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

FORM 20-F

(Mark One)

☐ **REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

☒ **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 _____

OR

☐ **SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
Date of event requiring this shell company report:

Commission file number **000-50112**

REPLICEL LIFE SCIENCES INC.
(Exact name of Registrant as specified in its charter)

Not Applicable
(Translation of Registrant's name into English)

British Columbia, Canada
(Jurisdiction of incorporation or organization)

Suite 2020 – 401 West Georgia Street
Vancouver, British Columbia, Canada V6B 5A1
(Address of principal executive offices)

David Hall, President & CEO,
Telephone: (604) 248-8730
Suite 2020 – 401 West Georgia Street
Vancouver, British Columbia, Canada V6B 5A1
Facsimile: (604) 248-8690
(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act.

Title of each class	Name of each exchange on which registered
Not Applicable	**Not Applicable**

Securities registered or to be registered pursuant to Section 12(g) of the Act.

Common Shares Without Par Value
(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act.

Not Applicable
(Title of Class)

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report: **45,025,054 common shares as of December 31, 2012**

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

☐ YES ☒ NO

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

☐ YES ☒ NO

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).

(Not applicable to the registrant at this time) ☐ YES ☐ NO

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☐ Accelerated filer ☐ Non-accelerated filer ☒

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP ☐ International Financial Reporting Standards as issued by the International Accounting Standards Board ☒ Other ☐

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

☐ Item 17 ☐ Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

☐ YES ☒ NO

(APPLICABLE ONLY TO ISSUERS INVOLVED IN BANKRUPTCY PROCEEDINGS DURING THE PAST FIVE YEARS)

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Sections 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court.

☐ YES ☐ NO

GENERAL INFORMATION REGARDING FORWARD-LOOKING STATEMENTS

This annual report on Form 20-F contains forward-looking statements. Forward-looking statements are projections in respect of future events or our future financial performance. In some cases, you can identify forward-looking statements by terminology such as "may", "should", "intend", "expect", "plan", "anticipate", "believe", "estimate", "predict", "potential", or "continue", or the negative of these terms or other comparable terminology. Forward-looking information presented in such statements or disclosures may, among other things, include: the potential of our products, including its potential for success with women; forecasts of expenditures; the sources of financing; expectations regarding our ability to raise capital; our business outlook; plans and objectives of management for future operations; and anticipated financial performance.

Various assumptions or factors are typically applied in drawing conclusions or making the forecasts or projections set out in forward-looking information. Those assumptions and factors are based on information currently available to our company, including information obtained from third-party industry analysts and other third party sources. In some instances, material assumptions and factors are presented or discussed elsewhere in this Annual Report in connection with the statements or disclosure containing the forward-looking information. You are cautioned that the following list of material factors and assumptions is not exhaustive. The factors and assumptions include, but are not limited to:

- no unforeseen changes in the legislative and operating framework for the business of our company;
- a stable competitive environment; and
- no significant event occurring outside the ordinary course of business such as a natural disaster or other calamity.

These statements are only predictions and involve known and unknown risks, uncertainties and other factors, including the risks in the section entitled "Risk Factors" commencing on page 7, which may cause our or our industry's actual results, levels of activity or performance to be materially different from any future results, levels of activity or performance expressed or implied by these forward-looking statements. These risks and uncertainties include:

- negative results from our clinical trials, including that our hair cell replication technology may not work as planned or may not be effective at causing the re-growth of hair follicles or the rejuvenation of damaged, miniaturized follicles;
- the effects of government regulation on our business;
- the viability and marketability of our hair cell replication technology;
- our failure to successfully implement our marketing plan;
- the development of superior technology by our competitors;
- the failure of consumers and the medical community to accept our technology as safe and effective;
- risks associated with our ability to obtain and protect rights to our intellectual property;
- risks and uncertainties associated with our ability to raise additional capital; and
- other factors beyond our control.

Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity or performance. Further, any forward-looking statement speaks only as of the date on which such statement is made, and, except as required by applicable law, we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which such statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for management to predict all of such factors and to assess in advance the impact of such factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statement.

As used in this annual report, the terms "we", "us", "our", and "RepliCel" mean RepliCel Life Sciences Inc., a British Columbia, Canada, corporation, and our wholly-owned subsidiary, TrichoScience Innovations Inc., as applicable. All references to common shares are to the common shares of our company, unless otherwise stated. Information on our website, www.replicel.com, is not incorporated by reference into this annual report.

APPLICATION OF INTERNATIONAL FINANCIAL REPORTING STANDARDS

Effective from January 1, 2011, we adopted International Financial Reporting Standards ("**IFRS**"), as issued by the International Accounting Standards Board. Unless otherwise stated, all information presented herein has been prepared in accordance with IFRS and all prior period amounts have been reclassified to conform with IFRS.

CURRENCY

Unless otherwise stated, "$", when used in this Form 20-F, refers to Canadian dollars.

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PART I

ITEM 1. Identity of Directors, Senior Management and Advisers

Not applicable.

ITEM 2. Offer Statistics and Expected Timetable

Not applicable.

ITEM 3. Key Information

A. Selected Financial Data

The following financial data summarizes selected financial data for our company prepared in accordance with IFRS for the three fiscal years ended December 31, 2012, 2011, and 2010. The information presented below for the three year period ended December 31, 2012, 2011, and 2010 is derived from our financial statements which were examined by our independent auditor. The information set forth below should be read in conjunction with our audited annual financial statements and related notes thereto included in this annual report, and with the information appearing under the heading "Item 5 – Operating and Financial Review and Prospects".

Selected Financial Data
(Stated in Canadian Dollars – Calculated in accordance with IFRS)

	Year ended Dec. 31, 2012 (audited)	Year ended Dec. 31, 2011 (audited)	Year ended Dec. 31, 2010 (audited)
Net sales or operating revenues	$ -	$ -	
Total expenses	3,363,175	3,713,439	2,542,525
Net loss	(3,363,175)	(3,713,439)	(2,542,525)
Basic and diluted loss per share	(0.08)	(0.10)	(0.12)
Total assets	505,488	631,419	1,308,742
Net assets	21,158	401,450	685,447
Share capital	8,319,082	6,266,739	3,344,320
Weighted average number of common shares outstanding (adjusted to reflect changes in capital)	42,680,615	34,942,240	21,567,675
Long-term debt	-	-	-

Disclosure of Exchange Rate History

Since June 1, 1970, the government of Canada has permitted a floating exchange rate to determine the value of the Canadian dollar as compared to the United States dollar. On April 15, 2013, the exchange rates in effect for Canadian dollars exchanged for United States dollars, expressed in terms of Canadian dollars (based on the noon buying rate of the Bank of Canada), was Cdn $1.0206 for each one US dollar. For the past five fiscal years ended December 31, 2012 and for the monthly periods subsequent to that date, the following exchange rates were in effect for Canadian dollars exchanged for United States dollars, expressed in terms of Canadian dollars (based on the noon buying rates in New York City, for cable transfers in Canadian dollars, as certified for customs purposes by the Federal Reserve Bank of New York):

Year	Average
December 31, 2008	1.0659
December 31, 2009	1.1409
December 31, 2010	1.0223
December 31, 2011	0.9887
December 31, 2012	0.9996

Month	High / Low
October 2012	1.0004/0.9763
November 2012	1.0028/0.9927
December 2012	0.9958/0.9841
January 2013	1.0078/0.9839
February 2013	1.0285/0.9960
March 2013	1.0314/1.0156

B. Capitalization and Indebtedness

Not applicable.

C. Reasons for the Offer and Use of Proceeds

Not applicable.

D. Risk Factors

Much of the information included in this annual report includes or is based upon estimates, projections or other "forward-looking statements". Such forward-looking statements include any projections or estimates made by our company and our management in connection with our business operations. While these forward-looking statements, and any assumptions upon which they are based, are made in good faith and reflect our current judgment regarding the direction of our business, actual results will almost always vary, sometimes materially, from any estimates, predictions, projections, assumptions or other future performance suggested herein. Such estimates, projections or other forward-looking statements involve various risks and uncertainties as outlined below. We caution the reader that important factors in some cases have affected and, in the future, could materially affect actual results and cause actual results to differ materially from the results expressed in any such estimates, projections or other forward-looking statements.

The common shares of our company are considered speculative. You should carefully consider the following risks and uncertainties in addition to other information in this annual report in evaluating our company and our business before purchasing any shares of our company. Our business, operating and financial condition could be harmed due to any of the following risks.

Risks Relating to our Business

Our company currently does not generate revenue from its operations, and as a result, it faces a high risk of business failure.

We have not generated any revenues from our operations to date. As of December 31, 2012, we had accumulated $10,233,396 in losses since inception. Our business is focused on the development of a new hair cell replication technology. In order to generate revenues, we will incur substantial expenses in the development of our business. We therefore expect to incur significant losses in the foreseeable future. Our company recognizes that if we are unable to generate significant revenues from our activities, our entire business may fail. There is no history upon which to base any assumption as to the likelihood that we will be successful in our plan of operation, and we can provide no assurance to investors that we will generate operating revenues or achieve profitable operations in the future.

We had cash in the amount of $384,286 and a working capital of $67,768 as of December 31, 2012 and we anticipate that we will require a minimum of approximately $3,000,000 to proceed with our plan of operations for the twelve month period ended December 31, 2013. In order to fund our plan of operations for the next twelve months, we may seek to sell additional equity or debt securities or obtain a credit facility. The sale of convertible debt securities or additional equity securities could result in additional dilution to our shareholders. The incurrence of indebtedness would result in increased debt service obligations and could result in operating and financing covenants that would restrict our operations and liquidity.

Our auditors' opinion on our December 31, 2012 financial statements includes an explanatory paragraph in respect of there being substantial doubt about our ability to continue as a going concern.

We have incurred a net loss of $10,233,396 for the cumulative period from September 7, 2006 (inception) to December 31, 2012. We anticipate generating losses for at least the next 12 months. Therefore, there is substantial doubt about our ability to continue operations in the future as a going concern, as described by our auditors with respect to the financial statements for the year ended December 31, 2012. Our financial statements do not include any adjustments relating to the recoverability and classification of recorded assets, or the amounts of and classification of liabilities that might be necessary in the event that we cannot continue in existence. Our business operations may fail if our actual cash requirements exceed our estimates and we are not able to obtain further financing. If we cannot continue as a viable entity, our shareholders may lose some or all of their investment in our company.

Our business is at an early stage of development and difficulties obtaining regulatory approval, technical deficiencies and other challenges may hinder the development and marketing of our hair cell replication technology.

Our hair cell replication technology is at an early stage of development and we may not develop hair cell replication technology that can be commercialized. We are still in the early stages of identifying and conducting research on our technology. Our technology will require significant research and development and preclinical and clinical testing prior to regulatory approval, if required, being obtained in the United States or other countries. We may not be able to obtain regulatory approvals, if required, to complete necessary clinical trials for our hair cell replication technology, or to commercialize it. Our technology may prove to have undesirable and unintended side effects, or other characteristics adversely affecting its safety, efficacy or cost-effectiveness could prevent or limit its use. Our technology may fail to provide its intended benefit, or achieve benefits equal to or better than our competitor's products at the time of testing or production and, if so, our business may fail.

Our clinical trials may fail to produce successful results or could be suspended due to unacceptable safety risks, which could cause our business to fail.

Clinical trials are subject to extensive regulatory requirements, and are very expensive, time-consuming and difficult to design and implement, in part because they may be subject to rigorous regulatory requirements. Our products may fail to achieve necessary safety and efficacy endpoints during clinical trials. We believe that our clinical trials will take a substantial period of time to complete. Furthermore, failure can occur at any stage of the trials, and we could encounter problems that cause us to abandon or repeat clinical trials. The commencement and completion of clinical trials may be delayed by several factors, including: unforeseen safety issues; lack of effectiveness during clinical trials; slower than expected rates of patient recruitment; and inability to monitor patients adequately during or after treatment. In addition, we or regulatory officials may suspend our clinical trials at any time if it appears that we are exposing participants to unacceptable health risks. If our clinical trials fail to produce successful results, or are suspended due to unacceptable safety risks, our business may fail.

Our success depends on the acceptance of our hair cell replication technology by the medical community and consumers as a safe and effective solution.

The success of our hair cell replication technology will depend on its acceptance by potential consumers and the medical community. Because our technology is new in the treatment of pattern baldness, the long term effects of using our new hair cell replication technology are unknown. The results of short-term clinical trials do not necessarily predict long-term clinical benefit or reveal adverse effects. If results obtained from future commercial experience indicate that our hair cell replication technology is not as safe or effective as other hair restoration treatments, adoption of this technology by consumers and the medical community may suffer and our business will be harmed.

If we are not able to effectively protect our existing intellectual property, our business may suffer a material negative impact and may fail.

The success of our company will be dependent on our ability to protect and develop our technology. We currently have registered patents for our hair cell replication technology in Australia and the European Union. If we are unable to protect our intellectual property, our business may be materially adversely affected. Further, we cannot be sure that our activities do not and will not infringe on the intellectual property rights of others. If we are compelled to prosecute infringing parties, defend our intellectual property or defend ourselves from intellectual property claims made by others, we may face significant expense and liability, as well as the diversion of management's attention from our business, any of which could negatively impact our business or financial condition.

The successful acquisition and maintenance of patent rights is critical to our business and any failure in this regard could hinder the development and marketing of our technology.

We currently have patent applications pending in the United States and several other countries around the world. Our pending patent applications may not result in the issuance of any patents. The applications may not be sufficient to meet the statutory requirements for patentability in all cases or may be the subject of interference proceedings by patent offices. These proceedings determine the priority of inventions and, thus, the right to a patent for technology. In the past, our patent applications have experienced delays and our patent applications may be delayed in the future. If others file patent applications or obtain patents similar to those we have licensed, such patents may restrict the use of our discoveries. The risk of third parties obtaining patents and filing patent applications will continue to increase as the hair restoration market expands. We cannot predict the ultimate scope and validity of existing patents and patents that may be granted to third parties, nor can we predict the extent to which we may wish or be required to obtain licenses to use such patents, or the availability and cost of acquiring such licenses. To the extent that licenses are required, the owners of the patents could bring legal actions against us to claim damages or to stop our manufacturing and marketing of the affected technology. If we become involved in patent litigation, it could consume a substantial portion of our resources.

Competitors in the hair restoration and related fields may currently offer, or may develop, superior hair loss solutions which could limit the market for our technology.

The market for hair restoration products and technology is competitive. We expect that some of our most significant competitors will be more established companies. These companies may have greater capital resources or experience in research and development, manufacturing, testing, obtaining regulatory approvals or marketing capabilities. As a result, our competitors may develop more competitive or affordable products, or achieve earlier patent protection or product commercialization than we are able to achieve. We face competition from companies offering traditional more established products and technologies.

Our company may be subject to changes and uncertainties in laws and government regulations.

Our company is subject to regulation by domestic and foreign governmental agencies with respect to many aspects of developing hair cell replication technology. In addition, relevant new legislation or regulation could occur. Any such new legislation or regulation, the application of laws and regulations from jurisdictions whose laws do not currently apply to our company's business, or the application of existing laws and regulations to hair cell replication technology, could have a material adverse effect on our company's business, prospects, financial condition and results of operations.

Risks Relating to our Management

We are dependent on the services of certain key consultants and the loss of any of these key consultants may have a materially adverse effect on our company.

While engaged in the business of developing a new hair cell replication technology, our company's ability to continue to develop a competitive edge in the marketplace will depend, in large part, on our ability to attract and maintain qualified key management personnel. Competition for such personnel is intense, and we may not be able to attract and retain such personnel. Our company's growth has depended, and in the future will continue to depend, on the efforts of our key management consultants. Loss of any of these people would have a material adverse effect on our company. Currently, our company does not have key-man life insurance.

Conflicts of interest may arise as a result of our company's directors and officers being directors or officers of other life sciences companies.

Certain of our company's directors and officers are, or may become, directors or officers of other life sciences companies. While we are engaged in the business of developing a new hair cell replication technology, such associations may give rise to

conflicts of interest from time to time. Our company's directors are required by law to act honestly and in good faith with a view to our company's best interests and to disclose any interest that they may have in any project or opportunity of our company. If a conflict of interest arises at a meeting of our company's board of directors, any director in a conflict must disclose his interest and abstain from voting on such matter. In determining whether or not our company will participate in any project or opportunity, our company's directors will primarily consider the degree of risk to which our company may be exposed and our financial position at the time.

Our articles contain provisions indemnifying our officers and directors against all costs, charges and expenses incurred by them.

Our articles contain provisions limiting the liability of our officers and directors for all acts, receipts, neglects or defaults of themselves and all of our other officers or directors or for any loss, damage or expense incurred by our company which may happen in the execution of the duties of such officers or directors. Such limitations on liability may reduce the likelihood of derivative litigation against our company's officers and directors and may discourage or deter our shareholders from suing our company's officers and directors based upon breaches of their duties to our company, though such an action, if successful, might otherwise benefit our company and our shareholders.

As a majority of our directors and officers are residents of countries other than the United States, investors may find it difficult to enforce, within the United States, any judgments obtained against our company, directors and officers.

We are governed by the laws of British Columbia, Canada. A majority of our directors and officers are nationals and/or residents of countries other than the United States, and all or a substantial portion of such persons' assets are located outside the United States. Consequently, it may be difficult for United States investors to effect service of process in the United States upon those directors or officers who are not residents of the United States, or to realize in the United States upon judgments of United States courts predicated upon civil liabilities under United States legislation. There is substantial doubt whether an original action based solely upon such civil liabilities could be brought successfully in Canada against any of such persons or our company.

Risks Relating to our Common Stock

If our business is unsuccessful, our shareholders may lose their entire investment.

Although shareholders will not be bound by or be personally liable for our expenses, liabilities or obligations beyond their total original capital contributions, should we suffer a deficiency in funds with which to meet our obligations, the shareholders as a whole may lose their entire investment in our company.

Trading of our company's common shares on the OTC Bulletin Board and the Canadian National Stock Exchange is limited and sporadic, making it difficult for our company's shareholders to sell their shares or liquidate their investments.

The trading price of our company's common shares has been and may continue to be subject to wide fluctuations. The stock market has generally experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of companies with little or no current business operations. There can be no assurance that trading prices and price earnings ratios previously experienced by our company's common shares will be matched or maintained. These broad market and industry factors may adversely affect the market price of the common shares, regardless of our company's operating performance. In the past, following periods of volatility in the market price of a company's securities, securities class-action litigation has often been instituted. Such litigation, if instituted, could result in substantial costs for our company and a diversion of management's attention and resources.

Investors' interests in our company will be diluted and investors may suffer dilution in their net book value per share if we issue additional options to any of our officers, directors, employees or consultants.

Because our company's success is highly dependent upon our directors, officers and consultants, we have granted, and may again in the future grant, options to some or all of our key officers, directors, employees and consultants to purchase our common shares as non-cash incentives. Options may be granted at exercise prices below that of our common shares prevailing in the public trading market at the time or may be granted at exercise prices equal to market prices at times when the public market is depressed. To the extent that significant numbers of such options may be granted and exercised, the interests of our company's other shareholders may be diluted.

Investors' interests in our company will be diluted and investors may suffer dilution in their net book value per share if our company issues additional shares or raises funds through the sale of equity securities.

In the event that our company is required to issue additional shares in order to raise financing, investors' interests in our company will be diluted and investors may suffer dilution in their net book value per share depending on the price at which such securities are sold. The dilution may result in a decline in the market price of our company's shares.

Penny stock rules limit the ability of our shareholders to sell their stock.

The SEC has adopted regulations which generally define "penny stock" to be any equity security that has a market price (as defined) less than $5.00 per share or an exercise price of less than $5.00 per share, subject to certain exceptions. Our securities are covered by the penny stock rules, which impose additional sales practice requirements on broker-dealers who sell to persons other than established customers and accredited investors. The penny stock rules require a broker-dealer, prior to a transaction in a penny stock not otherwise exempt from the rules, to deliver a standardized risk disclosure document in a form prepared by the SEC, which provides information about penny stocks and the nature and level of risks in the penny stock market. The broker-dealer also must provide the customer with current bid and offer quotations for the penny stock, the compensation of the broker-dealer and its salesperson in the transaction and monthly account statements showing the market value of each penny stock held in the customer's account. The bid and offer quotations, and the broker-dealer and salesperson compensation information, must be given to the customer orally or in writing prior to effecting the transaction and must be given to the customer in writing before or with the customer's confirmation. In addition, the penny stock rules require that prior to a transaction in a penny stock not otherwise exempt from these rules, the broker-dealer must make a special written determination that the penny stock is a suitable investment for the purchaser and receive the purchaser's written agreement to the transaction. These disclosure requirements may have the effect of reducing the level of trading activity in the secondary market for the stock that is subject to these penny stock rules. Consequently, these penny stock rules may affect the ability of broker-dealers to trade our securities.

The Financial Industry Regulatory Authority, or FINRA, has adopted sales practice requirements which may also limit a shareholder's ability to buy and sell our stock.

In addition to the "penny stock" rules described above, FINRA has adopted rules that require that in recommending an investment to a customer, a broker-dealer must have reasonable grounds for believing that the investment is suitable for that customer. Prior to recommending speculative low priced securities to their non-institutional customers, broker-dealers must make reasonable efforts to obtain information about the customer's financial status, tax status, investment objectives and other information. Under interpretations of these rules, FINRA believes that there is a high probability that speculative low priced securities will not be suitable for at least some customers. FINRA requirements make it more difficult for broker-dealers to recommend that their customers buy our common stock, which may limit your ability to buy and sell our stock and have an adverse effect on the market for our shares.

We do not intend to pay dividends on any investment in the shares of stock of our company.

We have never paid any cash dividends and currently do not intend to pay any dividends for the foreseeable future. To the extent that we require additional funding currently not provided for in our financing plan, our funding sources may prohibit the payment of a dividend. Because we do not intend to declare dividends, any gain on an investment in our company will need to come through an increase in the stock's price. This may never happen and investors may lose all of their investment in our company.

ITEM 4. Information on RepliCel Life Sciences Inc.

A. History and Development of RepliCel Life Sciences Inc.

Name

Our legal name is "RepliCel Life Sciences Inc.". We changed our name from "Newcastle Resources Ltd." on June 22, 2011.

Principal Office

Our principal office is located at Suite 2020 – 401 West Georgia Street, Vancouver, British Columbia, Canada V6B 5A1. Our telephone number is (604) 248-8730 and our facsimile number is (604) 248-8690.

Corporate Information and Important Events

Our company was incorporated under the laws of the Province of Ontario (specifically under the *Business Corporations Act* (Ontario)) on April 24, 1967 under the name "Jolly Jumper Products of America Limited". On September 25, 1987, our name was changed to "Sun Valley Hot Springs Ranch Inc.". We changed our name to "Tri-Valley Free Trade Inc." on March 26, 1991 and to "Tri-Valley Investments Corporation" on June 19, 1995. On October 2, 1998, we changed our name to "Tri-Lateral Venture Corporation". On May 6, 2004, we changed our name to "Pan American Gold Corporation" and on November 10, 2008, we changed our name to "Newcastle Resources Ltd.". On June 22, 2011 we filed a continuance in British Columbia and changed our name to "RepliCel Life Sciences Inc." We are a reporting issuer under the securities laws of the Provinces of British Columbia and Ontario. Under the *Business Corporations Act* (British Columbia), our company has an indefinite life span.

On November 10, 2008, our issued and outstanding common shares were consolidated on the basis of one (1) common share for every (30) common shares held and our name was changed to Newcastle Resources Ltd. The reverse split and name change were effected with the OTC Bulletin Board on November 28, 2008, at which time our trading symbol was changed to "NCSLF".

On December 22, 2010, we filed articles of amendment with the corporate registrar of the Province of Ontario, authorizing the creation of Class B preference shares and Class C preference shares.

Also on December 22, 2010, we completed the acquisition of two subsidiaries, TrichoScience Innovations Inc. ("**TrichoScience**") and 583885 B.C. Ltd. ("**583885**") pursuant to share exchange agreements dated October 29, 2010 with each of those companies. We determined to treat the acquisition of the shares of TrichoScience as a reverse acquisition for accounting purposes. As a result, our auditors changed from Manning Elliott LLP, our prior auditors, to BDO Canada LLP, the auditors of TrichoScience. As a result of this acquisition, we ceased to be involved in the mineral exploration sector and our business became the development of hair cell replication technology.

Under the TrichoScience share exchange agreement (the "**TrichoScience Agreement**"), we agreed to acquire up to all of the issued and outstanding common shares of TrichoScience on the basis of one unit of our company for each TrichoScience common share. Each unit consisted of 2.295300893 common shares, 1.1476504 Class B preference shares and 1.1476504 Class C preference shares. Upon the closing of the TrichoScience Agreement, we acquired a total of 4,860,000 TrichoScience common shares in exchange for the issuance of 4,860,000 units of our company comprised of an aggregate of: (i) 11,155,165 common shares; (ii) 5,577,580 Class B preference shares, and (iii) 5,577,580 Class C preference shares.

Pursuant to the terms of the TrichoScience Agreement, all shareholders of TrichoScience who did not tender their shares of TrichoScience to our company on December 22, 2010, were given the right to exchange their TrichoScience shares at any time during the following 18 months on the same exchange ratio as set forth above and all TrichoScience shareholders exchanged their shares for units of our company. As a result, we issued a total (including the share issuances described in the preceding paragraph) of 22,000,000 common shares, 11,000,000 Class B shares and 11,000,000 Class C shares to the former shareholders of TrichoScience (including the shares issued on December 22, 2010). Because the rights and restrictions of the Class B preference shares provided that all such shares would be extinguished upon our company: (i) acquiring at least 90% of the TrichoScience shares; and (ii) investing at least $3,000,000 in TrichoScience, all of our outstanding Class B preference shares were extinguished effective April 29, 2011.

As a result of the completion of the acquisition of all of the TrichoScience shares, TrichoScience is now a wholly-owned subsidiary of our company. All of the common shares of our company acquired by former shareholders of TrichoScience have been deposited with a trustee pursuant to the terms of a pooling agreement. The common shares are subject to a timed release schedule under which 15% of the shares have been or will be released on the first day of each of the fiscal quarters occurring after the first anniversary of the respective share exchanges.

In connection with the closing of the TrichoScience Agreement, TrichoScience caused all outstanding TrichoScience options to be cancelled and we agreed to grant each of the holders of such options one option to acquire one of our common shares in exchange for each TrichoScience option that was cancelled. At the same time, we completed the purchase of 1,000,000 common shares of TrichoScience from its treasury at a price of $1.00 per share. Subsequent to December 22, 2010, in accordance with the terms of the TrichoScience Agreement, we purchased an additional 2,050,000 TrichoScience common shares from its treasury at a price of $1.00 per share.

Concurrent with the acquisition of TrichoScience, we also acquired all of the issued and outstanding common shares of 583885 B.C. Ltd. ("**583885**") in exchange for the issuance of 4,400,000 common shares of our company. 583885 did not

have any assets or liabilities at the date of acquisition and was a private company controlled by our incoming Chief Executive Officer. 3,400,000 common shares controlled by the Chief Executive Officer were deposited with an escrow agent pursuant to the terms of an escrow agreement, to be released upon satisfaction of certain performance conditions as set out in the escrow agreement. 583885 was dissolved effective July 29, 2011.

During the year ended December 31, 2012, the performance conditions with respect to the release of 500,000 shares (December 31, 2011: 350,000) had been achieved, and $254,350 (December 31, 2011: $178,045) (representing the fair value of the shares released from escrow on the date of release) was recorded as stock-based compensation. Compensation expense relating to the transaction date fair value of the remaining 1,700,000 common shares will be recognized in the period the respective performance condition is probable and amortized over the period until the performance condition is met.

On June 22, 2011 we filed a continuance application with the corporate registrar of the Province of British Columbia and pursuant to which we continued our jurisdiction of incorporation from the Province of Ontario to the Province of British Columbia. In connection with the continuance, we adopted new articles and changed our name to "RepliCel Life Sciences Inc.". As all of the outstanding Class B preference shares had been cancelled in accordance with their terms shortly before the continuance, we continued to the Province of British Columbia with our authorized capital consisting of an unlimited number of common shares without par value, an unlimited number of Class A preference shares without par value and an unlimited number of Class C preference shares without par value.

On November 29, 2011, 13,000,000 of the Class C preference shares, being all the issued and outstanding Class C shares, were converted on a 5:1 ratio, into 2,600,000 common shares by the holders thereof. All of the common shares issued on conversion of the Class C shares were deposited with a trustee pursuant to the terms of pooling agreements. The common shares are subject to a timed release schedule under which 15% of the shares will be released on the first day of each of the fiscal quarters beginning January 1, 2013.

On December 5, 2011, we filed articles of amendment with the corporate registrar of the Province of British Columbia, cancelling the Class C preference shares.

On February 29, 2012, we completed a private placement of 66,304 units at a price of US$1.50 per unit for gross proceeds of US$99,456. Each unit issued consists of one common share and one common share purchase warrant. Each warrant entitles the holder to purchase an additional common share at US$2.50 per share for a period of 24 months from the closing of the financing.

On March 29, 2012, we completed a private placement of 876,042 units at a price of US$1.50 per unit for gross proceeds of US$1,314,063. Each unit issued consists of one common share and one common share purchase warrant. Each warrant entitles the holder to purchase an additional common share at US$2.50 per share for a period of 24 months from the closing of the financing.

On April 18, 2012, we completed a private placement of 502,667 units at a price of US$1.50 per unit for gross proceeds of US$754,000. Each unit issued consists of one common share of the Company and one common share purchase warrant. Each warrant entitles the holder to purchase an additional common share at US$2.50 per share for a period of 24 months from the closing of the financing. A finder's fee of $36,000 was issued in connection with the financing.

On April 20, 2012, we completed a private placement of 430,033 units at a price of US$1.50 per unit for gross proceeds of US$645,050. Each unit issued consists of one common share and one common share purchase warrant. Each warrant entitles the holder to purchase an additional common share at US$2.50 per share for a period of 24 months from the closing of the financing.

As described above, in connection with the acquisition of TrichoScience, we also acquired all of the issued and outstanding common shares of 583885 in exchange for the issuance of 4,400,000 common shares of our company. 3,400,000 of such common shares controlled by our Chief Executive Officer were deposited with an escrow agent pursuant to the terms of an escrow agreement, to be released upon satisfaction of certain performance conditions as set out in the escrow agreement. During the year ended December 31, 2012, the performance condition with respect to the release of 500,000 shares under the escrow agreement, being the completion of an aggregate of $4,000,000 in financing since December 22, 2010, was completed. As a result, an additional 500,000 shares were released from escrow.

On February 7, 2013, we amended the exercise price of the warrants expiring March 1, 2014, March 29, 2014, April 18, 2014 and April 20, 2014 from US$2.50 to US$0.50 per share. The warrants entitle holders to purchase an aggregate of 1,875,046 common shares.

On April 10, 2013, we completed a private placement of 1,643,555 units at price of $0.31 per unit for gross proceeds of $509,502, of which $24,851 was included in share subscriptions as at December 31, 2012. Each unit issued consists of one common share and one common share purchase warrant. Each warrant entitles the holder to purchase an additional common share at $0.50 per share for a period of 24 months from the closing of the financing.

Capital Expenditures

During the last three fiscal years ended December 31, 2012, we did not undertake any capital expenditures. In connection with the closing of the TrichoScience Agreement, we acquired 1,000,000 common shares of TrichoScience at a price of $1.00 per share. This acquisition was internally financed, partially from the proceeds of the private placement for gross proceeds of US$620,000 that we undertook in connection with the closing of the TrichoScience Agreement, as described above under the heading "Corporate Information and Important Events". On March 11, 2011, we acquired an additional 2,050,000 shares of TrichoScience at a price of $1.00 per share. This acquisition was internally financed from the proceeds of our March 2011 private placement for gross proceeds of US$2,550,000, as described above under the heading "Corporate Information and Important Events".

Takeover offers

We are not aware of any indication of any public takeover offers by third parties in respect of our common shares during our last and current financial years.

B. Business Overview and Plan of Operations

Overview

RepliCel Life Sciences Inc. is a British Columbia, Canada company that is in the business of developing and patenting a new hair follicle cell replication technology that has the potential to become the world's first autologous cellular treatment for hair loss in men and women. Our cellular replication and implantation technology is designed to grow new hair follicles in patients suffering from androgenetic alopecia. The procedure is also designed to rejuvenate damaged, miniaturized hair follicles in balding scalp skin.

Research and Development

Our technology has been developed over nine years of research, experimentation and trials. The mechanics of our technology involve the extraction of as few as 20 hair follicles from the back of a patient's scalp where healthy cycling hair follicles reside. Specific cells are isolated from the hair follicles and are then replicated in a current Good Manufacturing Practice ("**cGMP**") compliant facility through our proprietary cellular replication process and then reintroduced back into balding areas on a patient's scalp. The implanted cells are expected to induce the formation and growth of new hair follicles and are expected to also help rejuvenate damaged hair follicles. Our anticipated long term result is the restoration of a full head of hair that has been seeded by the patient's own natural hair cells.

The product development path of our technology effectively began in 2000/03 when Drs. McElwee and Hoffmann began focusing on specific groups of cells in the hair follicle described as dermal sheath cup cells ("**DSCs**"). Together they hypothesized that these DSCs were a reservoir of cells that were responsible for the continued cycling of the hair follicle, as well as neogenesis of new hair follicles. Multiple experiments on purpose-bred mice demonstrated that hair follicle DSCs could induce successful hair growth. The scientists' landmark study was published in the peer-reviewed Journal of Investigative Dermatology in 2003. Together, the scientists filed patent applications. To date, patents have been issued in Europe and Australia, and are now pending in the US, Canada and Japan.

These results have led us to believe in the effectiveness of the procedure and its potential to become a solution to hair loss for the hair restoration market. From 2004 to 2007, the developers of our technology planned for human clinical trials and cell culture laboratories, and sourced initial funding. In 2007, the developers of the technology assigned the technology, including the intellectual property, to TrichoScience Innovations Inc. ("**TrichoScience**"), all of the shares of which we acquired, in stages, between December 2010 and April 2011.

We believe our technology will offer several advantages over current hair loss solutions. Traditional hair transplantation surgery requires the surgical removal of a prominent band of hair-bearing scalp from the back of the head, dissection of individual hair follicles and then implantation of these follicles into the balding region of the scalp. Often, a number of

similar surgical procedures are required to achieve the desired result. In effect, surgical hair transplantation removes and redistributes a patient's own hair follicles to cover sections of bald scalp, leaving a longitudinal scar across the back of a patient's scalp where the strip of skin tissue carrying the hair follicles was removed. In follicular unit extraction ("**FUE**") transplants, the back of the scalp is left with multiple small round wound marks where the micro extractions have occurred.

In contrast, our technology is designed to replicate a patient's hair cells and rejuvenate miniaturized hair follicles, as well as induce entirely new follicles to grow from the balding scalp with only a minor single suture closure from the tissue extraction site. We believe there will be minimal pain involved and a short recovery period. Our technology is designed to provide the ability to grow a patient's own hair back, rather than to redistribute hair from the back of the scalp to the front.

In addition, hair transplantation surgery requires a team of six or more people, including up to four technicians trained in micro-dissection. The surgical procedure takes up to eight hours to complete. Our technology is designed to be fully performed by a single clinician who requires minimal additional training. We expect the time involved in the clinic to be less than thirty minutes for tissue collection and less than one hour for cell injection.

Existing Market Conditions

Although we have not yet generated any revenues from our technology, we believe that there is a very large potential market for our technology, should it be effective and obtain the necessary regulatory approvals.

The worldwide market for surgical hair restoration has been calculated at US$1.8 billion annually by the International Society of Hair Restoration Surgery (the "**ISHRS**"), with the US market accounting for 36% of that total (US$550 million). Between 2008 and 2010, the hair restoration surgery market increased 47% worldwide. The biggest increases were in the Middle East (454%) and Asia (345%). The American Academy of Family Physicians (the "**AAFP**") estimates the US market for non-surgical hair loss treatments at over US$1.2 billion annually. The drugs minoxidil (Rogaine®) and finasteride (Propecia®) together account for a large portion of the non-surgical market.

Established industry figures as noted above point to an annual worldwide hair restoration market of US$3 billion. However, it is clear that the market is significantly larger based on the broad range of hair loss appliances, treatments, techniques and topical applications that are widely available today. We believe the potential to deliver a minimally invasive surgical, non-drug based procedure such as ours will offer us access to all current hair loss treatment markets. We believe that our technology could serve as a catalyst to grow the market, even while usurping both existing surgical and nonsurgical procedures, given its potential permanent results and minimally invasive surgical basis. It will also bring women into the market where they have traditionally rejected invasive surgical procedures and avoided the side effects of drug treatments. According to the ISHRS, in 2010, 85.9% of hair restoration surgical patients were men, and 14.1% were women. It is anticipated that a cell-based treatment like RepliCel's could address the unmet market for women who currently have no real solution to their hair loss.

Current Hair Loss Treatments

Surgical Hair Restoration

Medical hair restoration consists of a variety of surgical hair restoration treatments designed to reduce baldness. Follicular unit hair transplant ("**FUT**") surgery is by far the dominant hair restoration treatment and involves the surgical removal of large portions of hair-bearing scalp from the back of the head. These sections of scalp skin are then dissected by hand into smaller hair follicle clusters (follicular units) and transplanted to the balding areas of a patient's scalp.

Follicular unit extraction or FUE is another type of hair transplant technique in which a small round punch is used to extract follicular units from a patient's baldness-resistant donor areas. These 1, 2, 3 and 4-hair follicular unit grafts are then transplanted into a patient's balding areas. This is a time consuming and tedious procedure and a physician is often limited to transplanting 500 to 600 follicular unit grafts in one day. While the FUE procedure has grown in popularity, largely due to the minimally invasive way in which follicular unit grafts are removed, the standard strip excision method is still the leading hair transplant procedure.

However, FUT and FUE hair transplant surgery will always be limited by the availability and quality of donor hair follicles. Hair replacement surgery is a complicated procedure that may require several hair transplant sessions over a period of one to two years before the desired result is achieved. Ultimately, the act of hair transplantation does not 'create' new hair. The process simply relocates viable hair from the back of the scalp to the front. We believe that most women will not undergo this extremely invasive surgery. In terms of cosmetic results, both FUT and FUE surgery are quite dependent upon the skill

of the surgeon. Scalp flap surgery, scalp reduction surgery and scalp expansion surgery are other forms of surgical hair restoration. Combined, these treatments represent a far smaller patient base than hair transplant surgery.

Non-Surgical Restoration

Only two drug hair restoration treatments approved by the United States Food and Drug Administration (the "**FDA**") are available today: minoxidil and finasteride. Minoxidil is marketed as Rogaine® and finasteride is marketed as Propecia®. These two products can be effective in hair loss prevention and may grow new hair. However, once a patient begins using Rogaine® or Propecia®, he or she must continue to use the products indefinitely. As with any drug, adverse reactions can sometimes occur.

Rogaine® (Minoxidil)

Rogaine® (minoxidil) was introduced in 1988 as the first drug approved for treatment of baldness by the FDA. It is now available over-the-counter in several countries including the USA. Minoxidil remains the only product available without a prescription that has been approved by the FDA as a proven treatment against hair loss. Minoxidil is no longer under patent so it is also marketed as a number of topical treatments made by several different companies. Minoxidil stimulates hair growth in individuals with male and female pattern baldness; however, the mechanism of action is unknown. It comes in 2% and 5% topical formulations and known side effects include itching and skin irritation of the treated scalp, as well as unwanted hair in areas adjacent to treatment sites which can be distressing to women when the face is involved. Once treatment is stopped, all results will be lost within 3 to 6 months.

Propecia® (Finasteride)

Finasteride is marketed by Merck under the trademark names Proscar® and Propecia®, among other generic names. It is a synthetic antiandrogen that inhibits type II 5-alpha reductase, the enzyme that converts testosterone to DHT. Only available by prescription, it was developed to treat mild to moderate male pattern hair loss on the vertex (top of head) and anterior mid-scalp area (middle front of head) in men only. There is insufficient evidence that Propecia® works for receding hairlines at the temples. Listed side effects include erectile dysfunction and depression. Once treatment is stopped, all results will be lost within 6 to 12 months.

Competition

Aderans Research Institute

The Aderans Research Institute ("**ARI**"), headquartered in Atlanta, is the research arm of two hair restoration companies: Aderans Co., Ltd., a leading manufacturer of wigs in Japan; and Bosley, a leading hair transplant company in the USA now owned by Aderans. ARI is researching a method of hair replication using a cell culture technology referred to as the Ji Gami™ process. Aderans is viewed as a potential competitor with first mover advantage. The RepliCel™ and Aderans technologies, when approved, will ultimately compete on results and cost. Relative efficacy is yet to be determined.

Histogen Inc.

Histogen is a regenerative medicine company developing solutions based upon the products of cells grown under proprietary conditions that mimic the embryonic environment, including low oxygen and suspension. Through this unique technology process, newborn cells are encouraged to naturally produce the vital proteins and growth factors from which the Company has developed its rich product portfolio. Histogen's technology focuses on stimulating a patient's own stem cells by delivering a proprietary complex of multipotent human proteins that have been shown to support stem cell growth and differentiation.

In 2012, Histogen conducted a clinical trial titled "Safety and Efficacy of Hair Stimulating Complex (HSC) on Hair Growth in Males with Androgenetic Alopecia (HSC Phase I/II). The double-blind Phase I/II clinical trial, conducted in the Philippines, was undertaken to further examine the safety and efficacy of intradermal injections of HSC in 56 men with androgenetic alopecia. In addition to other safety outcome measures, clinical evaluation of blood serum chemistry, hematology and urinalysis showed no indication of toxicity over 12 weeks. The treatment was well-tolerated and no study-related adverse events have been reported.

In this second clinical trial of HSC, which was designed with an additional treatment timepoint, the increase in total hair count was 46.5% above that seen in the pilot HSC trial at 12 weeks. Statistical significance was noted in all efficacy endpoints, which include increases in total hair count (p=0.0013), terminal hairs (p=0.0135), and hair thickness (p=0.026). A significant increase in vellus hair count (p=0.033) was seen for the first time, supporting the hypothesis that the HSC treatment rescues dying follicles, in addition to converting vellus to terminal hairs and increasing the number of hairs per follicle. Statistical significance continued to be seen at the 24 week time point.

Follica Inc.

Follica Inc. is developing a treatment that stimulates the re-growth of hair follicles by harnessing their natural wound-healing response. Follica's clinical trials are not listed on the clinicaltrials.gov website.

Marketing Strategy Overview

We have launched a branded corporate website which can be viewed at www.replicel.com to provide corporate information and information about our technology and the progress of our clinical trials. In the future, this site will act as our principal marketing and communications tool and, in time, we will add sections appropriate to our targeted key audiences – medical professionals, hair restoration clinics and appropriate professional associations. All marketing and communications efforts will feature a constant internet based strategy which we anticipate will allow us to leverage our technology advantages and brand to generate license sales.

We expect that, eventually, a highly targeted marketing effort will supplement the broad communications tactics and website with a focused direct sales campaign to primary licensee markets. We have identified the primary licensee market as more than 800 hair restoration physicians.

Business Model

We anticipate that the RepliCel™ procedure will be marketed directly to those medical professionals currently engaged in hair transplant procedures, as well as established hair loss and dermatology clinics. Access to, and application of the procedure will be offered to these establishments under a licensing arrangement. Clinicians will be charged a license fee by the company on an annual basis. We anticipate that we will be responsible for training and educating the clinicians in the RepliCel™ procedure. Clinicians will extract the patient's tissues through a punch biopsy which will then be shipped to our cGMP facilities where cells will be isolated and the proprietary cellular replication process will take place. We anticipate that we will maintain full control over the cellular replication process through the use of our own contracted facilities and own trained technicians. Clinicians will be charged a per-patient replication fee, while the clinic will be free to set the price it charges the patient, based on what the market will bear. We anticipate that we will generate two revenue streams: patient fees and annual license fees.

Regulatory Environment

The process of obtaining marketing authorization for the RepliCel™ procedure requires the collection of a thorough body of information that satisfies requirements set forth by regulators that oversee the safety and efficacy of products sold to the public. Each jurisdiction has specific regulatory requirements, many of which differ from region to region.

We are developing a clinical and regulatory strategy that will ensure adherence to regulations that will advance the marketing approval of our technology worldwide. As part of this strategy, plans for the following projects are in development:

1. Completion of a Phase I human clinical trial in Europe; TS001-2009 trial commenced in December, 2010;
2. Ongoing research and pre-clinical development to enhance knowledge base of our technology; and
3. Initiation of Phase II human dosing clinical trials in Europe and/or North America.

Phase I: TS001-2009

The protocol for the TS001-2009, Phase I study was developed with advice from European Union regulatory authorities responsible for advanced therapy medicinal products (ATMPs) of which our product is one. The clinical trial is designed to test the safety and efficacy of our technology in men and women with androgenic alopecia ("AGA") through the assessment of the following endpoints:

1. Primary Endpoint: local safety profile of our technology at the 6-month time point as defined by the incidence, relationship, severity and seriousness of adverse events at the injection sites and local tolerance (as judged by the investigator and patient);

2. Secondary safety endpoints:

    a. the local safety profile (as defined above) of our technology at the 12 and 24 month time points,
    b. systemic adverse events over the 24-month study,
    c. analysis of macroscopic images of injection sites, and
    d. analysis of histopathological biopsies taken at the 6, 12 and 24 month time points; and

3. Secondary efficacy endpoint:

    a. difference in hair thickness and hair density between 6 months (Visit 7) and baseline will be calculated using the TrichoScan® procedure.

The protocol, designed in compliance with International Conference on Harmonisation guidelines for Good Clinical Practice (ICH GCP) underwent thorough scientific and ethical review by the Georgian National Council of Bioethics and approval to conduct the study was granted on October 27, 2010.

Subjects with mild to moderate AGA categorized on the Ludwig Scale (female) or the Norwood scale (male) were enrolled in the study over a 4-month period starting in December 2010. These subjects provided blood samples to confirm their health status and scalp biopsies which were sent to a cGMP-compliant facility with the specific license to manufacture our product in Austria.

Once the manufacturing process was completed, the 19 subjects returned to the clinic to receive blinded injections of their own (autologous) replicated cells in a carrier medium on one part of the scalp, and another injection of carrier medium without replicated cells (placebo) on the other side of the scalp to allow for better assessment of the safety and efficacy of our technology. The final study participant received injections of hair follicle cells in late August 2011, thus marking the end of the treatment phase of TS001-2009.

In the next stage of the TS001-2009 trial, the post-injection follow-up period, subjects return to the clinic for ten follow-up visits over a 24-month period to have their health closely monitored to ensure that there have been no adverse effects associated with receiving the injections and to determine the efficacy of hair follicle cell injections at stimulating hair growth. Furthermore, at 6, 12 and 24 months post-injection, four subjects at each time point will provide biopsies of the injection sites for histopathological analysis. The post-injection follow-up period will be completed for all patients by the end of August 2013. The total duration of subject participation in the study is approximately 27 months.

Phase I: Six Month Interim Analysis

An interim analysis of data took place in the first quarter of 2012 as all subjects had completed their 6-month follow-up visit. The results of this analysis were released on May 2, 2012. This data has allowed for analysis of the primary endpoints of the study; assessment of the local (at treatment sites) safety profile of our product compared to placebo as defined by adverse events with respect to their causality, incidence, severity and seriousness. Secondary outcome measures of systemic (overall) safety (through review of adverse events in a similar fashion as described above) and efficacy (hair growth at treatment sites) were also performed at this time. The 6-month interim analysis showed that significantly more subjects (63%) had an increase in hair density of greater than 5% (vs. control) while some subjects had not yet shown an increase at this time point. These responders averaged an 11.4% change from baseline, including 70% of subjects above 10% (average 14.8%). The total range of responders was from 6.2% to 19.6%. The overall average of all treated subjects including responders and non-responders was 6.2% density increase. Final analysis of safety data from the entire 24-month post-injection follow-up period should be available in late 2013. To date, no serious adverse events have been reported post-injection.

The primary protocol objective of the study was to assess the local (at treatment sites) safety profile of injections of autologous DSC cells at 6 months post-injection compared to placebo. Secondary protocol objectives were to assess systemic (overall) safety and efficacy (hair growth at treatment sites) at 6 months post-injection and local safety at 24 months post-injection. The 6 month interim analysis was designed to provide us with safety information to support the regulatory filing for a Phase II clinical trial. The 6 month interim analysis results support the continued development of DSC cells for the treatment of androgenetic alopecia.

All 19 subjects (10 male and 9 female) completed 6 month post injection follow-up visits and the data collected from these visits was used for the interim analysis of the primary and secondary safety and efficacy endpoints for the TS001-2009 study.

Pre-Clinical Research

Even though our product has already started testing in human subjects; we continue to perform pre-clinical research to improve the production and delivery of our product. Currently we are conducting such research with our partners in Guangzhou, China, Innsbruck, Austria, and Vancouver, Canada in conjunction with the guidance we have received from regulators in the European Union and Canada.

Proposed Phase II Dosing Clinical Trials

Our next (Phase II) trial is designed to be a dose-finding study which will assess the number of characterized cells and the appropriate treatment pattern necessary to promote optimal hair growth. Subject to regulatory approval, we are planning a 15 month clinical trial that will include multiple subject cohorts studying different doses of DSC cells. Each subject will be given several different injections, while some cohorts will receive additional injections at subsequent time points. We will also review our standard operating procedures (SOPs) of cell biopsy, cell isolation, cell culture media, cell carrier, and injection media to fine-tune those processes in advance of a regulatory submission for a Phase II dosing trial.

The current draft of the RCH-01-2013 trial is designed as follows:

- 120 male subjects
  - 3 injection sites, 1 shaved site per patient as reference
- Treatment Group (96 subjects)
  - 48 treated with single injection (3 different doses)
  - 48 treated with repeat injections (3 different doses) at day 1 and day 91
- Placebo Group (24 subjects)
  - 12 treated with single injection (cell carrier medium at 3 locations)
  - 12 treated with single injection (cell carrier medium at 3 locations) at day 1 and day 91
- 288 treated data sites
- 72 placebo data sites

Intellectual Property

The success of RepliCel will be highly dependent on the protection of our intellectual property. We are developing a diverse portfolio of intellectual property for the use of stem cells in the treatment of hair loss as well as other medical conditions, and medical devices for the application of such cells. For example, RepliCel inventors filed an early patent application on the use of hair follicle derived stem cells (see EP 1 509 597 B1) entitled "Method for isolating hair follicle mesenchymal stem cells". This family of patents describes methods for isolating stem cells from hair follicles, and the growth and use of these stem cells for the treatment of a variety of medical conditions (including hair loss). Within this portfolio, there are granted patents in Australia (AU 2003246521) and Europe (EP1 509 597 B1), which were issued unopposed. Related patent applications are also pending in the United States, Canada and Japan.

Plan of Operations

The sections above contain a broad overview of our plan of operations on a go-forward basis. We intend to specifically focus on continuing our human trials in Europe and preparing for human trials in Canada. During this time, we will attempt to seek regulatory approval in those areas for our technology. We also intend to continue to focus on obtaining patents for our technology in various international jurisdictions. At the same time, we will be taking steps to implement our branding and marketing strategies.

We currently have four full time employees, as well as five contractors. These employees have expertise in biotechnology management, clinical trials, financial management and communications.

C. Organizational Structure

We currently are the parent company of one wholly-owned subsidiary, TrichoScience. TrichoScience is federally incorporated under the *Business Corporations Act* (Canada).

D. Property, Plant and Equipment

Our head office is located at Suite 2020 – 401 West Georgia Street, Vancouver, BC V6B 5A1. We have entered into an operatory lease agreement for our office premises, the term for which expires on October 15, 2015. Research and development is being conducted under contract with the University of British Columbia by Kevin McElwee, PhD at the UBC Dermatology facilities in Vancouver and by Dr. Rolf Hoffmann in Germany. We have no current plans to construct or lease dedicated laboratory facilities.

ITEM 4A Unresolved Staff Comments

Not applicable.

ITEM 5. Operating and Financial Review and Prospects

The information in this section is presented in accordance with International Financial Reporting Standards for 2012 and 2011.

A. Operating Results

Year Ended December 31, 2012 Compared to Year Ended December 31, 2011

Our company had no revenue from operations during the years ended December 31, 2012 or 2011. General and administrative expenses totalled $3,408,894 for the year ended December 31, 2012 compared to $2,713,918 for the year ended December 31, 2011.

Overall, the net general and administrative expenses have increased in 2012. The accounting and audit fees decreased to $73,015 (2011: $120,357) because of the completion of the acquisition of TrichoScience and the transition to IFRS in 2011. The decrease in consulting fees to $123,200 (2011: $185,959) was a result of reduction in the administrative personnel in 2012. The increase in general and administrative expenses was primarily the result of increased insurance (2012: $54,591, 2011: $48,006), marketing and investor relations (2012: $639,997, 2011: $334,709), office (2012: $198,377, 2011: $170,975), salaries (2012: $656,803, 2011: $623,027), and transfer agent and filing fees (2012: $54,755, 2011: $26,973). The increases in insurance, marketing and investor relations fees, office costs, salaries and transfer agent and filing fees were due to increased operational activities in 2012 and a number of marketing initiatives that were undertaken during the year, refer to Item 10 C. - Material Contracts for more information.

We recognized a stock based compensation charge of $1,381,589 for the year ended December 31, 2012 (2011: $947,272) for stock options granted under our stock option plan and founders stock option agreements. The overall increase in stock-based compensation expense in 2012 compared to 2011 was primarily due to the issuance of 1,190,000 stock options that were granted to employees and consultants of our company; 250,000 share purchase warrants which were issued as compensation to a consultant of our company and the release of 500,000 shares from escrow as discussed above under the heading ‘Corporate Information and Important Events’ during the year ended December 31, 2012.

During the year ended December 31, 2012, we incurred costs of $638,734 relating to our clinical trials compared to $637,649 in the year ended December 31, 2011. We incurred research consulting fees of $329,909 and intellectual property costs of $96,432 in 2012 compared to research consulting fees of $292,207 and intellectual property costs of $89,552 in 2011. These increases were all the result of increased operational activities in 2012 related to our Phase I/II trials and on-going clinical development.During the year ended December 31, 2012 the company experienced a $1,116,445 gain on the change in fair value of warrants denominated in a foreign currency due to marked to market adjustments.

We incurred a net loss for the year ended December 31, 2012 of $3,363,175 or $0.08 per share on a basic and diluted basis compared to a net loss of $3,713,439 or $0.10 per share on a basic and diluted basis for the year ended December 31, 2011. The increased loss was the result of increased operational activities in 2012.

Year Ended December 31, 2011 Compared to Year Ended December 31, 2010

Our company had no revenue from operations during the years ended December 31, 2011 or 2010. General and administrative expenses totalled $2,713,918 for the year ended December 31, 2011 compared to $1,992,276 for the year ended December 31, 2010. The increase in general and administrative expenses was primarily the result of increased

accounting and audit fees (2011: $120,357, 2010: $81,456), insurance (2011: $48,006, 2010: $30,472), legal (2011: $118,950, 2010: $116,954), marketing and investor relations (2011: $334,709, 2010: $57,353), office (2011: $170,975, 2010: $53,259), salaries (2011: $623,027, 2010: $109,830), transfer agent and filing fees (2011: $26,973, 2010: $24,851) and travel and promotion (2011: $130,098, 2010: $51,065). The increases in accounting and audit fees, insurance, legal fees, marketing and investor relations, office, salaries, transfer agent and filing fees, and travel and promotion expenses were due to increased operational activities in 2011, these expenses were offset by a decrease in consulting fees (2011: $185,959, 2010: $198,196).

We recognized a stock based compensation charge of $947,272 for the year ended December 31, 2011 (2010: $1,176,900) for stock options granted under our company stock option plan and founders stock option agreements. The overall decrease in stock-based compensation expense in 2011 compared to 2010 was primarily due to the share exchange with 583885 in 2010, 350,000 shares were released from escrow in 2011 upon the achievement of one milestone contained in the escrow agreement, compared to a release of 850,000 in 2010, resulting in decreased stock based compensation expense in 2011.

During the year ended December 31, 2011, we incurred costs of $637,649 relating to our clinical trials compared to $367,763 in the year ended December 31, 2010. We incurred research consulting fees of $292,207 and intellectual property costs of $89,552 in 2011 compared to research consulting fees of $132,100 and intellectual property costs of $50,386 in 2010. These increases were all the result of increased operational activities in 2011.

We incurred a net loss for the year ended December 31, 2011 of $3,713,439 or $0.10 per share on a basic and diluted basis compared to a net loss of $2,542,525 or $0.12 per share on a basic and diluted basis for the year ended December 31, 2010. The increased loss was the result of increased operational activities and on-going clinical development in 2011.

B. Liquidity and Capital Resources

We had working capital of $67,768 as at December 31, 2012 compared to working capital of $382,863 as at December 31, 2011 and $652,699 as at December 31, 2010.

	Year Ended December 31, 2012	Year Ended December 31, 2011	Year Ended December 31, 2010
Net cash used in operating activities	$ (2,957,711)	$ (3,115,623)	$ (894,301)
Net cash provided by (used in) investing activities	(9,090)	(12,929)	1,089,215
Net cash provided by financing activities	2,785,944	2,482,170	412,704
Increase (decrease) in cash during the year	$ (180,857)	$ (646,382)	$ 607,618
Cash and cash equivalents, beginning of year	565,143	1,211,525	603,907
Cash and cash equivalents, end of year	$ 384,286	$ 565,143	$ 1,211,525

Year Ended December 31, 2012 Compared to Year Ended December 31, 2011

Operating Activities

During the year ended December 31, 2012, we used net cash in operating activities of $2,957,711 compared to $3,115,623 for the year ended December 31, 2011. The decrease in cash used in operating activities was the result of a reduction in accounting and audit fees as well as consulting fees in 2012. Cash used in operational activities in 2011 also included large payments in 2011 of accounts payable and accrued liabilities working capital balances at December 31, 2010.

Investing Activities

During the year ended December 31, 2012, the net cash used in investing activities was $9,090 compared to net cash used in investing activities of $12,929 for the year ended December 31, 2011. Investing activities relate mainly to the purchase of computer equipment.

Financing Activities

During the year ended December 31, 2012, we completed private placements consisting of 1,875,046 units at US$1.50 per unit for proceeds of US$2,812,569 ($2,796,740). Each unit issued consists of one common share and one common share purchase warrant. Each warrant entitles the holder to purchase an additional common share at US$2.50 per share for a period

of 24 months from the closing of the financing. We paid $35,647 as finder's fees in connection with the private placement. At December 31, 2012, we had working capital of $67,768. Additional working capital will be required for general and administrative expenses and to further our business plans.

During the year ended December 31, 2011, we issued 2,550,000 common shares at US$1.00 per share for proceeds of US$2,550,000. We issued 101,200 common shares as finder's fees in connection with the private placement. At December 31, 2011, we had working capital of $382,863. Additional working capital will be required for general and administrative expenses and to further our business plans.

On April 10, 2013, we completed a private placement of 1,643,555 units at price of $0.31 per unit for gross proceeds of $509,502, of which $24,851 was included in share subscriptions as at December 31, 2012. Each unit issued consists of one common share and one common share purchase warrant. Each warrant entitles the holder to purchase an additional common share at $0.50 per share for a period of 24 months from the closing of the financing.

We anticipate that we will require a minimum of approximately $3,000,000 to proceed with our plan of operations for the twelve month period ended December 31, 2013. We have no current material commitments for capital expenditures.

We do not currently have sufficient capital resources to fund our plan of operations for the next twelve months, as described in Item 4.B of this Form 20-F. We plan to raise additional capital through the sale of debt or equity securities or through other forms of financing in order to raise the funds necessary to pursue our plan of operations. We currently do not have any arrangements in place for the completion of any financings and there is no assurance that we will be successful in completing any financings. There can be no assurance that additional financing will be available when needed or, if available, on commercially reasonable terms. If we are not able to obtain additional financing on a timely basis, we may not be able to pursue our plan of operations or meet our obligations as they come due, and may be forced to scale down, or perhaps even cease, business operations.

Cash on hand is currently our only source of liquidity. We do not have any lending arrangements in place with banking or financial institutions and we do not know whether we will be able to secure such funding arrangements in the near future.

Year Ended December 31, 2011 Compared to Year Ended December 31, 2010

Operating Activities

During the year ended December 31, 2011, we used net cash in operating activities of $3,115,623 compared to $894,301 for the year ended December 31, 2010. The increase in cash used in operating activities was the result of increased operational activities in 2011, as discussed above.

Investing Activities

During the year ended December 31, 2011, the net cash used in investing activities was $12,929 compared to net cash provided of $1,089,215 for the year ended December 31, 2010. The decrease is a result of the cash acquired on the closing of the TrichoScience Agreement in 2010.

Financing Activities

During the year ended December 31, 2011, RepliCel issued 2,550,000 common shares at US$1.00 per share for proceeds of US$2,550,000. We issued 101,200 common shares as finder's fees in connection with the private placement. At December 31, 2011, we had working capital of $382,863. Additional working capital will be required for general and administrative expenses and to further our business plans.

Going Concern

Due to the uncertainty of our ability to meet our current operating and capital expenses, in the auditor's report on our annual financial statements for the year ended December 31, 2012, our auditors included an explanatory paragraph on their report in respect of there being substantial doubt about our ability to continue as a going concern.

Significant Accounting Policies

Critical Accounting Estimates, Assumptions and Judgments

The preparation of consolidated financial requires the use of estimates, assumptions and judgment that in some cases relate to matters that are inherently uncertain, and which affect the amounts reported in the consolidated financial statements and accompanying notes. Changes to estimates and assumptions may affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of expenses during the reporting period. Actual results could also differ from those estimates under different assumptions and conditions. Information about critical judgments in applying accounting policies that have the most significant risk of causing material adjustment to the amounts reported in these financial statements are discussed below:

Share Based Payments

We measure the cost of equity-settled transactions with employees by reference to the fair value of the equity instruments at the date at which they are granted. Estimating fair value for share-based payment transactions requires determining the most appropriate valuation model, which is dependent on the terms and conditions of the grant. This estimate also requires determining the most appropriate inputs to the valuation model including the expected life of the share option, volatility and dividend yield and making assumptions about them. The assumptions and models used for estimating the fair value for share-based payment transactions are disclosed in Note 8(e) to our consolidated unaudited annual financial statement contained herein.

Similar methodology to the share-based payments is used to determine the fair value of derivative liabilities related to warrants denominated in US dollars. The assumptions and models used for estimating the fair value for derivative liabilities are disclosed in Note 8(g) to our consolidated unaudited annual financial statement contained herein.

Income Taxes

Significant judgment is required in determining the provision for income taxes. There are many transactions and calculations undertaken during the ordinary course of business for which the ultimate tax determination is uncertain. We recognize liabilities and contingencies for anticipated tax audit issues based on our current understanding of the tax law. For matters where it is probable that an adjustment will be made, we record our best estimate of the tax liability including the related interest and penalties in the current tax provision. Management believes they have adequately provided for the probable outcome of these matters; however, the final outcome may result in a materially different outcome than the amount included in the tax liabilities.

In addition, we will recognize deferred tax assets relating to tax losses carried forward to the extent there are sufficient taxable temporary differences relating to the same taxation authority and the same taxable entity against which the unused tax losses can be utilized. However, utilization of the tax losses also depends on the ability of the taxable entity to satisfy certain tests at the time the losses are recouped.

Recent Accounting Pronouncements in Canada

Certain pronouncements were issued by the IASB or the IFRS Interpretations Committee that are mandatory for accounting periods beginning after January 1, 2013 or later periods. The following new standards, amendments and interpretations, which have not been early adopted in these consolidated financial statements, will or may have an effect on the Company's future results and financial position:

IFRS 9 Financial Instruments

IFRS 9 Financial Instruments is part of the IASB's wider project to replace IAS 39 Financial Instruments: Recognition and Measurement. IFRS 9 retains but simplifies the mixed measurement model and establishes two primary measurement categories for financial assets: amortized cost and fair value. The basis of classification depends on the entity's business model and the contractual cash flow characteristics of the financial asset. The standard is effective for annual periods beginning on or after January 1, 2015. We are in the process of evaluating the impact of the new standard.

IFRS 10 Consolidated Financial Statements

IFRS 10 builds on existing principles by identifying the concept of control as the determining factor in whether an entity should be included within the consolidated financial statements of the parent company. The standard provides additional guidance to assist in the determination of control where this is difficult to assess. This standard is applicable for annual periods beginning on or after January 1, 2013. The adoption of this standard is not expected to have material impact on our consolidated financial statements.

IFRS 13 Fair Value Measurement

IFRS 13 aims to improve consistency and reduce complexity by providing a precise definition of fair value and a single source of fair value measurement and disclosure requirements for use across IFRS. The requirements, which are largely aligned between IFRS and US GAAP, do not extend the use of fair value accounting but provide guidance on how it should be applied where its use is already required or permitted by other standards within IFRS or US GAAP. This standard is effective for annual periods beginning on or after January 1, 2013. The adoption of this standard is not expected to have material impact on our consolidated financial statements.

Amendment to IAS 1 Presentation of Financial Statements

The amendments to IAS 1 revise the presentation of other comprehensive income (OCI). Separate subtotals are required for items which may subsequently be recycled through profit or loss and items that will not be recycled through profit or loss. The standard is effective for annual periods beginning on or after July 1, 2012. We have determined that there is no material impact as a result of these amendments on the presentation of the income statement.

Amendment to IAS 32 Financial Instruments: Presentations

The amendments to IAS 32 pertained to the application guidance on the offsetting of financial assets and financial liabilities, focused on four main areas: the meaning of ‘currently has a legally enforceable right of set-off, the application of simultaneous realization and settlement, the offsetting of collateral amounts and the unit of account for applying the offsetting requirements. The standard is effective for annual periods beginning on or after January 1, 2014. We are in the process of evaluating the impact that the adoptions of this standard may have on its financial statements.

Amendment to IFRS 7, Financial Instruments: Disclosure

Amended standard IFRS 7 Financial Instruments: Disclosures outlines the disclosures required when initially applying IFRS 9 Financial Instruments. The standard is effective for annual periods beginning on or after January 1, 2015. We are in the process of evaluating the impact that the adoptions of this standard may have on its financial statements.

There are no other IFRS or IFRIC Interpretations that are not yet effective that would be expected to have a material impact on our Company.

C. Research and Development, Patents and Licenses etc.

We incurred research costs of $329,909, $292,207, and $132,100 in 2012 2011, and 2010 respectively and clinical development costs of $638,734, $637,649, and $367,763 in 2012, 2011, and 2010, respectively. Our research currently focuses on the development of our non-surgical hair cell replication technology. In 2008, we were granted a patent for our technology in each of Australia and the European Union. Patents in other global jurisdictions, including Canada, Japan and the United States, have been applied for and are pending. We will continue to conduct our research and development

activities through contracts with the University of British Columbia, Tricholog GmbH, Pharmalog Institute fur klniische Forschung GmbH, and other research institutions and commercial entities when needed.

D. Trend Information

We do not currently know of any trends, uncertainties, demands, commitments or events that are reasonably likely to have a material effect on our net sales or revenue, income from continuing operations, profitability, liquidity or capital resources, or that would cause reported financial information not necessarily to be indicative of future operating results or financial condition.

E. Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that are material to investors.

F. Contractual Obligations

We have entered in an operating lease agreement for our office premises. The term of the lease is for three years with it ending on October 31, 2015 and the annual commitments under the lease is as follows:

2013	2014	2015
$ 130,470	$ 133,200	$ 119,550

G. Safe Harbor

Not applicable.

ITEM 6. Directors, Senior Management and Employees

A. Directors and Senior Management

There are no family relationships between any of the directors, senior management or employees. We have no arrangement or understanding with any major shareholders or other persons pursuant to which any of our directors or officers was selected as a director or officer. The following table sets out information regarding our directors and senior management, and any employees upon whose work our company is dependent.

Name and Age	Present Position with our Company	Age	Date of Commencement with our Company
David Hall	Chief Executive Officer, President and Director	59	December 22, 2010
Tom Kordyback	Chief Financial Officer	61	August 22, 2011
Dr. Rolf Hoffmann	Chief Medical Officer and Director, TrichoScience Founder	51	December 22, 2010
Dr. Kevin McElwee	Chief Scientific Officer, TrichoScience Founder	43	December 22, 2010
Peter Jensen[(1)]	Chairman of the Board and Director	59	December 22, 2010
John Challis[(1)]	Director	66	March 11, 2011
Peter Lewis[(1)]	Director	57	May 27, 2011
Darrell Panich	VP Clinical Affairs	41	March 15, 2010
Gemma Fetterley	VP Finance, Secretary and Treasurer	34	March 11, 2011

(1) Member of the audit committee.

David Hall – Chief Executive Officer, President and Director

Mr. Hall has almost two decades of experience in the life sciences industry. From 1994 through 2008, he served in roles as Chief Financial Officer, Chief Compliance Officer and Senior Vice President of Government & Community Relations for Angiotech Pharmaceuticals Inc. He also acted as the Corporate Secretary and Treasurer of Angiotech. Mr. Hall is highly committed to governmental policy issues related to the biotech industry. He is a past Chairman of Life Sciences BC and currently serves as a director of Advantage BC. He has served as the Chairman of the Biotech Industry Advisory Committee to the BC Competition Council and as a member of the BC Task Force on PharmaCare. Mr. Hall is also a member of the University of British Columbia's Tech Equity Investment Committee and is a director and Chairman of the Audit Committee of GLG Lifetech Corporation.

Tom Kordyback, CA – Chief Financial Officer

Mr. Kordyback has over 25 years of experience in corporate finance and management for emerging growth companies. He has held senior financial positions with Glenayre Electronics Inc. and Telelink Communications Inc. In 1995, he joined Creo Inc. as their Chief Financial Officer where he oversaw private financings totaling more than $80 million and led the company's Initial Public Offering on the NASDAQ stock exchange for $90 million. He remained at Creo until 2000. Mr. Kordyback also served as a director and member of the Audit, Compensation and Merger and Acquisitions Committees for Extreme CCTV Inc., a developer and manufacturer of state-of-the-art surveillance systems listed on the TSX. In 2008, the company was sold to Bosch Security Systems, Inc. for CDN $93 million. Mr. Kordyback currently serves as director of Silver Sun Resources Corp., a public Canadian-based resource company.

Prof. Rolf Hoffmann, MD – Chief Medical Officer and Director

Dr. Hoffmann is a European-based clinical researcher who has spent decades researching the fields of pattern hair loss, alopecia areata, endocrinology of the hair follicle and hair follicle morphogenesis. Together with Dr. McElwee, he is the applicant of a landmark patent on the use of hair follicle cup cells and their use in hair diseases. He is working clinically in his private practice, as a teaching professor in the Department of Dermatology for Marburg University, as well as a researcher on histopathogically on hair diseases, where he has published chapters in text books. Dr. Hoffmann has participated in dozens of clinical hair studies and consulted for a variety of large companies on hair matters. He is the inventor of TrichoScan®, a computerized technique to measure hair growth. Since then, he has run a successful privately owned company to market the device for dermatologists and to offer it as a service for clinical trials.

Dr. Kevin McElwee, PhD – Chief Scientific Officer

Dr. McElwee is an Associate Professor in the Department of Dermatology and Skin Health at the University of British Columbia, and Director of the Hair Research Laboratory in the Vancouver Coastal Health Research Institute at Vancouver General Hospital (VGH). His research is funded by competitive grants awarded by multiple organizations including the Canadian Institute for Health Research (the equivalent of the National Institute for Health in the USA). Dr. McElwee is one of only a small group of research scientists worldwide who studies hair biology and associated diseases. He has worked as a hair research scientist for 12 years and has published over 70 medical journal articles, research abstracts and academic book chapters on hair loss research. Dr. McElwee received his Bachelor of Science degree from the University of Aberdeen, Scotland and his PhD from the University of Dundee, Scotland. Postdoctoral training included three years at the Jackson Laboratory in Maine and four years at the University of Marburg, Germany, studying various hair loss diseases.

Peter Jensen – Chairman of the Board and Director

Mr. Jensen holds a Bachelor of Science and two Law degrees from McGill University. Prior to his law degrees, he was engaged in diabetes research and medical clinic management. In 1981, he commenced the practice of law in the corporate and securities fields in British Columbia. Mr. Jensen has a wide range of legal counseling experience internationally and has a depth of experience in trans-border transactions. Mr. Jensen has been and is a director of a number of private and publicly traded companies and has assisted in the raising of finance for these companies in Canada, the United States, Europe and Asia.

John Challis – Director

Dr. Challis is the past President and CEO of the Michael Smith Foundation for Health Research, British Columbia's health research funding organization. Dr. Challis received his PhD from the University of Cambridge and began his career as a research scientist at the University of Oxford. In 1976, he came to Canada as a faculty member at McGill University and joined the faculty at the University of Western Ontario two years later. Dr. Challis served as founding Scientific Director of the Lawson Research Institute at St. Joseph's Health Centre and as the Centre's vice-president (research). In 1995, he joined the University of Toronto as Professor and Chair of the Department of Physiology and in 2001 he was appointed the founding

Scientific Director of the Canadian Institute of Health Research, Institute of Human Development, Child and Youth Health. Dr. Challis served as Vice-President, Research and Associate Provost at the University of Toronto between 2003 and 2007.

In 2007, Dr. Challis was awarded the McLaughlin Medal from the Royal Society of Canada for important research of sustained excellence in medical science. In March 2009, Dr. Challis received the President's Distinguished Scientist Award from the Society for Gynaecologic Investigation (SGI). Currently, he holds the rank of University Professor Emeritus, University of Toronto, Departments of Physiology, Medicine and Obstetrics and Gynaecology.
Dr. Challis is an internationally-recognized researcher in the fields of physiology, obstetrics and gynaecology. He is a Fellow of the Royal Society of Canada, Fellow of the Royal College of Obstetricians and Gynecologists, and Fellow of the Canadian Academy of Health Sciences. He has published more than 500 scientific papers and articles, trained more than 70 graduate students and postdoctoral fellows and has served as President of several professional associations in his field of research.

Peter Lewis, CA – Director

Mr. Lewis is a partner with Lewis and Company, a firm specializing in taxation law since 1993. His areas of expertise include tax planning, acquisitions and divestitures, reorganizations and estate planning. He is a sought after educator, having taught and presented taxation courses at the Institute of Chartered Accountants of British Columbia and the Canadian Tax Foundation.

Darrell Panich, MSc, PMP, CPM - Vice President, Clinical Affairs

Mr. Panich is an experienced clinical trial management specialist. He has managed multinational clinical research studies in more than 15 different countries for over 20 different pharmaceutical and biotechnology companies. He obtained his Master of Science degree from the University of Alberta while conducting clinical research in neuroscience. Mr. Panich has obtained certifications in project management from the Project Management Institute (Project Management Professional; PMP) and Project Management Leadership Group (Certified Project Manager; CPM).

Gemma Fetterley, CA - VP Finance and Secretary

Ms. Fetterley is a Chartered Accountant and holds a degree in Economics from the University of British Columbia. Ms. Fetterley has spent several years in public practice specializing in the brokerage industry, as well as audit and advisory work for both private and public clients. She recently held a senior management finance role with the Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games, and has a wide range of experience in accounting and finance.

B. Compensation

The following table sets out the compensation provided to our directors and senior management for performance of their duties during the fiscal year ended December 31, 2012:

SUMMARY COMPENSATION TABLE									
					Non-equity incentive compensation plan compensation ($)				
Name and principal position	Year	Salary ($)	Share-based awards ($)	Option-based awards[2] ($)	Annual incentive plans	Long-term incentive plans	Pension value ($)	All other Compensation ($)	Total Compensation ($)
David Hall CEO, President and Director	2012	360,000	254,350[1]	[2]	N/A	N/A	N/A	N/A	614,350
Tom Kordyback Chief Financial Officer	2012	N/A	N/A	[2]	N/A	N/A	N/A	N/A	N/A
Dr. Rolf Hoffmann Chief Medical Officer and Director	2012	220,674[3]	N/A	[2]	N/A	N/A	N/A	N/A	220,674
Dr. Kevin McElwee Chief Scientific Officer Founder of TrichoScience	2012	53,571	N/A	[2]	N/A	N/A	N/A	N/A	53,571
Peter Jensen Chairmen and Director	2012	N/A	N/A	[2]	N/A	N/A	N/A	20,250[4]	20,250
John Challis Director	2012	N/A	N/A	[2]	N/A	N/A	N/A	15,500[5]	15,500
Peter Lewis Director	2012	N/A	N/A	[2]	N/A	N/A	N/A	15,250[6]	15,250
Darrell Panich VP, Clinical Affairs	2012	125,000	N/A	[2]	N/A	N/A	N/A	N/A	125,000
Gemma Fetterley VP, Finance and Secretary	2012	82,500	N/A	[2]	N/A	N/A	N/A	N/A	82,500

(1) The valuation of the share-based awards is based on the fair market value of the shares at the time of grant, being December 22, 2010, US$0.50 per share. During the year-ended December 31, 2012, 500,000 shares were released from escrow and compensation expense of $254,350 was recorded as stock-based compensation.

(2) The valuation of option-based awards is based on the fair value of the options at the time of the grant is based on the Black Scholes model and includes the following assumptions; weighted average risk free rate, weighted average expected life, expected volatility and dividend yield. For options that vest, only the vested options are valued. Details of options granted during 2012 are included in the table below under the heading "Share Ownership - Stock Option Plan".

(3) Includes $110,703 paid to a company controlled by Dr. Hoffmann.

(4) Mr. Jensen was paid $20,250 in director's fees by our company for the fiscal year ended December 31, 2012.

(5) Mr. Challis was paid $15,500 in director's fees by our company for the fiscal year ended December 31, 2012.

(6) Mr. Lewis was paid $15,250 in director's fees by our company for the fiscal year ended December 31, 2012.

Pension, Retirement or Similar Benefits

We do not provide pension, retirement or similar benefits to directors and executive officers. No funds were set aside or accrued by our company during the fiscal year ended December 31, 2012 to provide pension, retirement or similar benefits to our directors or officers pursuant to any existing plan provided or contributed to by us or our subsidiaries.

C. Board Practices

Our directors are re-elected at the annual general meeting of our shareholders and our officers are re-appointed by our board of directors at a directors' meeting following the annual general meeting. Each of our current directors and officers will hold their respective office until their successor is elected or appointed, unless such office is earlier vacated under any of the relevant provisions of our by-laws or the *Business Corporations Act* (British Columbia).

The following sets out terms of the consulting agreement between our company and David Hall. Mr. Hall is the only director of our company who is entitled to receive benefits upon termination of employment, as described below.

Consulting Agreement: David Hall

Pursuant to an employment agreement effective as of January 1, 2011 between David Hall, our company and TrichoScience, Mr. Hall serves as President and Chief Executive Officer of our company and TrichoScience for a base salary of $30,000 per month. The initial term of this agreement is for five years and is automatically renewable for subsequent two year terms. Under the agreement, Mr. Hall will be eligible to participate in a bonus plan as and when established by our company, which currently is anticipated to provide for bonuses based on a target bonus of 100 percent of the base salary earned by Mr. Hall during each fiscal year in accordance with milestones to be established by our board of directors. Mr. Hall may also be eligible to receive additional stock option grants or awards under other equity based incentive plans from time to time. In the case of general grants of options or awards to executives, Mr. Hall shall receive not less than 10% of such general grant unless our board presents material reasons for lesser or non-participation. If, within 24 months of a change of control of our company, Mr. Hall's employment is terminated for any reason other than for just cause, we will pay Mr. Hall: any unpaid base salary earned but unpaid; a lump sum amount as severance compensation equal to 36 months of base salary and an additional 2 months of base salary for each additional full year of employment completed after the first year of Mr. Hall's employment, up to a combined maximum of 48 months' base salary; a lump sum amount as compensation for loss of any benefits made available to Mr. Hall, including any benefit coverage under any group, health, dental, life or disability insurance plan up to a total amount of $100,000 plus an additional $2,000 for each additional full year of employment complete after the first year of Mr. Hall's employment, to a combined maximum of $124,000; the balance of any payments due under any bonus plan; and a further lump sum payment equal to two times the greater of: (i) the average of the payments made to Mr. Hall under the bonus plan in each of the two immediately preceding fiscal years; and (ii) the amount of Mr. Hall's target bonus under the bonus plan for the fiscal year in which Mr. Hall's employment is terminated.

Consulting Agreement: Darrell Panich

Pursuant to an employment agreement effective as of March 15, 2010 between Darrell Panich and TrichoScience, Mr. Panich serves as Vice President Clinical Affairs of our company and TrichoScience for a base salary of $125,000 per annum. Under the agreement, Mr. Panich will be eligible to participate in a bonus plan as and when established by our company, which currently is anticipated to provide for bonuses based on a target bonus of 20 percent of the base salary earned by Mr. Panich during each fiscal year in accordance with milestones to be established by our board of directors. Mr. Panich may also be eligible to receive additional stock option grants or awards under other equity based incentive plans from time to time. If, within 12 months of a change of control of our company, Mr. Panich's employment is terminated for any reason other than for just cause, we will pay Mr. Panich: any unpaid base salary earned but unpaid; a lump sum amount as severance compensation equal to three months of base salary for three years of employment and one additional month of base salary for each year of employment after the first three years; vacation pay and, if granted a performance bonus.

Consulting Agreement: Gemma Fetterley

Pursuant to an employment agreement effective as of March 11, 2011 between Gemma Fetterley and our Company, Ms. Fetterley serves as Vice President Finance of our company and TrichoScience for a base salary of $82,500 per annum. Under the agreement, Ms. Fetterley will be eligible to participate in a bonus plan as and when established by our company, which currently is anticipated to provide for bonuses based on a target bonus of 20 percent of the base salary earned by Ms. Fetterley during each fiscal year in accordance with milestones to be established by our board of directors. Ms. Fetterley may

also be eligible to receive additional stock option grants or awards under other equity based incentive plans from time to time. If, within 12 months of a change of control of our company, Ms. Fetterley's employment is terminated for any reason other than for just cause, we will pay Ms. Fetterley: any unpaid base salary earned but unpaid; a lump sum amount as severance compensation equal to three months of base salary for three years of employment and one additional month of base salary for each year of employment after the first three years; vacation pay and, if granted a performance bonus.

Audit Committee

Our audit committee is comprised of Peter Lewis, John Challis and Peter Jensen. The audit committee reviews and approves the scope of the audit procedures employed by our independent auditors, reviews the results of the auditor's examination, the scope of audits, the auditor's opinion on the adequacy of internal controls and quality of financial reporting and our accounting and reporting principles, policies and practices, as well as our accounting, financial and operating controls. The audit committee also reports to the board of directors with respect to such matters and recommends the selection of independent auditors. Before financial statements that are to be submitted to the shareholders at an annual general meeting are considered by the board of directors, such financial statements are submitted to the audit committee for review, following which the report of the audit committee on the financial statements is submitted to the board of directors.

Remuneration Committee

We do not have a standing remuneration committee but our entire board of director's acts as our compensation committee. We do not believe it is necessary to have a standing remuneration committee because we believe that the functions of such a committee can be adequately performed by our board of directors.

D. Employees

As of December 31, 2012, we had four full time employees and five contractors, the majority of which are located in Vancouver, British Columbia. These employees and contractors have expertise in biotechnology management, clinical trials, financial management and communications.

E. Share Ownership

Our directors, senior management and key employees beneficially own, directly or indirectly, the number of shares set out in the table below:

Name and Office Held	Number of Common Shares[(1)]	Percentage of Common Shares[(2)]
David Hall Chief Executive Officer, President and Director	2,400,000[(3)]	5.1%
Tom Kordyback Chief Financial Officer	100,993	*
Dr. Rolf Hoffmann Chief Medical Officer and Director	5,056,979	10.8%
Dr. Kevin McElwee Chief Scientific Officer	4,241,716	9.1%
Peter Jensen Chairmen and Director	500,000	1.1%
John Challis Director	-	-
Peter Lewis Director	40,000	*
Darrell Panich VP, Clinical Affairs	-	-
Gemma Fetterley VP, Finance and Secretary	-	-

* Less than 1%.

(1) Does not include options to acquire common shares of our company held by the persons set forth in the table. For a description of options held by the persons set forth in the table above, see below under the heading "Stock Option Plan".

(2) Based on 46,668,609 common shares issued and outstanding as of April 15, 2013.

(3) Does not include 1,000,000 common shares held by Mr. Hall's wife over which Mr. Hall does not exercise control or direction.

Stock Option Plan

On December 22, 2010, our board of directors approved the adoption of the 2010 Stock Option Plan, which was ratified and approved by our shareholders on January 5, 2011. The 2010 Stock Option Plan provides for the grant of incentive stock options to purchase our common shares to our directors, officers, employees and consultants. The Plan is administered by our board of directors. The maximum number of our common shares which may be reserved and set aside for issuance under the stock option plan is 10% of the issued and outstanding common shares of our company's stock on the date of issue. Each option, upon its exercise, entitles the grantee to one common share. The exercise price of common shares subject to an option will be determined by the board of directors at the time of grant. Stock options may be granted under our stock option plan for an exercise period of up to ten years from the date of grant of the option or such lesser periods as may be determined by our board of directors.

The following table sets forth the amount and terms of options to acquire common shares of our company we have granted to our directors, senior management and key employees:

Name and Office Held	Number of Options	Date of Grant	Exercise Price	Expiry Date
David Hall Chief Executive Officer, President and Director	250,000	March 11, 2011	US$1.00	March 11, 2018
Tom Kordyback Chief Financial Officer	325,000[(1)]	February 9, 2010	US$1.00	March 31, 2016
	100,000	April 18, 2012	US$1.50	April 18, 2019
Dr. Rolf Hoffmann Chief Medical Officer and Director	350,000	December 22, 2010	US$0.50	July 13, 2017
Dr. Kevin McElwee Chief Scientific Officer	350,000	December 22, 2010	US$0.50	July 13, 2017
Peter Jensen Chairmen and Director	235,000[(1)]	July 14, 2010	US$1.00	July 13, 2017
	65,000	December 22, 2010	US$0.50	July 13, 2017
John Challis Director	100,000	March 11, 2011	US$1.00	March 11, 2018
Peter Lewis Director	100,000	March 11, 2011	US$1.00	March 11, 2018
Darrell Panich VP, Clinical Affairs	50,000[(1)]	January 22, 2010	US$1.00	February 28, 2017
	100,000	March 11, 2011	US$1.00	March 11, 2018
	100,000	April 18, 2012	US$1.50	April 18, 2019
Gemma Fetterley VP, Finance and Secretary	100,000	March 11, 2011	US$1.00	March 11, 2018
	100,000	April 18, 2012	US$1.50	April 18, 2019

(1) Each stock option is exercisable into one unit at a price of $1.00 per unit, with each unit consisting of 2.52484 common shares

ITEM 7. Major Shareholders and Related Party Transactions

A. Major Shareholders

The following table sets forth persons known to us to be the beneficial owner of more than five percent (5%) of each class of our shares issued and outstanding as of April 15, 2013. All of these persons acquired their shares of our company in connection with the closing of the TrichoScience Agreement and the 583885 Agreement.

Name	Number of Common Shares[(1)]	Percentage of Common Shares[(2)]
Dr. Rolf Hoffmann	5,056,979	10.8%
Dr. Kevin McElwee	4,241,716	9.4%
Dr. Jerry Shapiro	4,241,716	9.4%
Matthew Wayrynen	4,092,743[(3)]	8.8%
David Hall	2,400,000[(4)]	5.3%

(1) Does not include options to acquire common shares of our company held by the persons set forth in the table.

(2) Based on 46,668,609 common shares issued and outstanding as of April 15, 2013. Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities. Except as otherwise indicated, we believe that the beneficial owners of the common stock listed above, based on information furnished by such owners, have sole investment and voting power with respect to such shares, subject to community property laws where applicable.

(3) Does not include 1,009,932 common shares held by a company that Mr. Wayrynen serves as a director.

(4) Does not include 1,000,000 common shares held by Mr. Hall's wife over which Mr. Hall does not exercise control or direction.

The voting rights of our major shareholders do not differ from the voting rights of holders of our shares who are not major shareholders. Each of the above listed securities entitles the holder to one vote at our company's shareholder meetings.

The following table sets forth the number of our issued and outstanding common shares that are held by record holders in the United States. We have no Class A preference shares outstanding:

Class	Number of Shareholders	Total Shares Held
Common Shares	18	1,610,468
Percentage of Common Shares	8.7%	3.5%[(1)]

(1) Based on 46,668,609 common shares issued and outstanding as of April 15, 2013.

To our knowledge we are not directly or indirectly owned or controlled by another company, a foreign government or any other natural or legal person, severally or jointly.

To our knowledge, there are no arrangements the operation of which may, at a subsequent date, result in a change in the control of our company.

B. Related Party Transactions

The following sets forth all material transactions and loans from January 1, 2012 to the current date between our company and: (a) enterprises that directly or indirectly through one or more intermediaries, control or are controlled by, or are under common control with, our company; (b) associates; (c) individuals owning, directly or indirectly, an interest in the voting power of our company that gives them significant influence over our company and close members of any such individuals' families; (d) key management personnel of our company, including directors and senior management of our company and close members of such individuals' families; and (e) enterprises in which a substantial interest in the voting power is owned, directly or indirectly, by any person described in (c) or (d) or over which such a person is able to exercise significant influence. For the purposes of this section, shareholders beneficially owning a 10% interest in the voting power of our company are presumed to have a significant influence:

Related party balances

The following amounts due to related parties are included in trade payables and accrued liabilities:

	December 31, 2012	December 31, 2011
Companies controlled by directors of the Company	**$ 31,318**	**$ 10,000**
Directors or officers of the Company	**21,015**	**9,596**
	$ 52,333	**$ 19,596**

These amounts are unsecured, non-interest bearing and have no fixed terms of repayment.

Related party transactions

We incurred the following transactions with companies that are controlled by directors and/or officers of our company. The transactions were measured at the exchange amount which approximates fair value, being the amount established and agreed to by the parties.

	December 31, 2012	December 31, 2011	December 31, 2010
Clinical trial costs	**$ 110,703**	**$ 103,563**	**$ -**
Research consulting fees	**163,543**	**135,044**	**144,100**
General and administrative consulting fees	**-**	**45,750**	**116,475**
Office	**-**	**9,000**	**15,000**
Legal fees	**-**	**6,621**	**39,326**
	$ 274,246	**$ 299,977**	**$ 314,901**

Key management compensation

Key management personnel are persons responsible for planning, directing and controlling the activities of an entity, and include executive directors, the Chief Executive Officer and the Chief Financial Officer.

	December 31, 2012	December 31, 2011	December 31, 2010
Short-term employee benefits – salaries and wages	**$ 411,000**	**$ 425,209**	**$ 30,000**
Stock-based compensation	**161,565**	**313,665**	**432,395**
	$ 572,565	**$ 738,874**	**$ 462,395**

C. Interests of Experts and Counsel

Not applicable.

ITEM 8. Financial Information

A. Financial Statements and Other Financial Information

Our financial statements are stated in Canadian dollars and are prepared in accordance with IFRS as issued by the IASB. In this Form 20-F, unless otherwise specified, all dollar amounts are expressed in Canadian dollars. Financial statements included with this annual report are listed below:

1. Audited Annual Financial Statements as at December 31, 2012 and 2011:

    Independent Auditor's Report of BDO Canada LLP, dated April 18, 2013

    Consolidated Statement of Financial Position as at December 31, 2012 and 2011;

    Consolidated Statements of Comprehensive Loss for the years ended December 31, 2012, 2011, and 2010;

    Consolidated Statements of Changes in Equity for the years ended December 31, 2012, 2011, and 2010;

    Consolidated Statements of Cash Flows for the years ended December 31, 2012, 2011, and 2010; and

    Notes to the Consolidated Financial Statements.

The audited consolidated financial statements for the years ended December 31, 2012 and 2011 can be found under "Item 17. Financial Statements".

Legal Proceedings

There are no legal or arbitration proceedings which may have, or have had in the recent past, a significant effect on our financial position or profitability.

Dividend Distributions

Holders of our common shares are entitled to receive such dividends as may be declared from time to time by our board, in its discretion, out of funds legally available for that purpose. We intend to retain future earnings, if any, for use in the operation and expansion of our business and do not intend to pay any cash dividends in the foreseeable future.

B. Significant Changes

The following is a summary of significant changes in our financial affairs since December 31, 2012:

On February 7, 2013, we amended the exercise price of the warrants expiring March 1, 2014, March 29, 2014, April 18, 2014 and April 20, 2014 from US$2.50 to US$0.50 per share. The warrants entitle holders to purchase an aggregate of 1,875,046 common shares.

On April 10, 2013, the Company completed a private placement of 1,643,555 units at a price of $0.31 per unit for gross proceeds of $509,502, of which $24,851 was included in share subscriptions as at December 31, 2012. Each unit issued consists of one common share and one common share purchase warrant. Each warrant entitles the holder to purchase an additional common share at $0.50 per share for a period of 24 months from the closing of the financing.

Subsequent to December 31, 2012, the Company received a proposed assessment as a result of Canada Revenue Agency's audit of the Scientific Research & Experimental Development (SR&ED) Claim filed by TrichoScience for the period ending December 21, 2010. As a result of the assessment, TrichoScience will receive a refundable investment tax credit in the amount of $148,296.

ITEM 9. The Offer and Listing

A. Offer and Listing Details

Price History

Since April 16, 2004, our common shares have been quoted on the OTC Bulletin Board, currently under the symbol "REPCF". The following table sets forth the annual high and low market prices for our common shares on the OTC Bulletin Board for the five most recent full fiscal years:

OTC Bulletin Board			
Annual Highs and Lows	**High (U.S.$)**		**Low (U.S.$)**
2008[(1)]	0.15		0.001
2009	2.00		0.10
2010	4.00		0.17
2011	3.05		1.75
2012	2.60		0.75

(1) On November 10, 2008, our issued and unissued shares of common stock were consolidated on the basis of one (1) share for every (30) shares of common stock and our name was changed to Newcastle Resources Ltd. The reverse split and name change were effected with the OTC Bulletin Board on November 28, 2008 at which time our trading symbol was changed to "NCSLF".

Since October 1, 2012, our common shares have been quoted on the CNSX, under the symbol "RP". The following table sets forth the annual high and low market prices for our common shares on the CNSX since the listing date:

CNSX			
Annual Highs and Lows	**High (CAD$)**		**Low (CAD$)**
2012	0.75		0.75

The high and low market prices for our common shares for each full fiscal quarter for the two most recent full fiscal years on the OTC Bulletin Board were as follows:

OTC Bulletin Board			
Quarterly Highs and Lows	**High (U.S.$)**		**Low (U.S.$)**
2011			
First Quarter	2.50		1.75
Second Quarter	3.05		2.20
Third Quarter	2.90		1.95
Fourth Quarter	2.70		2.25
2012			
First Quarter	2.55		1.60
Second Quarter	2.60		0.70
Third Quarter	1.00		0.66
Fourth Quarter	0.91		0.46
2013			
First Quarter	0.70		0.30

The high and low market prices for our common shares for each full fiscal quarter since listing on the CNSX were as follows:

CNSX			
Quarterly Highs and Lows	**High (CAD$)**		**Low (CAD$)**
2012			
Fourth Quarter	0.75		0.75
2013			
First Quarter	0.75		0.41

The high and low market prices of our common shares for each of the most recent six months on the OTC Bulletin Board were as follows:

OTC Bulletin Board			
Monthly Highs and Lows	**High (U.S.$)**		**Low (U.S.$)**
October 2012	0.86		0.73
November 2012	0.91		0.68
December 2012	0.72		0.46
January 2013	0.53		0.39
February 2013	0.70		0.41
March 2013	0.65		0.40

The high and low market prices of our common shares for each of the most recent six months on the CNSX were as follows:

CNSX			
Monthly Highs and Lows	**High (CAD$)**		**Low (CAD$)**
October 2012	0.75		0.75
November 2012	0.75		0.75
December 2012	0.75		0.75
January 2013	0.75		0.41
February 2013	0.41		0.41
March 2013	0.41		0.41

The trading price and volume of our company's common shares has been and may continue to be subject to wide fluctuations. The stock market has generally experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of companies with little or no current business operations. Because our common shares are only sporadically traded on the OTC Bulletin Board and the CNSX, shareholders may find it difficult to liquidate their shares, or purchase new shares, at certain times.

All of our common shares are issued in registered form. The transfer of our common shares is managed by our transfer agent, Computershare Investor Services Inc., 3rd Floor – 510 Burrard Street, Vancouver, British Columbia, V6C 3B9 (Telephone: 604.661.0271; Facsimile: 604.661.9549).

B. Plan of Distribution

Not applicable.

C. Markets

Since April 16, 2004, our common shares have been quoted on the OTC Bulletin Board under the symbol "REPCF"; since October 1, 2012, on the Canadian National Stock Exchange under the symbol "RP"; and, since September 2012, on the Berlin Stock Exchange under the symbol P6P1 and code number A1JHCB. Our shares are not currently listed for trading on any other market or quotation system.

D. Selling Shareholders

Not applicable.

E. Dilution

Not applicable.

F. Expenses of the Issue

Not applicable.

ITEM 10. Additional Information

A. Share Capital

Not applicable.

B. Memorandum and Articles of Association

We have been continued under the laws of the Province of British Columbia, Canada and have been assigned the number C0913693.

Our Articles do not contain a description of our objects and purposes.

Our Articles do not restrict a director's power to vote on a proposal, arrangement or contract in which the director is materially interested, vote compensation to themselves or any other members of their body in the absence of an independent quorum or exercise borrowing powers. There is no mandatory retirement age for our directors and our directors are not required to own securities of our company in order to serve as directors.

Our authorized capital consists of an unlimited number of common shares without par value and an unlimited number of Class A preference shares without par value. Our Class A preference shares may be issued in one or more series and our directors may fix the number of shares which is to comprise each series and designate the rights, privileges, restrictions and conditions attaching to each series. There are no Class A preference shares issued and outstanding.

Holders of our common shares are entitled to vote at all meetings of shareholders, except meetings at which only holders of a specified class of shares are entitled to vote, receive any dividend declared by us and, subject to the rights, privileges,

restrictions and conditions attaching to any other class of shares, receive the remaining property of our company upon dissolution.

The provisions in our Articles attaching to our common shares and Class A preference shares may be altered, amended, repealed, suspended or changed by the affirmative vote of the holders of not less than two-thirds of the common shares and two-thirds of the Class A preference shares, respectively, present in person or by proxy at any such meeting of holders.

Our Articles provide for directors to hold office until the expiry of his term (which is stipulated to be immediately before the next election or appointment of directors at an annual general meeting of our shareholders) or until his successor is elected or appointed, unless his office is earlier vacated in accordance with our Articles or with the provisions of the *Business Corporations Act* (British Columbia). A director appointed or elected to fill a vacancy on the board of directors holds office for the unexpired term of his predecessor.

An annual meeting of shareholders must be held at such time in each year that is not later than fifteen months after the last preceding annual meeting and at such place as our board of directors may from time to time determine. The holders of not less than five percent of our issued shares that carry the right to vote at a meeting may requisition our directors to call a meeting of shareholders for the purposes stated in the requisition. The quorum for the transaction of business at any meeting of shareholders is two persons who are entitled to vote at the meeting in person or by proxy. Only persons entitled to vote, our directors, president, secretary, lawyers and auditors, and others who, although not entitled to vote, are otherwise entitled or required to be present, are entitled to be present at a meeting of shareholders, provided that only persons entitled to vote may be counted in the quorum.

Except as provided in the *Investment Canada Act*, there are no limitations specific to the rights of non-Canadians to hold or vote our common shares under the laws of Canada or British Columbia, or in our charter documents. See the section entitled "Exchange Controls" below for a discussion of the principal features of the *Investment Canada Act* for non-Canadian residents proposing to acquire our common shares.

Our Articles do not contain provisions that would have an effect of delaying, deferring or preventing a change in control of our company, other than authorizing the issuance by our board of directors of preferred stock in series and limiting the persons who may call special meetings of shareholders. Our Articles do not contain any provisions that would operate only with respect to a merger, acquisition or corporate restructuring of our company.

Our Articles do not contain any provisions governing the ownership threshold above which shareholder ownership must be disclosed.

Our Articles are not significantly different from the requirements of the *Business Corporations Act* (British Columbia), and the conditions imposed by our Articles governing changes in capital are not more stringent than what is required by the *Business Corporations Act* (British Columbia).

C. Material Contracts

The material contracts which RepliCel and TrichoScience have entered into during the last two years are set out below. All references to "we", "us" or "our" in the descriptions of the agreements below refer to TrichoScience, with the exception of the descriptions of the TrichoScience Agreement and the 583885 Agreement:

- On September 1, 2011, we entered into a contract with a German consultant to provide services in relation to the clinical trials. The term of the agreement is for one year and will automatically renew on the anniversary date of the agreement. The consultant is to be paid €3,000 per month during the term of the agreement and is to be issued 100,000 stock options to acquire common shares of our company. These options were issued on January 3, 2012. The options vest according to key milestones as outlined in the agreement.

- Pursuant to an agreement dated September 30, 2011, we entered into a contract with a private US company to perform professional services related to shareholder acquisition and marketing consulting. In return for these services, we paid US$125,000, and issued 250,000 share purchase warrants to purchase common shares of our company at a price of $2.00 until May 17, 2016. The agreement was terminated on May 17, 2012. There were no monies paid to terminate the contract and all amounts have been paid as of the date of this annual report.

- On April 12, 2012, we entered into an arrangement with a private US company to perform professional services related to the dissemination of corporate marketing materials. In return for these services, we have paid US$338,000. There is no formal agreement with respect to this arrangement.

- On May 24, 2012, we signed a collaborative research agreement with the University of British Columbia and the Vancouver Coastal Health Authority (together, the "Institutions"). Under the collaborative research agreement, the Institutions agreed to undertake hair cell research and we agreed to pay research costs totaling $196,488. We will gain the rights to any intellectual property arising from the collaborative research agreement. We agreed to make the following payments to the Institutions in installments, as follows: $98,244 on 30 calendar days from signature of the agreement (paid); and $98,244 on Oct 1, 2012 (owing at December 31, 2012).

- On June 21, 2012, we entered into a professional services agreement (the "Value Agreement") with Value Relations GmbH ("Value Relations"). The Value Agreement is for a period of twelve months commencing on June 21, 2012 (the "Execution Date") and expiring on May 31, 2013. The Value Agreement may be terminated by us provided that we notify Value Relations of such termination and such notice of termination is provided to Value Relations no less than 30 days before any payment is due pursuant to the Value Agreement. Value Relations shall have no right of termination provided that we have complied with our payment obligations of the Value Agreement. Value Relations shall act as our strategic investor relations consultant in Germany, Austria and Switzerland and in that capacity will advise and assist us in structuring, scheduling, coordinating and organizing the following services: (a) investor relations, public relations and business development services; (b) translation of our website content; (c) translation, proofreading and distribution of news releases; (d) participation in the Deutsche Anglegermesse in Frankfurt; (e) two show packages including participation in the Frankfurter Finanz Forum; (f) five road show days in conjunction with the proposed shows; (g) complete coverage in three different newsletters; (h) organization of 12 interviews and articles in German publications; and (i) monthly reporting on investor relations activities. The compensation paid by to Value Relations, including any non-cash compensation:

  - €30,000 on the execution date;
  - grant stock options to purchase up to 300,000 common shares at an exercise price of USD$1.10 per share (issued);
  - €15,000 on the date which is six months after the execution date; which amount we paid on October 9, 2012 and
  - €15,000 on the date which is nine months after the execution date, which amount we paid on October 9, 2012.

- On July 23, 2012, we entered into a professional services agreement (the "Kaplan") with AIM Capital d/b/a Barry Kaplan Associates ("Kaplan"). The Kaplan Agreement is for a period of three months commencing on July 23, 2012 and expiring on October 23, 2012. Kaplan has agreed to conduct investor relations activities for our company and to raise our company's profile in the financial marketplace and the financial press using informational reports and public filings of our company. Pursuant to the terms of the Kaplan Agreement, we paid Kaplan a monthly fee of US$8,500; and a retainer of US$8,500.

- On October 1, 2012, we entered into a lease agreement for our office premises. The term of the lease is for three years, ending on October 31, 2015. The outstanding commitment at December 31, 2012 was $383,220.

- On January 15, 2013, we entered into an arrangement with a Berlin-based investor relations firm, Deutsche Investors-Relations GmbH ("Deutsche IR"). The arrangement is for a period of twelve months commencing on January 15, 2013 and expiring January 15, 2014, for compensation of €3,350 per month. Pursuant to the terms of the arrangement, Deutsche IR has agreed to conduct investor relations activities for the company and to raise our profile in the financial marketplace and the financial press using informational reports and public filings of our company.

D. Exchange Controls

There are presently no governmental laws, decrees or regulations in Canada which restrict the export or import of capital, or which impose foreign exchange controls or affect the remittance of interest, dividends or other payments to non-resident holders of our common shares. However, any remittances of dividends to shareholders not resident in Canada are subject to withholding tax in Canada. See the section entitled "Taxation" below.

Except as provided in the *Investment Canada Act*, there are no limitations specific to the rights of non-Canadians to hold or vote our common shares under the laws of Canada or British Columbia or in our charter documents. The following summarizes the principal features of the *Investment Canada Act* for non-Canadian residents proposing to acquire our common shares.

This summary is of a general nature only and is not intended to be, and should not be construed to be, legal advice to any holder or prospective holder of our common shares, and no opinion or representation to any holder or prospective holder of our common shares is hereby made. Accordingly, holders and prospective holders of our common shares should consult with their own legal advisors with respect to the consequences of purchasing and owning our common shares.

The *Investment Canada Act* governs the direct or indirect acquisition of control of an existing Canadian business by non-Canadians. Under the *Investment Canada Act*, non-Canadian persons or entities acquiring "control" (as defined in the *Investment Canada Act*) of a corporation carrying on business in Canada are required to either notify, or file an application for review with, Industry Canada, unless a specific exemption, as set out in the Investment Canada Act, applies. Industry Canada may review any transaction which results in the direct or indirect acquisition of control of a Canadian business, where the gross value of corporate assets exceeds certain threshold levels (which are higher for investors from members of the World Trade Organization, including United States residents, or World Trade Organization member-controlled companies) or where the activity of the business is related to Canada's cultural heritage or national identity. No change of voting control will be deemed to have occurred, for purposes of the *Investment Canada Act*, if less than one-third of the voting control of a Canadian corporation is acquired by an investor. In addition, the *Investment Canada Act* permits the Canadian government to review any investment where the responsible Minister has reasonable grounds to believe that an investment by a non-Canadian could be injurious to national security. No financial threshold applies to a national security review. The Minister may deny the investment, ask for undertakings, provide terms or conditions for the investment or, where the investment has already been made, require divestment. Review can occur before or after closing and may apply to corporate re-organizations where there is no change in ultimate control.

If an investment is reviewable under the *Investment Canada Act*, an application for review in the form prescribed is normally required to be filed with Industry Canada prior to the investment taking place, and the investment may not be implemented until the review has been completed and the Minister responsible for the *Investment Canada Act* is satisfied that the investment is likely to be of net benefit to Canada. If the Minister is not satisfied that the investment is likely to be of net benefit to Canada, the non-Canadian applicant must not implement the investment, or if the investment has been implemented, may be required to divest itself of control of the Canadian business that is the subject of the investment. The Minister is required to provide reasons for a decision that an investment is not of net benefit to Canada.

Certain transactions relating to our common shares will generally be exempt from the *Investment Canada Act*, subject to the Minister's prerogative to conduct a national security review, including:

(a) the acquisition of our common shares by a person in the ordinary course of that person's business as a trader or dealer in securities;

(b) the acquisition of control of our company in connection with the realization of security granted for a loan or other financial assistance and not for a purpose related to the provisions of the Investment Canada Act; and

(c) the acquisition of control of our company by reason of an amalgamation, merger, consolidation or corporate reorganization following which the ultimate direct or indirect control in fact of our company, through ownership of our common shares, remains unchanged.

E. Taxation

Material Canadian Federal Income Tax Consequences

We consider that the following general summary fairly describes the principal Canadian federal income tax consequences applicable to a holder of our common shares who is a resident of the United States, who is not, will not be and will not be deemed to be, a resident of Canada for purposes of the *Income Tax Act* (Canada) and any applicable tax treaty and who does not use or hold, and is not deemed to use or hold, his common shares in the capital of our company in connection with carrying on a business in Canada (a "**non-resident holder**").

This summary is based upon the current provisions of the *Income Tax Act*, the regulations thereunder (the "**Regulations**"), the current publicly announced administrative and assessing policies of the Canada Revenue Agency and the Canada-United

States Tax Convention (1980), as amended (the "**Treaty**"). This summary also takes into account the amendments to the *Income Tax Act* and the Regulations publicly announced by the Minister of Finance (Canada) prior to the date hereof (the "**Tax Proposals**") and assumes that all such Tax Proposals will be enacted in their present form. However, no assurances can be given that the Tax Proposals will be enacted in the form proposed, or at all. This summary is not exhaustive of all possible Canadian federal income tax consequences applicable to a holder of our common shares and, except for the foregoing, this summary does not take into account or anticipate any changes in law, whether by legislative, administrative or judicial decision or action, nor does it take into account provincial, territorial or foreign income tax legislation or considerations, which may differ from the Canadian federal income tax consequences described herein.

This summary is of a general nature only and is not intended to be, and should not be construed to be, legal, business or tax advice to any particular holder or prospective holder of our common shares, and no opinion or representation with respect to the tax consequences to any holder or prospective holder of our common shares is made. Accordingly, holders and prospective holders of our common shares should consult their own tax advisors with respect to the income tax consequences of purchasing, owning and disposing of our common shares in their particular circumstances.

Dividends

Dividends paid on our common shares to a non-resident holder will be subject under the *Income Tax Act* to withholding tax which tax is deducted at source by our company. The withholding tax rate for dividends prescribed by the *Income Tax Act* is 25% but this rate may be reduced under the provisions of an applicable tax treaty. Under the Treaty, the withholding tax rate is reduced to 15% on dividends paid by our company to residents of the United States and is further reduced to 5% where the beneficial owner of the dividends is a corporation resident in the United States that owns at least 10% of the voting shares of our company.

Capital Gains

A non-resident holder is not subject to tax under the *Income Tax Act* in respect of a capital gain realized upon the disposition of a common share of our company unless such share is "taxable Canadian property" (as defined in the *Income Tax Act*) of the non-resident holder. Our common shares generally will not be taxable Canadian property of a non-resident holder unless the non-resident holder alone or together with non-arm's length persons owned, or had an interest in an option in respect of, not less than 25% of the issued shares of any class of our capital stock at any time during the 60 month period immediately preceding the disposition of the shares. In the case of a non-resident holder resident in the United States for whom shares of our company are taxable Canadian property, no Canadian taxes will generally be payable on a capital gain realized on such shares by reason of the Treaty unless the value of such shares is derived principally from real property situated in Canada.

Material United States Federal Income Tax Consequences

The following is a general discussion of certain possible United States Federal foreign income tax matters under current law, generally applicable to a U.S. Holder (as defined below) of our common shares who holds such shares as capital assets. This discussion does not address all aspects of United States Federal income tax matters and does not address consequences peculiar to persons subject to special provisions of Federal income tax law, such as those described below as excluded from the definition of a U.S. Holder. In addition, this discussion does not cover any state, local or foreign tax consequences. See *Taxation Certain Canadian Federal Income Tax Consequences* above.

The following discussion is based upon the Internal Revenue Code of 1986, as amended (the "**Code**"), Treasury Regulations, published Internal Revenue Service ("**IRS**") rulings, published administrative positions of the IRS and court decisions that are currently applicable, any or all of which could be materially and adversely changed, possibly on a retroactive basis, at any time. In addition, this discussion does not consider the potential effects, both adverse and beneficial, of any recently proposed legislation which, if enacted, could be applied, possibly on a retroactive basis, at any time. No assurance can be given that the IRS will agree with such statements and conclusions, or will not take, or a court will not adopt, a position contrary to any position taken herein.

The following discussion is for general information only and is not intended to be, nor should it be construed to be, legal, business or tax advice to any holder or prospective holder of our common shares, and no opinion or representation with respect to the United States Federal income tax consequences to any such holder or prospective holder is made. Accordingly, holders and prospective holders of common shares are urged to consult their own tax advisors with respect to Federal, state, local, and foreign tax consequences of purchasing, owning and disposing of our common shares.

U.S. Holders

As used herein, a "U.S. Holder" includes a holder of less than 10% of our common shares who is a citizen or resident of the United States, a corporation created or organized in or under the laws of the United States or of any political subdivision thereof, any entity which is taxable as a corporation for United States tax purposes and any other person or entity whose ownership of our common shares is effectively connected with the conduct of a trade or business in the United States. A U.S. Holder does not include persons subject to special provisions of Federal income tax law, such as tax-exempt organizations, qualified retirement plans, financial institutions, insurance companies, real estate investment trusts, regulated investment companies, broker-dealers, non-resident alien individuals or foreign corporations whose ownership of our common shares is not effectively connected with the conduct of a trade or business in the United States and shareholders who acquired their shares through the exercise of employee stock options or otherwise as compensation.

Distributions

The gross amount of a distribution paid to a U.S. Holder will generally be taxable as dividend income to the U.S. Holder for United States federal income tax purposes to the extent paid out of our current or accumulated earnings and profits, as determined under United States federal income tax principles. Distributions which are taxable dividends and which meet certain requirements will be "unqualified dividend income" and taxed to U.S. Holders at a maximum United States federal rate of 15%. Distributions in excess of our current and accumulated earnings and profits will be treated first as a tax-free return of capital to the extent the U.S. Holder's tax basis in the common shares and, to the extent in excess of such tax basis, will be treated as a gain from a sale or exchange of such shares.

Capital Gains

In general, upon a sale, exchange or other disposition of common shares, a U.S. Holder will generally recognize a capital gain or loss for United States federal income tax purposes in an amount equal to the difference between the amount realized on the sale or other distribution and the U.S. Holder's adjusted tax basis in such shares. Such gain or loss will be a United States source gain or loss and will be treated as a long-term capital gain or loss if the U.S. Holder's holding period of the shares exceeds one year. If the U.S. Holder is an individual, any capital gain will generally be subject to United States federal income tax at preferential rates if specified minimum holding periods are met. The deductibility of capital losses is subject to significant limitations.

Foreign Tax Credit

A U.S. Holder who pays (or has had withheld from distributions) Canadian income tax with respect to the ownership of our common shares may be entitled, at the option of the U.S. Holder, to either a deduction or a tax credit for such foreign tax paid or withheld. Generally, it will be more advantageous to claim a credit because a credit reduces United States Federal income taxes on a dollar-for-dollar basis, while a deduction merely reduces the taxpayer's income subject to tax. This election is made on a year-by-year basis and generally applies to all foreign income taxes paid by (or withheld from) the U.S. Holder during that year. There are significant and complex limitations which apply to the tax credit, among which is an ownership period requirement and the general limitation that the credit cannot exceed the proportionate share of the U.S. Holder's United States income tax liability that the U.S. Holder's foreign source income bears to his or its worldwide taxable income. In determining the application of this limitation, the various items of income and deduction must be classified into foreign and domestic sources. Complex rules govern this classification process. The availability of the foreign tax credit and the application of these complex limitations on the tax credit are fact specific and holders and prospective holders of our common shares should consult their own tax advisors regarding their individual circumstances.

Passive Foreign Investment Corporation

We do not believe that we are a passive foreign investment corporation (a "**PFIC**"). However, since PFIC status depends upon the composition of a company's income and assets and the market value of its assets and shares from time to time, there is no assurance that we will not be considered a PFIC for any taxable year. If we were treated as a PFIC for any taxable year during which a U.S. Holder held shares, certain adverse tax consequences could apply to the U.S. Holder.

If we are treated as a PFIC for any taxable year, gains recognized by such U.S. Holder on a sale or other disposition of shares would be allocated ratably over the U.S. Holder's holding period for the shares. The amount allocated to the taxable year of the sale or other exchange and to any year before we became a PFIC would be taxed as ordinary income. The amount allocated to each other taxable year would be subject to tax at the highest rate in effect for individuals or corporations, as applicable, and an interest charge would be imposed on the amount allocated to such taxable year. Further, any distribution

in respect of shares in excess of 125% of the average of the annual distributions on shares received by the U.S. Holder during the preceding three years or the U.S. Holder's holding period, whichever is shorter, would be subject to taxation as described above. Certain elections may be available to U.S. Holders that may mitigate some of the adverse consequences resulting from PFIC status. However, regardless of whether such elections are made, dividends paid by a PFIC will not be "qualified dividend income" and will generally be taxed at the higher rates applicable to other items of ordinary income.

U.S. Holders and prospective holders should consult their own tax advisors regarding the potential application of the PFIC rules to their ownership of our common shares.

F. Dividends and Paying Agents

Not applicable.

G. Statements by Experts

Not applicable.

H. Documents on Display

Documents concerning our company referred to in this annual report may be viewed by appointment during normal business hours at our registered and records office at Suite 800 - 885 West Georgia Street, Vancouver, British Columbia, Canada V6C 3H1.

I. Subsidiary Information

We have one subsidiary: TrichoScience Innovations Inc., a company incorporated on September 7, 2006 under the *Business Corporations Act* (Canada).

ITEM 11. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to various market risks including currency risks, credit risks, liquidity risks and interest rate risks, which may affect our results of operations and financial condition and, consequently, the value of our company. Generally, our management believes that our current financial assets and financial liabilities, due to their short-term nature, do not pose significant financial risks. Please refer to Note 12 of our annual financial statements contained herein for a qualitative and quantitative discussion of our exposure to market risks at December 31, 2012.

ITEM 12. Description of Securities Other Than Equity Securities

Not applicable.

PART II

ITEM 13. Defaults, Dividend Arrearages and Delinquencies

Not applicable.

ITEM 14. Material Modifications to the Rights of Security Holders and Use of Proceeds

Not applicable.

ITEM 15. Controls and Procedures

A. Disclosure Controls and Procedures

As required by paragraph (b) of Rules 13a-15 or 15d-15 under the Exchange Act, our principal executive officer and principal financial officer evaluated our company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of the end of the period covered by this annual report on Form 20-F. Based on this evaluation, these officers concluded that as of the end of the period covered by this Annual Report on Form 20-F, our disclosure controls and procedures were not effective to ensure that the information required to be disclosed by our company in reports it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission. These disclosure controls and procedures include controls and procedures designed to ensure that such information is accumulated and communicated to our company's management, including our company's principal executive officer and principal financial officer, to allow timely decisions regarding required disclosure. The conclusion that our disclosure controls and procedures were not effective was due to the presence of material weaknesses in internal control over financial reporting as identified below under the heading "Management's Report on Internal Control Over Financial Reporting." Management anticipates that such disclosure controls and procedures will not be effective until the material weaknesses are remediated. Our company intends to remediate the material weaknesses as set out below.

Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues, if any, within our company have been detected.

B. Management's Report on Internal Control Over Financial Reporting

Our company's management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) for our company. Our company's internal control over financial reporting is designed to provide reasonable assurance, not absolute assurance, regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America. Internal control over financial reporting includes those policies and procedures that: (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our company's assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles in the United States of America, and that our company's receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of assets that could have a material effect on our financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. In addition, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions and that the degree of compliance with the policies or procedures may deteriorate.

Our management, including our principal executive officer and principal financial officer, conducted an evaluation of the design and operation of our internal control over financial reporting as of December 31, 2012 based on the criteria set forth in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. This evaluation included review of the documentation of controls, evaluation of the design effectiveness of controls, testing of the operating effectiveness of controls and a conclusion on this evaluation. Based on this evaluation, our management concluded our internal control over financial reporting was not effective as at December 31, 2012 due to the following material weaknesses: (i) inadequate segregation of duties and effective risk assessment; and (ii) insufficient written policies and procedures for accounting, financial reporting and corporate governance.

Our company has taken steps to enhance and improve the design of our internal controls over financial reporting, however these steps were not complete as of December 31, 2012. During the period covered by this annual report on Form 20-F, we have not been able to remediate the material weaknesses identified above.

Plan for Remediation of Material Weaknesses

We intend to take appropriate and reasonable steps to make the necessary improvements to remediate these deficiencies. We intend to consider the results of our remediation efforts and related testing as part of our year-end 2013 assessment of the effectiveness of our internal control over financial reporting.

Subject to receipt of additional financing, we have undertaken, or intend to undertake, the below remediation measures to address the material weaknesses described in this annual report. Such remediation activities include the following:

1. we intend to continue to update the documentation of our internal control processes, including formal risk assessment of our financial reporting processes.

The remediation efforts set out above are largely dependent upon our company securing additional financing to cover the costs of implementing the changes required. If we are unsuccessful in securing such funds, remediation efforts may be adversely affected in a material manner.

Our internal control over financial reporting was not subject to attestation by our independent registered public accounting firm pursuant to the rules of the Securities and Exchange Commission that permit us to provide only management's report in this annual report.

Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues, if any, within our company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error or mistake.

C. Changes in Internal Controls Over Financial Reporting

There were no changes in internal controls over financial reporting during the year ended December 31, 2012 that have materially affected or are reasonably likely to materially affect, our internal control over financial reporting. However, as a result of the evaluation of our internal control over financial reporting as of December 31, 2012, conducted by our principal executive officer and principal financial officer, we expect to make such changes in the year ended December 31, 2013.

ITEM 16A. Audit Committee Financial Expert

Our board of directors has determined that at least one member of its audit committee, being Mr. Peter Lewis, qualifies as an "audit committee financial expert" as defined in Item 16A(b) of Form 20-F. Mr. Lewis is also "independent" as that term is defined in Nasdaq Marketplace Rule 5605(a)(2).

ITEM 16B. Code of Ethics

Code of Ethics

Effective July 15, 2004, our board of directors adopted a Code of Business Conduct and Ethics that applies to, among other persons, our president (being our principal executive officer) and our chief financial officer (being our principal financial and accounting officer), as well as persons performing similar functions. As adopted, our Code of Business Conduct and Ethics sets forth written standards that are designed to deter wrongdoing and to promote:

(1) honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships;

(2) full, fair, accurate, timely, and understandable disclosure in reports and documents that we file with, or submit to, the Securities and Exchange Commission and in other public communications made by us;

(3) compliance with applicable governmental laws, rules and regulations;

(4) the prompt internal reporting of violations of the Code of Business Conduct and Ethics to an appropriate person or persons identified in the Code of Business Conduct and Ethics; and

(5) accountability for adherence to the Code of Business Conduct and Ethics.

Our Code of Business Conduct and Ethics requires, among other things, that all of our company's personnel shall be accorded full access to our president and secretary with respect to any matter which may arise relating to the Code of Business Conduct and Ethics. Further, all of our company's personnel are to be accorded full access to our company's board of directors if any such matter involves an alleged breach of the Code of Business Conduct and Ethics by our President or Secretary.

In addition, our Code of Business Conduct and Ethics emphasizes that all employees, and particularly managers and/or supervisors, have a responsibility for maintaining financial integrity within our company, consistent with generally accepted accounting principles, and federal, provincial and state securities laws. Any employee who becomes aware of any incidents involving financial or accounting manipulation or other irregularities, whether by witnessing the incident or being told of it, must report it to his or her immediate supervisor or to our company's president. If the incident involves an alleged breach of the Code of Business Conduct and Ethics by the president, the incident must be reported to any member of our board of directors. Any failure to report such inappropriate or irregular conduct of others is to be treated as a severe disciplinary matter. It is against our company policy to retaliate against any individual who reports in good faith the violation or potential violation of our company's Code of Business Conduct and Ethics by another.

Our Code of Business Conduct and Ethics was filed with the Securities and Exchange Commission as Exhibit 14.1 to our annual report filed on July 15, 2004. We will provide a copy of the Code of Business Conduct and Ethics to any person without charge, upon request. Requests can be sent to: RepliCel Life Sciences Inc., Suite 2020 -401 West Georgia Street, Vancouver, British Columbia, Canada V6B 5A1.

ITEM 16C. Principal Accountant Fees and Services

Audit Fees

Our board of directors appointed BDO Canada LLP, Chartered Accountants, as independent auditors to audit our consolidated financial statements for the fiscal year ended December 31, 2012. The aggregate fees billed by BDO Canada LLP for audit services rendered for the audit of our annual financial statements and interim reviews of our quarterly financial statements for the fiscal years ended December 31, 2012 and December 31, 2011 were $78,364 and $139,719, respectively.

Audit Related Fees

For the fiscal year ended December 31, 2012, and 2011, the aggregate fees billed for audit related services by BDO Canada LLP were $Nil and $Nil, respectively.

Tax Fees

For the fiscal years ended December 31, 2012 and 2011, the aggregate fees billed for tax compliance, tax advice and tax planning by BDO Canada LLP were $3,150 and $8,060, respectively.

All Other Fees

For the fiscal years ended December 31, 2012 and 2011, the aggregate fees billed by BDO Canada LLP for other non-audit professional services, other than those services listed above, were $Nil and $Nil, respectively.

Pre-Approval Policies and Procedures

Our audit committee pre-approves all services provided by our independent auditors. All of the services and fees described under the categories of "Audit Fees", "Audit Related Fees", "Tax Fees" and "All Other Fees" were reviewed and approved by the audit committee before the respective services were rendered, and none of such services were approved by the audit committee pursuant to paragraph (c)(7)(i)(C) of Rule 2-01 of Regulation S-X.

The audit committee has considered the nature and amount of the fees billed by BDO Canada LLP, Chartered Accountants, and believes that the provision of the services for activities unrelated to the audit is compatible with maintaining the independence of BDO Canada LLP, Chartered Accountants.

ITEM 16D. Exemption from the Listing Standards for Audit Committees

Not applicable.

ITEM 16E. Purchases of Equity Securities by the Issuer and Affiliated Purchasers

In 2011, neither we nor any affiliated purchaser (as defined in the Securities Exchange Act of 1934) purchased any of our common shares.

ITEM 16F. Change in Registrant's Certifying Accountant

None.

ITEM 16G. Corporate Governance

Not applicable.

ITEM 16H. Mine Safety Disclosure

Not applicable.

ITEM 17. Financial Statements

Financial Statements Filed as Part of this Report:

1. Audited Annual Consolidated Financial Statements as at December 31, 2012 and 2011:

    Independent Auditor's Report of BDO Canada LLP, dated April 18, 2013

    Consolidated Statement of Financial Position as at December 31, 2012 and 2011;

    Consolidated Statement of Comprehensive Loss for the years ended December 31, 2012, 2011, and 2010;

    Consolidated Statements of Cash Flows for the years ended December 31, 2012, 2011, and 2010;

    Consolidated Statement of Changes in Equity for the years ended December 31, 2012, 2011, and 2010; and

    Notes to the Consolidated Financial Statements.

ITEM 18. Financial Statements

Refer to Item 17 - Financial Statements

ITEM 19. Exhibits

The following exhibits are being filed as part of this annual report, or are incorporated by reference where indicated:

(1) Articles of Incorporation and By-laws

1.1 Certificate of Continuation dated June 22, 2011 (incorporated by reference from our Annual Report on Form 20-F, filed on April 26, 2012).

1.2 Articles adopted on May 10, 2011 (incorporated by reference from our Annual Report on Form 20-F, filed on April 26, 2012).

1.3 Notice of Articles dated December 5, 2011 (incorporated by reference from our Annual Report on Form 20-F, filed on April 26, 2012).

(4) Material Contracts

4.1 Share Exchange Agreement dated October 29, 2010 with TrichoScience Innovations Inc. and the shareholders of TrichoScience Innovations Inc. (incorporated by reference from our Shell Company Report on Form 20-F, filed on December 27, 2010).

4.2 Pooling Agreement dated December 22, 2010 (incorporated by reference from our Shell Company Report on Form 20-F, filed on December 27, 2010).

4.3 Share Exchange Agreement dated October 29, 2010 with 583885 B.C. Ltd. and the shareholders of 583885 B.C. Ltd. (incorporated by reference from our Shell Company Report on Form 20-F, filed on December 27, 2010).

4.4 Escrow Agreement dated December 22, 2010 (incorporated by reference from our Shell Company Report on Form 20-F, filed on December 27, 2010).

4.5 Corporate Consulting Services Agreement dated June 1, 2010 among TrichoScience Innovations Inc. and 583885 B.C. Ltd. (incorporated by reference from our Shell Company Report on Form 20-F, filed on December 27, 2010).

(8) List of Significant Subsidiaries

8.1 TrichoScience Innovations Inc., a company incorporated under the federal laws of Canada, all of the shares of which are beneficially owned by our company.

(11) Code of Ethics

11.1 Code of Ethics (incorporated by reference from our Registration Statement on Form 20-F, as amended, filed on July 15, 2004).

(12) 302 Certification

12.1* Section 302 Certification under Sarbanes-Oxley Act of 2002 for David Hall

12.2* Section 302 Certification under Sarbanes-Oxley Act of 2002 for Tom Kordyback.

12.3* Section 906 Certification under Sarbanes-Oxley Act of 2002 for David Hall.

12.4* Section 906 Certification under Sarbanes-Oxley Act of 2002 for Tom Kordyback.

* Filed herewith

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

REPLICEL LIFE SCIENCES INC.

Per: */s/ "David Hall"*
David Hall
Chief Executive Officer, President and Director

Dated: April 15, 2013

Per: */s/ "Tom Kordyback"*
Tom Kordyback
Chief Financial Officer

Dated: April 15, 2013