BIOLIFE SOLUTIONS INC
Form 10-K
March 28, 2011

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-K

(Mark One)
þ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the year ended December 31, 2010

o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE

ACT OF 1934

For the transition period from to

Commission File Number 0-18170

BioLife Solutions, Inc.
(Exact name of registrant as specified in its charter)

DELAWARE	94-3076866
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)

3303 MONTE VILLA PARKWAY, SUITE 310, BOTHELL, WASHINGTON, 98021
(Address of registrant's principal executive offices, Zip Code)

(425) 402-1400
(Telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:
COMMON STOCK, $0.001 PAR VALUE

Indicate by check mark whether the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ¨ No þ

Indicate by check mark whether the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ¨ No þ

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 þ No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (S232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit and post said files). Yes ¨ No þ

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

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

Large accelerated filer ¨ Accelerated filer ¨ Non-accelerated filer ¨ Smaller reporting company þ

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ¨ No þ

As of the registrant's most recently completed second fiscal quarter, the aggregate market value of common equity held by non-affiliates was $3,191,442.

As of February 28, 2011, 69,679,854 shares of the registrant's common stock were outstanding.

Table of Contents

PART I

ITEMBUSINESS
1.

Note: The terms “the Company,” “us,” “we” and “our” refer to BioLife Solutions, Inc.

Overview

BioLife Solutions, Inc. ("BioLife” or the “Company”), a life sciences tools provider, was incorporated in 1998 in Delaware as a wholly owned subsidiary of Cryomedical Sciences, Inc. ("Cryomedical"), a company that was engaged in manufacturing and marketing cryosurgical products. In 2002, BioLife was merged into Cryomedical, which changed its name to BioLife Solutions, Inc. Our product and service offerings include:

- Patented biopreservation media products for cells, tissues, and organs
- Generic formulations of blood stem cell freezing media products
- Custom product formulation and custom packaging services
- Contracted research and development and consulting services related to optimization of biopreservation processes and protocols.
- Contract aseptic manufacturing fill and finish services

Our proprietary HypoThermosol®, CryoStor®, and generic BloodStor® biopreservation media products are marketed to regenerative medicine companies, hospital-based stem cell transplant centers, pharmaceutical companies, cord blood and adult stem cell banks, hair transplant surgeons, and suppliers of cells to the toxicology testing and diagnostic markets. All of our products are serum-free and protein-free, fully defined, and are manufactured under current Good Manufacturing Practices using United States Pharmacopeia (“USP”) or the highest available grade components.

Our patented biopreservation media products are formulated to reduce preservation-induced, delayed-onset cell damage and death. Our platform enabling technology provides our customers significant shelf life extension of biologic source material and final cell products, and also greatly improved post-preservation cell, tissue, and organ viability and function.

The discoveries made by our scientists and consultants relate to how cells, tissues, and organs respond to the stress of hypothermic storage, cryopreservation, and the thawing process. These discoveries enabled the formulation of truly innovative biopreservation media products that protect biologic material from preservation-related cellular injury, much of which is not apparent immediately after return to normal body temperature. Our product formulations have demonstrated remarkable reduction in apoptotic (programmed) and necrotic (pathologic) cell death mechanisms and are enabling the clinical and commercial development of a number of innovative regenerative medicine products.

Our Oprincipal executive offices are located at 3303 Monte Villa Parkway, Suite 310, Bothell, WA 98021 and the telephone number is (425) 402-1400.

Mission

We strive to be the leading provider of biopreservation tools for cells, tissues, and organs; to facilitate basic and applied research and commercialization of new therapies by maintaining the health and function of biologic source material and finished products during the preservation process.

Technological Overview

Stability (shelf life), and functional recovery are crucial aspects of academic research and clinical practice in the biopreservation of biologic-based source material, intermediate derivatives, and isolated/derived/expanded cellular products. Limited stability is especially critical in the regenerative medicine field, where harvested cell culture and tissue, if not maintained at body temperature (98.6ºF/37ºC), or stored in an effective preservation medium, will lose viability over time. Chilling (hypothermia) is used to reduce metabolism and delay degradation of harvested cells, tissues, and organs. However, subjecting biologic material to hypothermic environments produces mixed results. Although cooling successfully reduces metabolism (i.e., lowers demand for oxygen), various levels of cellular damage and death occur. To solve this problem, transplant surgeons, for example, flush the donor tissue with a cold solution designed to provide short-term biopreservation support after removal of the organ from the donor and during transportation. Clinicians engaged in regenerative medicine product development also maintain the original and derived cellular material in a cold solution before and after cell manipulation and processing, and during necessary transportation up to the point of infusion/injection into the patient. Traditional support solutions range from simple "balanced salt" (electrolyte) formulations to complex mixtures of electrolytes, energy substrates such as sugars, acid buffers, osmolytes and antibiotics. The limited stability which results from traditional biopreservation media formulations is a significant shortcoming that our optimized products address with great success.

Our scientific research activities over the last 20 years enabled a detailed understanding of the molecular basis for the cryogenic (hypothermia induced) destruction of cells through apoptosis and necrosis. This research led directly to the development of our specifically formulated and patented HypoThermosol technology. Working from the HypoThermosol technology base, we developed a family of proprietary cell, tissue and organ specific hypothermic storage and cryopreservation media formulations. Our products are specifically formulated to:

·Minimize cell and tissue swelling
·Remove free radicals upon formation
·Maintain appropriate low temperature ionic balances
·Provide regenerative, high energy substrates to stimulate recovery upon warming
·Avoid the creation of an acidic state (acidosis)
·Inhibit the onset of apoptosis and necrosis

A key feature of our products is their fully “defined” nature. All of our products are serum-free, protein-free and packaged under aseptic processing using United States Pharmaopeia (“USP”) grade or highest quality available synthetic components. All of these features benefit prospective customers by facilitating the qualification process required to incorporate our products into their manufacturing and patient delivery processes and regulatory filings.

The results of independent testing demonstrate that our patented HypoThermosol solutions significantly extend shelf-life and improve cell and tissue post-thaw viability and function, which may, in turn, improve clinical outcomes for existing and new cell and tissue therapy applications. Our proprietary HypoThermosol technology is optimized based on low temperature molecular biology principles and genetic analysis. Competing biopreservation media products are often formulated with culture media, animal serum, a sugar, and in the case of cryopreservation media, a cryoprotectant such as Dimethyl Sulfoxide (“DMSO”). A key differentiator of our proprietary formulations is the tuning and optimizing of the key ionic component concentrations for hypothermic environments, as opposed to normal body

temperature around 37°C, as found in culture media based formulas. Our research and intellectual property related to the cellular stress response to cold temperature also led to discoveries in the field of cryosurgery. Specifically, through contracted research and completion of the specific aims of two National Institutes of Health ("NIH") Small Business Innovative Research ("SBIR") grants awarded to Cryomedical Sciences, our predecessor, and to BioLife, we determined via in vitro experiments on cancer cells, that the combination of chemotherapy and cryosurgery was more effective than cryosurgery alone. This intellectual property was excluded from the asset sold to Endocare in 2002, and has been the subject of extensive publications.

Products

HypoThermosol®

HypoThermosol is a family of optimized hypothermic (2-8°C) temperature biopreservation media products that enable improved and extended preservation of biologic source material and manufactured cell and tissue based products. The HypoThermosol product line includes:

HypoThermosol® FRS

This solution has been formulated to decrease the free radical accumulation in cells undergoing prolonged hypothermic preservation. Numerous investigators have shown that an increase in free radicals can lead to either necrosis (pathological cell death) or apoptosis (programmed cell death) in clinical conditions. HypoThermosol FRS is very effective at extending the shelf life and improving the post-preservation viability and function of numerous cell and tissue types.

HypoThermosol PURGE

HypoThermosol PURGE is a flush solution specifically designed for use during the transitions from normothermic to mild hypothermic (37°C to 20°C) to rinse culture media and native fluids from tissue and whole organ systems prior to suspension in a preservation solution. HypoThermosol PURGE is also used to support the transition from hypothermic to normothermic temperatures following the preservation interval.

CryoStor®

Based on our proprietary HypoThermosol technology, we developed the CryoStor family of optimized cryopreservation media products designed for frozen storage of cells and tissues. CryoStor is uniquely formulated to address the molecular-biological aspects of cellular stress as a response to the freezing and thawing processes, by directly reducing the level of preservation-induced, delayed-onset cell damage and death.

CryoStor® CS2

CryoStor CS2, a member of the CryoStor series of solutions, addresses the molecular-biological properties of systems undergoing preservation processes. CryoStor CS2 has been further formulated to provide reduced concentrations of cryoprotective agents (2% DMSO), for use in applications where a reduction in the level of DMSO is preferred.

CryoStor® CS5

CryoStor CS5 is a base cryopreservation solution which is designed to incorporate the principles which led to the successful development of the HypoThermosol series with the incorporation of agents to modulate the physical damaging effects associated with ice formation and cellular freezing such as dimethyl sulfoxide (“DMSO”). The proprietary formula of the CryoStor platform facilitates substantially improved post-thaw cell survival and function and allows for the maintenance of this enhanced recovery with substantially reduced levels of cryoprotective agents such as DMSO.

CryoStor® CS10

CryoStor CS10 contains 10% DMSO and has been adopted by numerous academic and clinical customers throughout the world.

BloodStor®

BloodStor is a family of generic blood cell freezing media products. BloodStor 55-5 is our GMP grade version of the traditional 55% DMSO, 5% Dextran cord blood stem cell freezing media. This product is packaged in sterile, single-use vials and also custom bulk packaging.

Market Opportunity

Recent advances in cord blood banking, adult stem cell banking, cell therapy, and tissue engineering have highlighted the significant and unmet need to maintain the stability and shelf life of biologics in the development and commercialization of new regenerative medicine products and therapies. Scarce and fragile source cells or tissues are extracted from a patient, transported to a culture laboratory, and then transported back to the clinic for patient infusion or injection. Because this entire process can take months and may involve transportation over long distances, cellular viability is of paramount importance.

Our target markets include:

Regenerative Medicine:

- Our proprietary HypoThermosol® and CryoStor® biopreservation media products are used by customers to store, transport, and freeze biologic source material and cell-or tissue-based final products. Our scientific discoveries related to preservation-induced cell stress enabled the development and commercialization of a new class of patented biopreservation media formulations that have demonstrated broad and significant ability to extend shelf life/stability and improve post-preservation viability and function of numerous biologics.

- This market is comprised of nearly 700 commercial companies and numerous other hospital-based transplant centers developing and delivering cellular therapies such as stem cells isolated from bone marrow, peripheral and umbilical cord blood as well as engineered tissue-based products.

- MedMarket Diligence, LLC, estimates that the current worldwide market for regenerative medicine products and services is growing at 20 percent annually. We expect pre-formulated biopreservation media products such as our HypoThermosol and CryoStor to continue to displace “home-brew” cocktails due to increased regulatory and quality oversight oversight, creating demand for high quality clinical grade preservation reagents that will grow at greater than the overall end market rate. We estimate that “home-brew” in-house formulated storage and freeze media comprise 80 percent of the market.

- We have shipped our proprietary biopreservation media products to over 200 regenerative medicine customers. We estimate that our products are now incorporated into 30 to 40 regenerative medicine cell or tissue-based products in pre-clinical and clinical trial stages of development.

- While this market is still in an early stage, we have secured a valuable position as a supplier of critical reagents to several commercial companies. Short-term revenue can be highly variable as customer therapies navigate the regulatory approval process, but we estimate that annual revenue from a typical regenerative medicine customer could reach $1 million per year within three to five years following their product approval.

Drug Screening:

- Our customers in the drug screening market are pharmaceutical companies that grow and preserve various cell types to measure pharmacologic effects and toxicity of new drug compounds, and also cell suppliers that provide preserved live cells for end-user testing in pharmaceutical companies. Key customers include 8 of the 10 largest cell suppliers and numerous pharmaceutical companies.

- To leverage our scientific discoveries and presence in this market, we continue to develop a proprietary disposable labware product that may address a significant workflow bottleneck in the drug screening market - insufficient supply of preserved cells required in high-throughput screening of new drug compounds. In April 2010, we filed an international patent application (PCT) to protect our intellectual property rights for our inventions which may for the first time, enable bulk freezing of cells in multiwell tissue culture plates.

Biobanking:

Our customers in this segment include public and private cord blood banks, adult stem cell banks, tissue banks, hair transplant centers, and biorepositories. Of note, since the product launch in the third quarter of 2009, we continue to realize increased sales of our BloodStor® 55-5, a GMP version of the standard “home-brew” cord blood stem cell freeze media. Sales of CryoStor and HypoThermosol in this segment also continue to increase as we displace home-brew preservation media due to the quality and performance profile of our proprietary products.

Sales and Marketing

In addition to our direct sales activities, our products are marketed and distributed by STEMCELL Technologies, Sigma-Aldrich, and several other regional distributors under non-exclusive agreements.

Manufacturing

Our internal production facility was validated and became operational during the second quarter of 2009. In December 2009, our quality and manufacturing systems became certified to ISO 13485:2003. We also adhere to 21 CFR Part 820 - Quality System Regulation for Good Manufacturing Practice (GMP) of medical devices, 21 CFR Parts 210 and 211 covering GMP for Aseptic Production, Volume 4, EU Guidelines, Annex 1 for the Manufacture of Sterile Medicinal Products, ISO 13408 for aseptic processing of healthcare products, and ISO 14644 for Clean Rooms and

Associated Controlled Environments.

Governmental Regulation

As an ancillary or excipient reagent used in the production, transportation, and infusion of our customers' regulated clinical products, HypoThermosol, CryoStor, and BloodStor are not subject to specific FDA or other non-US pre-market approval for drugs, devices, or biologics. In particular, we are not required to sponsor formal prospective, controlled clinical-trials in order to establish safety and efficacy. However, to support our current and prospective clinical customers, we comply with Current Good Manufacturing Practice ("cGMP").

During 2009, we submitted updated Type II Master Files to the FDA for CryoStor and HypoThermosol. These enhanced regulatory submissions provide the FDA with information regarding the quality of components used in the formulation of our products, the manufacturing process, our quality system, and stability testing that we have performed. Customers engaged in clinical applications who wish to notify the FDA of their intention to use our products in their product development and manufacturing process can now request a cross-reference to our Master Files.

There can be no assurance that we will not be required to obtain approval from the FDA or foreign regulatory authorities prior to marketing any of our products in the future.

Intellectual Property

We currently have six issued U.S. patents, one issued European patent, one issued Japanese patent, and several pending US and international patent applications.

In addition to our corporate logo and name, we have registered the following marks:

·HypoThermosol
·GelStor
·Powering the Preservation Sciences
·CryoStor CS2
·BioPreservation Today
·CP-RXCUE
•BloodStor
•CryoStor

While we believe that the protection of patents and trademarks is important to our business, we also rely on a combination of trade secrets, nondisclosure and confidentiality agreements, know-how and continuing technological innovation to maintain our competitive position. Despite these precautions, it may be possible for unauthorized third parties to copy certain aspects of our products or to obtain and use information that we regard as proprietary. The laws of some foreign countries in which we may sell our products do not protect our proprietary rights to the same extent as do the laws of the United States.

Research and Development

We currently employ a team of research scientists, some of whom hold Ph.D. degrees in molecular biology or related fields. We also conduct collaborative research with several leading academic and commercial entities in our strategic markets.

During 2010 and 2009, we spent approximately $318,900 and $414,500, respectively, on research and development activities.

In 2007, we established a Scientific Advisory Board (SAB) comprised of external members including leaders in the fields of regenerative medicine, biopreservation mechanics, quality systems, and regulatory compliance. These members advise us on our product development, quality systems, and overall marketing strategies. The current members are:

- Shelly Heimfeld, Ph.D., Director of the Cellular Therapy Laboratory at the Fred Hutchinson Cancer Research Center in Seattle, and President of the International Society of Cellular Therapy. Dr. Heimfeld is internationally recognized for research in hematopoietic-derived stem cells and the development of cell processing technologies for improved cancer therapy.

- Dayong Gao, Ph.D., Professor of Biomedical Engineering at the University of Washington in Seattle. Dr. Gao has been actively engaged in cryopreservation research for more than 20 years, and has authored over 130 peer-reviewed journal articles on cryopreservation.

- Darin Weber, Ph.D., a leading regulatory expert for cellular and tissue based products, and former FDA cellular therapy reviewer. Dr. Weber’s knowledge of the regulatory landscape for cell and gene therapy is extensive and directly relevant to our business since our biopreservation solutions are a critical process component in several active clinical trials for new cellular therapy products.

- Andrew Hinson, Vice President for Clinical and Regulatory Affairs for Lone Star Heart, Inc. (formerly CardioPolymers, Inc.) since 2004. Lone Star Heart is a venture capital backed privately-held developer of therapeutic biopolymer therapies for the treatment of heart failure and other cardiac abnormalities. Mr. Hinson is also a Director of the Company.

- Scott R. Burger, M.D., Principal, Advanced Cell and Gene Therapy, a consulting firm specializing in cell, gene, and tissue-based therapies. Dr. Burger works with clients in industry and academic centers worldwide, providing assistance in process development and validation, GMP/GTP manufacturing, GMP facility design and operation, regulatory affairs, technology evaluation, and strategic analysis.

- Erik J. Woods, Ph.D., Co-founder, CEO and Laboratory Director of The Genesis Bank, a private cord blood bank, and also Director of Genome Resources, an anonymous donor and client depositor sperm bank. Both laboratories are FDA registered and CLIA compliant.

- Lizabeth J. Cardwell, Principal, Compliance Consulting, LLC, a private consulting business offering quality and regulatory consulting services to cell therapy, medical device, and pharmaceutical companies.

- Colleen Delaney, MSc., M.D., Director of the Cord Blood Research and Transplant Program at Fred Hutchinson Cancer Research Center (FHCRC) and Seattle Cancer Care Alliance (SCCA). She is an attending physician at Seattle Children's Hospital, Assistant Member of the Clinical Research Division of FHCRC and Assistant Professor at the University of Washington, School of Medicine.

7

Competition

The life sciences industry is highly competitive. Most of our potential competitors have considerably greater financial, technical, marketing, and other resources than we do.

Our competitors include Life Technologies Corp. (formally Invitrogen), Lonza, Sigma Aldrich, and less than 10 other much smaller companies. However, it is our belief that in-house formulated biopreservation media, whereby the user purchases raw ingredients and manually mixes the ingredients, satisfies the large majority of the annual worldwide demand. Our products offer significant advantages over in-house formulations including, time saving, improved quality of components, more rigorous quality control release testing, and improved preservation efficacy.

We expect competition to intensify with respect to the areas in which we are involved as technical advances are made and become more widely known.

Employees

At December 31, 2010, we had 11 employees, of whom three were engaged in manufacturing; two were engaged in quality assurance; one in research and development; two were engaged in sales and marketing; and three were engaged in finance and administration. Our employees are not covered by any collective bargaining agreement. We consider relations with our employees to be good.

Reports to Security Holders

This annual report on Form 10-K, including the exhibits and schedules filed as part of the annual report, may be inspected at the public reference facility maintained by the Securities and Exchange Commission ("SEC") at its public reference room at 450 Fifth Street NW, Washington, DC 20549 and copies of all or any part thereof may be obtained from that office upon payment of the prescribed fees. One may call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference room and request copies of the documents upon payment of a duplicating fee, by writing to the SEC. In addition, the SEC maintains a website that contains reports, proxy and information statements and other information regarding registrants, including the Company, that file electronically with the SEC which can be accessed at www.sec.gov.

We also make our periodic and current reports available, free of charge, on our website, www.BioLifeSolutions.com, as soon as reasonably practicable after such material is electronically filed with the SEC. Information available on our website is not a part of, and is not incorporated into, this annual report on Form 10-K.

Safe Harbor for Forward-Looking Statements Under the Securities Litigation Reform Act of 1995; Risk Factors

This Annual Report on Form 10-K and other reports, releases, and statements (both written and oral) issued by the Company and its officers from time to time may contain statements concerning our future results, future performance, intentions, objectives, plans, and expectations that are deemed to be “forward-looking statements.” Such statements are made in reliance upon safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Our actual results, performance, and achievements may differ significantly from those discussed or implied in the forward-looking statements as a result of a number of known and unknown risks and uncertainties including, without limitation, those discussed below and in “Management’s Discussion and Analysis of Financial Condition and Results of Operations.” In light of the significant uncertainties inherent in such forward-looking statements, the inclusion of such statements should not be regarded as a representation by the Company or any other person that the Company’s objectives and plans will be achieved. Words such as “believes,” “anticipates,” “expects,” “intends,” “may,” and simi expressions are intended to identify forward-looking statements, but are not the exclusive means of identifying such

statements. We undertake no obligation to revise any of these forward-looking statements.

ITEMRISK FACTORS
1A.

The risks presented below may not be all of the risks we may face. These are the factors that we believe could cause actual results to be different from expected and historical results. Other sections of this report include additional factors that could have an effect on our business and financial performance. The industry in which we compete is very competitive and changes rapidly. Sometimes new risks emerge and management may not be able to predict all of them or how they may cause actual results to be different from those contained in any forward-looking statements. One should not rely upon forward-looking statements as a prediction of future results.

We have a history of losses and may never achieve or maintain profitability.

We have incurred annual operating losses since inception, and may continue to incur operating losses because new products will require substantial development, clinical, regulatory, manufacturing, marketing, and other expenditures. For the fiscal years ended December 31, 2010 and December 31, 2009, we had net losses of $(1,983,630) and $(2,768,352), respectively. As of December 31, 2010, our accumulated deficit was $(52,194,852). We may not be able to successfully commercialize our current or future products, achieve significant revenues from sales, or achieve or sustain profitability. Successful completion of our commercialization program and our transition to attaining profitable operations is dependent upon achieving a level of revenues adequate to support our cost structure.

The market for our Common Stock is limited and our stock price is volatile.

Our common stock, traded on the OTC Bulletin Board, has historically traded at low average daily volumes, resulting in a limited market for the purchase and sale of our common stock.

The market prices of many publicly traded companies, including emerging companies in the life sciences industry, have been, and can be expected to be, highly volatile. The future market price of our common stock could be significantly impacted by:

- Future sales of our common stock
- Announcements of technological innovations for new commercial products by our present or potential competitors
- Developments concerning proprietary rights
- Adverse results in our field or with clinical tests of our products in customer applications
- Adverse litigation
- Unfavorable legislation or regulatory decisions
- Public concerns regarding our products
- Variations in quarterly operating results
- General trends in the health care industry
- Other factors outside of our control

There is uncertainty surrounding our ability to successfully commercialize our biopreservation media products and contract research and development and manufacturing services.

Our growth depends, in part, on our continued ability to successfully develop, commercialize and market our HypoThermosol, CryoStor, and BloodStor biopreservation media products and contract research and development and manufacturing services. Even in markets that do not require us to undergo clinical trials and obtain regulatory approvals, our products will not be used unless they present an attractive alternative to competitive products and if the benefits and cost savings achieved through their use outweigh the cost of our products.

The success of our HypoThermosol, CryoStor, and BloodStor biopreservation media products is dependant, in part, on the commercial success of new regenerative medicine technologies.

Our HypoThermosol, CryoStor, and BloodStor biopreservation media products are marketed to, biotechnology companies and research institutions engaged in research and development of cell, gene and tissue engineering therapies. Although we, as a component supplier, may not be subject to the same formal prospective, controlled clinical-trials to establish safety and efficacy, and to substantial regulatory oversight by the FDA and other regulatory bodies, with respect to the commercialized end-products or therapies developed by these biotechnology companies and research institutions, the development of many of these therapies are years away from commercialization, and demand, if any, for HypoThermosol, CryoStor, and BloodStor is expected to be limited for several years.

We face significant competition.

The life sciences industry is highly competitive. Many of our competitors are significantly larger than we are and have greater financial, technical, research, marketing, sales, distribution and other resources than we do. There can be no assurance that our competitors will not succeed in developing or marketing technologies and products that are more effective or commercially attractive than any that are being developed or marketed by us, or that such competitors will not succeed in obtaining regulatory approval, or introducing or commercializing any such products, prior to us. Such developments could have a material adverse effect on our business, financial condition and results of operations. Further, even if we are able to compete successfully, there can be no assurance that we could do so in a profitable manner.

Our success will depend on our ability to attract and retain key personnel.

In order to execute our business plan, we must attract, retain and motivate highly qualified managerial, scientific, manufacturing, and sales personnel. If we fail to attract and retain skilled scientific and sales personnel, our research and development and sales efforts will be hindered. Our future success depends to a significant degree upon the continued services of key scientific and technical personnel. If we do not attract and retain qualified personnel we will not be able to achieve our growth objectives.

If we fail to protect our intellectual property rights, our competitors may take advantage of our ideas and compete directly against us.

Our success will depend to a significant degree on our ability to secure and protect intellectual proprietary rights and enforce patent and trademark protections relating to our technology. While we believe that the protection of patents and trademarks is important to our business, we also rely on a combination of copyright, trade secret, nondisclosure and confidentiality agreements, know-how and continuing technological innovation to maintain our competitive position. From time to time, litigation may be advisable to protect our intellectual property position. However, these legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. Any litigation in this regard could be costly, and it is possible that we will not have sufficient

resources to fully pursue litigation or to protect our intellectual property rights. This could result in the rejection or invalidation of our existing and future patents. Any adverse outcome in litigation relating to the validity of our patents, or any failure to pursue litigation or otherwise to protect our patent position, could materially harm our business and financial condition. In addition, confidentiality agreements with our employees, consultants, customers, and key vendors may not prevent the unauthorized disclosure or use of our technology. It is possible that these agreements will be breached or that they will not be enforceable in every instance, and that we will not have adequate remedies for any such breach. Enforcement of these agreements may be costly and time consuming. Furthermore, the laws of foreign countries may not protect our intellectual property rights to the same extent as the laws of the United States.

Because the life sciences industry is litigious, we may be sued for allegedly violating the intellectual property rights of others.

In the past, the life sciences industry has been characterized by a substantial amount of litigation and related administrative proceedings regarding patents and intellectual property rights. In addition, many life science companies have used litigation against emerging growth companies as a means of gaining a competitive advantage. Should third parties file patent applications or be issued patents claiming technology claimed by us in pending applications, we may be required to participate in interference proceedings in the U.S. Patent and Trademark Office to determine the relative priorities of our inventions and the third parties' inventions. We could also be required to participate in interference proceedings involving our issued patents and pending applications of another entity. An adverse outcome in an interference proceeding could require that we cease using the technology or license rights from prevailing third parties. Third parties may claim that we are using their patented inventions and may go to court to stop us from engaging in our normal operations and activities. These lawsuits are expensive to defend and conduct and would also consume and divert the time and attention of our management. A court may decide that we are infringing on a third party's patents and may order us to cease the infringing activity. The court could also order us to pay damages for the infringement. These damages could be substantial and could harm our business, financial condition and operating results. If we are unable to obtain any necessary license following an adverse determination in litigation or in interference or other administrative proceedings, we would have to redesign our products to avoid infringing a third party's patent and temporarily or permanently discontinue manufacturing and selling some of our products. If this were to occur, it would negatively impact future sales.

If we fail to obtain or maintain future regulatory clearances or approvals for our products, or if approvals are delayed or withdrawn, we will be unable to commercially distribute and market our products or any product modifications.

As an ancillary or excipient reagent used in the production, transportation, and infusion of our customers' regulated clinical products, HypoThermosol, CryoStor, and BloodStor are not subject to specific FDA or other non-US pre-market approval for drugs, devices, or biologics. In particular, we are not required to sponsor formal prospective, controlled clinical-trials in order to establish safety and efficacy. However, to support our current and prospective clinical customers, we comply with Current Good Manufacturing Practice ("cGMP").

There can be no assurance that we will not be required to obtain approval from the FDA, or foreign regulatory authorities, as applicable, prior to marketing any of our products in the future. During 2009, we submitted updated Type II Master Files to the FDA for CryoStor and HypoThermosol. These enhanced regulatory submissions provide the FDA with information regarding the quality of components used in the formulation of our products, the manufacturing process, our quality system, and stability testing that we have performed. Customers engaged in clinical applications who wish to notify the FDA of their intention to use our products in their product development and manufacturing process can now request a cross-reference to our Master Files.

We are dependent on outside suppliers for all of our manufacturing supplies.

We rely on outside suppliers for all of our manufacturing supplies, parts and components. Although we believe we could develop alternative sources of supply for most of these components within a reasonable period of time, there can be no assurance that, in the future, our current or alternative sources will be able to meet all of our demands on a timely basis. Unavailability of necessary components could require us to re-engineer our products to accommodate available substitutions which would increase costs to us and/or have a material adverse effect on manufacturing schedules, products performance and market acceptance.

ITEMUNRESOLVED STAFF COMMENTS
1B.

Not applicable.

ITEMPROPERTIES
2.

In July 2007, we signed a four-year lease, commencing August 1, 2007, for 4,366 square feet of office and laboratory space in Bothell, Washington at an initial rental rate of $6,367 per month. We are also responsible for paying our proportionate share of property taxes and other operating expenses as defined in the lease.

In November 2008, we signed an amended five-year lease to gain 5,798 square feet of additional clean room space for manufacturing in a facility adjacent to our corporate office facility leased in Bothell, Washington at an initial rental rate of $14,495 per month. Included in this amendment is the exercise of the renewal option for our current office and laboratory space to make the lease for such space coterminous with the new facility five-year lease period.

ITEMLEGAL PROCEEDINGS
3.

On February 7, 2007, Kristi Snyder, a former employee of the Company filed a complaint in the New York State Supreme Court, County of Broome, against the Company alleging a breach of an employment agreement and seeking damages of up to $300,000 plus attorneys' fees. This case currently is in discovery. The Company is vigorously defending its position.

On April 6, 2007, the Company was served with a complaint filed by John G. Baust, the Company's former Chief Executive Officer and President, and thereafter, until January 8, 2007, the Chairman, Sr. Vice President and Chief Scientific Officer, in the New York State Supreme Court, County of Tioga, against the Company seeking, among other things, damages under his employment agreement to be determined upon trial of the action plus attorneys' fees, a declaratory judgment that he did not breach his fiduciary duties to the Company, and that his covenant not to compete is void as against public policy or unenforceable as a matter of law, and to enjoin the Company from commencing an action against him in Delaware courts seeking damages for breaches of his fiduciary obligations to the Company. The parties have engaged in extensive motion practice. By decision of December 18, 2009, Justice Tait rejected Plaintiff Baust's efforts to obtain partial summary judgment. This case currently is in discovery. The Company is vigorously defending its position.

On June 15, 2007, the Company filed a lawsuit in the State of New York Supreme Court, County of Tioga against Cell Preservation Services, Inc. ("CPSI") and Coraegis Bioinnovations, Inc. ("Coraegis"), both of which are owned and/or controlled by John M. Baust, a former employee of the Company and the son of John G. Baust, both of whose employment with the Company was terminated on January 8, 2007.

On March 15, 2004, the Company had entered into a Research Agreement with CPSI, pursuant to which CPSI took over the processing of the Company's existing SBIR grants, on behalf of the Company was to apply for additional SBIR grants and, in each case, was to perform the research with respect to such grants. In connection therewith, the Company granted to CPSI a limited license to use the Company's technology ("BioLife's Technology"), including the Company's proprietary cryopreservation solutions (collectively, "Intellectual Property"), solely for the purpose of conducting the research pertaining to the SBIR grants, and CPSI agreed to keep confidential all Company confidential information disclosed to CPSI ("Confidential Information"). On January 8, 2007, the Company informed CPSI that the Research Agreement would not be extended and would terminate in accordance with its terms on March 15, 2007.

12

The lawsuit states various causes of action, including, (1) repeated violations of the Research Agreement by CPSI by improperly using BioLife's Technology, Intellectual Property and Confidential Information for its own purposes, (2) the unlawful misappropriation by CPSI and Coraegis of the Company's trade secrets, (3) unfair competition on the part of CPSI and Coraegis through their unlawful misappropriation and misuse of BioLife's Technology, Intellectual Property and Confidential Information, and (4) the conversion of BioLife's Technology, Intellectual Property and Confidential Information by CPSI and Coraegis to their own use without the Company's permission.

The lawsuit seeks, among other things, (1) to enjoin CPSI from continuing to violate the Research Agreement, (2) damages as a result of CPSI's breaches of the Research Agreement, (3) to enjoin CPSI and Coraegis from any further use of the Company's trade secrets, (4) damages (including punitive damages) as a result of CPSI's and Coraegis' misappropriation of the Company's trade secrets, (5) to enjoin CPSI and Coraegis from any further use of BioLife's Technology, Intellectual Property and Confidential Information, (6) damages (including punitive damages) as a result of CPSI's and Coraegis' unfair competition against the Company, and (7) damages (including punitive damages) as a result of CPSI's and Coraegis' conversion of BioLife's Technology, Intellectual Property and Confidential Information to their own use. On September 30, 2008, Justice Jeffrey Tait issued a Letter Decision and Order which provides for a multi-phase process for discovery concerning contested discovery disclosures. The parties are awaiting Justice Tait's decision on the initial process to be used concerning these contested discovery issues. The parties have engaged in extensive motion practice. By decision of December 18, 2009, Justice Tait denied the attempt of the Defendants to dismiss Plaintiff's complaint. This case currently is in discovery. The Company is vigorously defending its position.

On December 4, 2007, John M. Baust, the son of John G. Baust, filed a complaint in the New York State Supreme Court, County of Tioga, against the Company and Michael Rice, the Company's Chairman and Chief Executive Officer, alleging, among other things, a breach of an employment agreement and defamation of character and seeking damages against the Company in excess of $300,000 plus attorneys fees. This case currently is in discovery. The Company is vigorously defending its position.

On December 27, 2007, John G. Baust and John M. Baust, each separately, filed complaints with the State of New York, Division of Human Rights ("the Division") alleging unlawful discrimination practices against the Company based on wrongful termination due to retaliation for bringing complaints of sexual harassment on the part of Michael Rice, the Company's Chairman and Chief Executive Officer. The Company responded to the complaints, filed by John G. Baust on January 22, 2008, and by John M. Baust on January 14, 2008. On March 5, 2008, the Company was notified by the Division that these complaints were ordered dismissed and the files were closed due to the Division's lack of jurisdiction in the matter, the Division having determined that the civil suits filed by John G. Baust and John M. Baust had precedence and precluded the Division from asserting jurisdiction. The determination was successfully appealed and overturned by Justice Tait on October 23, 2008. On February 4, 2010, the Appellate Division of the Supreme Court of New York, Third Department affirmed Justice Tait's opinion that John G. Baust and John M. Baust could pursue a complaint in the Division. On March 15, 2010, the Division delivered to the Supreme Court, Appellate Division, a Notice of Motion and Motion for Reargument or Leave to Appeal. The motion was returnable April 5, 2010. On May 17, 2010, the Appellate Division denied the Division's motion for reargument or, in the alternative, for permission to appeal to the Court of Appeals. Thereafter, on June 23, 2010 the Division served a Motion for Leave to Appeal to the Court of Appeals. On October 14, 2010 the New York State Court of Appeals denied the Division's Motion for Leave to Appeal. Thus, the Complaints of John G. Baust and John M. Baust have been reinstated to the New York State Division of Human Rights. The Company retains all of its rights to oppose the complaints of Messrs. Baust before the Division and the Company will vigorously oppose any attempt at a recovery.

PART II

ITEMMARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND
5. ISSUER PURCHASES OF EQUITY SECURITIES

Price Range of Common Stock

The common stock, par value $.001 per share, of the Company ("Common Stock") is traded on the OTC Bulletin Board under the symbol "BLFS". As of December 31, 2010, there were approximately 3,000 holders of record of its common stock. The Company has never paid cash dividends on its common stock and does not anticipate that any cash dividends will be paid in the foreseeable future.

The following table sets forth, for the periods indicated, the range of high and low quarterly closing sales prices of its common stock:

	High	Low
Year ended December 31, 2009		
4th Quarter	$0.11	$0.10
3rd Quarter	0.13	0.13
2nd Quarter	0.22	0.17
1st Quarter	0.07	0.05
Year ended December 31, 2010		
4th Quarter	$0.09	$0.05
3rd Quarter	0.09	0.04
2nd Quarter	0.11	0.06
1st Quarter	0.13	0.08

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis should be read in conjunction with our audited financial statements and notes thereto that appear elsewhere in this report. This discussion contains forward-looking statements reflecting our current expectations that involve risks and uncertainties. Actual results may differ materially from those discussed in these forward-looking statements due to a number of factors, including those set forth in the section entitled “Risk Factors” and elsewhere in this report.

The statements contained in this Annual Report on Form 10-K, including statements under this section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, including, without limitation, statements regarding our management’s expectations, hopes, beliefs, intentions or strategies regarding the future. The words “believe,” “may,” “will,” “estimate,” “continue,” “anticipate,” “intend,” “expect,” “plan” and similar expressions may identify forward-looking statements, but t absence of these words does not mean that a statement is not forward-looking. The forward-looking statements contained in this Annual Report on Form 10-K is based on our current expectations and beliefs concerning future developments and their potential effects on us. There can be no assurance that future developments affecting us will be those that we anticipated. These forward-looking statements involve a number of risks, uncertainties or other assumptions that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements. These risks and uncertainties include those factors described in greater detail in Item 1A of Part I, “Risk Factors”. Should one or more of these risks or uncertainties materialize, or should any of our assumptions prove incorrect, actual results may vary in material respects from those anticipated in these forward-looking statements. We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws.

Overview

Management’s discussion and analysis provides additional insight into the Company and is provided as a supplement to, and should be read in conjunction with, our audited financial statements and accompanying footnotes thereto.

Our proprietary HypoThermosol®, CryoStor®, and generic BloodStor® biopreservation media products are marketed to cell therapy companies, pharmaceutical companies, cord blood banks, hair transplant surgeons, and suppliers of cells to the toxicology testing and diagnostic markets. All of our products are serum-free and protein-free, fully defined, and are manufactured under current Good Manufacturing Practices using United States Pharmacopeia (“USP”) or the highest available grade components.

Our product line of serum-free and protein-free biopreservation media products are fully defined and formulated to reduce preservation-induced, delayed-onset cell damage and death. This platform enabling technology provides academic and clinical researchers significant extension in biologic source material shelf life and also improved post-thaw cell, tissue, and organ viability and function.

The discoveries made by our scientists and consultants relate to how cells, tissues, and organs respond to the stress of hypothermic storage, cryopreservation, and the thawing process, and enables the formulation of truly innovative biopreservation media products that protect biologic material from preservation related cellular injury, much of which is not apparent immediately post-thaw. Our enabling technology provides significant improvement in post-preservation viability and function of biologic material. This yield improvement can reduce research, development, and commercialization costs of new cell and tissue based clinical therapies.

15

Critical Accounting Policies and Significant Judgments and Estimates

Management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of financial statements requires that we make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements as well as reported revenues and expenses during the reporting periods. On an ongoing basis, we evaluates estimates, including, but not limited to those related to accounts receivable allowances, determination of fair value of share-based compensation, contingencies, income taxes, and expense accruals. We base our estimates on historical experience and on other factors that we believes are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ materially from these estimates under different assumptions or conditions.

Share-based Compensation

We account for share-based compensation by estimating the fair value of share-based compensation using the Black-Scholes option pricing model on the date of grant. We utilize assumptions related to stock price volatility, stock option term and forfeiture rates that are based upon both historical factors as well as management's judgment. Non-cash compensation expense is recognized on a straight-line basis over the applicable requisite service period of one to four years, based on the fair value of such share-based awards on the grant date.

Income Taxes

We follow the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on differences between the financial reporting and tax basis of assets and liabilities and on the expected future tax benefits to be derived from net operating loss carryforwards measured using current tax rates. A valuation allowance is established if it is more likely than not that some portion or all of the deferred tax assets will not be realized. We have not recorded any liabilities for uncertain tax positions or any related interest and penalties. Our tax returns are open to audit for the years ending December 31, 2007 to 2010.

Comparison of Annual Results of Operations

Percentage comparisons have been omitted within the following table where they are not considered meaningful.

	Years Ended December 31,			
	2010	2009	$ Change	% Change
Revenue				
Product sales	$2,061,565	$1,556,600	$504,965	33 %
Licensing revenue	20,000	25,000	(5,000)	-20 %
Total revenue	2,081,565	1,581,600	499,965	32 %
Cost of product sales	1,225,177	1,007,022	218,155	22 %
Gross profit	856,388	574,578	281,810	49 %
Operating expenses				
Research and development	318,897	414,465	(95,568)	-23 %
Sales and marketing	431,007	558,721	(127,714)	-23 %
General and administrative	1,500,680	1,503,552	(2,872)	-0 %
Manufacturing start-up costs	-	385,205	(385,205)	-100 %
Total operating expenses	2,250,584	2,861,943	(611,359)	-21 %
Operating loss	(1,394,196)	(2,287,365)	893,169	39 %
Other income (expenses)				
Interest income	193	1,069	(876)	-82 %
Other income	-	9,692	(9,692)	-100 %
Interest expense	(588,001)	(488,013)	(99,988)	-21 %
Loss on disposal of assets	(1,626)	(3,735)	2,109	57 %
Total other income (expenses)	(589,434)	(480,987)	(108,447)	-23 %
Net Loss	$(1,983,630)	$(2,768,352)	$784,722	28 %

Comparison of Results of Operations for the Years Ended December 31, 2010 and 2009

Revenue. Sales to individual customers representing more than 10% of total revenue totaled approximately $535,000 and $494,000 in 2010 and 2009, respectively. In 2010 the amount in product sales revenue was from two customers, one which totaled $321,000 representing 16% of total product sales, and the other which totaled $213,000 representing 10% of total product sales. In 2009 the amount in product sales revenue was from two customers, one which totaled $334,000 representing 21% of total product sales, and the other which totaled $160,000 representing 10% of total product sales. Increase in revenue is primarily due to increased product sales to existing customers, the acquisition of new customers, and sales of our new product BloodStor®.

Licensing revenue. We have entered into license agreements with one customer that provides this customer with limited access to our intellectual property in certain conditions. This customer paid upfront fees for the specific rights and we recognize license revenue ratably over the term of the agreements.

Product sales and cost of product sales. In 2010, product sales increased 33% compared to 2009 due to increased product sales to existing customers, the acquisition of new customers in the cell therapy, drug discovery, and cell supplier markets, and continued sales of the new product family BloodStor®.

Cost of product sales consists of raw materials, labor and overhead expenses. In May 2009, we transitioned from a contract manufacturer to internal manufacturing. The initial period of in-house production included lower factory utilization during the start-up phase, which resulted in increased gross margins in 2010 compared to 2009.

Research and Development. R&D expense consist primarily of salaries and other personnel expenses, consulting and other outside services, laboratory supplies, and other costs. We expense all R&D costs as incurred. R&D expenses for the year ended December 31, 2010 decreased 23% compared to the 2009 period due to lower personnel related cost due to the reduction in workforce at the end of July 2009, offset by an increase in consulting fees related to outside services used in product development.

Sales and Marketing. Sales and marketing expenses consist primarily of salaries and other personnel-related expenses, consulting, trade shows and advertising. The 23% decrease in 2010 sales and marketing expenses compared to 2009 primarily was due to lower personnel related costs due to the reduction in workforce at the end of July 2009, offset by an increase in association dues as the company continues to place itself in key markets for increased product sales.

General and Administrative Expenses. General and administrative expenses consist primarily of salaries and other personnel-related expenses, non-cash stock-based compensation for administrative personnel and non-employee members of the board of directors, professional fees, such as accounting and legal, corporate insurance and facilities costs. The 0.2% decrease in general and administrative expenses in 2010 compared to 2009 resulted primarily in lower professional accounting fees offset by an increase in stock-based compensation.

Manufacturing Start-up Costs. Manufacturing start-up costs decreased 100% in the current year compared to 2009. In the third quarter of 2008, to reduce cost of product sales and enhance production flexibility, we decided to transition our manufacturing process in-house, which became operational in May 2009.

Interest Expense. The increase in interest expense in 2010 compared to 2009 was due to a higher average debt balance.

Liquidity, Going Concern and Capital Resources

These financial statements assume that we will continue as a going concern. If we are unable to continue as a going concern, we may be unable to realize our assets and discharge our liabilities in the normal course of business. The financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts, or, to amounts and classification of liabilities that may be necessary should we be unable to continue as a going concern.

Liquidity

At December 31, 2010, we had cash and cash equivalents of $3,211 compared to cash and cash equivalents of $139,151 at December 31, 2009. At December 31, 2010, we had working capital of $474,271, compared to working capital of $535,697 at December 31, 2009. We have been unable to generate sufficient income from operations in order to meet our operating needs and have an accumulated deficit of approximately $52 million at December 31, 2010. This raises substantial doubt about our ability to continue as a going concern.

Net Cash Used in Operating Activities

During the year ended December 31, 2010, net cash used in operating activities was $1,252,525 as compared to net cash used by operating activities of $2,413,642 for the year ended December 31, 2009. Cash used in operating activities relates primarily to funding net losses and changes in operating assets and liabilities, offset by non-cash compensation related to stock options and depreciation.

Net Cash Provided by and Used in Investing Activities

Net cash used in investing activities totaled $28,414 during the year ended December 31, 2010, and $373,531 during the year ended December 31, 2009. Cash used in investing activities was due to purchase of property and equipment.

Net Cash Provided by Financing Activities

Net cash provided by financing activities totaled $1,145,000 for the year ended December 31, 2010 and $2,827,600 for the year ended December 31, 2009 and resulted from the issuance of promissory notes to two shareholders.

On January 11, 2008, we entered into a Secured Convertible Multi-Draw Term Loan Facility Agreement (the “Facility Agreement”) with each of Thomas Girschweiler, a director and stockholder of the Company, and Walter Villiger, an affiliate of the Company (the “Investors”), pursuant to which each Investor extended to the Company a secured convertible multi-draw term loan facility of $2,500,000, which Facility (a) incorporated (i) a refinancing of then existing indebtedness of the Company to the Investor, and accrued interest thereon, in the aggregate amount of $1,431,563.30, (ii) a then current advance of $300,000, and (iii) a commitment to advance to the Company, from time to time, additional amounts up to a maximum of $768,436.70, (b) bears interest at the rate of 7% per annum on the principal balance outstanding from time to time, (c) is evidenced by a secured convertible multi-draw term loan note (the “Multi-Draw Term Loan Note”), which was due and payable, together with accrued interest thereon, the earlier of (i) January 11, 2010, or (ii) an Event of Default (as defined in the Multi-Draw Term Loan Note), (d) if outstanding at the time of any bona fide equity financing of the Company of at least Two Million Dollars ($2,000,000) (a “Financing”), at the option of the Investor, could be converted into that number of fully paid and non-assessable shares or units of the equity security(ies) of the Company sold in the Financing (“New Equity Securities”) as is equal to the quotient obtained by dividing the principal amount of the Facility outstanding at the time of the conversion plus accrued interest thereon by 85% of the per share or per unit purchase price of the New Equity Securities, and (e) is secured by all of the Company’s assets.

19

In May and July 2008, we received an additional $1,000,000 in total from the Investors pursuant to the Multi-Draw Term Loan Facility. On October 20, 2008, each Facility was increased by $2,000,000 to $4,500,000 (an aggregate of $9,000,000), and, on October 24, 2008, we received an additional $600,000 in total from the Investors pursuant to the amended Multi-Draw Loan Facilities. In 2009, we received an additional $2,825,000 in total from the Investors pursuant to the amended Facilities. In December 2009, the Investors extended the repayment date to January 11, 2011. On November 16, 2010, each Facility was increased by $250,000 to $4,750,000 (an aggregate of $9,500,000) and the Investors granted an extension of the repayment date to January 11, 2013. In 2010, we received an additional $1,145,000 in total from the Investors pursuant to the amended Facilities, which brought our total principal balance owed under the Multi-Draw Term Loan Notes to $9,033,127, and left $466,873 to draw from the Facilities at December 31, 2010.

Operating Capital and Capital Expenditure Requirements

We believe that continued access to the amended Facilities, in combination with cash generated from customer collections, will provide sufficient funds through June 30, 2011. However, we would require additional capital in the immediate short term if our ability to draw on the amended Facilities is restricted or terminated. Other factors that would negatively impact our ability to finance our operations include (a) significant reductions in revenue from our internal projections, (b) increased capital expenditures, (c) significant increases in cost of goods and operating expenses, or; (d) an adverse outcome resulting from current litigation. We expect that we may need additional capital to reach a sustainable level of positive cash flow. Although the Investors who have provided the amended Facilities historically have demonstrated a willingness to grant access to the Facilities and renegotiate terms of previous credit arrangements there is no assurance they will continue to do so in the future. If the Investors were to become unwilling to provide access to additional funds through the amended Facilities, we would need to find immediate additional sources of capital. There can be no assurance that such capital would be available at all, or, if available, that the terms of such financing would not be dilutive to stockholders. If we are unable to secure additional capital as circumstances require, we may not be able to continue our operations.

Off-Balance Sheet Arrangements

As of December 31, 2010, we did not have any off-balance sheet financing arrangements.

Contractual Obligations

In July 2007, we signed a four-year lease, commencing August 1, 2007, for 4,366 square feet of office and laboratory space in Bothell, WA at an initial rental rate of $6,367 per month. We are also responsible for paying our proportionate share of property taxes and other operating expenses as defined in the lease.

In November 2008, we signed an amended five-year lease to gain 5,798 square feet of additional clean room space for manufacturing in a facility adjacent to our corporate office facility leased in Bothell, WA at an initial rental rate of $14,495 per month. Included in this amendment is the exercise of the renewal option for our current office and laboratory space to make the lease for such space coterminous with the new facility five-year lease period.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The information required by this item is incorporated herein by reference to the financial statements included in Item 15 (a)1 of this Form 10-K Annual Report.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that material information required to be disclosed in our periodic reports filed under the Securities Exchange Act of 1934, as amended, or 1934 Act, is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms and to ensure that such information is accumulated and communicated to our management, including our chief executive officer and chief financial officer as appropriate, to allow timely decisions regarding required disclosure. During the quarter ended December 31, 2010 we carried out an evaluation, under the supervision and with the participation of our management, including the chief executive officer and chief financial officer, as required by the rules and regulations under the 1934 Act, of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rule 13a-15(e) under the 1934 Act. Based on this evaluation, our chief executive officer and chief financial officer concluded that, as of December 31, 2010, our disclosure controls and procedures were effective.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) under the Securities Exchange Act of 1934, as amended. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of the financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. This process 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 assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that 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 our 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. Also, projections of any evaluation of the internal control over financial reporting to future periods are subject to risk that the internal control may become inadequate because of changes in conditions, or that the degree of compliance with policies or procedures may deteriorate.

Our management, including our chief executive officer and chief financial officer, conducted an evaluation of the design effectiveness of our internal control over financial reporting based on the framework in "Internal Control — Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"), as of December 31, 2010. Based on our assessment, we conclude that as of December 31, 2010 our internal control over financial reporting was effective.

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

Changes in Internal Control Over Financial Reporting

There were no changes that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting during the quarter ended December 31, 2010.

Limitations on Controls

Management does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all error and fraud. Any control system, no matter how well designed and operated, is based upon certain assumptions and can provide only reasonable, not absolute, assurance that our objectives will be met. Further, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, have been detected.

ITEMOTHER INFORMATION
9B.

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS, AND CORPORATE GOVERNANCE

The following table and text set forth the names and ages of all directors and executive officers of the Company as of March 28, 2011. The Board of Directors is comprised of only one class. All of the directors will serve until the next annual meeting of shareholders, and until their successors are elected and qualified, or until their earlier death, retirement, resignation or removal. There are no family relationships among directors and executive officers. Also provided herein are brief descriptions of the business experience of each director and executive officer during the past five years (based on information supplied by them) and an indication of directorships held by each director in other companies subject to the reporting requirements under the Federal securities laws.

Name	Age	Position and Offices With the Company
Michael Rice	48	Chief Executive Officer, President, and Director
Howard S. Breslow	71	Director, Secretary
Roderick de Greef	50	Director
Thomas Girschweiler	53	Director
Raymond Cohen	51	Director
Andrew Hinson	45	Director

Michael Rice has been President and Chief Executive Officer and a director of the Company since August 2006, and Chairman of the board of directors since August 2007. From October 2004 to August 2006, Mr. Rice served as Sr. Business Development Manager for the Medical & Wireless Products Group at AMI Semiconductor, Inc. (NASDAQ: AMIS). Prior thereto, from October 2000 to October 2004, he served as Director of Marketing & Business Development, Western Region Sales Manager, and Director, Commercial Sales at Cardiac Science, Inc. (NASDAQ: CSCX); from May 1998 to October 2000 as Vice President, Sales and Marketing at TEGRIS Corporation; and from May 1986 to May 1998 in several sales and marketing roles at Physio Control Corporation.

Howard S. Breslow has served as a director of the Company since July 1988. He has been a practicing attorney in New York City for more than 40 years and is a member of the law firm of Breslow & Walker, LLP, New York, NY, which firm serves as general counsel to the Company.

Mr. de Greef has been a director of the Company since June 2000, and since July 2007, has been retained by the Company to provide strategic and financial consulting services. Mr. de Greef provides corporate advisory services to several other companies, including Cambridge Heart, Inc., where he has been employed as Chairman of the board of directors since November 2008. From October 2005 to July 2007, Mr. de Greef was Chief Financial Officer of Cambridge Heart, and Vice President of Finance and Administration from June 2006 to July 2007. From February 2001 to September 2005, Mr. de Greef was Executive Vice President and Chief Financial Officer of Cardiac Science, Inc., which merged with Quinton Cardiology, Inc. From 1995 to 2001, Mr. de Greef provided independent corporate finance advisory services to a number of early-stage companies, including BioLife Solutions and Cardiac Science. From 1986 to 1995, Mr. de Greef served as Vice President of Finance and Chief Financial Officer of several publicly held, development stage medical technology companies. Mr. de Greef is also a member of the board of directors of Irvine, CA based Endologix, Inc., and Amsterdam based Elephant Talk Communications, Inc. Mr. de Greef has a B.A. in Economics and International Relations from California State University at San Francisco and earned his M.B.A. from the University of Oregon.

23

Thomas Girschweiler joined the Board in 2003. Mr. Girschweiler has been engaged in corporate financing activities on his own behalf since 1996. From 1981 to 1996 he was an investment banker with Union Bank of Switzerland. Mr. Girschweiler is a graduate of the Swiss Banking School.

Raymond W. Cohen joined the Board in May 2006. Mr. Cohen is an Accredited Public Company Director. He currently serves as the CEO and member of the Board of Directors of Minnow Medical, Inc., a venture backed developer of a novel RF Thermoplasty therapy for treatment of vascular disease and as an advisor to Fjord Ventures, LLC., a life science incubator. Cohen also serves on the Board of publicly traded Cardiogenesis, Inc., (CPCG) a manufacturer of transmyocardial revascularization lasers, Syncroness, Inc., a privately-held engineering and product development firm and CardioPolymers, Inc., a privately-held developer of novel biotherapeutics for the treatment of congestive heart failure. In 2008, Mr. Cohen was named by AeA as the Private Company Life Science CEO of the Year. Previously, Cohen served as Chairman and Chief Executive Officer of Cardiac Science (CSCX). In 2004, Cardiac Science was ranked as the 4th fastest growing technology company in North America on Deloitte & Touche's Fast 500 listing. Mr. Cohen was named Entrepreneur of the Year in 2002 by the Orange County Business Journal and was a finalist for Ernst & Young's Entrepreneur of the Year in the medical company category in 2004. Mr. Cohen is a member of a number of local Southern California organizations, notably the Forum of Corporate Directors, OCTANe where he is a member of the Biomedical Leadership Council and as a Advisory Council member to the Keck Graduate Institute, BioScience MBA program. Mr. Cohen holds a B.S. in Business Management from the State University of New York at Binghamton.

Andrew Hinson joined the Board in February 2007. He currently is the Vice President for Clinical and Regulatory Affairs for LoneStar Heart, Inc., a developer of proprietary biopolymer, small molecule and cellular-based therapies to effectively treat heart failure and other cardiac conditions. Mr. Hinson has diverse experience in the cell and gene therapy markets and extensive experience with regulatory and clinical trial issues for new therapies for cardiac, neurologic, and gastrointestinal applications

Committee Membership, Meetings and Attendance

During the fiscal year ended December 31, 2010, there were:

·Four meetings of the Board of Directors
·Four meetings of the Audit Committee
·One meeting of the Compensation Committee
·No meetings of the Nominating and Corporate Governance Committee

Each Director attended or participated in at least 100% of the meetings of the Board of Directors held during the fiscal year ended December 31, 2010.

Board Committees

Audit Committee and Audit Committee Financial Expert

The Audit Committee is currently composed of Messrs. Girschweiler, Cohen and de Greef. The Board of Directors has determined that Mr. de Greef is an "audit committee financial expert" as defined in Item 407(d)(5)(ii) of Regulation S-K. The Audit Committee has the sole authority and responsibility to select, evaluate and replace our independent registered public accounting firm or nominate the independent auditors for stockholder approval. The Audit Committee must pre-approve all audit engagement fees and terms and all non-audit engagements with the independent auditors. The Audit Committee consults with management but does not delegate these responsibilities. The Audit Committee met four times in fiscal 2010 in which they reviewed and discussed the financial statements as

presented in form 10-K for period ended December 31, 2009, and in form 10-Q for periods ended March 31, June 30, and September 30, 2010.

Compensation Committee

The Compensation Committee consists of Messrs., Hinson, Cohen and Girschweiler. The Compensation Committee awards stock options to officers and employees, and has overall responsibility for approving and evaluating the executive officer compensation plans, policies and programs of the Company. The Compensation Committee met one time in fiscal 2010.

Nominating and Corporate Governance Committee

Our Nominating and Corporate Governance Committee consists of Messrs. Hinson, de Greef and Breslow. The Nominating and Corporate Governance Committee did not meet in fiscal 2010. The Nominating and Corporate Governance Committee is responsible for (1) reviewing suggestions of candidates for director made by directors and others; (2) identifying individuals qualified to become Board members, and recommending to the Board the director nominees for the next annual meeting of shareholders; (3) recommending to the Board director nominees for each committee of the Board; (4) recommending to the Board the corporate governance principles applicable to the Company; and (5) overseeing the annual evaluation of the Board and management. Pursuant to the Nominating and Corporate Governance Committee Charter, there is no difference in the manner in which a nominee is evaluated based on whether the nominee is recommended by a stockholder or otherwise.

Section 16(a) Beneficial Ownership Reporting Compliance

Our executive officers, directors, and beneficial owners of more than 10% of any class of its equity securities registered pursuant to Section 12 of the Securities Exchange Act of 1934 (collectively, the “Reporting Persons”) are required to file reports of ownership and changes in beneficial ownership of the Company’s equity securities with the Securities Exchange Commission. Copies of those reports also must be furnished to us. Based solely on review of the copies of such forms furnished by the Company, we believe that during the year ended December 31, 2010, the Reporting Persons complied with all applicable Section 16(a) filing requirements.

Code of Ethics

We have always encouraged our employees, including officers and directors to conduct business in an honest and ethical manner. Additionally, it has always been our policy to comply with all applicable laws and provide accurate and timely disclosure. Accordingly, the Board has adopted a formal written code of ethics for all employees, and an additional corporate code of ethics for its Chief Executive Officer and Senior Financial Officers. The code of ethics is designed to deter wrongdoing and promote honest and ethical conduct and compliance with applicable laws and regulations. These codes also incorporate our expectations of our executives which enable us to provide accurate and timely disclosure of our filings with the Securities and Exchange Commission and other public communication. The code of ethics is posted on our website, www.biolifesolutions.com. Any future changes or amendments to our code of ethics, and any waiver of our codes of ethics, will be posted on the website when applicable.

ITEMEXECUTIVE COMPENSATION
11.

The following table sets forth certain information concerning the compensation paid by the Company to its Chief Executive Officer, and any additional executive officers that received salary and bonus payments in excess of $100,000 during the fiscal year ended December 31, 2010 (collectively the “Named Executive Officers”).

SUMMARY COMPENSATION TABLE

Name and Principal Positions (a)	Year (b)	Salary ($) (c)	Bonus ($) (d)	Stock Awards ($) (e)	Option Awards ($) (f) (1)	Non-Equity Incentive Plan Compensation ($) (g)	Nonqualified Deferred Compensation Earnings ($) (h)	All Other Compensation ($) (i)	Total ($) (j)
Michael Rice	2010	270,000	—	—	92,305(2)		—	—	362,305
President, Chief Executive Officer and Director (8/06 –present)	2009	287,500	—	—	50,963(3)		—	—	338,463

(1) See Note 1 to Notes to Financial Statements for a description on the valuation methodology of stock option awards.
(2) Amount is a result of options to purchase 1,190,878 shares at $0.10 per share granted to officer on 2/5/2010, which options vest to the extent of 297,719 shares on 2/5/2011 and, thereafter, in monthly increments of 15,938 shares.
(3) Amount is a result of options to purchase 765,000 shares at $0.09 per share granted to officer on 2/2/2009, which options vest to the extent of 191,250 shares on each of 2/2/2010, 2/2/2011, 2/2/2012 and 2/2/2013.

Employment Agreements

We have an employment agreement with Michael Rice, our President and Chief Executive Officer, which automatically renews for successive one year periods in the event either party does not send the other a “termination notice” no less than 90 days prior to the expiration of the initial term or any subsequent term. The agreement provided for a salary of $200,000 per year and an incentive bonus based on certain quarterly milestones, to be determined by the Board of Directors. Mr. Rice also received a ten-year incentive stock option to purchase 1,500,000 shares of common stock at $.07 per share (the fair market value on the date of grant), which vested to the extent of 500,000 shares on each of the first three anniversary dates of the date of grant. We amended this employment agreement on February 7, 2007 to provide that if, in connection with a “change in control,” Mr. Rice’s employment is terminated without “Cause” or he resigns for “Good Reason,” he will be entitled to the continued payment of salary and bonuses and the reimbursement of medical insurance premiums for 24 months following the change in control event. On February 11, 2008, Mr. Rice’s salary was increased to $300,000 per annum, retroactive to January 1, 2008 and his quarterly bonus plan was supplanted by annual reviews of the Compensation Committee in 2008, 2009, and 2010. Beginning on August 1, 2009, Mr. Rice’s salary was decreased 10% in conjunction with the Company’s 10% across the board pay cuts.

The following table provides information related to outstanding equity awards for each of the Named Executive Officers as of December 31, 2010:

OUTSTANDING EQUITY AWARDS AT FISCAL YEAR-END

	OPTION AWARDS					STOCK AWARDS			
Name (a)	Number of Securities Underlying Unexercised Options (#) Exercisable (b)	Number of Securities Underlying Unexercised Options (#) Unexercisable (c)	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#) (d)	Option Exercise Price ($) (e)	Option Expiration Date (f)	Number of Shares or Units of Stock That Have Not Vested (#) (g)	Market Value of Shares or Units of Stock That Have Not Vested ($) (h)	Equity Incentive Plan Awards: Number of Unearned Shares, units or Other Rights That Have Not Vested (#) (i)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested ($) (j)
Michael Rice	1,500,000	—	—	0.07	8/7/2016 (1)	—	—	—	—
Michael Rice	1,000,000	—	—	0.08	2/7/2017 (2)	—	—	—	—
Michael Rice	350,625	414,375-	—	0.09	2/2/2019 (3)	—	—	—	—
Michael Rice	—	1,190,878	—	0.10	2/5/2020 (4)	—	—	—	—

(1) This award vested 500,000 shares on each of 8/7/2007, 8/7/2008, and 8/7/2009.

(2) This award vested 333,333 shares on each of 2/7/2008, 2/7/2009, and 333,334 shares on 2/7/2010.

(3) This award vests 191,250 shares on 2/2/2010 and, thereafter, in monthly increments of 15,938 shares.

(4) This award vests 297,719 shares on each of 2/5/2011, 2/5/2012, 2/5/2013, and 297,721 shares on 2/5/2014.

Compensation of Directors

Outside directors were compensated with a quarterly retainer fee of $1,500. The Audit Committee Chairman was compensated an additional quarterly retainer fee of $2,000. All directors receive $1,000 for attending board meetings and $500 per meeting for telephonic board meetings. Directors who attend audit committee and the compensation committee meetings receive $500. A total of $65,500 in director compensation was recorded during the year ended December 31, 2010.

The following table sets forth compensation paid to outside directors during the fiscal year ended December 31, 2010:

DIRECTOR COMPENSATION

Name (a)	Fees Earned or Paid in Cash ($) (b)	Stock Awards ($) (c)	Option Awards ($) (d)(1)	Non-Equity Incentive Plan Compensation ($) (e)	Non-Qualified Deferred Compensation Earnings ($) (f)	All Other Compensation ($) (g)	Total ($) (j)
Howard Breslow (2)	10,000	—	10,755	—	—	—	20,755
Thomas Girschweiler (3)	12,500	—	10,755	—	—	—	23,255
Roderick de Greef (4)	12,000	—	10,755	—	—	96,000	118,755
Raymond Cohen (5)	20,500	—	10,755	—	—	—	31,255
Andrew Hinson (6)	10,500	—	10,755	—	—	—	21,255

(1) See Note 1 to Notes to Financial Statements for a description on the valuation methodology of stock option awards.
(2) As of December 31, 2010, Mr. Breslow had received a grant of 150,000 options which vested 100% on 2/5/2011. He owned the following options and warrants, all of which were exercisable: options to purchase 650,000 shares of Common Stock and warrants to purchase 500,000 shares of Common Stock.
(3) As of December 31, 2010, Mr. Girschweiler had received a grant of 150,000 options which vested 100% on 2/5/2011. He owned the following options, all of which were exercisable: options to purchase 400,000 shares of Common Stock and warrants to purchase 1,000,000 shares of Common Stock.
(4) As of December 31, 2010, Mr. de Greef had received a grant of 150,000 options which vested 100% on 2/5/2011. He owned the following options and warrants, all of which were exercisable: options to purchase 650,000 shares of Common Stock and warrants to purchase 1,250,000 shares of Common Stock.
(5) As of December 31, 2010, Mr. Cohen had received a grant of 150,000 options which vested on 2/5/2011. He owned the following options, all of which were exercisable: options to purchase 900,000 shares of Common Stock.
(6) As of December 31, 2010, Mr. Hinson had received a grant of 150,000 options which vested on 2/5/2011. He owned the following options, all of which were exercisable: options to purchase 400,000 shares of Common Stock.

ITEMSECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED 12.STOCKHOLDER MATTERS

The following table sets forth, as of March 28, 2011, certain information regarding the beneficial ownership of Common Stock by (i) each stockholder known by the Company to be the beneficial owner of more than 5% of the outstanding shares thereof; (ii) each director of the Company; (iii) each Named Executive Officer of the Company; and (iv) all of the Company's current directors and executive officers as a group.

Name and Address of Beneficial Owner	Common Stock (1)	Percentage of Class (1)
Michael Rice (Officer and Director) c/o BioLife Solutions, Inc. 3303 Monte Villa Pkwy, Suite 310 Bothell, WA 98021	3,628,032 (2)	4.9%
John G. Baust 175 Raish Hill Road Candor, NY 13743	3,694,722	5.3%
Howard S. Breslow, Esq. (Director) c/o Breslow & Walker, LLP 767 Third Avenue New York, NY 10017	1,353,600 (3)	1.9%
Roderick de Greef (Director) c/o BioLife Solutions, Inc. 3303 Monte Villa Pkwy, Suite 310 Bothell, WA 98021	6,058,622 (4)	8.4%
Walter Villiger c/o BioLife Solutions, Inc. 3303 Monte Villa Pkwy, Suite 310 Bothell, WA 98021	20,240,081	28.6%
Thomas Girschweiler (Director) c/o BioLife Solutions, Inc. 3303 Monte Villa Pkwy, Suite 310 Bothell, WA 98021	15,956,552 (5)	22.4%
Beskivest Chart LTD Goodmans Bay Center West Bay Street & Sea View Drive Nassau, Bahamas	7,255,026	10.4%
Raymond Cohen (Director) c/o BioLife Solutions, Inc. 3303 Monte Villa Pkwy, Suite 310 Bothell, WA 98021	1,095,000 (6)	1.5%

Andrew Hinson (Director) c/o BioLife Solutions, Inc. 3303 Monte Villa Pkwy, Suite 310 Bothell, WA 98021	550,000 (7)	0.8%
All officers and directors as a group (six persons)	28,641,806	35.2%

(1) Shares of Common Stock subject to options and warrants that are exercisable or will be exercisable within 60 days are deemed outstanding for computing the number of shares beneficially owned. The percentage of the outstanding shares held by a person holding such options or warrants includes those currently exercisable or exercisable within 60 days, but such options and warrants are not deemed outstanding for computing the percentage of any other person. Except as indicated by footnote, and subject to community property laws where applicable, the Company believes that the persons named in the table have sole voting and investment power with respect to all shares shown as beneficially owned by them.

(2) Includes 2,500,000 shares of Common Stock issuable upon the exercise of outstanding stock options under the Company's 1998 Stock Option Plan, 1,128,032 shares of Common Stock issuable upon the exercise of outstanding stock options granted subsequent to the expiration of its plan. This does not include 334,688, 893,159, and 2,247,939 shares of Common Stock issuable upon the exercise of non-vested stock options granted on February 2, 2009, February 5, 2010, and February 25, 2011 respectively.

(3) Includes 500,000 shares of Common Stock issuable upon the exercise of outstanding stock options under the Company's 1998 Stock Option Plan, 300,000 shares of Common Stock issuable upon the exercise of outstanding stock options granted subsequent to the expiration of its plan, and 500,000 shares of Common Stock issuable upon the exercise of outstanding warrants, all of which options and warrants are currently exercisable, and 53,600 common shares. This does not include 150,000 shares of Common Stock issuable upon the exercise of non-vested stock options granted on February 11, 2011.

(4) Includes 500,000 shares of Common Stock issuable upon the exercise of outstanding stock options under the Company's 1998 Stock Option Plan, 759,459 shares of Common Stock issuable upon the exercise of outstanding stock options granted subsequent to the expiration of its plan, and 1,250,000 shares of Common Stock issuable upon the exercise of outstanding warrants, all of which options and warrants are currently exercisable, and 3,549,163 common shares. This does not include 150,000 shares of Common Stock issuable upon the exercise of non-vested stock options granted on February 11, 2011.

(5) Includes 250,000 shares of Common Stock issuable upon the exercise of outstanding stock options under the Company's 1998 Stock Option Plan, 300,000 shares of Common Stock issuable upon the exercise of outstanding stock options granted subsequent to the expiration of its plan and 1,000,000 shares of Common Stock issuable upon the exercise of outstanding warrants, all of which options are currently exercisable, and 14,406,552 common shares. This does not include 150,000 shares of Common Stock issuable upon the exercise of non-vested stock options granted on February 11, 2011.

(6) Includes 750,000 shares of Common Stock issuable upon the exercise of outstanding stock options under the Company's 1998 Stock Option Plan, 300,000 shares of Common Stock issuable upon the exercise of outstanding stock options granted subsequent to the expiration of its plan, all of which options are currently exercisable, and 45,000 common shares. This does not include 150,000 shares of Common Stock issuable upon the exercise of non-vested stock options granted on February 11, 2011.

(7) Includes 250,000 shares of Common Stock issuable upon the exercise of outstanding stock options under the Company's 1998 Stock Option Plan, 300,000 shares of Common Stock issuable upon the exercise of outstanding stock options granted subsequent to the expiration of its plan, all of which options are currently exercisable. This does not include 150,000 shares of Common Stock issuable upon the exercise of non-vested stock options granted on February 11, 2011.

Securities Authorized for Issuance under Equity Compensation Plan

Plan category	Number of securities to be issued upon exercise of outstanding options and warrants (in thousands)	Weighted Average exercise price of outstanding options and warrants	Number of securities remaining available for future issuance (in thousands)
Equity compensation plans approved by security holders	6,825	$ .08	—
Equity compensation plans not approved by security holders*	11,959	$ .08	—
Total	18,784	$ .09	—

*See note 6 of Notes to Financial Statements

ITEMCERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE
13.

Howard S. Breslow, a director of the Company, is a member of Breslow & Walker, LLP, general counsel to the Company. Mr. Breslow currently owns 53,600 shares of Common Stock of the Company and holds rights to purchase an aggregate of 1,300,000 additional shares pursuant to stock options and warrants issued to him and/or affiliates. The Company incurred approximately $21,902 in legal fees during the year ended December 31, 2010 for services provided by Breslow & Walker, LLP. At December 31, 2010, accounts payable includes $149 due to Breslow & Walker, LLP.

On January 11, 2008, we entered into a Secured Convertible Multi-Draw Term Loan Facility Agreement (the “Facility Agreement”) with each of Thomas Girschweiler, a director and stockholder of the Company, and Walter Villiger, an affiliate of the Company (the “Investors”), pursuant to which each Investor extended to the Company a secured convertible multi-draw term loan facility of $2,500,000, which Facility (a) incorporated (i) a refinancing of then existing indebtedness of the Company to the Investor, and accrued interest thereon, in the aggregate amount of $1,431,563.30, (ii) a then current advance of $300,000, and (iii) a commitment to advance to the Company, from time to time, additional amounts up to a maximum of $768,436.70, (b) bears interest at the rate of 7% per annum on the principal balance outstanding from time to time, (c) is evidenced by a secured convertible multi-draw term loan note (the “Multi-Draw Term Loan Note”), which was due and payable, together with accrued interest thereon, the earlier of (i) January 11, 2010, or (ii) an Event of Default (as defined in the Multi-Draw Term Loan Note), (d) if outstanding at the time of any bona fide equity financing of the Company of at least Two Million Dollars ($2,000,000) (a “Financing”), at the option of the Investor, could be converted into that number of fully paid and non-assessable shares or units of the equity security(ies) of the Company sold in the Financing (“New Equity Securities”) as is equal to the quotient obtained by dividing the principal amount of the Facility outstanding at the time of the conversion plus accrued interest thereon by 85% of the per share or per unit purchase price of the New Equity Securities, and (e) is secured by all of the Company’s assets.

In May and July 2008, we received an additional $1,000,000 in total from the Investors pursuant to the Multi-Draw Term Loan Facility. On October 20, 2008, each Facility was increased by $2,000,000 to $4,500,000 (an aggregate of $9,000,000), and, on October 24, 2008, we received an additional $600,000 in total from the Investors pursuant to the amended Multi-Draw Loan Facilities. In 2009, we received an additional $2,825,000 in total from the Investors pursuant to the amended Facilities. In December 2009, the Investors extended the repayment date to January 11, 2011. On November 16, 2010, each Facility was increased by $250,000 to $4,750,000 (an aggregate of $9,500,000) and the Investors granted an extension of the repayment date to January 11, 2013. In 2010, we received an additional $1,145,000 in total from the Investors pursuant to the amended Facilities, which brought our total principal balance owed under the Multi-Draw Term Loan Notes to $9,033,127, and left $466,873 to draw from the Facilities at December 31, 2010.

On August 7, 2007, the Board of Directors of the Company agreed to outsource to Roderick de Greef, a director of the Company, the task of overseeing the Company's financing activities, internal accounting functions and SEC reporting, and assisting in the search for, and reviewing, strategic alternatives, on a part-time basis (up to 80 hours per month on an as needed basis), effective as of July 1, 2007 (since he was effectively serving the Company in such capacity since such date), on terms to be agreed upon by Mike Rice, the President of the Company, and Mr. de Greef, and approved by the Board. Subsequent to August 7, 2007, Mr. Rice and Mr. de Greef agreed to the following terms: (1) a fee of $10,000 per month, (2) reimbursement of business expenses, (3) 90 day advance notice of termination by the Company, and (4) the payment of one (1) year's fees ($120,000) if terminated in connection with a Change of Control transaction. As used herein the term Change of Control means (A) there shall be consummated (1) any consolidation or merger of the Company in which the Company is not the continuing or surviving corporation or pursuant to which shares of the Company's Common Stock would be converted into cash, securities or other property, other than a merger of the Company in which the holders of the Company's Common Stock immediately prior to the merger have the same proportionate ownership of at least 50% of common stock of the surviving corporation immediately after the merger, or (2) any sale, lease, exchange or other transfer (in one transaction or a series of related transactions) of all, or substantially all, of the assets of the Company; (B) the shareholders of the Company approve any plan or proposal for the liquidation or dissolution of the Company; or (C) any person (as such term is used in Sections 13(d) and 14(d)(2) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")), shall become the beneficial owner (within the meaning of Rule 13d-3 under the Exchange Act) of 50% or more of the Company's outstanding Common Stock. On November 14, 2007, the arrangement was approved by the Board of Directors of the Company. Beginning on August 1, 2009, Mr. de Greef's fees were decreased 20% in conjunction with the Company's 10% across the board pay cuts. The Company paid consulting fees of $96,000 for year ended December 31, 2010.

ITEMPRINCIPAL ACCOUNTANT FEES AND SERVICES
14.

During 2010, Peterson Sullivan LLP acted as the independent auditors for the Company. The following table sets forth the aggregate fees billed and expected to be billed for audit and review services rendered in connection with the financial statements and reports for the years ending December 31, 2010 and December 31, 2009 and for other services rendered during the years ending December 31, 2010 and December 31, 2009 on behalf of the Company:

ACCOUNTANT FEES AND SERVICES

	Years Ended December 31,	
Description	2010	2009
Audit Fees	$ 68,300	$ 87,000
All Other Fees	—	—
Totals	$ 68,300	$ 87,000

The Board of Directors pre-approves all audit and non-audit services to be performed by the Company's independent auditors.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) 1. Financial Statements

The financial statements required by this item are included herein:

(a) 3. Exhibits

See Exhibit Index below for exhibits filed as part of this Annual Report on Form 10-K

Exhibit Number	Document
3.1	Certificate of Incorporation, as amended. (1)
3.2	By-Laws, and amendment, dated March 19, 1990, thereto. (1)
4.1	Specimen of Common Stock Certificate. (1)
10.1	Stock Option Plan, dated July 7, 1988, and amendment, dated July 19, 1989. (1)
10.2	1998 Stock Option Plan (2)
10.3	Employment Agreement dated July 26, 2006 between the Company and Michael Rice (3) ^
10.4	Amendment to Employment Agreement dated February 7, 2007 between the Company and Michael Rice (4) ^
10.5	Manufacturing Service Agreement dated October 26, 2007 between the Company and Bioserv, Inc., a division of NextPharma Technologies, Inc. (5)
10.6	Quality Agreement dated October 26, 2007 between the Company and Bioserv, Inc., a division of NextPharma Technologies, Inc. (5)
10.7	Storage Services Agreement dated October 26, 2007 between the Company and Bioserv, Inc., a division of NextPharma Technologies, Inc. (5)
10.8	Order Fulfillment Services Agreement dated October 26, 2007 between the Company and Bioserv, Inc., a division of NextPharma Technologies, Inc. (5)
10.9	Lease Agreement dated August 1, 2007 for facility space 3303 Monte Villa Parkway, Bothell, WA 98021 (6)
10.10	Consulting Agreement dated August 7, 2007 between the Company and Roderick de Greef (7)
10.11	Secured Convertible Multi-Draw Term Loan Facility Agreement dated January 11, 2008, between the Company and Thomas Girschweiler (8)
10.12	Secured Convertible Multi-Draw Term Loan Facility Agreement dated January 11, 2008, between the Company and Walter Villiger (8)
10.13	First Amendment to the Secured Convertible Multi-Draw Term Loan Facility Agreement dated October 20, 2008, between the Company, Thomas Girschweiler, and Walter Villiger (9)
10.14	Promissory Note dated October 20, 2008 issued by the Company to Thomas Girschweiler (9)

10.15	Promissory Note dated October 20, 2008 issued by the Company to Walter Villiger (9)
10.16	First Amendment to the Lease, dated the November 4, 2008, between the Company and Monte Villa Farms, LLC (9)

10.17	Second Amendment to the Secured Convertible Multi-Draw Term Loan Facility Agreement dated December 16, 2009, between the Company, Thomas Girschweiler and Walter Villiger (10)
10.18	Promissory Note dated December 16, 2009 issued by the Company to Thomas Girschweiler (10)
10.19	Promissory Note dated December 16, 2009 issued by the Company to Walter Villiger (10)
10.20	Third Amendment to the Secured Multi-Draw Term Loan Facility Agreement dated November 29, 2010, between the Company, Thomas Girschweiler and Walter Villiger *
10.21	Promissory Note dated November 29, 2010 issued by the Company to Thomas Girschweiler *
10.22	Promissory Note dated November 29, 2010 issued by the Company to Walter Villiger *
10.23	Warrant to purchase 1,000,000 shares of the Company's Common Stock, at $0.07 per share, issued to Thomas Girschweiler*
10.24	Warrant to purchase 1,000,000 shares of the Company's Common Stock, at $0.07 per share, issued to Walter Villiger*
31	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 *
32	Certification pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 *

———————

(1) Incorporated by reference to the Company's Annual Report on Form 10-KSB for the fiscal year ended December 31, 2000.
(2) Incorporated by reference to the Company's Definitive Proxy Statement for the special meeting of shareholders held on December 16, 1998.
(3) Incorporated by reference to the Company's Annual Report on Form 10-KSB for the fiscal year ended December 31, 2006.
(4) Incorporated by reference to the Company's current report on Form 8-K filed February 12, 2007.
(5) Incorporated by reference to the Company's current report on Form 8-K filed October 30, 2007.
(6) Incorporated by reference to the Company's Annual Report on Form 10-KSB for the fiscal year ended December 31, 2007.
(7) Incorporated by reference to the Company's current report on Form 8-K filed November 19, 2007.
(8) Incorporated by reference to the Company's current report on Form 8-K filed January 14, 2008.
(9) Incorporated by reference to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2008.
(10) Incorporated by reference to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2009.
* Filed herewith
^ Compensatory plan or arrangement

SIGNATURES

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

Date: March 28, 2011	BIOLIFE SOLUTIONS, INC.
	/s/Michael Rice Michael Rice Chief Executive Officer and Chief Financial Officer

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

Date: March 28, 2011	/s/Michael Rice Michael Rice Director
Date: March 28, 2011	/s/Roderick de Greef Roderick de Greef Director
Date: March 28, 2011	/s/Howard S. Breslow Howard S. Breslow Director
Date: March 28, 2011	/s/Thomas Girschweiler Thomas Girschweiler Director
Date: March 28, 2011	/s/Raymond Cohen Raymond Cohen Director
Date: March 28, 2011	/s/Andrew Hinson Andrew Hinson Director

INDEX TO FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders
BioLife Solutions, Inc.
Bothell, Washington

We have audited the accompanying balance sheets of BioLife Solutions, Inc. ("the Company") as of December 31, 2010 and 2009, and the related statements of operations, shareholders' equity (deficiency), and cash flows for the years then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

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

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of BioLife Solutions, Inc. as of December 31, 2010 and 2009, and the results of its operations and its cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States.

The accompanying financial statements have been prepared assuming the Company will continue as a going concern. As discussed in Note 2 to the financial statements, the Company has been unable to generate sufficient income from operations in order to meet its operating needs and has an accumulated deficit of approximately $52 million at December 31, 2010. These conditions raise substantial doubt about the Company's ability to continue as a going concern. Management's plans regarding those matters are also described in Note 2. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/S/ PETERSON SULLIVAN LLP
Seattle, Washington
March 28, 2011

BioLife Solutions, Inc.
Balance Sheets

December 31,