture agreement regarding the Pachuca project with Newmont de Mexico, Sde C.V. ("Newmont"), a wholly owned subsidiary of Newmont Mining Corporation. In December 2008

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Newmont terminated its right to earn an interest in the property and Solitario retained its 100% interest in the property. On April 27, 2010, Solitario signed a definitive Venture Agreement with Compañía de Minas Buenaventura S.A.A. (“Buenaventura”). In December 2011 Buenaventura terminated its right to earn an interest in the property and Solitario retained a 100% interest in the property. Both Newmont and Buenaventura conducted significant surface exploration work and core drilling.

### 3. Geological Setting and Mineralization

The geology of the Pachuca Norte project area is dominated by a thick sequence of Tertiary-aged volcanic and volcanic-related rock formations of dominantly andesitic composition that is cut by a series of younger quartz porphyry and dacite porphyry dikes. The andesitic volcanic rocks are the dominant host-rock to mineralization, are gently dipping on a regional scale, but locally display moderate dips of up to 40 degrees. Basement rocks within the project area consist of Cretaceous-aged sedimentary rocks. Overlying the andesitic volcanic rocks is a sequence of volcanic and volcanic-related rocks that are primarily dacitic composition. These rocks are generally post-mineralization in age.

The historic Pachuca Norte del Monte mining district is a classic large-scale vein district nearly 11 kilometers in an east-west direction and 7 kilometers in a north-south direction. Hundreds of near-vertical veins associated with fractures, faults and dikes occur throughout the district and typically have a west-northwest to east-southeast trend, except in the Real del Monte area that has a north-south trend. The major veins have productive stopes in excess of a kilometer in length, up to 600 meters in vertical extent and 1-5 meters in average width. The veins are characterized by low sulfide and base metal content and weak wallrock alteration. Historical average grades for the district are 500 g/t silver and 2.5 g/t gold.

In the North District, discrete vein systems are distributed over an area 20 kilometers long in an east-west direction and 10 kilometers wide in a north-south direction. Thirty-eight separate vein swarms have been identified and mapped. Geologically the mineralization both at surface and in drill core is very similar to the historic district. Specifically, mineralization consists of veins characterized by low sulfide and base metal content with weak alteration. Veins identified to date tend to be narrow, generally a meter or less thick. Some vein systems, however, display multiple parallel vein structures with over 10 separate vein intercepts.

### 4. Prior Exploration and Drilling

The old Pachuca Norte del Monte mining district has been intensely explored and mined throughout its long history, but this is not the area of our current exploration focus. We believe the area of greatest potential lies about 10 kilometers north of the main district and an area immediately east of the historic district. Exploration in this area (North District) during the past 60 years was restricted to mainly surface sampling with a very limited amount of

drilling and tunneling. We compiled all the historical data that we were able to obtain and conducted a limited surface rock and soil sampling program in the first half of 2006, prior to Newmont becoming our joint venture partner. Newmont collected a total of 2,865 geochemical samples from outcrops, dumps, old mine workings, and channel samples and also conducted detailed geologic mapping to define drill targets. Buenaventura collected approximately 1,700 geochemical samples from the surface and existing underground workings.

Newmont tested 11 different target areas in 2007 and 2008 by completing 19 core holes totaling 7,873 meters. Ten of the holes intersected significant mineralization in six different prospects. Buenaventura completed a 38-hole core drilling program totaling 13,489 meters in 2011. Twenty of the holes intersected at least one interval grading in excess of 100 grams per tonne silver equivalent. Most of the holes were widely spaced on 17 separate vein prospects scattered over an area measuring 14 kilometers by 8 kilometers. The 10 best drill hole intercepts are presented in the table below.

<b>Prospect Name</b>	<b>Drill Hole</b>	<b>From-To (m)</b>	<b>Width (m)*</b>	<b>Gold g/t</b>	<b>Silver g/t</b>
Investigadora	Pan11-12	217.75-218.60	0.85	1.95	271.47
Investigadora	Pan11-18	236.25-237.00	0.75	0.97	317.00
San Marcial	Pan11-19	225.15-225.60	0.45	0.75	657.00
La Perla	Pan11-22	344.90-345.90	1.00	6.30	53.48
Santa Rosa	Pan11-25	252.60-255.00	2.40	1.43	158.27
Santa Rosa	Pan11-27	144.90-145.50	0.60	5.60	837.00
Sumbimblia	Pan11-28	46.30-47.35	1.05	16.40	238.86
Escribano Norte	Pan11-29	444.45-445.05	0.60	2.60	834.00
Escondida	Pan11-31	250.30-251.15	0.85	8.40	283.00
Escribano Sur	Pan11-34	238.85-240.40	1.55	0.90	165.00

\*True thickness has not been determined and could be substantially less than the drill width for some intervals.



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We have reviewed both Newmont's and Buenaventura's sampling procedures and believe they meet or exceed industry and regulatory quality control standards.

5. Mineral Reserve Estimations and Mining Operations

There are no reported reserves and no current mining operations associated with this project.

6. Planned Exploration

Hochschild is currently planning an exploration program for 2013. Hochschild has indicated that their plans include drilling core holes that offset well-mineralized previous drill holes to determine the trend of mineralization. If a definitive agreement is not ultimately signed with Hochschild, we plan to maintain the property in good standing for 2013.

**Chambara Zinc Property (Peru)**

On April 4, 2008, we signed the Minera Chambara shareholders agreement with Votorantim Metais Cajamarquilla, S.A., a wholly owned subsidiary of Votorantim Metais (both companies referred to as "Votorantim") for the exploration of a large area of interest in northern Peru measuring approximately 200 by 85 kilometers. Votorantim is the project manager, and funds and conducts all exploration on the project. Votorantim contributed 52 mineral concessions within the area of interest totaling 52,000 hectares to Minera Chambara for a 15% interest in Minera Chambara. We contributed 9,600 hectares of mineral claims and certain exploration data in our possession for an 85% interest in Minera Chambara. Existing and future acquired properties subject to the terms of the shareholders agreement will be held by Minera Chambara. As of December 31, 2012, Minera Chambara's only assets are the properties and Minera Chambara has no debt. Votorantim may increase its shareholding interest to 49% by expending \$6,250,000 over seven years and may increase its interest to 70% by funding a feasibility study and providing for construction financing for Solitario's interest. If Votorantim provides such construction financing, we would repay that financing, including interest, from 80% of Solitario's portion of the project cash flow.

In 2010 Votorantim placed the project on care and maintenance, focusing all of their efforts on the Bongará project. The only field work conducted in 2012 and planned for 2013 is social work in preparation for any future exploration programs. Minera Chambara now controls 176 concessions totaling approximately 145,300 hectares of mineral rights. In June 2013 payments of approximately \$462,000 to the Peruvian government will be due by Votorantim in order to maintain the mineral rights.

### **Newmont Alliance (Peru)**

On January 18, 2005, we signed a Strategic Alliance Agreement (the "Alliance Agreement") with Newmont Overseas Exploration Limited ("Newmont"), to explore for gold in South America (the "Strategic Alliance"). Concurrent with the signing of the Alliance Agreement, Newmont Mining Corporation of Canada purchased 2.7 million shares of Solitario (at the time, an approximately 9.9% equity interest) for Cdn\$4,590,000. As part of the Alliance Agreement we spent \$3,773,000 on exploration on Strategic Alliance areas covered by the Alliance Agreement. Under the terms of the Alliance Agreement, we granted Newmont a 2% net smelter royalty on five properties ("Strategic Alliance Properties") that fall within Strategic Alliance areas. If we meet certain minimum exploration expenditures on Strategic Alliance Properties, Newmont will have the right to joint venture acquired properties and earn up to a 75% interest by taking the project through feasibility and financing Solitario's retained 25% interest into production. Newmont may elect to earn a lesser interest or no interest at all, in which case it would retain its 2% net smelter return royalty.

As of December 31, 2012 we retain 100%-interest in the La Promesa and Cerro Azul property positions, both of which fall within Strategic Alliance areas and are subject to the provisions of the Newmont Alliance as discussed above. In 2011, we recorded a mineral property write-down of \$10,000 for the Paria Cruz property and in 2012 we recorded a mineral property write down of \$5,000 for the Excelsior property.

#### 1. La Promesa

The La Promesa property, acquired in 2008, consists of three concessions totaling 2,600 hectares. Our only holding costs for the mineral rights are annual payments of three dollars per hectare to the Peruvian government. In February 2012 Newmont

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waived its right to joint venture La Promesa and allowed us to potentially joint venture the project with another company. During 2013 we hope to secure a joint venture partner to advance the project.

At least five high-grade polymetallic veins have been identified and sampled at surface. Two of the veins, about 300 meters apart, have been traced for at least 400 meters along strike. There appears to be a systematic trend towards greater vein thickness with depth, as the widest observed vein in outcrop occurs at the lowest elevation sampled to date. Channel sampling along 300 meters of strike length from the best exposed vein yielded the following high-grade results:

<b>Chip Channel #</b>	<b>True Width</b>	<b>Silver gpt</b>	<b>% Zinc</b>	<b>% Lead</b>	<b>Indium gpt</b>
A	2.8	758	19.4	7.2	153
B	1.1	181	21.0	2.4	190
C	0.5	433	10.5	6.3	23
D	0.4	458	10.2	10.8	15
E	1.0	346	5.9	3.4	27
F	1.2	1975	33.1	5.6	430

2. Cerro Azul

The Cerro Azul property acquired in 2007 consists of three concessions totaling 2,400 hectares. The geology of the property consists of Tertiary volcanics cut by a system of parallel quartz veins. Veins are up to two meters wide and can be traced along strike up to 1.2 kilometers. Some of the veins are polymetallic in character, within a low-sulfidation geologic environment. Other veins are gold-rich and locally occur in sheeted zones of up to 80 meters in width. In 2011 we completed 11 core holes totaling 2,016 meters on four different vein systems. The holes were widely scattered over an area measuring 2,200 meters long by 1,400 meters wide. Seven of the drill holes intersected mineralization.

**Norcan Copper Property (Mexico)**

In June 2010 we applied for mineral rights on property north of the Cananea mine, a major copper producer, in the State of Sonora, Mexico. We received title to two concessions totaling 35,991 hectares in 2012. Geochemical and biogeochemical surveys in this area exhibit locally anomalous copper values. Most of the area is covered by recent gravel deposits, but in several areas moderately to strongly altered intrusive rocks have been mapped.

On March 2, 2012, we signed a joint venture agreement with MMG Mexico Exploration, S.A. de C.V. ("MMG"), a wholly owned subsidiary of MMG Mining Ltd. The agreement provides for MMG to earn a 70% interest in the

property by funding the following exploration commitments:

Due Dates	Cumulative Expenditures (US\$)
12 months from signing	\$ 500,000
24 months from signing	\$1,250,000
36 months from signing	\$2,000,000
48 months from signing	\$3,000,000
60 months from signing	\$5,000,000

MMG manages the exploration operations and has the right to terminate the joint venture at any time. MMG conducted core drilling on the property during the first quarter of 2013. Assay results from the drill holes are pending.

### **Royalty Properties**

#### **Yanacocha Royalty Property (Peru)**

The Yanacocha royalty property consists of 69 concessions totaling approximately 61,000 hectares in northern Peru, 25 kilometers north of the city of Cajamarca. The property position consists of a rectangular-shaped contiguous block of concessions nearly 50 kilometers long in an east-west direction and 25 kilometers wide in a north-south direction. The southern boundary of the royalty property abuts Newmont Mining Corporation's Minera Yanacocha mining operation, a large gold mine currently in operation. We held 100% interest in the concessions until April 2000, at which time we signed an agreement with Newmont Peru, Ltd., a wholly-owned subsidiary of Newmont Mining Corporation (both companies referred to as "Newmont"), whereby we sold our Yanacocha Property to Newmont for \$6,000,000 and a sliding scale net smelter return royalty ("NSR-Royalty") that varied from two to five percent, depending on the price of gold.

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In January 2005 we signed an Amended and Restated Royalty Grant with Minera Los Tapados S.A., a subsidiary of Newmont Peru Limited, Minera Yanacocha S.R.L., and Minera Chaupiloma Dos de Cajamarca, S.R.L. (affiliates of Newmont Peru, Ltd., collectively "Newmont Peru") to modify the NSR-Royalty schedule. The modified royalty structure is classified into several categories, depending on the type of process used to recover each metal, gold and copper prices, as well as any government royalty burden imposed by Peru on the project ores. Assuming the current maximum royalty due the government of Peru and gold prices above \$500 per ounce, our gold royalty ranges from 1% to 2¾%, our silver royalty would be 2% and our copper royalty would be 1%. As part of the NSR-Royalty modification, Newmont Peru, through its subsidiaries, agreed to spend an aggregate of \$4.0 million on Solitario's royalty property over an eight year period. Newmont has met all of its required expenditure requirements through December 31, 2012. No resources or reserves have been reported by Newmont, nor has any mining been conducted on the property.

**Mercurio (Surubim) Gold Property (Brazil)**

The Mercurio gold property is located in Para State in Northern Brazil, approximately 250 km south of the town of Itaituba. It consists of three exploration concessions totaling 8,476 hectares. In November 2010 Solitario signed a definitive agreement with Regent Holdings, Ltd., a wholly-owned subsidiary of Brazilian Gold Corporation ("BGC"), whereby Solitario agreed to transfer its rights to the property to BGC, providing that BGC complete the following: (i) take over Solitario's underlying property obligations; (ii) pay Solitario \$1,000,000 over a four year period; and (iii) invest a minimum of \$900,000 in exploration expenditures over the same period. BGC made its initial payment of \$50,000 in October 2011. In December 2012, we amended the agreement with BGC whereby the property payment schedule provides that BGC paid Solitario \$100,000 on December 14, 2012, and will make further payments of \$100,000 in October 2013 and a final payment of \$650,000 in October 2014, with the final payment pending the government issuing title to one concession at the property. Upon the completion of all payments, BGC will own Mercurio and Solitario will retain a 1.5% NSR royalty on the first 2 million ounces of gold production and a 2.0% NSR royalty on all ounces of gold produced over 2 million ounces. BGC may terminate the agreement at any time after six months from the date of signing the agreement. BGC is responsible for all payments to keep the Mercurio claims in good standing during the period of the agreement. With exception of small scale artisanal mining for gold by gravity methods that has been conducted on the property for the past 15 years, there are no mining operations on the property. On January 28, 2013, BGC made a news release that estimated resources on the property. BGC refers to the project as the Surubim project.

**100%-Owned Properties**

**Aconchi Copper Property (Mexico)**

The 8,200-hectare Aconchi property in northern Sonora, Mexico, was acquired in October 2010. It is an early-stage property that displays copper and other trace element anomalies in soils. Most of the area is covered by

pediment gravels. We plan to conduct further geochemical surveys, and possibly conduct a geophysical survey in 2013. We may also seek a joint venture partner to more aggressively test the property.

### **La Tola Gold Property (Peru)**

In October 2003, we acquired the La Tola project to explore for gold and possibly silver. The 3,800-hectare project is located in southern Peru. During 2012, a royalty agreement with Estrella Gold Corp. ("EGC") was terminated, pursuant to which EGC was earning a 100% interest in the La Tola project, subject to a retained royalty by Solitario. Solitario now owns the La Tola project and is reporting it as a 100% owned project and not a royalty property. Significant surface exploration work, including core drilling, was conducted on the property by our former joint venture partner Newmont Mining. We are currently seeking a joint venture partner.

### **Canta Colorado Gold Property (Peru)**

In 2012 we applied for two exploration concessions totaling 2,000 hectares. Reconnaissance surface exploration indicates this property has the potential to host an epithermal gold deposit in Tertiary volcanic rocks. Pending signing of a surface rights agreement with the local community, we plan to carry out additional surface exploration in 2013 to determine if the project warrants drill testing.

### **Jaripo Silver-Zinc Property (Mexico)**

In December 2011 we optioned the 775-hectare Jaripo silver-zinc project in Sonora, Mexico, from a private Mexican concern. We paid \$5,000 initially, and a further \$25,000 in December 2011. To acquire a 100% interest in the property Solitario must make certain future option payments. We can elect to terminate the option at any time without any future

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obligations. We are currently evaluating the Jaripo project for further work in 2013.

### **Atico Gold-Copper Property (Peru)**

In April 2010 we acquired 1600 hectares by staking at the Atico property in southern Peru. Rock sampling has identified anomalous gold and copper values in skarn alteration of carbonate and intrusive rocks. We are currently evaluating the Atico project for further work in 2013.

### **Discontinued Projects**

In late 2012 we decided to discontinue all operations in Bolivia and abandoned the Triunfo and Espanola properties and recorded write downs of \$20,000 and \$5,000, respectively. In Peru, we abandoned the Excelsior property and recorded a \$6,000 write down.

During the 2011 we abandoned the Paria Cruz project and recorded a mineral property write down of \$10,000. The Paria Cruz property, staked in 2008, consisted of three concessions totaling 3,000 hectares. Exploration results did not support continued work on the property.

### **GLOSSARY OF MINING TERMS**

“**Amphibolite**” means a metamorphic rock composed chiefly of amphibole and plagioclase and having little or no quartz.

“**Assay**” means to test minerals by chemical or other methods for the purpose of determining the amount of valuable metals contained.

“**Bankable feasibility study**” means a comprehensive study of a mineral deposit in which all geological, engineering, legal, operating, economic, social, environmental and other relevant factors are considered in sufficient detail that it could reasonably serve as the basis for a final decision by a financial institution to finance the development of the deposit for mineral production.

“**Breccia**” means rock consisting of fragments, more or less angular, in a matrix of finer-grained material or of cementing material.

“**Claim or Concession**” means a mining interest giving its holder the right to prospect, explore for and exploit minerals within a defined area.

“**Clastic**” means pertaining to rock or rocks composed of fragments or particles of older rocks or previously existing solid matter; fragmental.

“**Chromite**” means a cubic mineral, ferrous chromate, usually with much of the ferrous iron and aluminum replaced by magnesium, and some of the chromium by ferric iron: the principal ore of chromium.

“**Cut-off grade**” means the grade below which mineralized material will be considered waste.

“**Dacite or Dacitic**” means a fine-grained volcanic rock of intermediate composition between mafic and felsic.

“**Deposit**” means an informal term for an accumulation of mineral ores.

“**Development**” means work carried out for the purpose of opening up a mineral deposit and making the actual ore extraction possible.

“**Dolomite**” means calcium magnesium carbonate,  $\text{CaMg}(\text{CO}_3)_2$ , occurring in crystals and in masses.

“**Dore**” means a mixture of gold and silver cast in bars or bullion, prior to final refining.

“**Dunite**” means a coarse-grained igneous rock composed almost entirely of olivine.

“**Facies**” means the appearance and characteristics of a sedimentary deposit, especially as they reflect the conditions and environment of deposition and serve to distinguish the deposit from contiguous deposits.

“**Fault**” means a fracture in rock along which there has been displacement of the two sides parallel to the fracture.

“**Felsic**” means rocks consisting chiefly of feldspars, quartz and other light colored materials.

“**Granodiorite**” means a coarse-grained acid igneous rock which is intermediate in composition between granite and diorite.

“**gpt**” means grams per tonne.

“**Heap leach**” means a gold extraction method that percolates a cyanide solution through ore heaped on an impervious pad or base.

“**Hornfels**” means a fine-grained metamorphic rock, the result of recrystallization of siliceous or argillaceous sediments by



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contact metamorphism.

“**Host rock**” means the rock surrounding an ore deposit.

“**Karst**” means a landscape that is characterized by the features of solution weathering and erosion in the subsurface. These features include caves, sinkholes, disappearing streams, subsurface drainage and deeply incised narrow canyons.

“**Mafic**” means silicate minerals or rocks that are rich in magnesium and iron. Most mafic minerals are dark in color with a high density.

“**Magnetometric**” means the results from an analysis utilizing a magnetometer, an instrument for measuring the intensity of a magnetic field, in this case, the earth's magnetic field.

“**Manto deposits**” means replacement orebodies that are stratabound, irregular to rod shaped ore occurrences usually horizontal or near horizontal in attitude.

“**Metasomatic**” means rocks that form from a series of metamorphic processes whereby chemical changes occur as a result of the introduction of material, often in hot aqueous solutions, from external sources.

“**Mineralization**” means the concentration of metals within a body of rock.

“**NSR**” means net smelter return royalty.

“**Olivine**” means a group of magnesium iron silicates, ( $MgFe_2SiO_4$ ), occurring in olive-green to gray-green masses as an important constituent of basic igneous rocks.

“**opt**” or “**oz/ton**” means ounces per ton.

“**Ore**” means material containing minerals that can be economically extracted.

“**Ounce**” means a troy ounce.

“**Oxide**” means mineralized rock in which some of the original minerals have been oxidized (*i.e.*, combined with oxygen). Oxidation tends to make the ore more porous and permits a more complete permeation of cyanide solutions so that minute particles of gold in the interior of the minerals will be more readily dissolved.

“**Patented mining claim**” means a mining claim for which the federal government of the United States has passed its title to the claimant, making it private land. A person may mine and remove minerals from a mining claim without a mineral patent. However, a mineral patent gives the owner exclusive title to the locatable minerals. It also gives the owner title to the surface and other resources.

“**Peridotite**” means a dense, dark-colored, coarse-grained igneous rock consisting mostly of the minerals olivine and pyroxene. Peridotite is ultramafic in composition, contains less than 45% silica and is high in magnesium and iron.

“**Porphyry**” means an igneous, usually hard, rock with large crystals embedded in a finer groundmass of minerals.

“**Phyllites**” means a slate-type rock, the cleavage planes of which have a luster imparted by minute scales of mica.

“**Reserves**” or “**ore reserves**” means that part of a mineral deposit, which could be economically and legally extracted or produced at the time of the reserve determination.

“**Sampling**” means selecting a fractional, but representative, part of a mineral deposit for analysis.

“**Sediment**” means solid material settled from suspension in a liquid.

“**Shales**” means a fine-grained sedimentary rock consisting of compacted and hardened clay, silt, or mud that often forms in many distinct layers and splits easily into thin sheets or slabs.

“**Sphalerite**” means a very common mineral, zinc sulfide, usually containing some iron and a little cadmium, occurring in yellow, brown, or black crystals or cleavable masses with resinous luster and it is the principal ore of zinc.

“**Skarn**” means a coarse-grained metamorphic rock formed by the contact metamorphism of carbonate rock often containing garnet, pyroxene epidote and wollastonite.

“**Stockwork**” means a rock mass interpenetrated by multiple, tightly packed small veins of mineralization.

“**Stope**” means an excavation in the form of steps made by the mining of ore from steeply inclined or vertical veins.

“**Stratigraphy**” means the arrangement of rock strata, especially as to the geographic, chronologic order of sequence (age), classification, characteristics and formation.

“**Strike**” when used as a noun, means the direction, course or bearing of a vein or rock formation measured on a level surface and, when used as a verb, means to take such direction, course or bearing.

“**Stripping ratio**” means the ratio of waste to ore in an open pit mine.

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“**Sulfide**” means a compound of sulfur and some other element.

“**Tailings**” means material rejected from a mill after most of the valuable minerals have been extracted.

“**Ton**” means a short ton (2,000 pounds).

“**Tonne**” means a metric ton that contains 2,204.6 pounds or 1,000 kilograms.

“**Vein**” means a fissure, fault or crack in a rock filled by minerals that have traveled upwards from some deep source.

“**Volcaniclastic**” means clastic (made up of fragments of preexisting rocks) rock chiefly composed of volcanic material derived by ejection of volcanic material from a volcanic vent.

**Item 3. Legal Proceedings**

None

**Item 4. Mine Safety Disclosures**

Not applicable

(table of contents)**PART II****Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities**

Our common stock traded predominantly on the TSX under the symbol SLR prior to August 2, 2006 when Solitario received approval to list its common shares on NYSE MKT. Trading on NYSE MKT began on Friday, August 11, 2006, under the symbol XPL. Since 2008 trading volume on NYSE MKT has exceeded the trading volume on the TSX.

The following table sets forth the high and low sales prices on NYSE MKT for our common stock for the quarterly periods from January 1, 2011 to December 31, 2012.

Period	All prices are in USD\$			
	2012		2011	
	High	Low	High	Low
First quarter	\$1.85	\$1.33	\$4.33	\$3.32
Second quarter	1.42	1.02	3.57	2.55
Third quarter	1.90	1.12	3.10	1.62
Fourth quarter	1.89	1.48	1.77	1.31

The following table sets forth the high and low sales prices on the TSX for our common stock for the quarterly periods from January 1, 2011 to December 31, 2012.

Period	All prices are in CDN\$			
	2012		2011	
	High	Low	High	Low
First quarter	\$1.85	\$1.33	\$4.20	\$3.30
Second quarter	1.40	1.04	3.44	2.46
Third quarter	1.78	1.16	2.98	1.63
Fourth quarter	1.83	1.41	1.79	1.35

Shares authorized for issuance under equity compensation plans

On June 27, 2006, Solitario's shareholders approved the 2006 Stock Option Incentive Plan (the "2006 Plan"). Under the terms of the 2006 Plan, the Board of Directors may grant up to 2,800,000 options to Directors, officers and employees with exercise prices equal to the market price of Solitario's common stock at the time of grant. However, under the terms of the 2006 Plan, the total number of outstanding options from all plans may not exceed 2,800,000. As of December 31, 2012, we have granted options for 165,000 shares that remain unexercised at Cdn\$1.49 per share, 376,500 shares that remain unexercised at Cdn\$1.55 per share and 2,056,900 shares that remain unexercised at Cdn\$2.40.

Equity Compensation Plan Information as of December 31, 2012:

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights Cdn\$ (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
<b>2006 Plan</b>			
Equity compensation plans approved by security holders	2,598,400	\$2.22	250
Equity compensation plans not approved by security holders	-	N/A	-
Total	2,598,400	\$2.22	250

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Holders of our common shares

As of February 28, 2013, we have approximately 3,132 holders of our common shares.

Dividend Policy

We have not paid a dividend in our history and do not anticipate paying a dividend in the foreseeable future.

(table of contents)**Item 6. Selected Financial Data**

The following table summarizes the consolidated statements of operations and balance sheet data for our business since January 1, 2008. This data has been derived from the audited consolidated statements of operations for our business for each of the five years ended December 31, 2012 and the audited consolidated balance sheets of our business as of December 31, 2012, 2011, 2010, 2009 and 2008. You should read this information in conjunction with Item 7 – "Management's Discussion and Analysis of Financial Condition and Results of Operations" and Solitario's historical consolidated financial statements and notes included in Item 8 – "Financial Statements and Supplementary Data." The information set forth below is not necessarily indicative of future results.

Balance sheet data:	As of December 31,				
(in thousands)	2012	2011	2010	2009	2008
Total current assets	\$7,936	\$5,281	\$6,113	\$6,742	\$4,997
Total assets	\$23,483	\$22,054	\$29,608	\$24,641	\$26,463
Working capital (1)	\$4,245	\$345	\$134	\$4,318	\$3,415
Long-term debt	\$2,437	\$2,075	\$2,604	\$—	\$—
Shareholders' equity	\$9,217	\$13,873	\$13,776	\$15,114	\$18,051

Statement of operations data:	Year ended December 31,				
(in thousands, except per share amounts)	2012	2011	2010	2009	2008
Property and joint venture revenue	\$300	\$242	\$200	\$200	\$200
Net loss attributable to Solitario shareholders	\$(3,297)	\$(3,377)	\$(4,066)	\$(1,786)	\$(617)
Per share information:					
Basic and diluted					
Net loss attributable to Solitario shareholders	\$(0.10)	\$(0.10)	\$(0.14)	\$(0.06)	\$(0.02)

(1) Working capital consists of current assets less current liabilities.

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## **Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations**

The following discussion should be read in conjunction with the information contained in the consolidated financial statements and notes thereto included in Item 8 "Financial Statements and Supplementary Data." Our financial condition and results of operations are not necessarily indicative of what may be expected in future years.

### **(a). Business Overview and Summary**

We are a development stage company (prior to February 22, 2012 we were an exploration stage company) with a focus on developing the Mt. Hamilton gold project, the acquisition of precious and base metal properties with exploration potential, and the development or purchase of royalty interests. We announced on February 22, 2012 the completion of a feasibility study on our Mt. Hamilton project (the "Feasibility Study"), prepared by SRK Consulting (US), Inc. of Lakewood, Colorado ("SRK"). As a result of the completion of the Feasibility Study, we have earned an 80% interest in the Mt. Hamilton project and intend to develop the Mt. Hamilton project, subject to a number of factors including obtaining necessary permits and availability of required capital, none of which is currently in place. The Mt. Hamilton project is discussed below under "Ely Gold Investment and the Mt. Hamilton Joint Venture." In addition, we acquire and hold a portfolio of exploration properties for future sale, joint venture or to create a royalty prior to the establishment of proven and probable reserves. Although our mineral properties may be developed in the future by us or through a joint venture, and we currently intend to develop the Mt. Hamilton project, we have never developed a mineral property. We may also evaluate mineral properties to potentially buy a royalty.

Solitario was incorporated in the state of Colorado on November 15, 1984 as a wholly owned subsidiary of Crown Resources Corporation. We have been actively involved in this business since 1993. We recorded revenues from joint venture delay rental payments related to our Bongará project of \$200,000, each year, during 2012 and 2011 and we recorded \$100,000 and \$42,000, respectively, in delay rental property payments during 2012 and 2011 related on our Mercurio project. During June 2012 we sold a royalty interest in our Mt. Hamilton project to Sandstorm Gold Ltd. ("Sandstorm") for \$10,000,000 of which \$6,000,000 was paid in June 2012 and \$4,000,000 was paid in January 2013. Previously, our last significant revenues were recorded in 2000 upon the sale of our Yanacocha property for \$6,000,000. We expect that future revenues from the sale of properties, if any, would also occur on an infrequent basis. At December 31, 2012, In addition to our Mt. Hamilton project, we had nine exploration properties in Peru, Mexico and Brazil, and one royalty property in each of Peru and Brazil. We are conducting exploration activities in all of those countries either on our own or through joint ventures operated by our partners.

In addition to our work at Mt. Hamilton, we have expertise in identifying mineral properties with promising mineral potential, acquiring these exploration mineral properties and exploring them to enable us to sell, joint venture or create a royalty on these properties prior to the establishment of proven and probable reserves. For these early-stage projects, one of our primary goals is to discover economic deposits on our mineral properties and advance these deposits, either on our own or through joint ventures, up to the development stage (development activities include,



among other things, the completion of a feasibility study for the identification of proven and probable reserves, as well as permitting and preparing a deposit for mining). At that point, or sometime prior to that point, we would attempt to either sell our exploration mineral properties, pursue their development either on our own or through a joint venture with a partner that has expertise in mining operations or create a royalty with a third party that continues to advance the property.

In analyzing our activities, the most significant aspect relates to results of our exploration and potential development activities and those of our joint venture partners on a property-by-property basis. When our exploration or development activities, including drilling, sampling and geologic testing, indicate a project may not be economic or contain sufficient geologic or economic potential we may impair or completely write-off the property. Another significant factor in the success or failure of our activities is the price of commodities. For example, when the price of gold is up, the value of gold-bearing mineral properties increases; however, it also becomes more difficult and expensive to locate and acquire new gold-bearing mineral properties with potential to have economic deposits. We anticipate the success of our development activities on our Mt. Hamilton property will become increasingly important in the future.

The potential sale, joint venture or development of our mineral properties will occur, if at all, on an infrequent basis. Accordingly, while we conduct development activities at the Mt. Hamilton project, we need to maintain and replenish our capital resources. We have met our need for capital in the past through (i) the sale of properties, which last occurred in 2000 with the sale of our Yanacocha property for \$6,000,000; (ii) joint venture payments, including delay rental payments of \$200,000, received each year for 2012 and 2011 on our Bongará property and delay rental payments of \$100,000 and \$50,000, respectively, on our Mercurio project in Brazil; (iii) the Sandstorm royalty sale during 2012; (iv) the sale of our investment in Kinross common stock; (v) borrowing against our RMB Facility Agreement; (vi) short-term margin borrowing secured by our investment in Kinross common stock; and (vii) issuance of common stock, including exercise of options. We have reduced our

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exposure to the costs of our exploration activities in the past through the use of joint ventures; however, we do not have any current plans to further joint venture Mt. Hamilton. Although we anticipate these practices will continue for the foreseeable future, we can provide no assurance that these sources of capital will be available in sufficient amounts to meet our needs, if at all.

**(b). Recent Developments***Feasibility Study*

On February 22, 2012, we announced the completion of the Feasibility Study, and as a result we earned an 80% interest in MH-LLC, and became a development-stage company (but not a company in the “Development Stage”) and we reported the following mineral reserves at our Mt. Hamilton project:

**Mineral Reserves Statement, Centennial Gold-Silver Deposit,****White Pine County, Nevada****SRK Consulting (Inc.)**

Reserve Category	Tons (millions)	Gold Grade		Silver Grade*		Contained Gold (koz)**	Contained Silver (koz)**
		oz/ton	g/tonne	oz/ton	g/tonne		
Proven	0.923	0.032	1.10	0.155	5.31	29.3	142.7
Probable	21.604	0.021	0.72	0.134	4.59	457.8	2,884.3
Proven + Probable	22.527	0.022	0.75	0.136	4.66	487.1	3,028.2

\*Reported silver grade is cyanide soluble. \*\* Some numbers may not add due to rounding

*RMB facility agreement*

As explained in more detail in Note 4, “Long term debt,” in Item 8, “Financial Statements and Supplementary Data,” we entered into a Facility Agreement (the “Facility Agreement”) with RMB Australia Holdings Limited, an Australian corporation (“RMBAH”), and RMB Resources Inc., a Delaware corporation (“RMBR”) whereby we may borrow up to \$5,000,000 from RMBAH (with any amounts outstanding collectively being the “RMB Loan”). We

borrowed \$1,500,000 on August 21, 2012. We paid an arrangement fee of \$250,000 upon initial funding. The RMB Loan matures on the earlier to occur of (i) 36 months from the date of initial funding or (ii) the date on which financing is made available to MH-LLC for purposes of placing the Mt. Hamilton project into commercial production. The RMB Loan amounts bear interest at the 90-day LIBOR rate plus 5%, payable in arrears on the last day of each quarterly interest period. The RMB Loan may be repaid at any time without penalty. Any amounts repaid may not be redrawn under the Facility Agreement. The RMB Loan is secured by a lien on our 80% interest in MH-LLC as well as a general security interest in our remaining assets.

#### *RMB warrants*

Pursuant to the Facility Agreement, we issued 1,624,748 warrants (the “RMB Warrants”) to RMBAH as partial consideration for financing services provided in connection with the Facility Agreement. Each RMB Warrant entitles the holder to purchase one share of our common stock (the “Warrant Shares”) pursuant to the terms and conditions of the RMB Warrants. The RMB Warrants expire 36 months from their date of issuance and have an exercise price of \$1.5387 per Warrant Share, subject to customary anti-dilution adjustments.

#### *Sandstorm royalty sale*

On June 11, 2012, MH-LLC completed the sale of a 2.4% net smelter returns royalty (“NSR”) on the Mt. Hamilton project to Sandstorm for US\$10,000,000. MH-LLC received an upfront payment of US\$6,000,000 upon signing the agreement and received US\$4,000,000 on January 15, 2013, which we have recorded as a current asset as of December 31, 2012. As part of the agreement, MH-LLC will have the option, for a period of 30 months from June 11, 2012 to repurchase up to 100% of the NSR for US\$12,000,000, provided that MH-LLC enters into a gold stream agreement with Sandstorm that has an upfront deposit of greater than US\$30,000,000. In addition, MH-LLC has provided Sandstorm with a right of first refusal on any future royalty or gold stream financing for the Mt. Hamilton project. Pursuant to the agreement, we are jointly and severally liable for all obligations of MH-LLC to Sandstorm. See Note 2, “Mineral Properties,” in Item 8, “Financial Statements and Supplementary Data” below for further discussion of the Sandstorm royalty sale.

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*Investment in Kinross*

We have a significant investment in Kinross at December 31, 2012, which consists of 670,000 shares of Kinross common stock. During 2012 and 2011, we sold 180,000 and 130,000 shares, respectively, of Kinross common stock for proceeds of \$1,591,000 and \$2,035,000. As of February 28, 2013, we own 670,000 shares of Kinross common stock. Our investment in Kinross common stock represents a significant concentration of risk and any significant fluctuation in the market value of Kinross common shares could have a material impact on our liquidity and capital resources. As of December 31, 2012 we have sold one covered call option covering 50,000 shares of Kinross stock whereby the holder could purchase the shares at \$12.00 per share, which expired unexercised in February 2013. The Kinross call option is discussed below under Note 6, "Derivative instruments" in Item 8, "Financial Statements and Supplementary Data." As of December 31, 2012, we have borrowed \$1,500,000 in a margin loan against its holdings of Kinross shares. The short-term margin loan is discussed below under Note 3 "Short-term debt" to the consolidated financial statements in Item 8, "Financial Statements and Supplementary Data."

*Mineral property*

Solitario began capitalizing its development costs incurred at its Mt. Hamilton project subsequent to the completion of the Feasibility Study. During 2012, Solitario capitalized \$3,129,000 of development costs, \$325,000 of payments on mineral properties, and \$300,000 of advance royalty payments to an underlying leaseholder as long-term other assets at the Mt. Hamilton project. See Note 2, "Mineral Properties," in Item 8, "Financial Statements and Supplementary Data" below for further discussion of the Mt. Hamilton project.

*Stock option liability – Change in accounting principle*

On January 1, 2011, we changed our accounting for stock options to equity accounting from liability accounting in accordance with ASU 2010-13. This change in accounting principle has been made on a prospective basis as of January 1, 2011 with a reduction to stock option liability of \$2,775,000, an increase to additional paid-in-capital of \$1,240,000 and a reduction in accumulated deficit of \$992,000, net of deferred taxes of \$543,000. The newly adopted accounting principle is preferable because it improves consistency in financial reporting by eliminating diversity in accounting practice. See Note 9, "Employee stock compensation plans" to our consolidated financial statements in Item 8, "Financial Statements and Supplementary Data."

**(c). Results of Operations**

Comparison of the year ended December 31, 2012 to the year ended December 31, 2011

We had a net loss of \$3,297,000 or \$0.10 per basic and diluted share for the year ended December 31, 2012 compared to a net loss of \$3,377,000 or \$0.10 per basic and diluted share for the year ended December 31, 2011. As explained in more detail below, the primary reasons for the decrease in net loss during 2012 compared to the net loss during 2011 were (i) a decrease in exploration costs to \$301,000 on our Mt. Hamilton project compared to \$3,700,000 during 2011; (ii) a decrease in other exploration expense to \$1,685,000 during 2012 compared to \$2,246,000 during 2011 and (iii) a decrease in our non-stock option general and administrative expense to \$1,948,000 during 2012 compared to \$2,160,000 during 2011. Partially offsetting these decreases in costs were (i) a loss on warrant liability of \$488,000 during 2012; (ii) an increase in our interest expense, net of \$318,000 during 2012 compared to interest expense, net of \$163,000 during 2011; (iii) a decrease in the credit for net loss attributable to noncontrolling interest to \$301,000 during 2012 compared to a credit of \$3,591,000 during 2011 and (iv) a decrease in the gain on sale of marketable equity securities to \$1,528,000 during 2012 compared to \$1,937,000 during 2011. Each of these items is discussed in greater detail below.

Our primary activities during 2012 and 2011 have been the (i) exploration and development activities to advance the Mt. Hamilton property toward future production, (ii) exploration on our mineral properties to delineate deposits to enable us to sell or joint venture the mineral properties and (iii) reconnaissance exploration to locate and acquire new mineral properties. During 2012 we increased our development efforts related to our Mt. Hamilton project and spent \$3,730,000 in direct development costs, of which we capitalized \$3,129,000 of mineral property development costs, discussed above and capitalized a \$300,000 advance royalty payment. During 2011 we incurred \$3,700,000 including \$3,400,000 in direct exploration expenditures and a \$300,000 advance royalty payment, all of which were expensed as incurred related to Mt. Hamilton. We recorded a credit of \$301,000 and \$3,591,000, respectively, during 2012 and 2011 for DHI-US's noncontrolling interest in the expenditures of MH-LLC, related to our expenditures prior to the SRK feasibility study, which were included in our statement of operations. We decreased our exploration expenditures at our South American and Mexico properties to \$1,686,000 and \$2,246,000, respectively, in 2012 and 2011 as a result of a shift in our focus to the Mt. Hamilton project. During 2012 we completed a drilling campaign at our Jaripo project in Mexico and during 2011 we completed a drilling program at our Cerro Azul project in Peru. In addition we capitalized \$3,000 for initial acquisition costs at our Canta Colorado property in Peru compared to capitalization of \$10,000 related to our Jaripo and Aconchi properties in Mexico.

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Our 2013 exploration and development expenditure budget is approximately \$3,439,000, which includes approximately \$2,043,000 for development costs related to Mt. Hamilton. In addition we anticipate we will spend approximately \$1,625,000 for payments on leases to landowners, advance minimum royalty payments and payments to DHI-US pursuant to the MH Agreement. The primary factor in the reduction in Mt. Hamilton exploration and development expenditures from 2012 to 2013 relates to the completion of our Feasibility Study and related activities, including drilling and engineering design work, which occurred during 2012, and which will not be a significant part of our planned activities during 2013. Our planned activities during 2013 relate to our intention to move the Mt. Hamilton project substantially through development activities including permitting, seeking financing for the capital required to build the project and other engineering and project management. The future construction of Mt. Hamilton will be dependent on a number of factors including receiving permits and obtaining financing for construction, none of which is currently in place. We cannot predict with certainty that we will be successful in achieving any of these goals. In addition we plan to continue to perform our early-stage planned exploration activities on our other properties and to continue reconnaissance exploration activities to acquire new properties. These exploration activities may also be modified, as necessary for changes, in joint venture funding, commodity prices and access to capital.

Exploration expense (in thousands) by property consisted of the following:

Property Name	2012	2011
Mt. Hamilton	\$301	\$3,700
Jaripo	247	26
Cerro Azul	99	715
Pachuca	32	2
Espanola	22	24
La Promesa	19	17
Canta Colorado	17	—
Mercurio	9	15
Atico	4	—
Norcan	2	3
Triunfo	1	1
Pedra Branca, net	(30 )	(50 )
Cajatambo	—	7
Chonta	—	4
Newmont Alliance	—	4
Excelsior	—	3
Bongará	—	3
Reconnaissance	1,263	1,472
Total exploration expense	\$1,986	\$5,946

We recorded a credit (reduction of expense) of \$301,000 and \$3,591,000, respectively, during 2012 and 2011 for DHI-US's noncontrolling interest in the losses of MH-LLC. The significant decrease during 2012 related to the capitalization of development cost of \$3,129,000 and our earning an 80% interest in MH-LLC as a result of the completion of the Feasibility Study, discussed above. During 2012 and 2011 we recorded management fees of \$30,000 and \$50,000, respectively, to PBM as a credit to exploration expense.

We believe a discussion of our general and administrative costs should be viewed without the non-cash stock option compensation expense which is discussed below. Excluding these costs, general and administrative costs were \$1,948,000 during 2012 compared to \$2,160,000 during 2011. We incurred salary and benefits expense of \$1,008,000 during 2012 compared to \$1,207,000 during 2011, which decreased as a result of the capitalization to Mt. Hamilton property of certain salary costs during 2012. We also reduced legal and accounting costs to \$224,000 during 2012 compared to \$305,000 during 2011 due to the legal and accounting work during 2011 associated with setting up the administration of MH-LLC and land matters at Mt. Hamilton and the Royalty Buy-down, while during 2012 legal costs associated with the RMB Loan of \$328,000 were capitalized. These decreases were mitigated by an increase in our shareholder relations costs to \$397,000 during 2012 compared to \$318,000 during 2011. We anticipate general and administrative costs for 2013 will be comparable to the costs incurred during 2012 as we expect less activity with regard to Mt. Hamilton and our South American operations will be offset by an increase in shareholder relations costs during 2013. We have forecast 2013 general and administrative costs to be approximately \$1,941,000, excluding non-cash stock option compensation expense.

We account for our employee stock options under the provisions of ASC 718. Beginning in January 1, 2011, we recognize stock option compensation expense on the date of grant for 25% of the grant date fair value, and subsequently, based

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upon a straight line amortization of the grant date fair value of each of its outstanding options. During the year ended December 31, 2012 we recorded \$732,000 of non-cash stock option expense for the amortization of grant date fair value with a credit to additional paid-in-capital compared to \$697,000 of non-cash stock option compensation expense during 2011. Prior to January 1, 2011, Solitario recorded a stock option liability for the vested fair value of each option grant on the measurement date by multiplying the estimated fair value determined using the Black-Scholes model by the percentage vested on the measurement date See Note 9, "Employee stock compensation plans" to our consolidated financial statements in Item 8, "Financial Statements and Supplementary Data" for an analysis of the changes in the fair value of our outstanding stock options and the components that are used to determine the fair value.

During 2012 we recorded a loss on derivative instruments of \$30,000 compared to a loss of \$137,000 during 2011. The decrease in the loss was primarily related to a reduction in unrealized loss on our investment in Ely warrants of \$74,000 during 2012 compared to \$180,000 during 2011. The Ely warrants expired unexercised which resulted in the loss during 2012 and prior to that, during 2011, the change in value in the Ely warrants was determined using a Black-Scholes option pricing model and was highly dependent on the change in the price of Ely's common stock which declined from Cdn\$0.30 per share at December 31, 2010 to Cdn\$0.18 per share at December 31, 2011. These losses were partially mitigated by gains on Kinross calls we sold during 2012 and 2011 of \$48,000 and \$42,000, respectively. We have sold covered calls on a limited portion of our Kinross common stock that we intend to sell within one year, to enhance our return on Kinross common stock in exchange for some potential upside in those covered Kinross shares. We have one Kinross call option outstanding at December 31, 2012, however it expired unexercised in February 2013. We do not anticipate selling a material number of covered Kinross call options during 2013. See Note 6, "Derivative instruments" to our consolidated financial statements in Item 8, "Financial Statements and Supplementary Data" for an analysis of the changes in our derivative instruments, and the components that are used to determine the fair value of our derivative instruments.

We had \$61,000 of depreciation and amortization expense during 2012 compared to \$46,000 in 2011 primarily as a result of an increase in furniture and fixtures at Mt. Hamilton. We amortize these assets over a three-year period. We anticipate our 2013 depreciation and amortization costs will be similar to our 2012 amount.

During 2012 we recorded interest expense, net of interest and dividend income, of \$318,000 compared to \$163,000 during the same period in 2011. The increase in interest expense is primarily related to an increase related to the RMB Loan where we recorded \$70,000 of interest expense related to the amortization of deferred offering costs on the RMB Loan and we recorded \$77,000 of interest expense related to the discount recorded on the warrants issued in connection with the RMB Loan. Both the deferred offering costs and the warrant discount are being amortized to interest expense on a straight-line basis over the expected life of the RMB Loan. In addition we paid \$30,000 in interest on our outstanding RMB Loan balance during 2012. See Note 4, "Long-term debt" to our consolidated financial statements in Item 8, "Financial Statements and Supplementary Data." These increases in interest expense were partially offset by reductions in our margin loan interest to \$58,000 during 2012 compared to \$71,000 during 2011. We recorded interest expense related to our Augusta long-term debt of \$184,000 during 2012 compared to \$217,000 during 2011. During 2012 we recorded dividend income of \$119,000 compared to \$98,000 during 2011, primarily related to dividends on our Kinross stock. Remaining interest income recorded during 2012 and 2011 consisted of payments on cash and cash equivalent deposit accounts. We anticipate our interest expense will increase as we continue to utilize short-term margin loans to fund a portion of our activities to supplement the sales of our Kinross common stock. We also anticipate dividend income will decrease during 2013 as we sell a portion of our Kinross



common stock to fund our operations. See Note 3, "Short-term debt" and Note 4, "Long-term debt" to our consolidated financial statements in Item 8, "Financial Statements and Supplementary Data" for additional discussion of our interest expense related to our short and long-term debt.

During 2012 we sold 180,000 shares of Kinross stock for proceeds of \$1,591,000 and recorded a gain on sale of Kinross of \$1,464,000 compared to 2011 when we sold 130,000 shares of Kinross stock for proceeds of \$2,035,000 and recorded a gain on sale of \$1,937,000. In addition during 2012 we sold 570,000 shares of TNR for proceeds of \$73,000 and recorded a gain on sale of \$64,000. We anticipate we will continue to liquidate our holdings of Kinross stock to fund our exploration activities and our 2013 budget anticipates the sale of 320,000 shares of Kinross stock for assumed proceeds of \$3,200,000 during 2013. These proceeds are significantly dependent on the quoted market price of Kinross stock on the date of sale and may be at prices significantly below our projected price.

During 2012 we recorded an income tax benefit of \$648,000 compared to an income tax benefit of \$635,000 during 2011. The small change in our tax benefit during 2012 is primarily related to the following factors, discussed above, which reduced our expected 2012 tax benefit compared to 2011: (a) a reduction in the gain on sale of marketable equity securities, (b) the decrease in our taxable non-stock option general and administrative expenses and (c) the decrease in our United States exploration costs; and these factors, discussed above, which increased our expected 2012 tax benefit compared to 2011: (a) our US taxable-deductible capitalized costs at Mt. Hamilton, (b) the warrant liability expense and the deferred offering cost expense

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incurred in connection with the RMB Loan, (c) the increased interest expense incurred during 2012 compared with 2011. See Note 5, "Income taxes" to our consolidated financial statements in Item 8, "Financial Statements and Supplementary Data" for additional discussion of our income tax expense and deferred income tax liability at December 31, 2012. We provide a valuation allowance for our foreign net operating losses, which are primarily related to our exploration activities in Peru, Mexico and Brazil. We anticipate we will continue to provide a valuation allowance for these net operating losses until we are in a net tax liability position with regards to those countries where we operate or until it is more likely than not that we will be able to realize those net operating losses in the future.

We regularly perform evaluations of our mineral property assets to assess the recoverability of our investments in these assets. All long-lived assets are reviewed for impairment whenever events or circumstances change which indicate the carrying amount of an asset may not be recoverable utilizing guidelines based upon future net cash flows from the asset as well as our estimates of the geologic potential of early stage mineral property and its related value for future sale, joint venture or development by us or others. During 2012 we recorded \$31,000 of mineral property impairments related to our Triunfo and Espanola properties in Bolivia and our Excelsior project in Peru compared to a mineral property impairment of \$10,000 related to our Paria Cruz project in Peru.

**(d). Liquidity and Capital Resources**

Short-term debt

As of December 31, 2012, we have borrowed \$1,500,000 from UBS Bank, USA ("UBS Bank") pursuant to a secured credit line agreement between us and UBS Bank and have accrued \$1,000 of unpaid interest on this debt in accounts payable. As of February 28, 2013 we have paid back \$500,000, net on the UBS loan and have an outstanding balance of 1,000,000. The UBS Bank credit line carries an interest rate which floats, based upon a base rate of 2.25% plus the one-month London Interbank Offered Rate ("LIBOR"), which was 0.25% as of December 31, 2012. We are required to maintain minimum equity value percentages of 40% at UBS. The equity value percentage may be modified by UBS at any time. If the equity value in our account at UBS falls below the minimum, UBS may call the loan, or may sell enough Kinross shares held in our brokerage account or liquidate any other assets to restore the minimum equity value. At December 31, 2012 and February 28, 2013, the equity balance in our account at UBS was 67% and 71%, respectively. Solitario recorded interest expense related to the UBS credit line of \$36,000 and \$50,000, respectively, for the year ended December 31, 2012 and 2011.

We also have access to short-term margin loan borrowing capacity from RBC Capital Markets, LLC ("RBC") using our investment in Kinross stock held at RBC as collateral for the short-term margin loans. As of December 31, 2012, we have repaid all short-term margin loans previously borrowed from RBC. We estimate we have access to additional borrowing of approximately \$1.0 million on our RBC margin loan borrowing capacity as of February 28, 2013, based upon the market value of our Kinross shares held at RBC. The previously outstanding loans carried, and the currently outstanding loan carries, interest at a margin loan rate of 4.25% per annum. The margin loan rate can be

modified by RBC at any time. The margin loans are callable by RBC at any time. Per the terms of the margin loans, we are required to maintain a minimum equity value in the account of 35%, based upon the value of our Kinross shares and any other assets held at RBC, less any short-term margin loan balance and any other balances owed to RBC. The equity value percentage may be modified by RBC at any time. If the equity value in our account at RBC falls below the minimum, RBC may call the loan, or may sell enough Kinross shares held in our brokerage account or liquidate any other assets to restore the minimum equity value. We recorded \$22,000 and \$21,000, respectively, of interest expense related to the RBC short-term margin loans for the year ended December 31, 2012 and 2011.

We are using this short-term debt as an alternative source of capital to selling our Kinross stock. We intend to continue to borrow money for the next year or longer using our Kinross common stock as collateral to defer potential current United States income taxes if we were to sell our Kinross common stock in excess of our anticipated United States tax deductible expenses for the entire year of 2013, which consist primarily of United States general and administrative costs and a portion of our costs to develop the Mt. Hamilton project in Nevada. We anticipate the proceeds from the sale of Kinross common stock sold during 2013 will not exceed our anticipated United States tax deductible expenses, and accordingly, we do not anticipate having any currently payable United States income taxes for 2013. We anticipate proceeds from the sale of shares of Kinross common stock and proceeds from borrowing from the RMB Loan and any loans against our investment in Kinross stock will provide adequate funds for our operations through the end of 2013. Our use of short-term borrowing is not considered critical to our liquidity, capital resources or credit risk strategies. We consider the use of short-term borrowing as a component of our overall strategy to potentially maximize our after-tax returns on the sale of our investment in Kinross stock. We currently intend to repay the short-term debt with proceeds from the sale of Kinross stock in the future. Our maximum amount of short-term borrowing was \$3,287,000, including accrued interest, during the year ended December 31, 2012. Our average short-term borrowing during the year ended December 31, 2012 was \$2,665,000. Subsequent to December 31, 2012, we repaid

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\$500,000 of short-term borrowings and as of February 28, 2013, we have a total of \$1,000,000 outstanding under short-term margin loans.

Long-term debt

*RMB Facility Agreement*

On August 10, 2012, we entered into a Facility Agreement with RMBAH and RMBR. Under the Facility Agreement, we may borrow up to \$5,000,000 from RMBAH (with any amounts outstanding collectively being the “RMB Loan”) at any time during the 24 month period commencing on August 21, 2012, the date of initial funding (the “Availability Period”), after which time any undrawn portion of the \$5,000,000 commitment will be cancelled and will no longer be available for drawdown. We borrowed \$1,500,000 on August 21, 2012 from which we received net proceeds of \$912,000 after deducting deferred offering costs of \$588,000, which included an arrangement fee of \$250,000, legal costs of \$328,000 and other costs of \$10,000. The deferred offering costs are recorded in other long-term assets and are being amortized on a straight-line basis to interest expense over 36 months, the term of the Facility Agreement. We recorded deferred offering costs of \$518,000 as of December 31, 2012 in other assets. In February 2013, we borrowed an additional \$1,000,000 and at February 28, 2013, the balance of the RMB Loan is 2,500,000.

The RMB Loan matures on the earlier to occur of (i) 36 months from the date of initial funding or (ii) the date on which financing is made available to MH-LLC for purposes of placing the Mt. Hamilton project into commercial production. The RMB Loan amounts bear interest at the 90-day LIBOR rate plus 5%, payable in arrears on the last day of each quarterly interest period. All proceeds from the RMB Loan are deposited in a proceeds account (the “Proceeds Account”) and are recorded as restricted cash until disbursed in accordance with the Facility Agreement. Pursuant to the Facility Agreement, funds may only be disbursed from the Proceeds Account for approved expenditures, including (i) exploration and development activities at the Mt. Hamilton project, ongoing earn-in payments at MH-LLC, general corporate purposes as set forth in a project and corporate budget approved by RMBAH and (iv) any other purpose approved by RMBAH. As of December 31, 2012 there was no cash balance in the Proceeds Account. The RMB Loan may be repaid at any time without penalty. Any amounts repaid may not be redrawn under the Facility Agreement. The RMB Loan is secured by a lien on our 80% interest in MH-LLC as well as a general security interest in our remaining assets.

As of December 31, 2012, the outstanding balance of the RMB Loan was \$1,500,000. During 2012 we recorded the following interest expense related to the RMB Loan:

(in thousands)

Year  
ended

	December 31, 2012
Interest expense paid in cash	\$ 30
Amortization of the RMB Warrants discount	77
Amortization of RMB deferred offering costs	70
Total interest expense related to the RMB Loan	\$ 177

#### *RMB Warrants*

Pursuant to the Facility Agreement, we issued 1,624,748 warrants to RMBAH as partial consideration for financing services provided in connection with the Facility Agreement. Each RMB Warrant entitles the holder to purchase one share of Solitario common stock pursuant to the terms and conditions of the RMB Warrants. The RMB Warrants expire 36 months from their date of issuance and have an exercise price of \$1.5387 per share, subject to customary anti-dilution adjustments. We recorded a discount to the RMB Loan for the fair value of the RMB Warrants of \$650,000 as of August 21, 2012, based upon a Black-Scholes model using a 36-month life, volatility of 62%, and a risk-free interest rate of 0.39%. We are amortizing this discount on a straight-line basis to interest expense over the three-year term of the RMB Loan and as of December 31, 2012 the remaining unamortized warrant discount was \$573,000.

#### *Augusta long-term debt*

In connection with the formation of MH-LLC, the Mt. Hamilton properties contributed by DHI-US to MH-LLC were subject to a security interest granted to Augusta related to Ely's acquisition of the Mt. Hamilton properties. Pursuant to the MH Agreement, as part of our earn-in, we agreed to make private placement investments totaling \$2,500,000 in Ely common stock, all to provide Ely with the funds necessary for Ely to make the loan payments due to Augusta. The payments due to Augusta are non-interest bearing. Accordingly, upon formation and the contribution of the mineral properties by DHI-US to MH-LLC, MH-LLC recorded discounted fair value of the payments due to Augusta, discounted at 7.5%, which was our estimated cost of similar credit as of the formation of MH-LLC.

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The following is the schedule of debt payments due to Augusta as of December 31, 2012 and 2011:

Payment date	December 31,	
	<u>2012</u>	<u>2011</u>
June 1, 2012	\$—	\$750,000
June 1, 2013	750,000	750,000
June 1, 2014	750,000	750,000
June 1, 2015	1,000,000	1,000,000
Unamortized discount	(264,000 )	(448,000 )
Total	2,236,000	2,802,000
Current portion	727,000	727,000
Long-term debt	\$1,509,000	\$2075,000

During 2012 and 2011 we recorded \$184,000 and \$217,000, respectively, for accretion of interest expense related to the Augusta note and paid \$750,000 and \$500,000, respectively, on the long-term note.

Joint venture and delay rental payments

In the past, we have financed our activities through the sale of our properties, joint venture arrangements, and the sale of our securities and from the sale of our marketable equity security investment in Kinross. We received \$200,000, each year respectively, from joint venture payments during 2012 and 2011 related to delay rental payments on our Bongará project, discussed above, and during 2012 and 2011 we received \$100,000 and \$50,000 delay rental payments, respectively, on our Mercurio project in Brazil. Receipts from joint venture payments previously occurred on an infrequent basis. Per our agreements with both Votorantim on Bongará and Brazilian Gold Corporation on Mercurio, the joint venture partners may terminate the agreements at any time, and will not be required to make further delay rental payments if they terminate the agreements. Our agreement with Votorantim on our Bongará project calls for annual delay rental payments of \$200,000 until Votorantim provides notice that it has made certain minimum expenditures or makes a decision to place the project in production or decides to drop the project. We expect future revenues from joint venture payments and from the sale of properties, if any, would occur on an infrequent basis.

Sale of mineral property

During 2012, MH-LLC completed the sale of a 2.4% net smelter returns royalty (“NSR”) on the Mt. Hamilton project to Sandstorm for US\$10,000,000. MH-LLC received an upfront payment of US\$6,000,000 upon signing the agreement and received US\$4,000,000 on January 15, 2013, which we have recorded as a current asset as of December 31, 2012. See Note 2, “Mineral Properties,” in Item 8, “Financial Statements and Supplementary Data” below for further discussion of the Sandstorm royalty sale. Previously a significant sale of mineral properties occurred in 2000 when we sold our interest in our Yanacocha property in Peru for \$6,000,000 in cash. Any sales of property, whether as a royalty, gold-stream or outright sale will also occur in the future, if at all, on an infrequent basis.

MH Agreement

During 2012, MH-LLC distributed \$2.5 million to its members in proportion to their interests. Solitario received \$2 million from this distribution which was eliminated in consolidation. In addition Solitario received \$500,000 from DHI-US to repay a portion of a prior loan to Solitario, and Solitario agreed to forgive \$35,000 of accrued interest due from DHI-US, which represented the accrued interest on loans made to DHI-US in connection with the MH Agreement through June 30, 2012.

Investment in marketable equity securities

Our marketable equity securities are classified as available-for-sale and are carried at fair value, which is based upon market quotes of the underlying securities. At December 31, 2012 and 2011, we owned 670,000 and 850,000 shares of Kinross common stock, respectively. The Kinross shares are recorded at their fair market value at December 31, 2012 and 2011 of \$6,512,000 and \$9,690,000, respectively. In addition we own other marketable equity securities at December 31, 2012 and 2011 with a fair value of \$581,000 and \$671,000, respectively. Our investments in marketable equity securities are based upon market quotes on the NYSE and the TSXV. At December 31, 2012, we have classified \$3,110,000 of our marketable equity securities as a short-term asset. Changes in the fair value of marketable equity securities are recorded as gains and losses in other comprehensive income in stockholders' equity. During the year ended December 31, 2012, we recorded a loss in other comprehensive income on marketable equity securities of \$3,131,000, less related deferred tax expense of \$1,168,000.

During the year ended December 31, 2012, we sold 180,000 shares of Kinross stock for proceeds of \$1,591,000, resulting in a gain of \$1,464,000 which was transferred, less related deferred tax expense of \$546,000, from previously

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unrealized gain on marketable equity securities in other comprehensive income. We also own (i) 430,000 shares of TNR Gold Corp. that are recorded at their fair market value of \$39,000 at December 31, 2012; (ii) 250,000 shares of International Lithium Corporation that are recorded at their fair market of \$10,000 at December 31, 2012 and (iii) 3,333,333 shares of Ely that are recorded at their fair market value of \$532,000, all of which are classified as marketable equity securities available for sale.

Any change in the market value of the shares of Kinross common stock could have a material impact on our liquidity and capital resources. The price of shares of Kinross common stock varied from a high of \$12.85 per share to a low of \$7.31 per share during the year ended December 31, 2012.

Kinross Calls

Beginning in December 2008, Solitario sold covered calls covering its shares of Kinross common stock. In September 2012, Solitario sold options covering 100,000 shares for proceeds of \$68,000. In November 2012 Solitario repurchased options for 50,000 shares for \$17,000, and recorded a gain on derivative instruments of \$23,000. As of December 31, 2012, the remaining options for 50,000 shares were recorded in other current assets at its fair value of \$3,000 and Solitario recorded a gain on derivative instruments of \$25,000. This option expired unexercised in February 2013. In September 2011 Solitario sold options covering 65,000 shares for proceeds of \$57,000, which were repurchased in October 2011 for \$15,000 and Solitario recorded a gain of \$42,000 in gain/loss on derivative earnings. Solitario has not designated its covered calls as hedging instruments as described in ASC 815 and any changes in the fair market value of its covered calls are recognized in the statement of operations in the period of the change. Solitario does not use its covered call derivative instruments as trading instruments; any cash received or paid related to its derivative instruments is shown as investing activities in the consolidated statement of cash flows.

The business purpose of the Kinross calls was to lock in a specific price on a portion of the Kinross shares we intended to sell within the next year. We will continue to look toward other Kinross risk management options to meet our risk management objectives. These alternatives include the use of short-term margin loans, discussed above, listed options, use of covered calls and sale of the investment. The use of these Kinross risk management strategies reduces the potential of paying significant taxes on a near term sale of the entire investment in Kinross shares based upon both (i) the projected future needs for the use of funds from any sales of the investment in Kinross shares and (ii) the potential generation of future United States net operating losses which could be used to offset any taxable gains on future sale of the investment in Kinross shares. We have not designated the Kinross calls as hedging instruments as described in ASC 815 and any changes in the fair market value of the Kinross Collar or the Kinross calls are recognized in the statement of operations in the period of the change.

Working capital



We had working capital of \$4,245,000 at December 31, 2012 compared to working capital of \$345,000 as of December 31, 2011. Our working capital at December 31, 2012 primarily consists of our cash and equivalents, the \$4,000,000 Sandstorm receivable, and the current portion of our investment in 670,000 shares of Kinross common stock of \$3,110,000, less our short-term margin loan of \$1,500,000, current portion of long-term debt of \$727,000 and current deferred income taxes of \$963,000 primarily related to our planned sales of Kinross common stock during the next year. We intend to liquidate a limited portion of our Kinross shares over the next year, in order to continue to defer current United States income taxes on the sale of shares of Kinross common stock. We also intend to borrow pursuant to the RMB Facility Agreement and to borrow on margin at RBC and on our UBS Bank secured credit line. We will continue to monitor our exposure to a single asset, taking into consideration our cash and liquidity requirements, tax implications, the market price of gold and the market price of Kinross stock. We have budgeted the anticipated sale of 320,000 shares of Kinross stock during 2013 for assumed proceeds of \$3,200,000. Any funds received from the sale of our Kinross shares or borrowing against the value of our Kinross shares would be used primarily to fund exploration and development on our existing properties, for the acquisition and exploration of new properties and general working capital.

Cash and cash equivalents were \$616,000 as of December 31, 2012 compared to \$432,000 at December 31, 2011. As of December 31, 2012, our cash balances along with our available credit from the RMB Facility Agreement, our investment in marketable equity securities and our UBS Bank credit line are considered adequate to fund our expected expenditures over the next year, including our planned 2013 development and payment obligations related to MH-LLC and the Mt. Hamilton project.

The nature of the mining exploration business requires significant sources of capital to fund exploration, development and operation of mining projects. We will need additional resources to fund our long-term payment obligations associated with MH-LLC, develop the Mt. Hamilton project on our own and explore any mineral deposits we have. We anticipate that we would finance these activities through the use of joint venture arrangements, the issuance of debt or equity, the sale of interests in our properties or the sale of our shares of Kinross common stock. There can be no assurance that a combination of such

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sources of funds will be available in the quantity or on terms acceptable to us, if at all.

Sale of our common stock

On June 26, 2012 we sold 180,000 shares of common stock to Christopher Herald, President and Chief Executive Officer of Solitario, and 45,000 shares of common stock to James Maronick, Chief Financial Officer of Solitario, at a price of \$1.22 per share. The purchase of the shares was unanimously approved by our Board of Directors and was also unanimously approved by our Audit Committee of the Board of Directors. The price of the shares was the last closing price of our common shares as quoted on the NYSE MKT (formerly NYSE Amex) on June 25, 2012. Solitario received total proceeds of \$274,500. During 2011 we completed a public offering of 3,400,000 shares of our common stock at a price to the public of \$2.50 per share and on May 9, 2011 we sold an additional 510,000 shares at \$2.50 per share, upon the exercise of the underwriter's option to cover over-allotments. The net proceeds from the Offering were \$8,937,000 after the underwriter's commission of six percent totaling \$587,000 and offering costs of \$251,000. The Offering was made pursuant to a shelf registration statement on Form S-3 filed with the SEC on March 18, 2011, which was declared effective on March 29, 2011.

Any future sale of our common stock, if any, would be dependent on a number of factors including the market price of our stock, the availability of investors, our ability to meet necessary regulatory requirements, including possible registration of the shares to be sold with the United States Securities and Exchange Commission among other things, none of which are currently in place.

Stock-based compensation plans

During the year ended December 31, 2012, no options were exercised from the 2006 Plan and we granted 165,000 options from the 2006 Plan. During the year ended December 31, 2011, 150,600 options were exercised for proceeds of \$247,000 and no options were granted from the 2006 Plan. None of our outstanding options from the 2006 Plan expire during 2013. We do not expect a significant number of our vested options from the 2006 Plan will be exercised in the next year. See Note 9, "Employee stock compensation plans" to the consolidated financial statements contained in Item 8, "Financial Statements and Supplementary Data" for a summary of the activity for stock options outstanding under the 2006 Plan as of December 31, 2012.

Off-balance sheet arrangements

As of December 31, 2012 and 2011, we have no off-balance sheet arrangements.

(e). Cash Flows

Net cash used in operations during the year ended December 31, 2012 decreased to \$3,504,000 compared to \$7,931,000 for 2011 primarily as a result of (i) a decrease in exploration expenses to \$1,986,000 in 2012 compared to \$5,946,000 in 2011, primarily related to the capitalization of \$3,129,000 in exploration and development costs at our Mt. Hamilton project, as discussed above and included in investing activities; (ii) a decrease in non-stock option general and administrative costs to \$1,948,000 during 2012 compared to \$2,160,000 during 2011 and an increase in joint venture property payments to \$300,000 during 2012 compared to \$242,000 during 2011. These decreased uses and increased sources of cash were partially mitigated by an increase in interest expense during 2012.

Net cash provided from investing activities increased to \$3,870,000 during 2012 compared to \$193,000 during 2011 primarily related to proceeds of \$6,000,000 from the Sandstorm sale, discussed above. This increase was partially offset by a decrease in the proceeds from the sale of marketable equity securities to \$1,664,000 during 2012 compared to 2,035,000 during 2011; during 2012 we sold 180,000 shares of Kinross at an average price of \$8.83 per share compared to the sale of 130,000 shares of Kinross at an average price of \$15.65 per share; and (ii) the capitalization of \$3,129,000 of development costs at Mt. Hamilton during the year.

Net cash provided from (used in) financing activities decreased to \$(182,000) during 2012 compared to \$7,692,000 during 2011. The primary reason for the decrease in cash provided from financing activities in 2011 was related to the equity offering which provided \$8,937,000 in cash during 2011 and no similar financing was completed during 2012. The decrease in cash provided from (used in) financing activities during 2012 was partially offset by an increase in cash due to the RMB Loan and reductions in net cash repaid to \$500,000 during 2012 compared to net cash repaid of \$872,000 during 2011 for short-term borrowing.

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**(f). Development Activities, Exploration Activities, Environmental Compliance and Contractual Obligations**

Development Activities

With the completion of the Feasibility Study on February 22, 2012, we entered the development stage of the Mt. Hamilton project. The development of the Mt. Hamilton project, if it occurs, will entail a significant capital investment, which is estimated in the Feasibility Study to be \$71.9 million. We currently do not have the funds for the estimated \$71.9 million capital investment to develop the Mt. Hamilton project. The funding for the full development will require significant additional capital which we anticipate may come from the liquidation of our investment in Kinross, additional issuance of our common stock, equipment leasing, debt and commodity stream financing, none of which is currently in place to adequately fund the required capital investment. We cannot provide any assurance that such capital will be available in sufficient amounts, if at all. If we develop the Mt. Hamilton deposit, we will be responsible for reclamation of the Mt. Hamilton project at the completion of mining. In addition we are required to make certain annual claim payments on our mineral property at Mt. Hamilton and to make payments to DHI-US, Ely and to certain other underlying leaseholders at Mt. Hamilton to maintain our ownership of MH-LLC and the Mt. Hamilton project. These obligations are detailed below under "Contractual Obligations." If we fail to make any of these payments we may lose some or all of our interest in MH-LLC and/or the Mt. Hamilton project.

Exploration Activities

A significant part of our business involves the review of potential property acquisitions and continuing review and analysis of properties in which we have an interest, to determine the exploration and development potential of the properties. In analyzing expected levels of expenditures for work commitments and property payments, our obligations to make such payments fluctuate greatly depending on whether, among other things, we make a decision to sell a property interest, convey a property interest to a joint venture, or allow our interest in a property to lapse by not making the work commitment or payment required. In acquiring our interests in mining claims and leases, we have entered into agreements, which generally may be canceled at our option. We are required to make minimum rental and option payments in order to maintain our interest in certain claims and leases. Our net 2012 mineral and surface property rental and option payments included in exploration expense, were \$127,000. In 2013 we estimate our net exploration property rentals and option payments for properties we own or operate, excluding Mt. Hamilton, to be approximately \$805,000, assuming that our joint ventures continue in their current status and that we do not appreciably change our property positions on existing properties, we estimate that our joint venture partners will pay on our behalf, or reimburse us approximately \$777,000 of these annual payments. These obligations are detailed below under "Contractual Obligations." In addition, we may be required to make further payments in the future if we elect to exercise our options under those agreements or if we enter into new agreements.

Environmental Compliance

We are subject to various federal, state and local environmental laws and regulations in the countries where we operate. We are required to obtain permits in advance of initiating certain of our exploration activities, to monitor and report on certain activities to appropriate authorities, and to perform remediation of environmental disturbance as a result of certain of our activities. Historically, the nature of our activities of review, acquisition and exploration of properties prior to the establishment of reserves, which may include mapping, sampling, geochemistry and geophysical studies, as well as some limited exploration drilling, has not resulted in significant environmental impacts in the past. We have historically carried on our required environmental remediation expenditures and activities, if any, concurrently with our exploration activities and expenditures. The expenditures to comply with our environmental obligations are included in our exploration expenditures in the statement of operations and have not been material to our capital or exploration expenditures, and have not had a material effect on our financial position. For the years ended December 31, 2012 and 2011, we have not capitalized any costs related to environmental control facilities. We do not anticipate our non-Mt. Hamilton project exploration activities will result in any material new or additional environmental expenditures or liabilities in the near future.

Our planned Mt. Hamilton project development activities will increase our environmental expenditures in the event we complete the development of the Mt. Hamilton project, which entails among other things, building a mine, building and operating an open pit, an ore processing plant and leach pads and other similar activities. Prior to mining development activities, substantial reclamation and mine closure bonds to the federal and state regulatory agencies must be put in place and are dependent on, among other things, receiving required permits and obtaining necessary financing. None of which are in place currently; please see "Risk Factors" in Item 1A of Part I, above. While we anticipate the majority of our activities during 2013 at our Mt. Hamilton project will relate to obtaining required permits to develop the project, we do not expect any of these activities to result in additional environmental exposures or required environmental remediation expenditures within the next year.

(table of contents)Contractual Obligations

The following table provides an analysis of our contractual obligations at December 31, 2012:

(in thousands)	As of December 31, 2012				
	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating Lease Obligations	\$ 98	\$ 65	\$ 33	\$ -	\$ -
Short-term margin loan (1)	1,500	1,500	-	-	-
Land Holding Costs (2)	28	28	-	-	-
Mt. Hamilton land holding costs (3)	1,814	279	758	518	259
Mt. Hamilton cash earn-in payments (4)	1,000	500	500	-	-
Mt. Hamilton earn-in payments in stock of Solitario (4)(5)	336	168	168	-	-
Mt. Hamilton advance royalty and royalty buy-down payments (4)(6)	6,800	300	5,600	600	300
Augusta long-term debt (4)(7)	2,500	750	1,750	-	-
RMB Loan long-term debt (8)	1,500	-	1,500	-	-
Total	\$15,576	\$3,590	\$10,309	\$1,118	\$559

(1) The short term-margin loan is due on demand and includes \$1,000 of accrued interest at December 31, 2012.

(2) Excluding Mt. Hamilton, discussed below, our other land holding contractual obligations, net of expected joint venture reimbursements of \$777,000. Our non-Mt. Hamilton land holding agreements are generally cancelable at our option and this amount includes all required net land payments for the next 12 months to maintain our existing mineral properties.

(3) Mt. Hamilton land holding costs have been shown through 2017 and include \$44,000 of annual unpatented mining claim fees, minimum cash stand-by royalty and land payments and required minimum royalty payments of 33 ounces of gold per year in 2016, 2017 and 2018, valued at \$1,664 per ounce, the closing price of an ounce of gold at December 31, 2012, quoted on [kitco.com](http://www.kitco.com).

(4) Pursuant to the MH Agreement, we have agreed to make the following payments as part of our earn-in upon completion of the Feasibility Study: We have agreed to (i) make the \$2,500,000 payments to Ely discussed below in (7) to DHI-US, to enable Ely to make payments in satisfaction of the Augusta long-term debt and (ii) make payments totaling \$500,000 and deliver 100,000 shares of Solitario common stock to DHI-US by August 23, 2013, of which \$250,000 was paid and 50,000 shares of our stock were delivered in February 2013. We have further agreed to (i) make payments totaling \$500,000 to DHI-US and deliver 100,000 shares of Solitario common stock to DHI-US by August 23, 2014. Finally, we have agreed to (i) buy down the existing 6% net smelter return ("NSR") royalty to a 1% NSR royalty by paying the underlying royalty holder \$5,000,000 on or before commercial completion of the Mt.

*Hamilton project. If we fail to make any of the payments due to DHI-US, described above, or fail to make the annual advanced royalty payments discussed below or fail to pay down the existing royalty, discussed below, our interest in MH-LLC will be reduced to 49% and DHI-US's interest will be increased to 51%.*

*(5) The commitment value of the shares of Solitario stock to be paid to DHI-US, discussed above in note (4) to this table, have been valued at \$1.68 per share, the December 31, 2012 ending stock price as quoted on the NYSE Amex.*

*(6) The minimum annual advance royalty payments of \$300,000 per year have been included in this table through December 2017. In addition the \$5,000,000 royalty buy-down discussed above is due on or before commercial completion, which is estimated to occur in November 2014 for purposes of this schedule only. The actual date of commercial completion is not currently known and is dependent upon obtaining permits, financing and other factors, none of which are currently in place and may be delayed for a number of reasons beyond our control. Please see "Risk Factors", above.*

*(7) Includes unamortized discount as of December 31, 2012; see "Long-term debt" above. These payments of \$2,500,000 will be made to Ely, in the form of private placements for Ely common stock, of \$750,000 in May 2013, \$750,000 in or before May 2014, and \$1,000,000 in or before May 2015, as further discussed below in Note 10 to the consolidated financial statements, "Ely Gold investment and the Mt. Hamilton Joint Venture" in Item 8, "Financial Statements and Supplementary Data."*

*(8) The RMB Loan is a three year term loan and is estimated to be paid in full for the purpose of this schedule on or before August 2015 and this payment schedule does not include \$1,000,000 borrowed pursuant to the RMB Facility Agreement in February 2013.*

#### **(g). Mt Hamilton development project**

##### Mt. Hamilton joint venture

The Mt. Hamilton gold property, located in east-central Nevada, is currently the most important project in the Company and is our primary focus for 2013. With the completion of the Feasibility Study in February 2012, we have now earned an 80% interest in the property. It is our only property with proven and probable reserves. Our initial participation in the Mt. Hamilton property began in August 2010, when we signed a Letter of Intent with Ely Gold to earn up to an 80% interest. In December 2010, we entered into the definitive MH Agreement with DHI-US, a wholly owned subsidiary of Ely Gold, with respect to MH-LLC, the limited liability company that holds the Mt. Hamilton project assets. During 2012 upon completion of the Feasibility study we earned an 80% interest in MH-LLC. During 2012 Solitario, Ely and DHI-US revised the MH Agreement to require the royalty reduction payments to be made as described in the Contractual Obligations table above. Previously, the MH Agreement obligated Solitario to make the continuing payment obligations to CMC of \$3,500,000 on or before November 13, 2013 and \$1,500,000 on or before November 13, 2014. In addition, Solitario Ely and DHI-US revised the LOI to clarify

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the timing and pricing of the payments due to Ely under the private placement as further described in Note 10 “Ely Gold investment and the Mt. Hamilton joint venture” in Part II, Item 8 “Financial Statements and Supplementary Data” of this Form 10-K.

We are the manager of all project activities. Our focus for 2013 is to advance environmental permitting for the project. The most important component of permitting will be approval of the Plan of Operations. The Plan of Operations is currently being reviewed by the USFS to determine its completeness, and then to develop and manage the appropriate permitting path and activities for the project. There can be no assurance as to when permitting will be completed as it is dependent on a number of factors over which we have no control. As part of the permitting process, we will undertake public scoping meetings to define potential concerns and develop mitigation plans to address issues identified by all stakeholders, which includes the public, local communities, county, state, and federal regulatory agencies, and Native American input. Other planned activities for 2013 are additional drilling south of the Centennial reserves in an area called Wheeler Ridge, metallurgical testing of Seligman mineralization to determine gold and silver recoveries, additional reserve and resource modeling of both the Centennial and Seligman deposits incorporating the 2012 drilling and 2013 metallurgical results, and an update of the project’s economic model.

We have budgeted approximately \$3,668,000 for permitting activities, planned development, land and earn-in payments for 2013 at Mt. Hamilton.

**(h). Exploration Joint Ventures, Royalty and other properties**

The following discussion relates to an analysis of our anticipated property exploration plans as of December 31, 2012. Please also see Note 2 to the consolidated financial statements, “Mineral Properties” in Item 8, “Financial Statements and Supplementary Data,” and our discussion of our properties under Item 2, “Properties” of this Annual Report on Form 10-K for a more complete discussion of all of our mineral properties.

Bongará

The Bongará project is an advanced-stage high-grade zinc project in Peru. Based on extensive exploration and development work conducted to date, we believe the property has excellent potential to be developed into a mine over the next several years. In August 2006 we signed a Letter Agreement with Votorantim Metais (“Votorantim”), granting Votorantim the right to earn up to a 70% interest in the project by meeting certain spending and development milestones. The Bongará project hosts the Florida Canyon zinc deposit, where high-grade zinc mineralization has been encountered in drill holes over an area approximately 2.5 kilometers by 1.3 kilometers in dimension.



Votorantim is funding and managing all work conducted on the project. Votorantim's work plans for 2013 will focus on activities necessary to complete a prefeasibility study by mid-year and then to transition to feasibility-level work in the second half of the year. As part of this program, construction of a new 700-meter long tunnel to provide underground access and drilling platforms in the Karen-Milagros zone of the Florida Canyon deposit is planned, as well as extending the existing San Jorge tunnel a further 300 meters to the south to test for the continuation of high-grade mineralization. Detailed drilling from both these tunnels will provide feasibility-level reserve information. Construction of these new tunnels will begin upon permit approval, which is expected in the first half of 2013. A total of 25,000 meters of both surface and underground drilling is scheduled this year. Other work scheduled includes additional metallurgical testing, more detailed engineering of site infrastructure, update the deposit model incorporating the results of the 2012 drilling program, additional hydrologic and geotechnical studies that began in 2012, and completing the 32-kilometer access road to the mine site. Permitting and social development activities with surrounding communities will also continue throughout 2013.

### Pedra Branca

The Pedra Branca project is an advanced-stage project in which we are exploring for platinum and palladium ("PGM") in Brazil. Several well mineralized bodies containing strong values of PGM's have been delineated by drilling. We believe there is good potential to discover additional PGM-bearing deposits. The property is 100% owned by PBM. Our joint venture partner, Anglo Platinum ("Anglo"), currently owns 51% of PBM and is funding, through PBM, all work conducted on the project. We hold a 49% interest in PBM. We deconsolidated PBM during 2010 and record our share of any exploration expense as our equity interest in the gains and losses of PBM against its investment in PBM. As part of the Shareholders Agreement, Anglo is the manager of the project and is paid a management fee of 5% of the incurred costs at PBM.

Anglo has indicated the 2013 exploration program will consist of helicopter-borne geophysics on closely spaced flight lines traversing areas potentially underlain by ultramafic rocks. Ultramafic rocks are highly magnetic and detectable by

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geophysics. Ultramafic rocks are also the host to all PGM mineralization identified on the property. If the geophysical program is successful in identifying new ultramafic bodies, Anglo has indicated PBM may drill test these areas in late-2013 or the first half of 2014.

Pachuca Norte

The Pachuca Norte project (formerly referred to as “Pachuca-Real”) located in central Mexico is an early-stage exploration project in which we are exploring for silver and gold. We believe the project has excellent potential to host multiple high-grade silver-gold veins over a fairly large area.

In March 2013 we signed a binding Letter of Intent (“LOI”) with Minera Hochschild Mexico S.A. de C.V. (“Hochschild”), a wholly owned subsidiary of Hochschild Mining plc. The LOI provides for Hochschild to earn a 51% interest in the property by funding \$10,000,000 in exploration commitments over the next five years from the date of signing a definitive agreement. Hochschild will have the option to earn an additional 19% (total interest 70%) by funding all project expenditures necessary to complete a positive feasibility study. Hochschild will manage the operations and has the right to terminate the joint venture at any time. Currently, we and Hochschild are working on negotiating a definitive joint venture agreement. There can be no assurance that such an agreement will ultimately be signed. Assuming a definitive agreement is signed, Hochschild has committed to a firm \$1.5 million exploration work commitment over the first 12-month period. Hochschild has indicated that their exploration plans for 2013 include drilling core holes that offset well-mineralized previous drill holes to determine the trend of mineralization.

Yanacocha Royalty Property

The 61,000-hectare Yanacocha royalty property is located in northern Peru immediately north of Newmont Mining-Buenaventura's Minera Yanacocha Mine, the largest gold mine in South America. We acquired the property in 1993 and sold it to Newmont in 2000 for \$6.0 million and we retained a net smelter return (“NSR”) royalty on the property. We amended the NSR royalty schedule in January 2005 at which time Newmont committed to a long-term US\$4.0 million work program on our royalty property. We consider the property to be an early-stage exploration property, but believe it has good potential to host gold mineralization. Newmont continues to conduct annual exploration work on the property, and we see this work continuing for the foreseeable future.

Other Properties

For Peru and Mexico, we have budgeted approximately \$1,396,000 in 2013 for exploration on our wholly-owned exploration projects and project generation activities for 2013. These activities include mapping,

sampling, geophysical and geochemical analysis, and potentially acquisitions of new properties. We are not planning on drilling any of these early stage projects in 2013.

**(i). Discontinued Projects**

During 2012 abandoned our Triunfo and Espanola properties in Bolivia and our Excelsior project in Peru and we recorded mineral property impairments of \$31,000. During 2011 we abandoned the Paria Cruz project and recorded a mineral property write-down of \$10,000.

**(j). Significant Accounting Policies**

See Note 1, "Business and Summary of Significant Accounting Policies," in Item 8 "Financial Statements and Supplementary Data" for a discussion of our Significant Accounting Policies.

**(k). Related Party Transactions**

On June 26, 2012, Christopher Herald, our President and Chief Executive Officer, and James Maronick, our Chief Financial Officer, purchased shares of our common stock at a price of \$1.22 per share, with Mr. Herald purchasing 180,000 shares and Mr. Maronick purchasing 45,000 shares. The purchase of the shares was unanimously approved by our Board of Directors and was also unanimously approved by our Audit Committee of the Board of Directors. The price of the shares was the last closing price of our common shares as quoted on the NYSE MKT on June 25, 2012. We received total proceeds of \$275,000.

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**(I). Recent Accounting Pronouncements**

There are no recently issued accounting standards for which the Company expects a material impact on our consolidated financial statements

**Item 7A. Quantitative and Qualitative Disclosures about Market Risk**

Smaller reporting companies are not required to provide the information required by this item.

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**Item 8. Financial Statements and Supplementary Data**

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## **REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

To the Board of Directors and Shareholders

Solitario Exploration & Royalty Corp.

Wheat Ridge, Colorado

We have audited the accompanying consolidated balance sheets of Solitario Exploration & Royalty Corp. (the "Company") as of December 31, 2012 and 2011, and the related consolidated statements of operations, comprehensive loss, shareholders' equity, and cash flows for the years then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements and assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Solitario Exploration & Royalty Corp. as of December 31, 2012 and 2011, and the results of their operations and their cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

/s/ EKS&H LLLP

March 7, 2013

Denver, Colorado

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## SOLITARIO EXPLORATION &amp; ROYALTY CORP.

## CONSOLIDATED BALANCE SHEETS

(in thousands of U.S. dollars, except share and per share amounts)	December 31, 2012	December 31, 2011
Assets		
Current assets:		
Cash and cash equivalents	\$616	\$432
Investments in marketable equity securities, at fair value	3,110	4,361
Royalty Sale Receivable	4,000	—
Prepaid expenses and other	210	488
Total current assets	7,936	5,281
Mineral properties	9,327	8,901
Investments in marketable equity securities, at fair value	3,983	6,000
Equity method investment	1,165	1,653
Other assets	1,072	219
Total assets	\$23,483	\$22,054
Liabilities and Shareholders' Equity		
Current liabilities:		
Accounts payable	\$398	\$482
Short-term margin loan	1,500	2,000
Current portion long-term debt	727	727
Deferred income taxes	963	1,627
Other	103	100
Total current liabilities	3,691	4,936
Long-term debt, net of discount	2,437	2,075
Deferred income taxes	—	1,170
Deferred gain on sale of mineral property	7,000	—
Warrant liability	1,138	—
Commitments and contingencies (Notes 2 and 8)		
Shareholders' Equity:		
Solitario shareholders' equity		
Preferred stock, \$0.01 par value, authorized 10,000,000 shares (none issued and outstanding at December 31, 2012 and 2011)	—	—
Common stock, \$0.01 par value, authorized, 100,000,000 shares (34,479,958 and 34,204,958, respectively, shares issued and outstanding at December 31, 2012 and 2011)	345	342
Additional paid-in capital	47,107	49,015
Accumulated deficit	(42,678)	(39,381)
Accumulated other comprehensive income	3,914	5,877



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Total Solitario shareholders' equity	8,688	15,853	
Noncontrolling interest	529	(1,640)	)
Contra-noncontrolling interest	—	(340)	)
Total shareholders' equity	9,217	13,873	
Total liabilities and shareholders' equity	\$23,483	\$22,054	

See Notes to Consolidated Financial Statements.

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## SOLITARIO EXPLORATION &amp; ROYALTY CORP.

## CONSOLIDATED STATEMENTS OF OPERATIONS

FOR THE YEARS ENDED DECEMBER 31, 2012 AND 2011

(in thousands of U.S. Dollars, except per share amounts)	For the year ended December 31,	
	2012	2011
Property and joint venture revenue		
Joint venture property payments	\$300	\$242
Costs, expenses and other:		
Exploration expense	1,986	5,946
Depreciation and amortization	61	46
General and administrative	2,680	2,857
Loss on derivative instruments	30	137
Property abandonment and impairment	31	10
Gain on sale of assets	(8 )	—
Interest expense and dividend income (net)	318	163
Total costs, expenses and other	5,098	9,159
Other Income (expense)		
Gain on sale of marketable equity securities	1,528	1,937
Loss on warrant liability	(488 )	—
Equity in net loss of equity method investment	(488 )	(623 )
Total other income (expense)	552	1,314
Loss before income tax	(4,246 )	(7,603 )
Income tax benefit	648	635
Net loss	(3,598 )	(6,968 )
Less net loss attributable to noncontrolling interest	301	3,591
Net loss attributable to Solitario shareholders	\$(3,297 )	\$(3,377 )
Loss per common share attributable to Solitario shareholders:		
Basic and diluted	\$(0.10 )	\$(0.10 )
Weighted average shares outstanding:		
Basic and diluted	34,351	32,807

See Notes to Consolidated Financial Statements.

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SOLITARIO EXPLORATION & ROYALTY CORP.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

FOR THE YEARS ENDED DECEMBER 31, 2012 AND 2011

(in thousands of U.S. dollars)	2012	2011
Net loss for the period, before comprehensive loss	\$(3,598)	\$(6,968 )
Unrealized loss on marketable equity securities, net of deferred taxes	(1,963)	(5,909 )
Comprehensive loss	\$(5,561)	\$(12,877)
Comprehensive loss attributable to Solitario shareholders	\$(5,260)	\$(9,286 )
Comprehensive loss attributable to noncontrolling interests	(301 )	(3,591 )
Comprehensive loss	\$(5,561)	\$(12,877)

See Notes to Consolidated Financial Statements

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Issuance of shares on exercise of stock options										
Accrued interest on advance to noncontrolling interest	-	-	-	-	-	-	(19)	-	(19)	
Net loss	-	-	-	(3,377)	-	(3,377)	(3,591)	-	(6,968)	
Net unrealized (loss) on marketable equity securities (net of tax of \$3,516)	-	-	-	-	(5,909)	(5,909)	-	-	(5,909)	
<b>Balance at December 31, 2011</b>	<b>34,204,958</b>	<b>\$342</b>	<b>\$49,015</b>	<b>\$(39,381)</b>	<b>\$5,877</b>	<b>\$15,853</b>	<b>\$(1,640)</b>	<b>\$(340)</b>	<b>\$13,873</b>	
Issuance of shares and \$300 of cash to noncontrolling shareholder for future earn-in	50,000	1	70	-	-	71	(180)	(191)	(300)	
Noncontrolling interest Contribution (net)	-	-	-	-	-	-	198	-	198	
Disproportionate share entry on earn in to MH-LLC	-	-	(2,983)	-	-	(2,983)	2,983	-	-	
Reversal of contra-noncontrolling interest on earn-in	-	-	-	-	-	-	(531)	531	-	
Stock option expense	-	-	732	-	-	732	-	-	732	
Issuance of shares in private placement	225,000	2	273	-	-	275	-	-	275	
Net loss	-	-	-	(3,297)	-	(3,297)	(301)	-	(3,598)	
Net unrealized (loss) on marketable equity securities (net	-	-	-	-	(1,963)	(1,963)	-	-	(1,963)	

of tax of  
 \$1,168)

**Balance at**

<b>December 31,</b>	<b><u>34,479,958</u></b>	<b><u>\$345</u></b>	<b><u>\$47,107</u></b>	<b><u>\$(42,678)</u></b>	<b><u>\$3,914</u></b>	<b><u>\$8,688</u></b>	<b><u>\$529</u></b>	<b><u>\$ -</u></b>	<b><u>\$9,217</u></b>
<b>2012</b>									

See Notes to Consolidated Financial Statements.

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## SOLITARIO EXPLORATION &amp; ROYALTY CORP.

## CONSOLIDATED STATEMENTS OF CASH FLOWS

FOR THE YEARS ENDED DECEMBER 31, 2012 AND 2011

(in thousands of U.S. Dollars)	For the year ended December 31,	
	2012	2011
Operating activities:		
Net loss	\$(3,598)	\$(6,968)
Adjustments to reconcile net loss to net cash used in operating activities:		
Loss on derivative instruments	30	137
Depreciation and amortization	61	46
Loss on equity method investment	488	623
Property abandonment and impairment	31	10
Employee stock option expense	732	697
Deferred income taxes	(648 )	(635 )
Loss on warrant liability	488	—
Amortization of interest on debt discounts	332	217
Gain on asset and equity security sales	(1,536)	(1,937)
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	200	(2 )
Accounts payable and other current liabilities	(84 )	(119 )
Net cash used in operating activities	(3,504)	(7,931)
Investing activities:		
Additions to mineral properties	(3,457)	(1,765)
Additions to other assets	(397 )	(119 )
Sale of derivative instrument, net	51	42
Proceeds from sale of mineral property	6,000	—
Proceeds from sale of marketable equity securities	1,664	2,035
Proceeds from sale of other assets	9	—
Net cash provided by investing activities	3,870	193
Financing activities:		
Short-term borrowing	2,665	1,075
Repayment of short-term borrowing	(3,165)	(1,947)
Repayment of long-term debt	(750 )	(500 )
Proceeds from issuance of debt, net	912	—
Proceeds from issuance of common stock , net	275	8,937
Proceeds from exercise of options	—	247
Payment to noncontrolling interest	(300 )	(200 )
Noncontrolling interest contribution, net	181	80
Net cash provided by (used in) financing activities	(182 )	7,692

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Net increase (decrease) in cash and cash equivalents	184	(46 )
Cash and cash equivalents, beginning of year	432	478
Cash and cash equivalents, end of year	\$616	\$432
Supplemental disclosure of cash flow information:		
Cash paid for interest	\$87	\$71
Supplemental disclosure of non-cash flow investing and financing activities:		
Royalty sale receivable	\$4,000	\$—
Transfer of contra-noncontrolling interest to noncontrolling interest upon earn-in	\$531	\$—
Disproportionate share entry from noncontrolling interest to additional paid in capital upon earn-in	\$2,983	\$—
Debt financing costs	\$588	\$—
Issuance of stock to noncontrolling interest	\$71	\$140
Acquisition of mineral properties for stock	\$—	\$1,000
Loan to noncontrolling interest	\$—	\$504
Reclassification of stock option liability to additional paid-in capital, \$1,240 and to retained earnings, \$992, net of deferred taxes of \$543 upon change in accounting principle	\$—	\$2,775

See Notes to Consolidated Financial Statements.



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1. Business and Summary of Significant Accounting Policies:

*Business and company formation*

Solitario Exploration & Royalty Corp. (“Solitario”) is a development stage company at December 31, 2012 (but not a company in the “Development Stage”) as a result of the completion of a feasibility study on its Mt. Hamilton project (the “Feasibility Study”) prepared by SRK Consulting (US), Inc. of Lakewood, Colorado (“SRK”). Solitario intends to develop the Mt. Hamilton project. However, Solitario has never developed a mineral property. In addition Solitario has a focus on the acquisition of precious and base metal properties with exploration potential and the development or purchase of royalty interests. Solitario acquires and holds a portfolio of exploration properties for future sale or joint venture or to create a royalty prior to the establishment of proven and probable reserves.

Solitario has been actively involved in mineral exploration since 1993. Although, Solitario records joint venture property payments as revenue for standby delay rental payments, Solitario's last significant revenues were recorded in 2000 upon the sale of the Yanacocha property for \$6,000,000. During 2012, Solitario sold a royalty on its Mt. Hamilton Project for \$10,000,000 and recorded a deferred gain on that sale of \$7,000,000. Future revenues from the sale of properties, if any, would also occur on an infrequent basis in the future. At December 31, 2012, in addition to its Mt. Hamilton project, Solitario had nine mineral exploration properties in the United States, Peru, Mexico and Brazil and its Yanacocha and Mercurio royalty properties in Peru and Brazil, respectively. Solitario is conducting exploration activities in all of those countries.

Solitario was incorporated in the state of Colorado on November 15, 1984 as a wholly-owned subsidiary of Crown Resources Corporation (“Crown”). In July 1994, Solitario became a publicly traded company on the Toronto Stock Exchange (the “TSX”) through its Initial Public Offering.

*Recent developments*

Mt. Hamilton feasibility study

In December 2010 Solitario signed the Limited Liability Company Operating Agreement of Mt. Hamilton LLC, (the “MH Agreement”), with Ely Gold and Minerals, Inc. (“Ely”) and formed Mt. Hamilton LLC (“MH-LLC”), the owner of the Mt. Hamilton project. Solitario announced on February 22, 2012 the completion of the Feasibility Study. As a result of the completion of the Feasibility Study, pursuant to the MH Agreement, Solitario earned an 80% interest in MH-LLC and reported mineral reserves at its Mt. Hamilton project. See Note 2, “Mineral Properties,” below.

RMB facility agreement

As explained in more detail in Note 4, “Long-term debt,” Solitario entered into a Facility Agreement (the “Facility Agreement”) with RMB Australia Holdings Limited, an Australian corporation (“RMBAH”), and RMB Resources Inc., a Delaware corporation (“RMBR”) whereby Solitario may borrow up to \$5,000,000 from RMBAH (with any amounts outstanding collectively being the “RMB Loan”). Solitario borrowed \$1,500,000 on August 21, 2012. Solitario paid an arrangement fee of \$250,000 upon initial funding. The RMB Loan matures on the earlier to occur of (i) 36 months from the date of initial funding or (ii) the date on which financing is made available to MH-LLC for purposes of placing the Mt. Hamilton project into commercial production. The RMB Loan amounts bear interest at the 90-day LIBOR rate plus 5%, payable in arrears on the last day of each quarterly interest period. The RMB Loan may be repaid at any time without penalty. Any amounts repaid may not be redrawn under the Facility Agreement. The RMB Loan is secured by a lien on Solitario’s 80% interest in MH-LLC as well as a general security interest in Solitario’s remaining assets.

RMB warrants

Pursuant to the Facility Agreement, Solitario issued 1,624,748 warrants (the “RMB Warrants”) to RMBAH as partial consideration for financing services provided in connection with the Facility Agreement. Each RMB Warrant entitles the holder to purchase one share of Solitario common stock (the “Warrant Shares”) pursuant to the terms and conditions of the RMB Warrants. The RMB Warrants expire 36 months from their date of issuance and have an exercise price of \$1.5387 per Warrant Share, subject to customary anti-dilution adjustments.

Sandstorm royalty sale

On June 11, 2012, MH-LLC completed the sale of a 2.4% net smelter returns royalty (“NSR”) on the Mt. Hamilton

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project to Sandstorm Gold, Ltd (“Sandstorm”) for US\$10,000,000. MH-LLC received an upfront payment of US\$6,000,000 upon signing the agreement and received US\$4,000,000 on January 15, 2013, which Solitario has recorded as a current asset as of December 31, 2012. As part of the agreement, MH-LLC will have the option, for a period of 30 months from June 11, 2012 to repurchase the NSR for US\$12,000,000, provided that MH-LLC enters into a gold stream agreement with Sandstorm that has an upfront deposit of greater than US\$30,000,000. In addition, MH-LLC has provided Sandstorm with a right of first refusal on any future royalty or gold stream financing for the Mt. Hamilton project. Pursuant to the Agreement, Solitario is jointly and severally liable for all obligations of MH-LLC to Sandstorm. See Note 2, “Mineral Properties,” below for further discussion of the Sandstorm royalty sale.

*Investment in Kinross*

Solitario has a significant investment in Kinross Gold Corporation (“Kinross”), which consisted of the following at December 31, 2012 and December 31, 2011:

(in thousands)	<u>Year ended</u>	
	<u>December 31,</u>	
	<u>2012</u>	<u>2011</u>
Shares	670	850
Fair value		
Current assets	\$3,110	\$4,361
Long term assets	\$3,402	\$5,329

The current assets represent Solitario's estimate of the portion of marketable equity securities that will be liquidated within one year. Solitario sold the following shares of Kinross during 2012 and 2011:

(in thousands)	<u>Year ended</u>	
	<u>December 31,</u>	
	<u>2012</u>	<u>2011</u>
Shares sold	180	130
Proceeds	\$1,591	\$2,035
Gain on sale	\$1,464	\$1,937

As of December 31, 2012 and 2011, Solitario has borrowed \$1,500,000 and \$2,000,000, respectively, in short-term margin loans, which are primarily secured by its investment in Kinross. The short-term margin loan is discussed below under Note 3, “Short-term debt.” As of February 28, 2013, Solitario owns 670,000 shares of Kinross common stock which have a value of approximately \$5.1 million based upon the market price of \$7.62 per Kinross share. Solitario’s investment in Kinross common stock represents a significant concentration of assets, with the

inherent risk that entails. Any significant fluctuation in the market value of Kinross common shares could have a material impact on Solitario's liquidity and capital resources.

#### *Financial reporting*

The consolidated financial statements include the accounts of Solitario and its wholly-owned subsidiaries, controlled non-wholly-owned subsidiaries and its equity investment in Pedra Branca Mineracao, Ltd "(PBM)", which owns the Pedra Branca project in Brazil. All significant intercompany accounts and transactions have been eliminated in consolidation. The consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States of America ("generally accepted accounting principles"), and are expressed in US dollars.

#### *Revenue recognition*

Solitario records delay rental payments as revenue in the period received. Solitario recorded \$300,000 and \$242,000, respectively, in joint venture and property payments for the years ended December 31, 2012 and 2011. Any payments received for the sale of property interests are recorded as a reduction of the related property's capitalized cost. Proceeds which exceed the capitalized cost of the property without reserves are recognized as revenue. Payments received on the sale of properties with reserves are recognized as revenue to the extent the proceeds exceed the proportionate basis in the assets sold. Gain on

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the sale of a mineral property revenue stream is deferred to the extent there is a guarantee for the future revenue stream until such time as the potential funding obligation for the guarantee is reduced or released. to the extent Solitario no longer has any involvement of obligations.

*Use of estimates*

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Some of the more significant estimates included in the preparation of Solitario's financial statements pertain to: (i) the recoverability of mineral properties and their future exploration potential; (ii) the estimate of the fair value of Solitario's stock option grants to employees; (iii) the ability of Solitario to realize its deferred tax assets; (iv) the current portion of Solitario's investment in Kinross stock and other marketable equity securities; (v) the fair value of Solitario's liability for the RMB warrants.

In performing its activities, Solitario has incurred certain costs for mineral properties. The recovery of these costs is ultimately dependent upon the sale of mineral property interests or the development of economically recoverable ore reserves and the ability of Solitario to obtain the necessary permits and financing to successfully place the properties into production, and upon future profitable operations, none of which is assured.

*Cash equivalents*

Cash equivalents include investments in highly liquid money-market securities with original maturities of three months or less when purchased. As of December 31, 2012 and 2011 Solitario had concentrations of cash and cash equivalents in excess of federally insured amounts and cash in foreign banks, which are not covered under the federal deposit insurance rules for the United States.

*Mineral properties*

Solitario began capitalization all of its expenditures on its Mt. Hamilton project, subsequent to the completion of the Feasibility Study. Solitario expenses all exploration costs incurred on its mineral properties prior to the establishment of proven and probable reserves. Initial acquisition costs of its mineral properties are capitalized. Solitario regularly performs evaluations of its investment in mineral properties to assess the recoverability and/or the residual value of its investments in these assets. All long-lived assets are reviewed for impairment whenever events or

circumstances change which indicate the carrying amount of an asset may not be recoverable, utilizing established guidelines based upon undiscounted future net cash flows from the asset or upon the determination that certain exploration properties do not have sufficient potential for economic mineralization.

#### *Derivative instruments*

Solitario accounts for its derivative instruments in accordance with ASC 815 "Accounting for Derivative Instruments and Hedging Activities" ("ASC 815"). Beginning in December 2008, Solitario sold covered calls covering its shares of Kinross common stock. Solitario also owned certain warrants issued by Ely, which expired unexercised during 2012. Solitario issued the RMB Warrants during 2012. Solitario has not designated its covered calls as hedging instruments and any changes in the fair market value of the covered calls and its warrants are recognized in the statement of operations in the period of the change. See Note 6, "Derivative instruments" below.

#### *Fair value*

FASB ASC 820, "Fair Value Measurements and Disclosures" ("ASC 820") establishes a framework for measuring fair value and requires enhanced disclosures about fair value measurements. ASC 820 clarifies that fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. For certain of Solitario's financial instruments, including cash and cash equivalents, short-term margin loans and accounts payable, the carrying amounts approximate fair value due to their short-term maturities. Solitario's marketable equity securities and the Kinross calls are carried at their estimated fair value based on quoted market prices. See Note 7, "Fair value of financial instruments" below.

(table of contents)*Marketable equity securities*

Solitario's investments in marketable equity securities are classified as available-for-sale and are carried at fair value, which is based upon quoted prices of the securities owned. The cost of marketable equity securities sold is determined by the specific identification method. Changes in market value are recorded in accumulated other comprehensive income within shareholders' equity, unless a decline in market value is considered other than temporary, in which case the decline is recognized as a loss in the consolidated statements of operations. The following tables summarize Solitario's marketable equity securities and accumulated other comprehensive income related to its marketable equity securities:

(in thousands)	<u>December 31,</u>	<u>2012</u>	<u>December 31,</u>	<u>2011</u>
Marketable equity securities at fair value	\$7,093		\$10,361	
Cost	851		988	
Accumulated other comprehensive income for unrealized holding gains	6,242		9,373	
Deferred taxes on accumulated other comprehensive income for unrealized holding gains	2,328		3,496	
Accumulated other comprehensive income	\$3,914		\$5,877	

The following table represents changes in marketable equity securities:

(in thousands)	Year ended December 31,	
	<u>2012</u>	<u>2011</u>
Gross cash proceeds	\$1,664	\$2,035
Cost	136	98
Gross gain on sale included in earnings during the period	1,528	1,937
Deferred taxes on gross gain on sale included in earnings	(571)	(722)
Reclassification adjustment to unrealized gain in other comprehensive income for net gains included in earnings	(957)	(1,215)
Gross unrealized holding loss arising during the period included in other comprehensive loss.	(1,603)	(7,488)
Deferred taxes on unrealized holdings loss included in other comprehensive loss	597	2,794
<u>Net unrealized holding gain (loss)</u>	<u>(1,006)</u>	<u>(4,694)</u>
Other comprehensive income (loss) from marketable equity Securities	(1,963)	\$(5,909)

*Foreign exchange*

The United States dollar is the functional currency for all of Solitario's foreign subsidiaries. Although Solitario's South American exploration activities have been conducted primarily in Brazil, Peru and Mexico, a portion of the payments under the land, leasehold and exploration agreements of Solitario are denominated in United States dollars. Foreign currency gains and losses are included in the results of operations in the period in which they occur. During 2012 and 2011, Solitario recorded foreign exchange losses of \$32,000 and \$43,000, respectively. Solitario's cash accounts in foreign subsidiaries not denominated in United States dollars represent the only significant foreign currency denominated assets. Foreign currency denominated cash accounts totaled \$36,000 and \$325,000, respectively, at December 31, 2012 and 2011.

*Equity method investments*

Solitario accounts for its investment in Pedra Branca do Mineracao, Ltd. ("PBM") under the equity method as of July 21, 2010, when Anglo Platinum Limited ("Anglo") earned a 51% interest in PBM. Solitario elected not to record its investment in



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PBM at fair value after July 21, 2010 and during 2012 and 2011 recorded a reduction of \$488,000 and \$623,000, respectively, in its equity method investment for Solitario's share of the loss of PBM during 2012 and 2011.

*Income taxes*

Solitario accounts for income taxes in accordance with ASC 740, "Accounting for Income Taxes." Under ASC 740, income taxes are provided for the tax effects of transactions reported in the financial statements and consist of taxes currently due plus deferred taxes related to certain income and expenses recognized in different periods for financial and income tax reporting purposes. Deferred tax assets and liabilities represent the future tax return consequences of those differences, which will either be taxable or deductible when the assets and liabilities are recovered or settled. Deferred taxes are also recognized for operating losses and tax credits that are available to offset future taxable income and income taxes, respectively. A valuation allowance is provided if it is more likely than not that some portion or all of the deferred tax assets will not be realized.

*Accounting for uncertainty in income taxes*

ASC 740 clarifies the accounting for uncertainty in income taxes recognized in a company's financial statements. ASC 740 prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. ASC 740 also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition. ASC 740 provides that a company's tax position will be considered settled if the taxing authority has completed its examination, the company does not plan to appeal, and it is remote that the taxing authority would reexamine the tax position in the future. These provisions of ASC 740 had no effect on Solitario's financial position or results of operations. See Note 5, "Income taxes" below.

*Earnings per share*

The calculation of basic and diluted loss per share is based on the weighted average number of common shares outstanding during the years ended December 31, 2012 and 2011. Potentially dilutive shares related to outstanding common stock options of 2,598,400 and 2,433,400 for the years ended December 31, 2012 and 2011, respectively, and RMB warrants of 1,624,748 for the year ended December 31, 2012 were excluded from the calculation of diluted loss per share because the effects were anti-dilutive.

*Employee stock compensation plans*

In April 2010 the FASB issued ASU No. 2010-13, which addresses the classification of a share-based payment award with an exercise price denominated in the currency of a market in which the underlying equity security trades. ASC 718 was amended to clarify that a share-based payment award with an exercise price denominated in the currency of a market in which a substantial portion of the entity's equity securities trade shall not be considered to contain a market, performance or service condition. Therefore, such an award is not to be classified as a liability if it otherwise qualifies for equity classification. The amendments in ASU 2010-13 are effective for fiscal years, and interim periods within those fiscal years, beginning on or after December 15, 2010, with early application permitted. Prior to the adoption of ASU 2010-13, Solitario classified its stock options as liabilities as they are priced in Canadian dollars and Solitario's functional currency is United States dollars. Beginning January 1, 2011, Solitario classifies its options as equity options, in accordance with ASU 2010-13 and no longer records a liability for the fair value of its outstanding options. In accordance with ASU 2010-13, this change has been made on a prospective basis as of January 1, 2011 with a reduction to stock option liability of \$2,775,000, an increase to additional paid-in capital of \$1,240,000 and a reduction in accumulated deficit of \$992,000, net of deferred taxes of \$543,000 as a cumulative effect of a change in accounting principle. The adoption of ASU 2010-13 had the effect of increasing the 2011 net loss and basic and diluted earnings per share by \$524,000 and \$0.02 per share, respectively, by no longer accounting for its options as liabilities. See Note 9, "Employee stock compensation plans" below.

Solitario's outstanding options on the date of grant have a five-year term, and vest 25% on date of grant and 25% on each anniversary date. Solitario recognizes stock option compensation expense based upon the grant date fair value of the awards and as the stock options vest by multiplying the estimated grant date fair value determined using the Black-Scholes model by a vesting percentage, with 25% recognized immediately, and the remaining 75% recognized over three years on a straight line basis.

(table of contents)*Segment reporting*

With the completion of the Feasibility Study on February 22, 2012, Solitario now operates in two segments, (i) mineral exploration and (ii) mining development and operations. Solitario is capitalizing Mt. Hamilton development and operations costs subsequent to February 22, 2012. At December 31, 2012, Solitario's Mt. Hamilton project is located in Nevada and all of Solitario's remaining operations are located in Peru, Brazil and Mexico as further described in Note 2 to these consolidated financial statements. Included in the consolidated balance sheet at December 31, 2012 and 2011 are total assets of \$1,433,000 and \$2,251,000, respectively, related to Solitario's foreign operations including its investment in PBM, located in Brazil, Peru and Mexico. Solitario is not aware of any foreign exchange restrictions on its subsidiaries located in foreign countries.

*Recent accounting pronouncements*

There are no recently issued accounting standards for which the Solitario expects a material impact on its consolidated financial statements

2. Mineral properties:

The following table details Solitario's investment in Mineral Property:

(in thousands)	December 31,	
	2012	2011
Development (United States)		
Mt. Hamilton	\$9,275	\$8,821
Exploration		
Cerro Azul (Peru)	3	3
La Promesa (Peru)	5	5
Atico (Peru)	5	5
Pachuca (Mexico)	20	20
Norcan (Mexico)	6	6
Aconchi (Mexico)	5	5
Canta Colorado (Mexico)	3	-
Jaripo (Mexico)	5	5
Excelsior (Peru)	-	6
Triunfo (Bolivia)	-	20
Espanola (Bolivia)	-	5
Total exploration	52	80
Total mineral property	\$9,327	\$8,901

*Mt. Hamilton*

Formation of MH-LLC joint venture of the Mt. Hamilton project

On November 12, 2010 Solitario made an initial contribution of \$300,000 for a 10% interest in, upon the formation of, MH-LLC which was formed in December 2010. Pursuant to the MH Agreement, the fair value of the DHI-US contribution was valued at \$3,000,000 for its 90% interest and MH-LLC assumed \$3,066,000 for the fair value of the Augusta Resources Corporation (“Augusta”) debt, discussed below in Note 4, “Long-term debt.”

Feasibility Study

On February 22, 2012, Solitario announced the completion of the Feasibility Study on its Mt. Hamilton project prepared by SRK. As a result of the completion of the Feasibility Study, Solitario earned an 80% interest in MH-LLC, and intends to develop the Mt. Hamilton project, subject to a number of factors including obtaining necessary permits and availability of required capital, none of which is currently in place.

MH-Agreement

The MH Agreement provides that if Solitario completes a bankable feasibility study and earns an 80% interest in MH-LLC, as of that date, Solitario will be obligated to make any unpaid payments of cash and stock to DHI-US, investments

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into Ely and any unpaid payments to the underlying royalty holder by the due dates prescribed in the MH Agreement, or will be subject to dilution of its interest in MH-LLC. If Solitario fails to make any of the remaining required payments due after December 31, 2012, Solitario will be diluted from its current 80% ownership interest, to a 49% interest in MH-LLC and DHI-US will increase its ownership interest to 51%. Furthermore, the MH Agreement provides that all costs for development at Mt. Hamilton after completion of the Feasibility Study will be shared by Solitario and DHI-US pro-rata. Upon completion of the feasibility study, DHI-US notified Solitario that it had exercised its option of having Solitario contribute DHI-US' share of costs through commercial completion as a loan, with such loan, plus interest at 8%, being repaid to Solitario from 80% of DHI-US's share of distributions from MH-LLC. During 2012, Solitario loaned DHI-US \$127,000 for its share of costs subsequent to the completion of the Feasibility Study. However, subsequently, DHI-US repaid Solitario \$131,000 for the remaining balance due on the loan from Solitario, including interest, and has no balance due to Solitario as of December 31, 2012.

During 2012, MH-LLC distributed \$2.5 million to its members in proportion to their interests. Solitario received \$2 million from this distribution which was eliminated in consolidation. In addition Solitario received \$500,000 from DHI-US to repay a portion of a prior loan to Solitario, and Solitario agreed to forgive \$35,000 of accrued interest due from DHI-US, which represented the accrued interest on loans made to DHI-US in connection with the MH Agreement through June 30, 2012. Including accrued interest of \$17,000 prior to the repayment of the DHI-US loan, Solitario recorded a net decrease to interest income of \$18,000 for the interest earned and forgiven during 2012.

During 2012, Solitario and DHI-US agreed to modify the terms of the MH Agreement whereby certain continuing payment obligations of Solitario pursuant to the MH Agreement totaling \$5,000,000 to buy down the production royalty payable to Centennial Minerals Company LLC ("CMC") will now be payable on or prior to the date of commencement of commercial production at the Mt. Hamilton project. Previously, the MH Agreement obligated Solitario to make the continuing payment obligations to CMC of \$3,500,000 on or before November 13, 2013 and \$1,500,000 on or before November 13, 2014.

Sandstorm royalty sale

In June 2012, MH-LLC completed the sale of a 2.4% NSR on its Mt. Hamilton project to Sandstorm for \$10 million. MH-LLC received an upfront payment of US\$6 million upon signing the agreement and received US\$4 million on January 15, 2013, which Solitario has recorded as a current asset as of December 31, 2012. In determining the initial fair value of the Sandstorm receivable, Solitario has classified the receivable from Sandstorm as a Level 3 asset, in as much as there were no observable independent inputs to determine the fair value. Solitario recorded a deferred gain as a long-term liability on the sale of the Sandstorm royalty of \$7,000,000 during 2012. In determining the gain on sale of the Sandstorm royalty, Solitario determined the basis in the property sold primarily based upon the purchase of a 2% royalty on the same property in May of 2011 for consideration of \$2,500,000. In addition Solitario reviewed the relative fair values of the royalty sold to the assets retained, and applied that percentage to its existing capitalized costs at Mt. Hamilton. Solitario considers the basis of \$3,000,000 for the royalty sold reasonable based upon this analysis. The Sandstorm royalty agreement provides that in the event Sandstorm does not receive \$10 million in royalty proceeds by December 31, 2022, MH-LLC will make up any shortfall. As a result of this guarantee, Solitario believes it is appropriate to defer the gain on sale, until such time as the potential funding obligation under the guarantee is reduced or eliminated.

As part of the agreement, MH-LLC will have the option, for a period of 30 months from the date of the agreement to repurchase the NSR for US\$12 million, provided that MH-LLC enters into a gold stream agreement with Sandstorm that has an upfront deposit of greater than US\$30 million. In addition, MH-LLC has provided Sandstorm with a right of first refusal on any future royalty or gold stream financing for the Mt. Hamilton project. Pursuant to the agreement, Solitario is jointly and severally liable for all obligations of MH-LLC to Sandstorm.

#### Capitalized costs

Solitario began capitalizing its development costs incurred at its Mt. Hamilton project subsequent to the completion of the Feasibility Study. During 2012, Solitario capitalized \$3,129,000 of development costs at the Mt. Hamilton project. In addition, during 2012, Solitario capitalized \$325,000 of lease payments to mineral properties related to Mt. Hamilton. Also during 2012, Solitario capitalized \$300,000 of advance royalty payments to an underlying leaseholder as long-term other assets.

#### *Exploration property*

Solitario's exploration mineral properties at December 31, 2012 consist of use rights related to exploration stage

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properties, and the value of such assets is primarily driven by the nature and amount of economic mineral ore believed to be contained, or potentially contained, in such properties. The amounts capitalized as mineral properties include concession and lease or option acquisition costs. Capitalized costs related to a mineral property represent its fair value at the time it was acquired. At December 31, 2012, none of Solitario's exploration properties have production (operating) or contain proven or probable reserves. Solitario's exploration mineral properties represent interests in properties that Solitario believes have exploration and development potential. Solitario's mineral use rights generally are enforceable regardless of whether proven and probable reserves have been established.

In addition to its capitalized exploration properties, Solitario has an interest in its Bongará and Pedra Branca exploration concessions, which are currently subject to joint venture agreements. Solitario records joint venture property payment revenue received in excess of capitalized costs. At December 31, 2012 and 2011, neither of these properties have any remaining capitalized costs.

Solitario also sold its mineral interests in its Yanacocha and Mercurio exploration projects and retained a royalty interest in each. Solitario has no capitalized costs related to these royalty interests.

*Discontinued projects*

During 2012, Solitario recorded \$31,000 of mineral property mineral property write-downs related to its Excelsior, Triunfo and Espanola projects. During 2011, Solitario recorded \$10,000 of mineral property mineral property write-downs related to its Paria Cruz property.

*Exploration Expense*

The following items comprised exploration expense:

(in thousands)	2012	2011
Geologic and field expenses	\$ 1,307	\$ 1,922
Administrative	378	324
Mt. Hamilton exploration	301	3,700
Total exploration expense	\$ 1,986	\$ 5,946

3. Short-term debt:

Solitario entered into a secured credit line agreement with UBS Bank, USA ("UBS Bank"). At December 31, 2012, the credit line is secured by all of Solitario's assets held in its UBS brokerage account, consisting primarily of 460,000 Kinross shares. The UBS Bank credit line carries an interest rate which floats, based upon a base rate of 2.25% plus the one-month London Interbank Offered Rate ("LIBOR"), which is 0.27% as of December 31, 2012. The average interest rate was approximately 2.49% and 2.48%, respectively, for 2012 and 2011. UBS Bank may change the base rate at any time. The UBS Bank credit line provides that Solitario may borrow up to \$2 million and that Solitario maintain a minimum equity value percentage in its UBS brokerage account above 40%, based upon the value of its Kinross shares and any other assets held in Solitario's UBS brokerage account, less the value of its UBS Bank credit line and any other balances owed to UBS Bank. UBS Bank may modify the minimum equity value percentage of the loan at any time. In addition, if the equity value in Solitario's UBS brokerage account falls below the minimum equity value, UBS Bank may sell enough Kinross shares held in Solitario's UBS brokerage account or liquidate any other assets to restore the minimum equity value. At December 31, 2012, the equity value in Solitario's UBS brokerage account was 67%.

Solitario also maintains a short-term margin account with RBC Capital Markets, LLC ("RBC"). At December 31, 2012, the credit line is secured by all of Solitario's assets held in its RBC brokerage account, consisting primarily of 210,000 of Solitario's Kinross shares. Solitario has utilized short-term margin loans from RBC, using Solitario's investment in Kinross held at RBC as collateral for the short-term margin loans. During 2012, the loans carried interest at a margin loan rate of 4.25% per annum, which floats based upon the London Interbank Offered Rate. The margin loan rate can be modified by RBC at any time. The margin loans are callable by RBC at any time. Per the terms of the margin loans, Solitario is required to maintain a minimum equity value in the account of 35%, based upon the value of its Kinross shares and any other assets held at RBC, less any short-term margin loan balance and any other balances owed to RBC. The equity value percentage may be modified by RBC at any time. If the equity value in Solitario's account at RBC falls below the minimum, RBC may call the



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loan, or may sell enough Kinross shares held in Solitario's brokerage account or liquidate any other assets to restore the minimum equity value. At December 31, 2012, Solitario had no outstanding borrowing on the RBC margin account and the equity balance in Solitario's account at RBC was 100%.

The following tables summarize Solitario's short-term debt:

(in thousands)	December 31,	
	2012	2011
UBS short-term credit line		
Beginning balance	\$2,000	\$1,918
Borrowing	1,200	82
Repayments	(1,700)	—
Ending balance	1,500	2,000
RBC short term margin loan		
Beginning balance	—	905
Borrowing	1,465	1,000
Repayments	(1,465)	(1,905)
Ending balance	—	—
Total short-term margin loans	\$1,500	\$2,000

(in thousands)	Year ended	
	December 31,	
	2012	2011
Interest expense UBS short-term credit line	\$36	\$ 50
Interest expense RBC short-term margin loan	22	21
Total interest expense, short term margin loans	\$58	\$ 71

4. Long-term debt:*Augusta long-term debt*

In connection with the formation of MH-LLC, the Mt. Hamilton properties contributed by DHI-US to MH-LLC were subject to a security interest granted to Augusta related to Ely's acquisition of the Mt. Hamilton properties. Pursuant to the MH Agreement, as part of its earn-in, Solitario agreed to make private placement investments totaling \$2,500,000 in Ely common stock, all to provide Ely with the funds necessary for DHI-US to make the loan payments due to Augusta as discussed below in Note 10, "Ely Gold investment and the Mt. Hamilton joint venture." The payments due to Augusta are non-interest bearing. Accordingly, upon formation and the contribution of the mineral properties by DHI-US to MH-LLC, MH-LLC recorded discounted fair value of the payments due to Augusta, discounted at 7.5%, which was Solitario's estimated cost of similar credit as of the formation of MH-LLC.

The following is the schedule of debt payments due to Augusta as of December 31, 2012 and 2011:

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Payment date	December 31,	
	2012	2011
June 1, 2012	\$—	\$750,000
June 1, 2013	750,000	750,000
June 1, 2014	750,000	750,000
June 1, 2015	1,000,000	1,000,000
Unamortized discount	(264,000 )	(448,000 )
Total	2,236,000	2,802,000
Current portion	727,000	727,000
Long-term debt	\$1,509,000	\$2,075,000

During 2012 and 2011 Solitario recorded \$184,000 and \$217,000, respectively, for accretion of interest expense related to the Augusta note and paid \$750,000 and \$500,000, respectively, on the long-term note.

(table of contents)*RMB Facility Agreement*

On August 10, 2012, Solitario entered into a Facility Agreement with RMBAH and RMBR. Under the Facility Agreement, Solitario may borrow up to \$5,000,000 from RMBAH (with any amounts outstanding collectively being the “RMB Loan”) at any time during the 24 month period commencing on August 21, 2012, the date of initial funding (the “Availability Period”), after which time any undrawn portion of the \$5,000,000 commitment will be cancelled and will no longer be available for drawdown. Solitario borrowed \$1,500,000 on August 21, 2012 from which it received net proceeds of \$912,000 after deducting deferred offering costs of \$588,000, which included an arrangement fee of \$250,000, legal costs of \$328,000 and other costs of \$10,000. The deferred offering costs are recorded in other long-term assets and are being amortized on a straight-line basis to interest expense over 36 months, the term of the Facility Agreement. Solitario has recorded deferred offering costs of \$518,000 as of December 31, 2012 in other long-term assets. The proceeds from the initial funding were used to pay the balance due on the facility arrangement fee of \$175,000, to pay certain legal expenses related to the Facility Agreement, and to reduce outstanding short-term margin loans.

The Facility Agreement was subject to a \$250,000 arrangement fee, of which \$75,000 had been paid prior to initial funding. The RMB Loan matures on the earlier to occur of (i) 36 months from the date of initial funding or (ii) the date on which financing is made available to MH-LLC for purposes of placing the Mt. Hamilton project into commercial production. The RMB Loan amounts bear interest at the 90-day LIBOR rate plus 5%, payable in arrears on the last day of each quarterly interest period. The RMB Loan interest rate was 5.36% at December 31, 2012. All proceeds from the RMB Loan are to be deposited in a proceeds account (the “Proceeds Account”) and are recorded as restricted cash until disbursed in accordance with the Facility Agreement. Pursuant to the Facility Agreement, funds may only be disbursed from the Proceeds Account for approved expenditures, including (i) exploration and development activities at the Mt. Hamilton project, ongoing earn-in payments at MH-LLC, general corporate purposes as set forth in a project and corporate budget approved by RMBAH and (iv) any other purpose approved by RMBAH. As of December 31, 2012 there was no cash balance in the Proceeds Account. The RMB Loan may be repaid at any time without penalty. Any amounts repaid may not be redrawn under the Facility Agreement. The RMB Loan is secured by a lien on Solitario’s 80% interest in MH-LLC as well as a general security interest in Solitario’s remaining assets.

As of December 31, 2012, the outstanding balance under the RMB Loan was \$1,500,000. Solitario borrowed an additional \$1,000,000 during February 2013 pursuant to the RMB Facility Agreement and at February 28, 2013 the balance due on the RMB Loan is \$2,500,000. During 2012 Solitario recorded the following interest expense related to the RMB Loan:

(in thousands)	Year ended December 31, 2012
Interest expense paid in cash	\$ 30
Amortization of the RMB Warrants discount	77

Amortization of RMB deferred financing costs	70
Total interest expense related to the RMB Loan	\$ 177

*RMB Warrants*

Pursuant to the Facility Agreement, the Company issued 1,624,748 warrants to RMBAH as partial consideration for financing services provided in connection with the Facility Agreement. Each RMB Warrant entitles the holder to purchase one of Solitario common stock pursuant to the terms and conditions of the RMB Warrants. The RMB Warrants expire 36 months from their date of issuance and have an exercise price of \$1.5387 per Warrant Share, subject to customary anti-dilution adjustments. Solitario recorded a discount to the RMB Loan for the fair value of the RMB Warrants of \$650,000 as of August 21, 2012, based upon a Black-Scholes model using a 36-month life, volatility of 62%, and a risk-free interest rate of 0.39%. Solitario is amortizing this discount on a straight-line basis to interest expense over the three-year term of the RMB Loan and as of December 31, 2012 the remaining unamortized warrant discount was \$573,000.

5. Income taxes:

Solitario's income tax expense (benefit) consists of the following as allocated between foreign and United States components:

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(in thousands)	2012	2011
Current:		
United States	\$—	\$—
Foreign	18	14
Deferred:		
United States	\$(853)	\$407
Foreign	—	—
Operating loss and credit carryovers:		
United States	187	(1,056)
Foreign	—	—
Income tax expense (benefit)	\$(648)	\$(635)

Consolidated income (loss) before income taxes includes losses from foreign operations of \$1,944,000 and \$2,657,000 in 2012 and 2011, respectively.

See Note 1, “Business and Summary of Significant Accounting Policies” for a detail of the deferred taxes associated with the sale of marketable equity securities and the deferred taxes associated with unrealized gains and losses associated with other comprehensive income related to marketable equity securities.

The net deferred tax assets/liabilities in the December 31, 2012 and 2011 consolidated balance sheets include the following components:

(in thousands)	2012	2011
Deferred tax assets:		
Loss carryovers	\$10,118	\$9,887
Deferred Gain	1,253	—
Stock option compensation expense	900	648
Royalty	1,492	1,492
Earnings in Unconsolidated Subsidiary	496	314
Severance	30	30
Unrealized loss on derivative securities	79	—
Other	106	67
Valuation allowance	(10,328)	(9,699)
Total deferred tax assets	4,146	2,739
Deferred tax liabilities:		
Unrealized gain on derivative securities	—	107
MH-LLC investment	1,932	1,083
Exploration costs	845	845
Unrealized gains on marketable equity securities	2,328	3,496
Other	4	5
Total deferred tax liabilities	5,109	5,536
Net deferred tax liabilities	\$963	\$2,797

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At December 31, 2012 and 2011, Solitario has classified \$963,000 and \$1,627,000, respectively, of its deferred tax liability as current, primarily related to the current portion of its investment in Kinross common stock.

A reconciliation of expected federal income taxes on income (loss) from operations at statutory rates, with the expense (benefit) for income taxes is as follows:

(in thousands)	2012	2011
Expected income tax expense (benefit)	\$(1,444)	\$(2,585)
Non-deductible foreign expenses	1	1
Non-deductible foreign stock compensation expense	20	16
Foreign tax rate differences	72	90
State income tax	(82 )	(56 )
Change in valuation allowance	629	621
LLC Investment	102	1,221
Permanent differences and other	54	57
Income tax expense (benefit)	\$(648 )	\$(635 )

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During 2012 and 2011 the valuation allowance was increased primarily as a result of increases in Solitario foreign net operating loss carryforwards, for which it was more likely than not that the deferred tax benefit would not be realized.

At December 31, 2012, Solitario has unused US federal Net Operating Loss ("NOL") carryovers of \$2,502,000 and unused US State NOL carryovers of \$3,409,000 both of which begin expiring in 2030. Solitario has foreign loss carryforwards for which Solitario has provided a full valuation allowance and which expire over various periods from five years to no expiration depending on the foreign jurisdiction.

Solitario adopted the provisions ASC 740, which prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. ASC 740 requires that Solitario recognize in its consolidated financial statements, only those tax positions that are "more-likely-than-not" of being sustained as of the adoption date, based on the technical merits of the position. As a result of the implementation of ASC 740, Solitario performed a comprehensive review of its material tax positions in accordance with recognition and measurement standards established by ASC 740. The provisions of ASC 740 had no effect on Solitario's financial position, cash flows or results of operations at December 31, 2012 or December 31, 2011, or for the years then ended as Solitario had no unrecognized tax benefits.

Solitario and its subsidiaries are subject to the following material taxing jurisdictions: United States Federal, States of Colorado and Nevada, Mexico, Peru and Brazil. The tax years that remain open to examination by the United States Internal Revenue Service are years 2009 through 2012. The tax years that remain open to examination by the State of Colorado are years 2008 through 2012. The tax years that remain open to examination by Mexico are years 2009 through 2012. All tax years remain open to examination in Peru and Brazil. Solitario's policy is to recognize interest and penalties related to uncertain tax benefits in income tax expense. Solitario has no accrued interest or penalties related to uncertain tax positions as of December 31, 2011, or December 31, 2012 or for the years then ended.

6. Derivative instruments:

*RMB warrants*

Because the Facility Agreement requires Solitario to be current in its filings with the United States Securities and Exchange Commission, Solitario has determined the warrants could be cash settled in accordance with ASC 815-40, "Derivatives and Hedging, Contracts in Entity's Own Equity." Accordingly Solitario has classified its RMB Warrants as a liability and adjusts the fair value of the warrants at each balance sheet date, with changes in value recorded in other income/expense in the statement of operations. Solitario recorded a loss on the RMB Warrants of \$488,000 during 2012, based upon a Black-Scholes model using a 35 month-life, a volatility of 62% a stock price of

\$1.68 per share and a risk free interest rate of 0.35%

*Covered call options*

Beginning in December 2008, Solitario sold covered calls covering its shares of Kinross common stock. In September 2012, Solitario sold options covering 100,000 shares for proceeds of \$68,000. In November 2012 Solitario repurchased options for 50,000 shares for \$17,000, and recorded a gain on derivative instruments of \$23,000. As of December 31, 2012, the remaining options for 50,000 shares were recorded in other current assets at their fair value of \$3,000 and Solitario had recorded a gain on derivative instruments of \$25,000. In September 2011 Solitario sold options covering 65,000 shares for proceeds of \$57,000, which were repurchased in October 2011 for \$15,000 and Solitario recorded a gain of \$42,000 in gain/loss on derivative earnings. Solitario has not designated its covered calls as hedging instruments as described in ASC 815 and any changes in the fair market value of its covered calls are recognized in the statement of operations in the period of the change. Solitario does not use its covered call derivative instruments as trading instruments; any cash received or paid related to its derivative instruments is shown as investing activities in the consolidated statement of cash flows.

*Ely warrants*

During 2010, in connection with the acquisition of Mt. Hamilton and the formation of MH-LLC, Solitario made a series of equity investments in Ely. Solitario acquired 3,333,333 shares of Ely and warrants to purchase 1,666,666 shares of Ely stock for Cdn\$0.25 per share, with warrants for 833,333 shares that expired on August 30, 2012 and warrants for 833,333 that expired on October 19, 2012. Solitario has recorded gains and losses on the Ely warrants in its gain (loss) on derivative instruments in the statement of operations as detailed below. Solitario has no remaining value for its investment in the



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Ely warrants in the consolidated balance sheet at December 31, 2012. Solitario's fair value for its investment in the Ely warrants at December 31, 2011, based upon a Black-Scholes option pricing model, was recorded as a current asset as detailed below.

*Kinross Collar*

On October 12, 2007, Solitario entered into a Zero-Premium Equity Collar (the "Kinross Collar") pursuant to a Master Agreement for Equity Collars and a Pledge and Security Agreement with UBS AG, London, England, an Affiliate of UBS Securities LLC (collectively "UBS"). Under the terms of the Kinross Collar, Solitario pledged 900,000 shares of Kinross common shares to be sold (or delivered back to Solitario with any differences settled in cash). On April 12, 2011, the remaining 100,000 shares under the Kinross Collar were released upon the expiration of the tranche of the Kinross Collar on that date. No shares were delivered to UBS under the Kinross Collar and no cash was paid or received upon termination of the final tranche of the Kinross Collar. Solitario had not designated the Kinross Collar as a hedging instrument as described in ASC 815, "Derivatives and Hedging," and any changes in the fair market value of the Kinross Collar are recognized in the statement of operations in the period of the change.

*International Lithium Corp.*

In May 2011 TNR Gold Corp. ("TNR") completed a spin-out of a new entity, International Lithium Corp. ("ILC"). Solitario owned 1,000,000 shares of TNR at the time of the spin-out and received 250,000 shares of ILC and warrants to acquire 250,000 shares of ILC (the "ILC Warrants") at a price of Cdn\$0.375 per share for a period of two years. Solitario has written-down its investment in the ILC Warrants and has no value recorded for the ILC warrants as of December 31, 2012.

The following table provides the location and amount of the fair values of Solitario's derivative instruments presented in the consolidated balance sheet as of December 31, 2012 and 2011:

(in thousands)	Derivatives	
	Balance Sheet Location	December 31, 2012    December 31, 2011
Derivatives not designated as hedging instruments under ASC 815		
RMB warrants	Long-term liabilities	\$ 1,138    \$ —
Ely Investment warrants	Current other assets	—    74
ILC warrants	Current other assets	—    4

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The following amounts are included in loss on derivative instruments in the consolidated statement of operations for the years ended December 31, 2012 and 2011:

(in thousands)	Year ended December 31,	
	2012	2011
Loss on derivatives not designated as hedging instruments under ASC 815		
Ely warrants	\$(74)	\$(179)
ILC warrants	(4 )	2
Kinross Collar	—	(2 )
Kinross Calls	48	42
Total loss	\$(30)	\$(137)

The Kinross common stock held as collateral for the margin loans at UBS Bank and RBC are held in Solitario's brokerage accounts at UBS and RBC, respectively. See Note 3, "Short-term debt" above.

7. Fair value of financial instruments:

For certain of Solitario's financial instruments, including cash and cash equivalents, the Sandstorm royalty sale receivable, payables and short-term debt, the carrying amounts approximate fair value due to their short maturities. Solitario's

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marketable equity securities, including its investment in Kinross common stock, TNR Gold and Ely equity investments are carried at their estimated fair value primarily based on publicly available quoted market prices.

Solitario applies ASC 820, "Fair Value Measurements." ASC 820 establishes a framework for measuring fair value and requires enhanced disclosures about fair value measurements. ASC 820 clarifies that fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. ASC 820 also requires disclosure about how fair value is determined for assets and liabilities and establishes a hierarchy for which these assets and liabilities must be grouped, based on significant levels of inputs as follows:

**Level 1:** Quoted prices in active markets for identical assets or liabilities;

**Level 2:** Quoted prices in active markets for similar assets and liabilities and inputs that are observable for the asset or liability; or

**Level 3:** Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

The determination of where assets and liabilities fall within this hierarchy is based upon the lowest level of input that is significant to the fair value measurement. During 2011 Solitario reclassified a portion of its investment in Ely shares from Level 2 to Level 1 upon the expiration of statutory holding requirements. During the years ended December 31, 2012 and 2011, there were no other reclassifications in financial assets or liabilities between Level 1, 2 or 3 categories.

The following is a listing of Solitario's financial assets and liabilities required to be measured at fair value on a recurring basis and where they are classified within the hierarchy as of December 31, 2012:

(in thousands)	Level 1	Level 2	Level 3	Total
Assets				
Marketable equity securities	\$7,093	\$—	\$—	\$7,093
Liabilities				
RMB warrants	—	1,138	—	1,138

The following is a listing of Solitario's financial assets and liabilities required to be measured at fair value on a recurring basis and where they are classified within the hierarchy as of December 31, 2011:

(in thousands)	Level 1	Level 2	Level 3	Total
Assets				

Marketable equity securities	\$10,361	\$—	\$—	\$10,361
Other current assets - Ely warrants	—	74	—	74
Other current assets - ILC warrants	—	4	—	4

*Items measured at fair value on a recurring basis:*

Marketable equity securities: At December 31, 2012 and 2011, the fair value of Solitario's investment in Kinross, TNR and Ely marketable equity securities is based upon quoted market prices.

RMB warrants: The RMB warrants issued by Solitario are not traded on any public exchange. Solitario determines the fair value of the RMB warrants using a Black-Scholes pricing model, using inputs, including share price, volatility of Solitario common stock and discount rates that include an assessment of performance risk, that are readily available from public markets therefore they are classified as Level 2 inputs as of December 31, 2012.

Ely and ILC warrants: The Ely and ILC warrants are not traded on any public exchange. Solitario determines the fair value of the Ely and ILC warrants using a Black-Scholes pricing model, using inputs, including share price, volatility of Ely common stock and discount rates that include an assessment of performance risk, that are readily available from public markets therefore they are classified as Level 2 inputs as of December 31, 2011.

*Items measured at fair value on a nonrecurring basis:*

RMB long-term debt: In 2012 the long-term debt associated with the RMB Facility Agreement was discounted for the

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fair value of the RMB Warrants, discussed above. The RMB warrants are not traded on any public exchange. Solitario determined the fair value of the RMB warrants, associated with the discount to the RMB Loan, using a Black-Scholes pricing model, using inputs, including share price, volatility of Solitario common stock and discount rates that include an assessment of performance risk, that are readily available from public markets therefore they were classified as Level 2 inputs. See Note 4, "Long-term debt."

During the year ended December 31, 2012, Solitario did not change any of the valuation techniques used to measure its financial assets and liabilities at fair value.

8. Commitments and contingencies:

In acquiring its interests in mineral claims and leases, Solitario has entered into lease agreements, which may be canceled at its option without penalty. Solitario is required to make minimum rental and option payments in order to maintain its interests in certain claims and leases. See Note 2, "Mineral properties," above. Solitario estimates its 2013 property rentals and option payments, excluding the Augusta long term-debt, discussed above and certain earn-in payments to DHI-US discussed below, for properties we own or operate to be approximately \$805,000, assuming that our joint ventures continue in their current status and that we do not appreciably change our property positions on existing properties; approximately \$777,000 of these annual payments are paid or are reimbursable to us by our joint venture partners. In addition, we may be required to make further payments in the future if we elect to exercise our options under those agreements or if we enter into new agreements.

Solitario has entered into certain month-to-month office leases for its field offices in Nevada, Peru and Mexico. The total rent expense for these offices during 2012 and 2011 was approximately \$61,000 and \$55,000, respectively. In addition, Solitario leases office space under a non-cancelable operating lease for the Wheat Ridge, Colorado office which provides for total minimum rent payments through October of 2015 of \$73,000.

As a result of completion of the Mt. Hamilton feasibility study, Solitario is committed to make certain earn-in payments to DHI-US, excluding payments for the Augusta debt, discussed above in Note 4, "Long-term debt," as contemplated in the MH Agreement: (1) annual cash payments of \$300,000 for an advance minimum royalty due to an underlying royalty holder; (2) payment to DHI-US of \$500,000 in cash and delivery of 100,000 shares of Solitario common stock by August 23, 2013; (3) payment of \$500,000 in cash; delivery of 100,000 shares of Solitario common stock by August 23, 2014; and (4) buy down a portion of an existing 6% net smelter royalty to a 1% net smelter royalty by paying \$5,000,000 to an underlying royalty holder on or before commercial completion of the Mt. Hamilton project.

9. Employee stock compensation plans:

a.) The 2006 Plan

On June 27, 2006, Solitario's shareholders approved the 2006 Stock Option Incentive Plan (the "2006 Plan"). Under the terms of the 2006 Plan, the Board of Directors may grant up to 2,800,000 options to Directors, officers and employees with exercise prices equal to the market price of Solitario's common stock at the date of grant.

Solitario accounts for its stock options under the provisions of ASC 718 "Compensation – Stock Compensation." Pursuant to ASC 718, as of January 1, 2011, Solitario classifies its stock options as equity options in accordance with ASU 2010-13. Previously, Solitario had classified its stock options as liabilities as they are priced in Canadian dollars and Solitario's functional currency is United States dollars and Solitario's common stock trades on both the NYSE MKT and the Toronto Stock Exchange ("TSX"). Prior to January 1, 2011, Solitario recorded a liability for the fair value of the vested portion of outstanding options based upon a Black-Scholes option pricing model.

During the year ended December 31, 2011, options for 150,600 shares were exercised at prices between Cdn\$1.55 and Cdn\$2.40 per share for cash proceeds of \$247,000. During 2012 there were no shares exercised from the 2006 Plan. There were no options forfeited during 2012 or 2011.

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## b.) Stock option compensation

Solitario's outstanding options on the date of grant have a five-year term, and vest 25% on date of grant and 25% on each of the next three anniversary dates. Solitario recognizes stock option compensation expense on the date of grant for 25% of the grant date fair value, and subsequently, based upon a straight line amortization of the unvested grant date fair value of each of its outstanding options. The following table shows the grant date fair value of Solitario's options grants as of the date of grant.

Grant date fair value

Grant Date	12/16/12	5/5/10	5/19/09		
Option – grant date price (Cdn\$)	\$1.49	\$2.40	\$1.55		
Options outstanding	165,000	2,065,000	519,000		
Expected life yrs.	5.0	5.0	5.0		
Expected volatility	68	% 56	% 56	%	
Risk free interest rate	0.7	% 2.2	% 1.9	%	
Weighted average fair value	\$0.84	\$1.19	\$0.65		
Grant date fair value	\$139,000	\$2,449,000	\$339,000		

Solitario recorded \$732,000 and \$697,000, respectively, of stock option expense during 2012 and 2011 included in general and administrative expense, for the amortization of grant date fair value with a credit to additional paid-in capital.

## c.) Stock option activity

The following table summarizes the activity for stock options outstanding under the 2006 Plan as of December 31, 2012, with exercise prices equal to the stock price, as defined, on the date of grant and no restrictions on exercisability after vesting:

The activity in the 2006 Plan for the years ended December 31, 2012 and 2011 is as follows:

2012			2011		
Options	Weighted Average Exercise Price(Cdn\$)	Aggregate intrinsic value(1)	Options	Weighted Average Exercise Price(Cdn\$)	Aggregate intrinsic value(1)

2006 Plan						
Outstanding, beginning of year	2,433,400	\$ 2.27		2,584,000	\$ 2.23	
Granted	165,000	\$ 1.49		—		
Exercised	—	—		(150,600 )	\$ 1.60	
Cancelled	—	—		—		
Forfeited	—	—		—		
Outstanding, end of year	2,598,400	\$ 2.22	\$ 1,650	2,433,400	\$ 2.27	\$ —
Exercisable, end of year	1,958,400	\$ 2.22	\$ 413	1,271,150	\$ 2.24	\$ —

(1)The intrinsic value at December 31, 2012 and 2011 based upon the quoted market price of Cdn\$1.50 and Cdn\$1.36, respectively, per share for our common stock on the TSX and an exchange ratio of 1.0312 and 0.9804, respectively, Canadian dollars per United States dollar.

10. Ely Gold investment and the Mt. Hamilton joint venture:

On August 26, 2010, Solitario signed a letter of intent (the “LOI”) with Ely to make certain equity investments into Ely and to joint venture Ely’s Mt. Hamilton gold project through the formation of MH-LLC. The formation of MH-LLC and certain property investments are described above in Note 2 “Mineral property.” The terms of the joint venture are set forth in the MH Agreement of MH-LLC between us and DHI-US.

*Initial investment in Ely*

During 2010, in connection with the acquisition of Mt. Hamilton and the formation of MH-LLC, Solitario paid \$500,000 in cash for a series of equity investments in Ely. Solitario acquired 3,333,333 shares of Ely (the “Ely Shares”) and warrants to purchase 1,666,666 shares of Ely stock for Cdn\$0.25 per share, with warrants for 833,333 shares that expired on August 30, 2012 and warrants for 833,333 that expired on October 19, 2012. Solitario allocated its investment in Ely based upon the fair values of the assets purchased using quoted market prices for the Ely Shares and a Black-Scholes option pricing model for the



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Ely warrants. As of December 31, 2012, and 2011 the Ely Shares are recorded at their fair value based upon quoted prices of \$532,000 and \$588,000, respectively, with an unrealized gain included in other comprehensive income of \$174,000 and \$231,000, respectively, net of deferred taxes of \$65,000 and \$86,000, respectively.

*Additional tranches of Ely common stock for payment of MH-LLC long-term debt*

The LOI, as amended, provides that Solitario subscribe for three additional tranches of shares of Ely: (i) \$750,000 in shares of Ely common stock on May 1, 2013 at a price equal to the greater of (a) the 20-day weighted moving average price on the TSXV (the “WMAV”) immediately preceding May 1, 2013 and (b) the price of Ely’s shares on the TSXV on the day before May 1, 2013 (the “Third Tranche”), the entire amount of which Ely is required to utilize to make the \$750,000 payment due to Augusta for the long-term debt in Note 4 above; (ii) \$750,000 in shares of Ely common stock on or before May 1, 2014 at a price equal to the greater of (a) the WMAV immediately preceding the date that Solitario subscribes for such shares and (b) the price of Ely’s shares on the TSXV on the trading day immediately preceding the date that Solitario subscribes for such shares (the “Fourth Tranche”), the entire amount of which Ely is required to utilize to make the \$750,000 payment due to Augusta for the long-term debt in Note 4 above; and (iii) \$1,000,000 in shares of Ely common stock on or before May 1, 2015 at a price equal to the greater of (a) the WMAV immediately preceding the date that Solitario subscribes for such shares and (b) the price of Ely’s shares on the TSXV on the trading day immediately preceding the date that Solitario subscribes for such shares (the “Fifth Tranche”), the entire amount of which Ely is required to utilize to make the \$1,000,000 payment due to Augusta for the long-term debt in Note 4 above. Although the MH Agreement provides that Solitario would have no obligation to subscribe for any of the shares if Solitario chooses to cease earning an additional interest in MH-LLC, discussed below, prior to the subscription for the shares, as a result of the completion of the Feasibility Study, Solitario intends to develop the Mt. Hamilton project and would be subject to dilution to a 49% interest in MH-LLC if it does not complete all of the payments to DHI-US and the subscription of Ely required in the LOI.

11. Related party transactions:

On June 26, 2012, Christopher Herald, President and Chief Executive Officer of Solitario, and James Maronick, Chief Financial Officer of Solitario, purchased shares of the Company’s common stock at a price of \$1.22 per share, with Mr. Herald purchasing 180,000 shares and Mr. Maronick purchasing 45,000 shares. The purchase of the shares was unanimously approved by Solitario’s Board of Directors and was also unanimously approved by Solitario’s Audit Committee of the Board of Directors. The price of the shares was the last closing price of Solitario’s common shares as quoted on the NYSE MKT (formerly NYSE Amex) on June 25, 2012. Solitario received total proceeds of \$275,000.

12. Segment reporting

With the completion of the Feasibility Study on February 22, 2012, Solitario now operates in two segments, (i) mineral exploration and (ii) mining development and operations. Solitario is capitalizing Mt. Hamilton development and operations costs subsequent to February 22, 2012, as detailed above in Note 2, "Mineral properties." The following summarizes Solitario segment information for the year ended December 31, 2012:

(in thousands)	Year ended December 31, 2012			
	Mt Hamilton	Exploration	<u>Corporate and Other</u>	Consolidated
Exploration expense	\$301	\$1,685	\$—	\$1,986
Interest expense	184	—	234	418
Other (1)	58	798	986	1,842
Pre-tax income (loss)	\$543	\$2,483	\$1,220	\$4,246
Total assets (2)(3)	\$14,236	\$1,467	\$7,780	\$23,483
Capital Expenditures	\$3,789	\$3	\$62	\$3,854

(1) Corporate and other includes gain on sale of marketable equity securities of \$1,528.

(2) Exploration total assets include equity method investment of \$1,165.

(3) Corporate and other total assets include investment in marketable equity securities of \$7,093.

### 13. Subsequent event

In March 2013 Solitario signed a binding Letter of Intent ("LOI") related to its Pachuca project in Mexico with Minera Hochschild Mexico S.A. de C.V. ("Hochschild"), a wholly owned subsidiary of Hochschild Mining plc. The LOI provides for Hochschild to earn a 51% interest in the Pachuca project by funding the following exploration commitments from the signing of a definitive agreement:

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Due Dates Expenditures (US\$)

18 months \$ 2,000,000

36 months \$ 3,000,000

60 months \$ 5,000,000

Total \$10,000,000

Hochschild will have the option to earn an additional 19% (total interest 70%) in the project by funding all project expenditures necessary to complete a positive feasibility study. Hochschild will manage the operations and has the right to terminate the joint venture at any time. Currently, we are working on negotiating a definitive joint venture agreement with Hochschild. There can be no assurance that such an agreement will ultimately be signed.

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**Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure**

None

**Item 9A. Controls and Procedures**

The management of Solitario is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). During the fiscal period covered by this report, Solitario's management, with the participation of the Chief Executive Officer and Chief Financial Officer, carried out an evaluation of the effectiveness of Solitario’s internal control over financial reporting and the design and operation of Solitario’s disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act). This evaluation of the effectiveness of our internal control over financial reporting was based on the framework and criteria established in *Internal Control – Integrated Framework*, issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on such evaluation, Solitario’s Chief Executive Officer and Chief Financial Officer have concluded that, as of December 31, 2012, Solitario’s internal control over financial reporting is effective and that its disclosure controls and procedures are effective to ensure that information required to be disclosed by Solitario in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the required time periods and are designed to ensure that information required to be disclosed in its reports is accumulated and communicated to Solitario’s management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. There were no changes over financial reporting pursuant to Item 308(c) of Regulation SK during the three months ended December 31, 2012.

This annual report does not include an attestation report of our independent registered public accounting firm regarding internal control over financial reporting. As a smaller reporting company, Solitario’s management’s report was not subject to attestation by our independent registered public accounting firm pursuant to rules of the Securities and Exchange Commission that permit us to provide only management’s report in this annual report.

**Item 9B. Other Information**

None

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PART III

**Item 10. Directors, Executive Officers and Corporate Governance**

The information required under Item 10 is incorporated herein by reference to the information set forth in our definitive proxy statement in connection with the annual meeting of shareholders to be filed with the Securities and Exchange Commission within 120 days after the end of our fiscal year ended December 31, 2012 pursuant to Section 14(a) of the Exchange Act (the "2013 Proxy").

**Item 11. Executive Compensation**

The information required under Item 11 is incorporated herein by reference to the information set forth in the 2013 Proxy.

**Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters**

The information with respect to Item 12 is incorporated herein by reference to the information set forth in the 2013 Proxy.

**Item 13. Certain Relationships and Related Transactions, and Director Independence**

The information with respect to Item 13 is incorporated herein by reference to the information set forth in the 2013 Proxy.

**Item 14. Principal Accounting Fees and Services**

The information required under Item 14 is incorporated herein by reference to the information set forth in the 2013 Proxy.



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## **PART IV**

### **Item 15. Exhibits, Financial Statement Schedules**

The following documents are filed as a part of this Annual Report on Form 10-K:

#### 1. Financial Statements

The following financial statements contained in Part II, Item 8 are filed as part of this Annual Report on Form 10-K:

Consolidated Financial Statements  
Report of Independent Registered Public Accounting Firm  
Consolidated Balance Sheets as of December 31, 2012, and 2011  
Consolidated Statements of Operations for the years ended December 31, 2012 and 2011  
Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2012 and 2011  
Consolidated Statements of Stockholders' Equity for the years ended December 31, 2012 and 2011  
Consolidated Statements of Cash Flows for the years ended December 31, 2012 and 2011  
Notes to Consolidated Financial Statements

#### 2. Financial Statement Schedules

Financial statement schedules are omitted because they are not required or are not applicable, or the required information is provided in the consolidated financial statements or notes thereto described in Item 15(1) above.

#### 3. Exhibits

The Exhibits listed in the Index to Exhibits, which appears immediately following the signature page and is incorporated herein by reference, are filed as part of this Annual Report on Form 10-K.

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**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

SOLITARIO EXPLORATION  
& ROYALTY CORP.

By: /s/ James R. Maronick  
Chief Financial Officer

Date: March 7, 2012

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Christopher E. Herald, Chief Executive Officer	Principal Executive Officer and Director	March 7, 2013
/s/ James R. Maronick, Chief Financial Officer	Principal Financial and Accounting Officer	March 7, 2013
/s/ Mark E. Jones, III	     A majority of	
/s/ Brian Labadie	the Board of   Directors	March 7, 2013
/s/ Leonard Harris	 	
/s/		



John Hainey

|  
|  
|  
|

By: /s/

James R. Maronick,  
Attorney-in-fact

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INDEX TO EXHIBITS

Description

- 3.1 Amended and Restated Articles of Incorporation of Solitario Exploration & Royalty Corp., as Amended (incorporated by reference to Exhibit 3.1 to Solitario's Form 10-Q filed on August 10, 2010)
- 3.2 Amended and Restated By-laws of Solitario Exploration & Royalty Corp. (incorporated by reference to Exhibit 3.2 to Solitario's Form 10-Q filed on August 7, 2008)
- 4.1 Form of Common Stock Certificate of Solitario Exploration & Royalty Corp. (incorporated by reference to Exhibit 4.1 to Solitario's Form 10-Q filed on August 7, 2008)
- 4.2 Form of Warrant Certificate of Solitario Exploration & Royalty Corp. (incorporated by reference to Exhibit 99.2 to Solitario's Form 8-K filed on August 16, 2012)
- 10.1 Facility Agreement dated August 10, 2012 between Solitario, RMBAH and RMBR. (incorporated by reference to Exhibit 99.1 to Solitario's Form 8-K filed on August 16, 2012)
- 10.2 Security Agreement dated August 10, 2012 between Solitario, RMBAH and RMBR. (incorporated by reference to Exhibit 99.3 to Solitario's Form 8-K filed on August 16, 2012)
- 10.3 Pledge Agreement dated August 10, 2012 between Solitario, RMBAH and RMBR. (incorporated by reference to Exhibit 99.4 to Solitario's Form 8-K filed on August 16, 2012)
- 10.4 Side Agreement dated August 10, 2012 between Solitario, RMBAH, RMBR, DHI-US and Ely. (incorporated by reference to Exhibit 99.5 to Solitario's Form 8-K filed on August 16, 2012)
- 10.5 Net smelter royalty agreement for purchase of a 2.4% NSR Royalty by Sandstorm for \$10 million by and among MH-LLC, Solitario and Sandstorm dated June 11, 2012. (incorporated by reference to Exhibit 99.1 to Solitario's Form 8-K filed on June 13, 2012)
- 10.6 Subscription agreement between Solitario and Mr. Christopher E. Herald. (incorporated by reference to Exhibit 99.1 to Solitario's Form 8-K filed on July 2, 2012)
- 10.7 Subscription agreement between Solitario and Mr. James R. Maronick. (incorporated by reference to Exhibit 99.2 to Solitario's Form 8-K filed on July 2, 2012)
- 10.8 Amendment of the Mt. Hamilton LLC Operating Agreement dated June 28, 2012 between Solitario and DHI Minerals (US), Ltd. (incorporated by reference to Exhibit 99.3 to Solitario's Form 8-K filed on July 2, 2012)
- 10.9 Letter Agreement dated June 28, 2012 between Solitario and DHI Minerals (US), Ltd. (incorporated by reference to Exhibit 99.4 to Solitario's Form 8-K filed on July 2, 2012)
- 10.10 Purchase Agreement for a royalty buy-down by and among MH-LLC, Solitario Exploration & Royalty Corp. and Centennial, dated May 17, 2011 (incorporated by reference to Exhibit 99.1 to Solitario's Form 8-K filed on May 18, 2011)

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Letter agreement between Solitario Exploration & Royalty Corp. and DHI-US with respect to the funding of the  
10.11 Purchase Price and related amendments to the MH-LLC Operating Agreement dated May 17, 2011  
(incorporated by reference to Exhibit 99.2 to Solitario's Form 8-K filed on May 18, 2011)

Letter of intent between Solitario Exploration & Royalty Corp. and Ely Gold & Minerals Inc. regarding private  
10.12 placement and the Mt. Hamilton joint venture (incorporated by reference to Exhibit 99.1 to Solitario's 8-K filed  
on September 1, 2010)

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Limited Liability  
Company  
Operating  
Agreement of Mt.  
Hamilton LLC  
between Solitario  
Exploration &  
Royalty Corp. and  
10.13 DHI Minerals  
(U.S.) Ltd. dated  
December 22,  
2010 (incorporated  
by reference to  
Exhibit 99.2 to  
Solitario's 8-K  
filed on December  
28, 2010)

Limited Liability  
Company  
Contribution  
Agreement among  
Solitario  
Exploration &  
Royalty Corp.,  
DHI Minerals  
10.14 (U.S.) Ltd. and Mt.  
Hamilton LLC  
dated December  
22, 2010  
(incorporated by  
reference to  
Exhibit 99.3 to  
Solitario's 8-K  
filed on December  
28, 2010)

10.15 Solitario  
Resources  
Corporation 2006  
Stock Option  
Incentive Plan (As  
Amended), an  
amendment of the  
Solitario  
Resources  
Corporation 2006  
Stock Option

Incentive Plan  
(incorporated by  
reference to  
Exhibit A to  
Solitario's Proxy  
Statement  
Pursuant to  
Section 14(a) filed  
on April 30, 2007)

10.16 Alliance  
Agreement, dated  
January 18, 2005,  
between Solitario  
Resources  
Corporation and  
Newmont  
Overseas  
Exploration  
Limited  
(incorporated by  
reference to  
Exhibit 99.1 to  
Solitario's Form  
8-K filed on  
January 20, 2005)

10.17 Stock Purchase  
Agreement, dated  
January 18, 2005,  
between Solitario  
Resources  
Corporation and  
Newmont Mining  
Corporation of  
Canada Limited  
(incorporated by  
reference to  
Exhibit 99.2 to  
Solitario's Form  
8-K filed on  
January 20, 2005)

10.18 Amended and  
Restated Royalty  
Grant, dated  
January 18, 2005,  
between Solitario  
Resources  
Corporation and  
Minera Los

Tapados S.A.  
(incorporated by  
reference to  
Exhibit 99.3 to  
Solitario's Form  
8-K filed on  
January 20, 2005)

Change in Control  
Severance Benefits  
Agreement  
between Solitario  
Resources  
Corporation and  
Christopher E.  
10.19 Herald, dated as of  
March 14, 2007  
(incorporated by  
reference to  
Exhibit 99.1 to  
Solitario's Form  
8-K filed on  
March 14, 2007)

Change in Control  
Severance Benefits  
Agreement  
between Solitario  
Resources  
Corporation and  
James R.  
10.20 Maronick, dated as  
of March 14, 2007  
(incorporated by  
reference to  
Exhibit 99.2 to  
Solitario's Form  
8-K filed on  
March 14, 2007)

10.21 Change in Control  
Severance Benefits  
Agreement  
between Solitario  
Resources  
Corporation and  
Walter W. Hunt,  
dated as of March  
14, 2007  
(incorporated by  
reference to

Exhibit 99.3 to  
Solitario's Form  
8-K filed on  
March 14, 2007)

Framework  
Agreement for the  
Exploration and  
Development of  
Potential Mining  
Properties, related  
to Solitario's 100%  
owned Bongará  
project in Peru  
between Minera  
Bongará S.A.,  
Minera Solitario

10.22 Peru S.A.C,  
Solitario  
Resources  
Corporation, and  
Votorantim Metais  
– Cajamarquilla S.A  
dated March 24,  
2007 (incorporated  
by reference to  
Exhibit 10.2 to  
Solitario's Form  
8-K filed on  
October 4, 2007)

10.23 Shareholders  
Agreement  
relating to the  
Pedra Branca  
Project in Brazil,  
between Anglo  
Platinum Brasil,  
S.A. and Altoro  
Mineracao, LTDA  
and Pedra Branca  
do Brasil  
Mineração S.A.  
and Rustenburg  
Platinum Mines  
Limited and  
Solitario  
Resources  
Corporation dated  
April 24, 2007  
(incorporated by

reference to  
Exhibit 10.1 to  
Solitario's Form  
8-K filed on  
October 4, 2007)

Code of Ethics for  
the Chief  
Executive Officer  
and Senior  
Financial Officer  
14.1 (incorporated by  
reference to  
Exhibit 99.1 to  
Solitario's Form  
8-K filed on July  
18, 2006)

Subsidiaries of  
21.1\* Solitario  
Exploration &  
Royalty Corp.

Consent of  
23.1\* Ehrhardt Keefe  
Steiner & Hottman  
PC

Consent of SRK  
23.2\* Consulting (U.S.)  
Inc.

24.1\* Power of Attorney



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Certification of  
Chief Executive  
Officer pursuant to  
SEC Rule  
31.1\* 13a-14(a)/15d-14(a)  
as adopted pursuant  
to Section 302 of the  
Sarbanes-Oxley Act  
of 2002

Certification of  
Chief Financial  
Officer pursuant to  
SEC Rule  
31.2\* 13a-14(a)/15d-14(a)  
as adopted pursuant  
to Section 302 of the  
Sarbanes-Oxley Act  
of 2002

Certification of  
Chief Executive  
Officer and Chief  
Financial Officer  
32.1\* pursuant to 18 U.S.C  
Section 1350 as  
adopted pursuant to  
Section 906 of the  
Sarbanes-Oxley Act  
of 2002

101\* The following  
financial statements,  
formatted in XBRL:  
(i) Consolidated  
Balance Sheets as of  
December 31, 2012  
and 2011; (ii)  
Consolidated  
Statements of  
Operations for the  
years ended  
December 31, 2012  
and 2011; (iii)  
Consolidated  
Statements of  
Shareholders' Equity  
and Comprehensive

Loss for the years ended December 31, 2012 and 2011; (iv) Consolidated Statements of Cash Flows for the years ended December 31, 2012 and 2011; and (v) Notes to the Consolidated Financial Statements, with detailed tagging. In accordance with Rule 406T of Regulation S-T, the information in these exhibits is furnished and deemed not filed or a part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, is deemed not filed for purposes of section 18 of the Securities Exchange Act of 1934, and otherwise is not subject to liability under these sections and shall not be incorporated by reference into any registration statement or other document filed under the Securities Act of 1933, as amended, except as expressly set forth by the specific reference in such filing.

\* Filed herewith

