SPIRE CORP
Form 10KSB
March 30, 2007

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

FORM 10-KSB

|X| Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 For the fiscal year ended December 31, 2006 or

|_| Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 For the transition period from _______ to _______

Commission file number: 0-12742

SPIRE CORPORATION
(Name of small business issuer as specified in its charter)

MASSACHUSETTS	04-2 57335
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

ONE PATRIOTS PARK
BEDFORD, MASSACHUSETTS 01730-2396
(Address of principal executive offices)

(781) 275-6000
(Issuer's telephone number, including area code)

Securities registered under Section 12(b) of the Act:
COMMON STOCK, $0.01 PAR VALUE; REGISTERED ON THE NASDAQ GLOBAL MARKET
(Title of class)

Check whether the issuer: (1) filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the past 12 months (or for such shorter period that the issuer was required to file such reports); and (2) has been subject to such filing requirements for the past 90 days. Yes |X| No |_|

Check if there is no disclosure of delinquent filers in response to Item 405 of Regulation S-B contained in this form, and no disclosure will be contained, to the best of issuer's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-KSB or any amendment to this Form 10-KSB. |_|

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

The issuer's revenues for its most recent fiscal year: $20,125,000.

The aggregate market value of the voting stock held by non-affiliates of the issuer based on the last sale price of such stock as reported by The Nasdaq Global Market on March 1, 2007, was approximately $60,184,000.

The number of shares outstanding of the issuer's common stock, as of March 1, 2007, was 8,260,137.

Transitional Small Business Disclosure Format (Check One): Yes |_| No |X|

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive proxy statement for the Special Meeting in Lieu of 2007 Annual Meeting of Stockholders to be held on May 17, 2007, are incorporated by reference in Part III of this Report.

SPIRE CORPORATION
FORM 10-KSB
FOR THE YEAR ENDED DECEMBER 31, 2006

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FORWARD-LOOKING STATEMENTS

THIS REPORT CONTAINS FORWARD-LOOKING STATEMENTS WITHIN THE MEANING OF SECTION 27A OF THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND SECTION 21E OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED (THE "EXCHANGE ACT"), WHICH STATEMENTS INVOLVE RISKS AND UNCERTAINTIES. THESE

STATEMENTS RELATE TO OUR FUTURE PLANS, OBJECTIVES, EXPECTATIONS AND INTENTIONS. THESE STATEMENTS MAY BE IDENTIFIED BY THE USE OF WORDS SUCH AS "MAY", "COULD", "WOULD", "SHOULD", "WILL", "EXPECTS", "ANTICIPATES", "INTENDS", "PLANS", "BELIEVES", "ESTIMATES" AND SIMILAR EXPRESSIONS. OUR ACTUAL RESULTS AND TIMING OF CERTAIN EVENTS COULD DIFFER MATERIALLY FROM THOSE DISCUSSED IN THESE STATEMENTS. FACTORS THAT COULD CONTRIBUTE TO THESE DIFFERENCES INCLUDE BUT ARE NOT LIMITED TO, THOSE DISCUSSED UNDER "RISK FACTORS", "MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS", AND ELSEWHERE IN THIS REPORT. THE CAUTIONARY STATEMENTS MADE IN THIS REPORT SHOULD BE READ AS BEING APPLICABLE TO ALL FORWARD-LOOKING STATEMENTS WHEREVER THEY APPEAR IN THIS REPORT.

PART I

ITEM 1. DESCRIPTION OF BUSINESS

Spire Corporation ("Spire" or the "Company") is a Massachusetts corporation incorporated in 1969. Our principal offices are located at One Patriots Park, Bedford, Massachusetts, and our phone number is (781) 275-6000. Our SEC filings are available through our website, www.spirecorp.com. Our common stock trades on the Nasdaq Global Market under the symbol "SPIR".

PRINCIPAL PRODUCTS AND SERVICES

Overview

The Company develops, manufactures and markets highly-engineered products and services in three principal business areas: (i) solar, (ii) biomedical and (iii) optoelectronics, generally bringing to bear expertise in materials technologies, surface science and thin films across all three business areas. In some cases, such as IONGUARD(R) processing of orthopedic devices, commercial services are well established, while in other cases, commercialization is just beginning.

In the solar area, the Company develops, manufactures and markets specialized equipment for the production of terrestrial photovoltaic modules from solar cells. The Company's equipment has been installed in approximately 190 factories in 46 countries. The Company also provides custom and building integrated photovoltaic (BIPV) modules, stand-alone emergency power back up and photovoltaic systems integration services using technology developed by the Company.

In the biomedical area, the Company provides value-added surface treatments to manufacturers of orthopedic and other medical devices that enhance the durability, antimicrobial characteristics or other material characteristics of their products; develops and markets coated hemodialysis catheters and related devices for the treatment of chronic kidney disease; and performs sponsored research programs into practical applications of advanced biomedical and biophotonic technologies.

In the optoelectronics area, the Company provides custom compound semiconductor foundry and fabrication services on a merchant basis to customers involved in biomedical/biophotonics instruments, telecommunications and defense applications. Services include compound semiconductor wafer growth, other thin film processes and related device processing and fabrication services. The Company also provides materials testing services and performs services in support of sponsored research into practical applications of optoelectronic technologies.

Solar Equipment and Solar Systems

Solar photovoltaics, the direct conversion of sunlight into electricity, is an important source of distributed power that can be employed locally or connected to a power grid. Spire believes that it is one of the world's leading suppliers of the manufacturing equipment and technology needed to manufacture solar photovoltaic power systems. Spire's individual items of manufacturing equipment and its SPI-LINETM integrated turnkey wafer, cell, and module production lines are designed to

meet the needs of a broad range of customers ranging from small manufacturers relying on mostly manual processes to the largest photovoltaic manufacturing companies in the world.

Spire's equipment spans the full process for fabricating photovoltaic modules including:

- Sorting solar cells into performance groups;
- Assembling and soldering strings of cells interconnected with metal ribbons or "tabs";
- Completing the module circuit by soldering bus ribbons to connect the strings together;
- Cutting polymer, fiberglass, and back cover to length and assembling them with the glass and module circuit in preparation for encapsulation;
- Laminating the module assembly and curing the encapsulating polymer;
- Final assembly, including edge trimming, installing an edge gasket and frame, and attaching a junction box;
- Performing a high voltage isolation test to guarantee voltage isolation between the cell circuit and the module frame; and
- Electrically testing the module performance by measuring a current-voltage curve under simulated sunlight.

The fabrication of photovoltaic modules uses solar cells and module materials as input and produces functional PV modules, ready for use. The Company provides the necessary equipment and training for implementing these process steps as individual equipment items and as fully integrated production lines. The Company also provides materials to support the manufacturing activities of our customers on an ongoing basis.

Spire solar systems provide clients with grid-connected distributed photovoltaic ("PV") systems and custom modules to meet their demand for solar electricity. The business is primarily a system design and engineering service whose team of experienced professionals offers complete project design, management, installation coordination, and customer service.

Spire solar systems was originally founded in collaboration with BP Solarex to address the renewable energy needs of the City of Chicago, State of Illinois, and the local utility, and was based in Chicago. The Company has since moved all production operations to its Bedford, MA location. The Company continues to pursue the PV system product line through its Bedford operations primarily focused on providing photovoltaic systems integration services.

Spire Biomedical

Spire Biomedical is both a manufacturer of medical devices and a provider of advanced medical device surface treatment processes. Spire Biomedical's medical device business develops, manufactures, and sells premium products for

vascular access in chronic kidney disease patients. Spire Biomedical's surface treatment business modifies the surfaces of medical devices to improve their performance.

Spire Biomedical's line of long-term hemodialysis catheters is defined to combine high level performance with increased catheter placement options. The Company's proprietary catheter products provide higher flow at lower pressures and superior kink-resistance. Its patented separated distal tip design minimizes recirculation and provides a wider margin of functionality compared to conventional staggered tip designs. The Company believes that these key features present the renal care community with attractive value and performance for patient care. The Company added a heparin-coated catheter to its catheter product line in the second half of 2006. This catheter has been demonstrated in invitro and animal studies to reduce catheter clotting, a significant complication in hemodialysis vascular access. The Company has also announced it would sell a silver coated catheter in 2007.

The Company offers its medical customers a family of process services utilizing ion beam technologies to enhance both the surface characteristics and the performance of medical devices. The Company's advanced surface modification technology services employ proprietary Ion Implantation and Ion Beam Assisted Deposition ("IBAD") techniques to improve the performance of medical components. Spire's customized surface treatments meet a variety of needs, including reduced friction, wear and abrasion, infection resistance, enhanced tissue and bone growth, increased thromboresistance, conductivity, improved radiopacity and the improvement of other performance characteristics. Spire-treated products currently include orthopedic prostheses (such as replacement hips, knees, elbows), catheters, guidewires, ear-nose-throat devices, vascular grafts, and other specialty medical devices.

Bandwidth Semiconductor

Bandwidth Semiconductor ("Bandwidth"), the principal business unit of the Company's optoelectronics business segment, operates in a state-of-the-art semiconductor foundry and fabrication facility in Hudson, New Hampshire equipped with advanced and sophisticated metal-organic chemical vapor deposition ("MOCVD") reactors and fabrication equipment. Our fabrication facility has been designed to have the flexibility to engage in quick-turn research and prototyping as well as for economical full-rate volume production services in three primary areas: MOCVD epitaxial wafers, device foundry services, and thin film circuits.

Our MOCVD epitaxial wafer services include a wide range of compound semiconductor (chiefly gallium arsenide and indium phosphide-based compounds) epitaxial structures fabricated to our customers' designs or in some cases to our own designs. We recognize that time-to-market is critical to our customers' success, so we strive to provide the fastest turnaround times possible. Bandwidth Semiconductor has a number of standard structures available to meet many device needs and speed prototype development. Our epitaxial engineers work closely with customers to develop and improve proprietary structures for specific applications. Typical applications include: Vertical Cavity Surface Emitting Lasers ("VCSEL"), optical waveguides, high power edge emitting lasers, photocathodes, high electron mobility transistors ("HEMT"), field effect transistors ("FET"), "PIN" photodetectors, avalanche photo-detectors ("APD") and other gallium arsenide-on-silicon, lattice mismatched indium gallium arsenide photodetectors, strained quantum well and other compound semiconductor material structures.

Our foundry services can take compound semiconductor wafers up to 4 inches in diameter through processing, on-wafer test, and die separation. We can use customer-supplied photomasks or develop a new set of masks for an entire process sequence. We design the process steps and conditions to meet the desired device characteristics and implement the process in our fabrication facility, saving our customers development time and providing a source of proprietary devices without the expense of a dedicated internal fabrication. Typical OEM devices we have fabricated include single-element photodetectors, photodetector arrays, VCSELs, edge-emitting lasers, thermo-photovoltaic ("TPV") cells and communications-quality light emitting diodes ("LED").

Our thin film circuit services include the fabrication of custom structures, chip resistors and resistor arrays to customer orders using thin film technology on alumina ceramic, aluminum nitride, ferrite, glass, quartz, sapphire and silicon substrates using a variety of metals and alloys.

On August 29, 2006, Bandwidth entered into a five-year manufacturing agreement in which it will be the exclusive supplier to Principia Lightworks, Inc. ("Principia"), of semiconductor wafers, enabling Principia, a Woodland Hills, California firm, to begin high volume production of its patented device, an electron beam pumped vertical cavity surface emitting laser ("eVCSEL") as a light source for production display applications, including rear-projection consumer televisions. Bandwidth will manufacture epitaxial wafers which will be further processed by Principia to produce red, blue, and green colored lasers

PRINCIPAL DISTRIBUTION METHODS

The Company's products and services are sold primarily by its direct, internal sales staff with four notable exceptions: in certain offshore markets, the Company's solar equipment is sold via independent sales representatives, the Company's hemodialysis catheter products are sold via independent distributors, proposals for sponsored research and development work are prepared by the Company's scientists and researchers, and, in certain locations, the Company has granted licenses to third parties to sell their products.

PHYSICIAN RELATIONSHIPS

We have engaged certain physicians to serve as consultants to the Company. These physicians enter into written contracts that specify their duties and fix their compensation for periods of one or more years. The compensation for these consultants is the result of arm's length negotiations and generally depends upon competitive factors in the local market, the physician's professional qualifications and the specific duties and responsibilities of the physician.

COMPETITIVE CONDITIONS

The markets in which the Company operates are highly competitive and characterized by changes due to technological improvements and developments. The Company competes with many other manufacturers and service providers in each of its product and service areas; many of these competitors have greater resources and sales. Additionally, the Company's products and services compete with products and services utilizing alternative technologies. For example, the Company's solar photovoltaic systems compete with other forms of renewable energy such as wind, solar thermal, and geo-thermal. Price, service and product performance are significant elements of competition in the sale of each of the Company's products. The Company believes that there are considerable barriers to entry into the markets it serves, including a significant investment in specialized capital equipment and product design and development, and the need for a staff with sophisticated scientific and technological knowledge.

SOURCES AND AVAILABILITY OF RAW MATERIALS

Principal raw materials purchased by the Company include polymer extrusions, molded plastic parts, silicon photovoltaic cells, compound semiconductor wafer substrates, high purity industrial gases, custom metal welded structures, fasteners, position sensors, electrical motors, electrical power conditioning inverters, and electrical controls. All of these items are available from several suppliers and the Company generally relies on more than one supplier for each item. There has been increased demand for semiconductor grade silicon during the past year leading to shortages. The shortage in semiconductor grade silicon had an adverse effect on the ordering patterns of our solar equipment customers in the early part of 2006 and could have an adverse effect on solar ordering patterns in the future.

SOURCES AND AVAILABILITY OF MANUFACTURING SERVICES

The Company employs an outsourcing-model supply chain in its biomedical products business by which certain manufacturing services, such as polymer extrusion, assembly, packaging and sterilization, are obtained from third party contractors. The Company has identified multiple potential sources for the services it requires; however, certain elements of the supply chain currently involve only one qualified contractor. As sales volume expands, the Company plans to reassess its supply chain to eliminate potential "bottlenecks" and reduce dependence on sole-source, single site contract services.

DEPENDENCE ON MAJOR CUSTOMERS

One customer accounted for more than 10% of consolidated net sales and revenues during the year ended December 31, 2006, and no customers accounted for more than 10% of net sales and revenues in 2005.

KEY LICENSES AND PATENTS, GOVERNMENT RIGHTS TO INTELLECTUAL PROPERTY

In October 2002, the Company sold an exclusive patent license for its hemodialysis split-tip catheter to Bard Access Systems, Inc. ("Bard"), a wholly owned subsidiary of C.R. Bard, Inc., in exchange for $5 million upon the execution of the agreement, with another $5 million due upon the attainment of certain milestones no later than 18 months after signing, and a total of $6 million upon achievement of certain milestones by Bard through 2005. In June 2005, the Company received the final contingent payment of $3 million. In connection with the sale, the Company also received a sublicense that permits the Company to continue to manufacture and market hemodialysis catheters for the treatment of chronic kidney disease.

On May 26, 2005, the Company entered into a global consortium agreement (the "Agreement") with Nisshinbo Industries, Inc. ("Nisshinbo") for the development, manufacturing, and sales of solar photovoltaic module manufacturing equipment. Nisshinbo's prior relationship with Spire was as a sub-licensee of Marubeni Corporation with whom the Company had a license arrangement that was originally signed in 1997, extended in 2003, and terminated in May 2005. Nisshinbo's role as sub-licensee was to manufacture equipment for Marubeni to sell to the Japanese market based upon the Company's proprietary technology. Under the terms of the Agreement, Nisshinbo purchased a license to manufacture and sell the Company's module manufacturing equipment on a semi-exclusive basis for an upfront fee plus additional royalties based on ongoing equipment sales over a ten-year period. In addition, the Company and Nisshinbo agreed, but are not obligated, to pursue joint research and development, product improvement activities and sales and marketing efforts. The companies may share market costs such as product collateral and trade show expenses. It may also collaborate on sales leads and have the other company manufacture and service its equipment in the field. Both companies have reciprocal rights to participate in the other

company's R&D efforts on a going-forward basis. Nisshinbo can request the Company to further develop a technology but Nisshinbo must (a) share in the costs of these development efforts equally with the Company (and thereafter have joint ownership) otherwise the Company will own the technology under a partial contribute or no

participation by Nisshinbo with the Company receiving a royalty from Nisshinbo if it utilizes the technology. At the end of the license all non-jointly owned technology developed under the Agreement will revert back to the owner, with the other party being required to purchase a new license based upon the fair market value of that technology in order to continue to utilize the technology.

On June 27, 2005, the Company received JPY 400,000,000 from the sale of this permanent license. The Company determined that the Nisshinbo Agreement contains multiple elements consisting of (1) the granting of a license to utilize the Company's technology and (2) the semi-exclusive right to utilize the technology for a period of 10 years. The Company believes the granting of the license meets the criteria of Emerging Issues Task Force ("EITF") 00-21, "Accounting for Revenue Arrangements with Multiple Elements", paragraph 9(a), as the license to utilize the technology has value to Nisshinbo on a stand-alone basis. Further, Question 1 to Securities and Exchange Commission ("SEC") Staff Accounting Bulletin Topic 13A-3f "Nonrefundable Up-Front Fees", was directly considered as guidance for determining if the upfront fee under the Nisshinbo Agreement should be recognized upon the signing of contract or recognized over the term of the license. It is the Company's belief that a separate earnings process was complete as Nisshinbo was purchasing access to utilize technology it already had in its possession; therefore, recognition of the gain on the sale was appropriate. The Company has determined the fair value of the license and royalty based on an appraisal. As a result, a $3,319,600 gain was recognized as a gain on sale of license in the accompanying consolidated statements of operations for the year ended December 31, 2005. The balance of $350,000 was determined to represent an advanced royalty payment and was recorded as an advance on contracts in progress. This amount is being credited as royalty income over the ten-year license period on a straight-line basis.

Through over 30 years of research and development, the Company has accumulated extensive scientific and technological expertise. The Company protects its technological advances as trade secrets, in part through confidentiality agreements with employees, consultants and third parties. The Company also seeks and enforces patents as appropriate. The Company currently has 35 issued United States patents, one of which is jointly owned, eleven patents pending in the United States, and five foreign patents pending, all of which cover elements of its materials and processing technologies.

The United States government retains the right to obtain a patent on any invention developed under government contracts as to which the Company does not seek and obtain a patent, and may require the Company to grant a third party license of such invention if steps to achieving practical application of the invention have not been taken. The United States government also retains a non-exclusive, royalty-free, non-transferable license to all technology developed under government contracts, whether or not patented, for government use, including use by other parties to United States government contracts. Furthermore, the Company's United States government contracts prohibit the Company from granting exclusive rights to use or sell any inventions unless the grantee agrees that any product using the invention will be manufactured substantially in the United States.

GOVERNMENT REGULATION OF MEDICAL PRODUCTS

The Company's hemodialysis catheters and accessory products require the approval of the United States Food & Drug Administration ("FDA") prior to sale within the United States. Sales within the European Union ("EU") require the CE Mark certification and sales within Canada require a medical device license issued by Health Canada.

Within the United States, the process requires that a pre-market notification (the "510(k) Submission") be made to the FDA to demonstrate that the device is as safe and effective, substantially equivalent to a legally marketed device that is not subject to pre-market approval. FDA guidance documents are used to prepare the 510(k) Submission. Applicants must compare this device to one or more similar devices commercially available in the United States, known as the "predicate" device(s), and make and support their substantial equivalency claims. Applicants must submit descriptive data and performance data to establish that the device is substantially equivalent to a predicate device. In some instances, data from human clinical trials must also be submitted in support of a 510(k) Submission. If so, the data must be collected in a manner that conforms to specific requirements in accordance with federal regulations. The FDA must issue a 510(k) letter order finding substantial equivalence before commercial distribution can occur. Upon receipt of the 510(k) application by the FDA, up to a 90-day response period is allowed before the FDA must respond.

The Company currently holds all required approvals and certifications to market its hemodialysis catheters and accessory products in the USA, EU, Canada, Australia and Hong Kong. The Company is committed to maintaining these critical approvals and certifications and the stringent quality requirements applicable to the development, testing, manufacturing, labeling, marketing and distribution of these products.

GOVERNMENT REGULATION OF CONTRACTS

The Company's United States government contracts are subject to a large number of federal regulations and oversight requirements. Compliance with the array of government regulations requires extensive record keeping and the maintenance of complex policies and procedures relating to all aspects of the Company's business, as well as to work performed for the Company by any subcontractors. The Company believes that it has put in place systems and personnel to ensure compliance with all such federal regulations and oversight requirements. All contracts with United States government agencies have been audited by the government through December 2004. The Company has not incurred substantial losses as a result of these incurred cost audits.

RESEARCH AND DEVELOPMENT

The Company's policy is to support as much of its research and development as possible through government contract funding, which it recognizes as revenue. Revenues from the Company's research and development contracts funded by the United States government, and their percent of consolidated net sales and revenues were $2,261,000, or 11%, and $3,233,000, or 14%, for the years ended December 31, 2006 and 2005, respectively.

The Company's contracts with the United States government grant to the Company proprietary rights in any technology developed pursuant to such contracts and grant to the United States government a non-exclusive license to utilize the technology for its benefit. The United States government retains the right to obtain the patent on any inventions made under these contracts as to which patent protection is not sought and obtained by the Company. The Company's rights to technology developed under contracts with private companies vary,

depending upon negotiated terms.

The Company's internally funded research and development expenditures were $734,000 and $1,346,000 for the years ended December 31, 2006 and 2005, respectively.

ENVIRONMENTAL QUALITY

Compliance with federal, state and local provisions regulating the discharge of materials into the environment has not materially affected the Company's capital expenditures, earnings or its competitive position. Currently there are no lawsuits related to the environment or material administrative proceedings pending against the Company.

EMPLOYEES

At December 31, 2006, the Company had approximately 126 employees, of whom 113 worked full time. The Company also from time to time employs part-time employees and hires independent contractors. The Company's employees are not represented by any collective bargaining agreement, and the Company has never experienced a work stoppage. The Company believes that its employee relations are good.

RISK FACTORS

In addition to the other information in this Form 10-KSB, the following risk factors inherent in and affecting the business of the Company should be considered. The descriptions in this Form 10-KSB contain forward-looking statements that involve risks and uncertainties. The Company's actual results and the timing of certain events may differ materially from the results and timing described in the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those described below and in "Management's Discussion and Analysis of Financial Condition and Results of Operations" and above in "Business."

RISKS RELATING TO OUR BUSINESS

OUR SUCCESS WILL DEPEND UPON OUR ABILITY TO EFFECTIVELY IMPLEMENT OUR BUSINESS MODEL OF CREATING OR ACQUIRING SCIENTIFICALLY ADVANCED TECHNOLOGY, DEVELOPING AND MANUFACTURING COMMERCIALLY VIABLE PRODUCTS FROM SUCH TECHNOLOGY AND SUCCESSFULLY MARKETING AND DISTRIBUTING SUCH PRODUCTS. THE FAILURE TO SUCCESSFULLY EXECUTE ANY STAGE OF THIS PROCESS COULD HAVE A MATERIALLY NEGATIVE IMPACT ON OUR BUSINESS AND RESULTS OF OPERATIONS.

We believe that our continued success will depend upon our ability to create or acquire scientifically advanced technology, apply our technology cost-effectively across product lines and markets, develop or acquire proprietary products, attract and retain skilled development personnel, obtain patent or other protection for our products, obtain required

regulatory approvals, manufacture and successfully market our products either directly or through outside distributors and sales representatives and supply sufficient inventory to meet customer demand. There can be no assurance that we will realize financial benefit from our technology development and application efforts, that we will continue to be successful in identifying, developing and marketing new products or enhancing our existing products, or that products or technologies developed by others will not render our products or technologies non-competitive or obsolete.

WE HAVE EXPERIENCED LOSSES FROM OPERATIONS, BEFORE THE SALE OF CERTAIN TECHNOLOGY LICENSES, AND WE EXPECT THAT OUR OPERATING RESULTS WILL FLUCTUATE IN THE FUTURE.

We have experienced losses from operations, before the sale of certain technology licenses, in each of the past two fiscal years. These losses have resulted in an accumulated deficit of approximately $9.8 million as of December 31, 2006. Our revenues have not been sufficient to cover our operating expenses, and we anticipate that we may sustain future losses from operations if revenues do not increase significantly. Future fluctuations in operating results may also be caused by a number of factors, many of which are outside our control. Additional factors that could affect our future operating results include the following:

- Availability of raw materials required to perform the manufacturing or services we provide, particularly in the silicon wafer and solar cell markets;
- Availability of raw materials processed by the capital equipment we provide to our buyers, particularly the polysilicon used in the manufacture of the silicon wafers and solar cells;
- Delays, postponements or cancellations of orders and shipments of our products, particularly in our solar equipment and solar systems businesses where individual order sizes may be large and thus may represent a significant portion of annual revenue;
- Changes in our receipt of license fees, milestone payments, and royalty payments relating to our intellectual property;
- Loss of major customers, particularly as a result of customers changing their own product designs in such ways as reduce or eliminate the need for the manufacturing services we provide;
- Reductions in the selling prices of our products and services as a result of competitive pressures;
- Delays in introducing and gaining physician acceptance for new products and product improvements, particularly in our biomedical products business;
- Disruption in the distributor sales channels by which we bring our biomedical products to market;
- Variation in capacity, capacity utilization and manufacturing yields within the third party medical contract manufacturing service providers that constitute the supply chain for our biomedical products that, in turn, cause variation in our ability to timely ship our products;
- Increased competition from current and future competitors, including competition resulting from services and products utilizing competing technologies;
- Variation in the timing of customer orders and inventory levels at our customers, particularly within our biomedical manufacturing services business; and
- Termination of existing grants with government agencies or delays in funding of grants awarded.

If we are unable to reach and sustain profitability from our operations, we risk depleting our working capital balances and our business may not continue as a going concern. Although future sales of technology licenses may be pursued, such sales cannot be assured. In addition, we may need to raise additional capital, or arrange other sources of funds, in order to sustain our operations. There can be no assurance that we will be able to raise such funds if they are required. Even if new financing were available, it may not be on commercially reasonable terms or terms that are acceptable to us.

OUR ABILITY TO EXPAND REVENUE AND SUSTAIN PROFITABILITY DEPENDS SUBSTANTIALLY ON THE STABILITY AND GROWTH OF THE VARIOUS MARKETS FOR OUR PRODUCTS AND SERVICES.

SHOULD WE BE UNABLE TO EXPAND OUR REVENUE, OUR ABILITY TO REACH AND SUSTAIN PROFITABILITY WOULD BE IMPAIRED.

- The world demand for photovoltaic manufacturing equipment depends on sustained expansion in the demand for decentralized power sources, especially in developing countries, and on domestic and foreign government funding of initiatives to invest in solar energy as an alternative to the burning of fossil fuels and other energy production methods. There can be no assurance that government funding for such initiatives will be available, or that solar energy will prove to be a cost-effective alternative to other energy sources and thus gain acceptance where traditional energy sources continue to be available. Should demand for solar photovoltaic power sources not increase, demand for new photovoltaic manufacturing equipment would not materialize and our business would be adversely affected.

- Most of our research and development revenues are generated by contracts with the United States government. There can be no assurance that the United States government will fund our research and development projects at the same level as it has in the past. Should federal research funding priorities change, and should we be unable to adjust our research focus to reflect the shift, our business could be adversely affected.

- Our solar systems business is dependent on continued and increased order activity from the development of other industrial and residential sales opportunities. Should we be unable to capture a significant stream of new solar system installation projects from a more diverse group of project sponsors, our solar systems business could be adversely affected.

- The growth of our biomedical products business depends on increased physician acceptance of our hemodialysis catheter products, our ability to manage the production of higher unit volumes of catheter products and our ability to effectively distribute those products. Should our hemodialysis catheters not gain market acceptance or should we not be able to meet demand for our products, our biomedical products business could be adversely affected.

- The growth of our biomedical services business depends upon our customers' ability to serve demand for the end-use items, such as orthopedic prostheses, on which our services are performed and thus is substantially beyond our control.

- Our ability to expand our biomedical business depends upon our ability to introduce new products and services. The marketing of new biomedical products requires pre-approval of government regulatory authorities, the completion of which can be lengthy and more costly than originally planned.

- The growth of our optoelectronics business depends upon growth in demand for compound semiconductor wafers from manufacturers of microwave and optoelectronic circuits and sensors that, in turn, are used in diverse biomedical, telecommunications and aerospace products. Should these end-use markets not experience anticipated levels of growth and, in the case of telecommunications uses, experience a recovery from currently depressed business levels, our optoelectronics business could be adversely affected.

- The Company has made a substantial investment in equipment at Bandwidth in anticipation of future revenues under its agreement with Principia Lightworks. If these anticipated revenues are not achieved the Company will have significant unutilized capacity and may not recover its investment in the equipment.

WE HAVE NOT CONSISTENTLY COMPLIED WITH NASDAQ'S MARKETPLACE RULES FOR CONTINUED LISTING, WHICH EXPOSES US TO THE RISK OF DELISTING FROM THE NASDAQ GLOBAL MARKET.

Our stock is currently listed on the Nasdaq Global Market. In August 2003, we received notice from Nasdaq that the Company was not in compliance with Nasdaq's Marketplace Rules as a result of filing its second quarter Form 10-QSB prior to the completion of the review by the Company's independent auditors and, accordingly, was subject to possible delisting. The Company subsequently filed all reports and was able to maintain its continued listing on the Nasdaq Global Market.

In April 2005, the Company received notice from Nasdaq that it was not in compliance with the minimum stockholders' equity level of $10,000,000 required for continued listing on the Nasdaq Global Market. Following the submission of a plan of compliance and making later filings showing this deficiency no longer existed, Nasdaq subsequently notified the Company that it had achieved compliance with the $10,000,000 stockholders' equity threshold during 2005 and the matter was closed. However, as of December 31, 2006 and 2005, the Company was not in compliance with the minimum stockholders' equity threshold. As a result, the Company did not meet Standard No. 1 for continued listing on the Nasdaq Global Market. However, the Company believes that it does meet Standard No. 2 for continued listing on the Nasdaq Global Market as the market value of its listed securities currently exceeds $50,000,000 and it meets all of the other requirements of Standard No. 2. In order to remain in compliance with Standard No. 2, the Company's market value of listed securities cannot fall below $50,000,000 for ten consecutive trading days at any point. If the Company fails to maintain compliance with these rules and its common stock is delisted from the Nasdaq Global Market, there could be a number of negative implications, including reduced liquidity in the common stock as a result of the loss of market efficiencies associated with the Nasdaq Global Market, the loss of federal preemption of state securities laws, the potential

loss of confidence by suppliers, customers and employees, as well as the loss of analyst coverage and institutional investor interest, fewer business development opportunities and greater difficulty in obtaining financing.

OUR BUSINESS RELIES IN PART ON A LIMITED NUMBER OF CUSTOMERS, AND UNFAVORABLE DEVELOPMENTS IN RELATION TO A MAJOR CUSTOMER MAY ADVERSELY AFFECT OUR REVENUES, OPERATING RESULTS AND CASH FLOWS.

The Company had one customer that accounted for more than 10% of consolidated net sales and revenues in fiscal 2006. In addition, we have had such customers in other years and may have them again in the future. If an unfavorable development were to occur with respect to any significant customer it would likely have a material adverse affect on our business, financial condition, operating results, cash flows and future prospects.

WE SELL OUR PRODUCTS AND SERVICES AGAINST ESTABLISHED COMPETITORS, AND ENTITIES NOW OPERATING IN RELATED MARKETS MAY ENTER OUR MARKETS. SOME OF OUR CURRENT AND POTENTIAL COMPETITORS HAVE GREATER FINANCIAL AND TECHNICAL RESOURCES THAN WE DO. SHOULD WE BE UNABLE TO OFFER OUR CUSTOMERS PRODUCTS AND SERVICES THAT REPRESENT ATTRACTIVE PRICE VERSUS VALUE, OUR BUSINESS WOULD SUFFER.

Although we believe that there are considerable barriers to entry into the markets we serve, including a significant investment in specialized capital equipment, product design and development, and the need for a staff with sophisticated scientific and technological knowledge, there can be no assurance that new or existing entities would not seek to enter our markets or that we would be able to compete effectively against such entities.

- In our biomedical products business, our hemodialysis catheter products directly compete against the already established product offerings of larger competitors. Although we believe that our catheter products offer significant advantages, widespread physician acceptance of these products in preference to the more established products of competitors cannot be assured.

- In our optoelectronics business, our manufacturing services may compete against the internal manufacturing capabilities of our customers. Although we believe that we offer significant advantages in terms of timely response, reduced total cost and reduced capital investment over the captive fabrication facilities of our customers, customers may elect to maintain their internal capabilities despite economic incentives to outsource these services from us.

IF WE ARE UNABLE TO DEVELOP AND INTRODUCE NEW PRODUCTS SUCCESSFULLY OR TO ACHIEVE MARKET ACCEPTANCE OF OUR NEW PRODUCTS, OUR OPERATING RESULTS WOULD BE ADVERSELY AFFECTED.

We compete in markets characterized by technological advances and improvements in manufacturing efficiencies. Our ability to operate profitably depends in large part on our timely access to, or development of, technological advances, and on our ability to use those advances to improve existing products, develop new products and manufacture those products efficiently. There can be no assurance that we will realize financial benefit from our development programs, will continue to be successful in identifying, developing and marketing new products or enhancing our existing products, or that products or technologies developed by others will not render our products or technologies non-competitive or obsolete. The failure to introduce new or enhanced products on a timely and cost competitive basis, or to attain market acceptance for commercial products, could have a material adverse effect on our business, results of operations or financial condition.

IF WE ARE NOT SUCCESSFUL IN PROTECTING OUR INTELLECTUAL PROPERTY RIGHTS, OUR ABILITY TO COMPETE MAY BE HARMED.

We rely on a combination of patent, copyright, trademark and trade secret protections as well as confidentiality agreements and other methods, to protect our proprietary technologies and processes. For example, we enter into confidentiality agreements with our employees, consultants and business partners, and control access to and distribution of our proprietary information. We have been issued 35 United States patents, one of which is jointly owned, and have a number of pending patent applications. However, despite our efforts to protect our intellectual property, we cannot assure that:

- The steps we take to prevent misappropriation or infringement of our intellectual property will be successful;
- Any existing or future patents will not be challenged, invalidated or circumvented;
- Any pending patent applications or future applications will be approved;
- Others will not independently develop similar products or processes to ours or design around our patents; or
- Any of the measures described above would provide meaningful

protection.

A failure by us to meaningfully protect our intellectual property could have a material adverse effect on our business, financial condition, operating results and ability to compete. In addition, effective patent, copyright, trademark and trade secret protection may be unavailable or limited in certain countries.

From time to time the Company may be subject to lawsuits by other parties seeking to enforce their intellectual property rights. WE DEPEND ON OTHERS, PARTICULARLY ON AGENCIES OF THE UNITED STATES GOVERNMENT, FOR FUNDING OUR RESEARCH AND DEVELOPMENT EFFORT.

Substantially all of our research and development work is funded by agencies of the United States government either directly or via their contractors. Loss of outside funding may materially adversely affect our ability to further develop our proprietary technologies and to apply these technologies to our current products and products under development. If we are unable to maintain our current level of such funding for any reason, we would need to generate funds for such research from other sources, reduce our research and development effort or increase our internal funding for research and development. An increase in internally funded research and development would have a negative impact on our profitability.

Additionally, the process of bidding for, obtaining, retaining and performing United States government contracts is subject to a large number of United States government regulations and oversight requirements. Compliance with these government regulations requires extensive record keeping and the maintenance of complex policies and procedures relating to all aspects of our business, as well as to work performed for us by any subcontractors. Any failure to comply with applicable regulations, or to require our subcontractors so to comply, could result in a variety of adverse consequences, ranging from remedial requirements to termination of contracts, reimbursement of fees, reduction of fees on a going forward basis and prohibition from obtaining future United States government contracts. While we believe that we have in place systems and personnel to ensure compliance with all United States government regulations relating to contracting, we cannot assure that we will at all times be in compliance or that any failure to comply will not have a material adverse effect on our business, results of operations or financial condition.

THE U.S. GOVERNMENT HAS CERTAIN RIGHTS RELATING TO OUR INTELLECTUAL PROPERTY.

The United States government retains the right to obtain a patent on any invention developed under government contracts as to which the Company does not seek and obtain a patent, and may require the Company to grant a third party license of such invention if steps to achieving practical application of the invention have not been taken. The United States government also retains a non-exclusive, royalty-free, non-transferable license to all technology developed under government contracts, whether or not patented, for government use, including use by other parties to United States government contracts. Furthermore, the Company's United States government contracts prohibit the Company from granting exclusive rights to use or sell any inventions unless the grantee agrees that any product using the invention will be manufactured substantially in the United States.

WE DEPEND ON THIRD-PARTY CONTRACTORS TO MANUFACTURE SUBSTANTIALLY ALL OF OUR CURRENT BIOMEDICAL PRODUCTS.

We depend on third-party subcontractors in the U.S. for the manufacturing,

assembly and packaging of our biomedical products. Any difficulty in obtaining parts or services from these subcontractors could affect our ability to meet scheduled product deliveries to customers, which could in turn have a material adverse effect on our customer relationships, business and financial results. Several significant risks are associated with reliance on third-party subcontractors, including:

- The lack of assured product supply and the potential for product shortages;
- Reduced control over inventory located at contractors' premises;
- Limited control over delivery schedules, manufacturing yields and production costs;
- Direct control over product quality;
- The temporary or permanent unavailability of, or delays in obtaining, access to key process technologies; and
- Dependence on single source contractors to provide critical services.

OUR SUCCESS DEPENDS ON OUR ABILITY TO HIRE AND RETAIN QUALIFIED TECHNICAL PERSONNEL, AND IF WE ARE UNABLE TO DO SO, OUR PRODUCT DEVELOPMENT EFFORTS AND CUSTOMER RELATIONS WILL SUFFER.

Our products require sophisticated manufacturing, research and development, marketing and sales, and technical support. Our success depends on our ability to attract, train and retain qualified technical personnel in each of these areas.

Competition for personnel in all of these areas is intense and we may not be able to hire or retain sufficient personnel to achieve our goals or support the anticipated growth in our business. The market for the highly trained personnel we require is very competitive, due to the limited number of people available with the necessary technical skills and understanding of our products and technology. If we fail to hire and retain qualified personnel, our product development efforts and customer relations will suffer.

WE ARE SUBJECT TO ENVIRONMENTAL LAWS AND OTHER LEGAL REQUIREMENTS THAT HAVE THE POTENTIAL TO SUBJECT US TO SUBSTANTIAL LIABILITY AND INCREASE OUR COSTS OF DOING BUSINESS.

Our properties and business operations are subject to a wide variety of federal, state, and local environmental, health and safety laws and other legal requirements, including those relating to the storage, use, discharge and disposal of toxic, volatile or otherwise hazardous substances used in our manufacturing processes. We cannot assure that these legal requirements will not impose on us the need for additional capital expenditures or other requirements. If we fail to obtain required permits or otherwise fail to operate within these or future legal requirements, we may be required to pay substantial penalties, suspend our operations or make costly changes to our manufacturing processes or facilities. Although we believe that we are in compliance and have complied with all applicable legal requirements, we may also be required to incur additional costs to comply with current or future legal requirements.

OUR INTERNATIONAL SALES SUBJECT US TO RISKS THAT COULD ADVERSELY AFFECT OUR REVENUE AND OPERATING RESULTS.

Sales to customers located outside the U.S. have historically accounted for a significant percentage of our revenue (approximately 33% in 2006) and we anticipate that such sales will continue to be a significant percentage of our revenue. International sales involve a variety of risks and uncertainties, including risks related to:

- Reliance on strategic alliance partners such as representatives and licensees;
- Compliance with changing foreign regulatory requirements and tax laws;
- Reduced protection for intellectual property rights in some countries;
- Longer payment cycles to collect accounts receivable in some countries;
- Political instability;
- Economic downturns in international markets; and
- Changing restrictions imposed by United States export laws.

Failure to successfully address these risks and uncertainties could adversely affect our international sales, which could in turn have a material and adverse effect on our results of operations and financial condition.

THE USE OF OUR CATHETER AND OTHER MEDICAL RELATED PRODUCTS ENTAILS A RISK OF PHYSICAL INJURY; THE DEFENSE OF CLAIMS ARISING FROM SUCH RISK MAY EXCEED OUR INSURANCE COVERAGE AND DISTRACT OUR MANAGEMENT.

The use of orthopedic and other medical devices may entail a risk of physical injury to patients. To the extent we have been involved in the design and manufacturing of these products, we may be exposed to potential product liability and other damage claims. Furthermore, the use of our photovoltaic module manufacturing equipment could result in operator injury. We have had cases brought against us in which it was alleged that we have been a party to the manufacture and sale of defective heart valves with other defendants. A case has recently been filed alleging that our catheter was the cause of a patient's death in Ohio. No other claims of product liability or other damages have been initiated against us. We maintain product liability and umbrella insurance coverage; however, there can be no assurance that any product liability claim assessed against us would not exceed our insurance coverage, or that insurance coverage would continue to be available. While we typically obtain agreements of indemnity from manufacturers of biomedical products for which we provide manufacturing services, there can be no assurance that any such indemnity agreements will be enforceable or that such manufacturers will have adequate funds to meet their obligations under such agreements. The cost of defending a product liability, negligence or other action, and/or assessment of damages in excess of insurance coverage, could have a material adverse effect on our business, results of operations, or financial condition.

RISKS RELATED TO OUR COMPANY

OUR COMPANY IS SUBJECT TO CONTROL BY PRINCIPAL STOCKHOLDER.

Roger G. Little, the founder, Chairman of the Board, Chief Executive Officer and President of the Company, controls approximately 27% of the Company's outstanding Common Stock. As a result, Mr. Little is in a position to exert significant

influence over actions of the Company which require stockholder approval and generally to direct the affairs of the Company, including the election of directors, potential acquisitions and sales or otherwise preventing or delaying changes in control of the Company that may be otherwise viewed as beneficial by shareholders other than Mr. Little.

WE DO NOT PAY DIVIDENDS AND WE MAY NOT PAY DIVIDENDS IN THE FUTURE.

We have paid no cash dividends since the Company's inception. We anticipate retaining any future earnings for reinvestment in operations and do not

anticipate that dividends will be paid in the foreseeable future. Thus, the return on investment should be expected to depend on changes in the market price of our common stock.

THE MARKET PRICE FOR OUR COMMON STOCK HAS BEEN VOLATILE AND FUTURE VOLATILITY COULD CAUSE THE VALUE OF INVESTMENTS IN THE COMPANY TO FLUCTUATE.

Our stock price has experienced significant volatility. While our revenues have increased since 2000, we expect that uncertainty regarding demand for our products will cause our stock price to continue to be volatile. In addition, the value of your investment could decline due to the impact of any of the following factors, among others, upon the market price of our common stock:

- Additional changes in investment analysts' estimates of our revenues and operating results;
- Our failure to meet investment analysts' performance expectations; and
- Changes in market valuations of other companies in the biomedical, alternative energy or semiconductor industries.

In addition, many of the risks described elsewhere in this section could materially and adversely affect our stock price, as discussed in those risk factors. U.S. financial markets have recently experienced substantial price and volume volatility. Fluctuations such as these have affected and are likely to continue to affect the market price of our common stock.

SOME OF THE REQUIREMENTS OF SARBANES-OXLEY AFFECT US AS A SMALL COMPANY DISPROPORTIONATELY, AND WE MAY NOT BE ABLE TO COMPLY IN A TIMELY MANNER DESPITE SUBSTANTIAL EFFORT AND EXPENSE.

The Sarbanes-Oxley Act of 2002 imposed many new requirements on public companies, the most significant of which involves the documentation, testing and reporting of the effectiveness of our internal control over financial reporting. Although we are not required to be in compliance with Section 404 of Sarbanes-Oxley relating to internal control over financial reporting until our annual report for the year ended December 2007, we will begin documenting and testing our internal controls in a way that we have never before been required to do. We expect this effort will involve substantial time and expense. Because we have limited resources we can devote to this effort we cannot be sure that we will be able to complete the task in a timely manner or that our internal controls will meet the standards that are currently required. We have various material weakness and significant control deficiencies identified by our registered public accounting firm. These deficiencies include, among other things, inadequate staffing in our finance area and the need to improve and update the documentation of our policies, procedures, and related internal controls surrounding our accounting and financial reporting functions. Although we are not yet required to report on our assessment of the effectiveness of our internal control over financial reporting until at least the end of the next fiscal year (or provide auditor attestation until the end of fiscal 2008), there is a reasonable likelihood that our registered public accounting firm will inform us of one or more material weaknesses before we complete our compliance and remediation efforts. We are working to address the issues raised by these control deficiencies, but we may not be successful in remediating them within the required time frame.

ITEM 2. DESCRIPTION OF PROPERTY

Our corporate headquarters are located at One Patriots Park, Bedford, Massachusetts. This 92,000 square foot facility is leased and contains our administrative offices, sales and marketing offices, research and development facilities and the manufacturing facilities of the Company's biomedical and solar equipment and systems businesses. The lease expires in November 2007. We lease an approximately 90,000 square foot facility located at 25 Sagamore Park

Road, Hudson, New Hampshire that contains a semiconductor wafer growth and fabrication facility and administrative offices used primarily by our Optoelectronics business unit including Bandwidth Semiconductor. The lease expires in May 2008. The Company believes that its facilities are suitable for their present intended purposes and adequate for the Company's current level of operations.

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ITEM 3. LEGAL PROCEEDINGS

From time to time, the Company is subject to legal proceedings and claims arising from the conduct of its business operations. The Company does not expect the outcome of these proceedings, either individually or in the aggregate, to have a material adverse effect on its financial position, results of operations, or cash flows.

The Company was named a defendant in 58 cases filed from August 2001 to July 2003 in various state courts in Texas by persons claiming damages from the use of allegedly defective mechanical heart valves coated by a process licensed by the Company to St. Jude Medical, Inc., the heart valve manufacturer, which has also been named as a defendant in these cases. In June 2003, a motion for summary judgment was granted to the Company and most of these cases were dismissed, based on the principle of federal preemption. The Texas Court of Appeals upheld the lower court's decision, and, because these cases were not submitted for review to the Texas Supreme Court, the judgments rendered are now final.

As of January 2007, four cases remain pending in various district courts in Harris County, Texas. One of these cases appears to remain pending despite its inclusion in the original summary judgment which was subsequently upheld by the first court of appeals. This may be the result of an administrative omission; counsel for the Company intends to confirm with the court that this case should in fact no longer be pending. Two of the remaining cases where filed after the motion for summary judgment, but since the appeals court has subsequently ruled in the Company's favor, counsel for the Company is asking the plaintiffs in these cases to consider voluntary dismissal, or alternatively, because the cases are not actively prosecuted, to ask the court to dismiss them. The remaining case was not subject to the preemption argument advanced by the Company's counsel and either may be settled or may go to trial.

During the second quarter of 2005 a suit was filed by Arrow International, Inc. against Spire Biomedical, Inc., a wholly owned subsidiary of the Company, alleging patent infringement by the Company. The complaint claims one of the Company's catheter products induces and contributes to infringement when medical professionals insert it. The Company has responded to the complaint denying all allegations and has filed certain counterclaims. The discovery process in this case has continued and is nearly complete. The Company filed a motion for summary judgment, asserting patent invalidity resulting from plaintiff's failure to follow the administrative procedures of the U.S. Patent and Trademark Office ("USPTO") which failure has remained uncorrected. On August 4, 2006, the Court granted the Company's motion and dismissed this lawsuit without prejudice. Plaintiffs applied to revive the applicable patent, which application was granted by the USPTO in August 2006. Plaintiffs refiled their lawsuit against the Company in September 2006. The Company has filed its answer and resumed its defense. The parties have been working to conclude discovery. At this time, however, in response to a joint request, the court has temporarily stayed the proceedings to allow the parties to discuss possible alternative methods toward resolution of the subject matter of the litigation. Based on information presently available to the Company, the Company believes that it does not infringe any valid claim of the plaintiff's patent and that, consequently, it

has meritorious legal defenses with respect to this action in the event it were to be reinstated.

In an amended complaint filed on December 28, 2006, in the Eastern Division of the U.S. District Court for the Southern District of Ohio, the wife and executor of the estate of Darrell Adams, deceased, alleges that the failure of a hemodialysis catheter manufactured by the Company was a cause of his death. Counsel retained by its insurance underwriters, on behalf of the Company, have filed an answer denying all such allegations and asserting various defenses. Based on the knowledge available to it at this time, the Company determined the likelihood of an unfavorable outcome to be remote and accordingly has not recorded an accrued expense.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

No matters were submitted to a vote of the Company's security holders in the fourth quarter of 2006.

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PART II

ITEM 5. MARKET FOR COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

MARKET INFORMATION

The Company's Common Stock, $0.01 par value ("Common Stock"), is traded on the Nasdaq Global Market under the symbol "SPIR." The following chart sets forth the high and low bid prices for the Common Stock for the periods shown:

	High Bid	Low Bid
2006		
First Quarter	$10.61	$ 7.49
Second Quarter	10.25	6.98
Third Quarter	7.45	6.67
Fourth Quarter	8.69	6.50
2005		
First Quarter	$ 6.18	$ 4.32
Second Quarter	8.99	3.68
Third Quarter	11.95	6.28
Fourth Quarter	11.24	6.56

These prices do not reflect retail mark-ups, markdowns or commissions and may not reflect actual transactions. The closing price of the Common Stock on March 1, 2007 was $10.32, and on that date, there were 193 stockholders of record. The number of holders does not include individuals or entities who beneficially own shares but whose shares are held of record by a broker or clearing agency, but does include each such broker or clearing agency as one record holder.

DIVIDENDS

The Company did not pay any cash dividends during 2006 or 2005 and currently does not intend to pay dividends in the foreseeable future so that we may reinvest our earnings in the development of our business. The payment of dividends in the future will be at the discretion of the Board of Directors.

ITEM 6. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS

OF OPERATIONS

THIS MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS SECTION AND OTHER PARTS OF THIS REPORT CONTAIN FORWARD-LOOKING STATEMENTS WITHIN THE MEANING OF SECTION 27A OF THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND SECTION 21E OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED (THE "EXCHANGE ACT"), WHICH STATEMENTS INVOLVE RISKS AND UNCERTAINTIES. THESE STATEMENTS RELATE TO OUR FUTURE PLANS, OBJECTIVES, EXPECTATIONS AND INTENTIONS. THESE STATEMENTS MAY BE IDENTIFIED BY THE USE OF WORDS SUCH AS "MAY", "COULD", "WOULD", "SHOULD", "WILL", "EXPECTS", "ANTICIPATES", "INTENDS", "PLANS", "BELIEVES", "ESTIMATES", AND SIMILAR EXPRESSIONS. THE COMPANY'S ACTUAL RESULTS AND THE TIMING OF CERTAIN EVENTS MAY DIFFER SIGNIFICANTLY FROM THE RESULTS AND TIMING DESCRIBED IN THE FORWARD-LOOKING STATEMENTS. FACTORS THAT COULD CAUSE OR CONTRIBUTE TO SUCH DIFFERENCES INCLUDE, BUT ARE NOT LIMITED TO, THOSE FACTORS DESCRIBED BELOW AND ABOVE IN "RISK FACTORS" AND "BUSINESS." THE FOLLOWING DISCUSSION AND ANALYSIS OF THE COMPANY'S FINANCIAL CONDITION AND RESULTS OF OPERATIONS SHOULD BE READ IN LIGHT OF THOSE FACTORS AND IN CONJUNCTION WITH, THE COMPANY'S ACCOMPANYING CONSOLIDATED FINANCIAL STATEMENTS, INCLUDING THE NOTES THERETO.

OVERVIEW

Spire Corporation ("Spire" or the "Company") develops, manufactures and markets highly-engineered products and services in three principal business areas: (i) solar equipment and systems, (ii) biomedical and (iii) optoelectronics, generally bringing to bear expertise in materials technologies, surface science and thin films across all three business areas, discussed below.

In the solar area, the Company develops, manufactures and markets specialized equipment for the production of terrestrial photovoltaic modules from solar cells. The Company's equipment has been installed in approximately 190

factories in 46 countries. The Company also provides stand alone emergency power backup and electric power grid-connected distributed power generation systems, employing photovoltaic technology developed by the Company and others.

In the biomedical area, the Company provides value-added surface treatments to manufacturers of orthopedic and other medical devices that enhance the durability, antimicrobial characteristics or other material characteristics of their products; develops and markets coated and uncoated hemodialysis catheters and related devices for the treatment of chronic kidney disease; and performs sponsored research programs into practical applications of advanced biomedical and biophotonic technologies.

In the optoelectronics area, the Company provides custom compound semiconductor foundry and fabrication services on a merchant basis to customers involved in biomedical/biophotonic instruments, telecommunications and defense applications. Services include compound semiconductor wafer growth, other thin film processes and related device processing and fabrication services. The Company also provides materials testing services and performs services in support of sponsored research into practical applications of optoelectronic technologies.

Operating results will depend upon revenue growth and product mix, as well as the timing of shipments of higher priced products from the Company's solar equipment line and delivery of solar systems. Export sales, which amounted to 33% of net sales and revenues for 2006, continue to constitute a significant portion of the Company's net sales and revenues.

RESULTS OF OPERATIONS

The following table sets forth certain items as a percentage of net sales and revenues for the periods presented:

	Year Ended December 31,	
	2006	2005
Net sales and revenues	100%	100%
Cost of sales and revenues	(89)	(85)
Gross profit	11	15
Selling, general and administrative expenses	(48)	(38)
Internal research and development expenses	(4)	(6)
Gain on extinguishment of purchase commitment	--	3
Gain on sales of licenses	--	28
Earnings (loss) from operations	(41)	2
Other expense, net	--	(2)
Earnings (loss) before income taxes	(41)	--
Income tax expense (benefit)	--	--
Net earnings (loss)	(41)%	-%

OVERALL

The Company's total net sales and revenues for the year ended December 31, 2006 ("2006") decreased 10% to $20,125,000 as compared to $22,422,000 for the year ended December 31, 2005 ("2005"). The decrease was attributable to our solar and biomedical business units, while our optoelectronics business unit achieved a small increase.

SOLAR BUSINESS UNIT

Sales in the Company's solar business unit decreased 26% to $6,992,000 in 2006 as compared to $9,393,000 in 2005, primarily due to a 30% decrease in solar equipment sales resulting from lower volume and timing of the delivery of equipment and by a 11% decrease in solar systems sales.

BIOMEDICAL BUSINESS UNIT

Revenues of the Company's biomedical business unit decreased less than 1% during 2006 to $10,517,000 as compared to $10,578,000 in 2005, as a result of a 28% decrease in revenue from Spire's research and development activities offset by a 16% increase in revenue from Spire's line of hemodialysis catheters and a 7% increase in biomedical services.

OPTOELECTRONICS BUSINESS UNIT

Sales in the Company's optoelectronics business unit increased 7% in 2006 to $2,616,000 as compared to $2,451,000 in 2005.

Year Ended December 31, 2006 Compared to Year Ended December 31, 2005

Net Sales and Revenues

The following table categorizes the Company's net sales and revenues for the periods presented:

	Year Ended December 31,		(Decrease)	
	2006	2005	$	%
Contract research, service and license revenues	$10,563,000	$11,151,000	$ (588,000)	5%
Sales of goods	9,562,000	11,271,000	(1,709,000)	15%
Net sales and revenues	$20,125,000	$22,422,000	$(2,297,000)	10%

The 5% decrease in contract research, service and license revenues in 2006 is primarily attributable to a decrease in our contract research activities. Revenues from the Company's research activities decreased 30% in 2006 as compared to 2005 primarily due to a decrease in the number and dollar value of contracts associated with government and third party funded research. The decrease was partially offset by a 7% increase in biomedical and optoelectronic service revenue.

The 15% decrease in sales of goods for the year ended December 31, 2006 as compared to the year ended December 31, 2005 was primarily due to a 26% decrease in solar equipment and solar systems revenues. Contributing to the solar equipment decrease was the timing of the delivery of equipment that was ordered but did not get shipped prior to our year-end. Our ability to deliver equipment is, at times, dependent upon our customer's ability to have their facilities ready to receive the equipment as scheduled, as well as the Company's ability to produce the equipment. Solar sales were also impacted by a tight supply of solar wafers available to our customers. The tight wafer market had eased somewhat by year-end 2006. Biomedical product sales increased 16% in 2006 as compared to 2005 as a result of increased demand for the Company's expanded line of hemodialysis catheters. The Company introduced a new heparin coated catheter late in the fourth quarter of 2006.

Cost of Sales and Revenues

The following table categorizes the Company's cost of sales and revenues for the periods presented, stated in dollars and as a percentage of related sales and revenues:

	Years Ended December 31,				Increase (Decrease)	
	2006	%	2005	%	$	%
Cost of contract research, service and license revenues	$ 8,819,000	83%	$ 8,779,000	79%	$ 40,000	--
Cost of goods sold	9,029,000	94%	10,322,000	92%	(1,293,000)	(13%)
Net cost of sales and revenues	$17,848,000	89%	$19,101,000	85%	$(1,253,000)	(7%)

The overall cost of contract research, services and licenses in 2006 is up slightly as increased costs at our optoelectronics facility (Bandwidth) were

somewhat offset by a decrease in costs of our contract research activities due to lower volumes. Bandwidth's costs increased primarily due to an allocation of costs that were charged to internal research and development in 2005. This allocation of costs reflects the increase in optoelectronics service revenues in 2006. Cost of contract research, services and licenses as a percentage of revenue increased to 83% of revenues in 2006 from 79% in 2005, primarily due to the increase in Bandwidth costs.

Cost of goods sold decreased 13% in 2006 as compared to 2005, primarily as a result of the 15% decrease in related revenues. As a percentage of sales, cost of goods sold was 94% of sales of goods in 2006 as compared to 92% of sales in 2005. This change is due to increased costs in 2006 associated with certain equipment contracts, partially offset by a reduction in solar systems manufacturing overhead costs. The solar systems savings were realized with the move of solar systems operations from Chicago to Bedford.

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Cost of goods sold also includes approximately $47,000 of stock based compensation in 2006, due to the adoption of SFAS 123(R), as compared to zero stock based compensation in 2005.

OPERATING EXPENSES

The following table categorizes the Company's operating expenses for the periods presented, stated in dollars and as a percentage of net sales and revenues:

	Years Ended December 31,				Increase (Decrease)	
	2006	%	2005	%	$	%
Selling, general and administrative	$ 9,794,000	48%	$ 8,539,000	38%	$ 1,255,000	15%
Internal research and development	734,000	4%	1,346,000	6%	(612,000)	(45%)
Operating expenses	$10,528,000	52%	$ 9,885,000	44%	$ 643,000	7%

SELLING, GENERAL AND ADMINISTRATIVE EXPENSES

The 15% increase in selling, general and administrative expenses was primarily due to increased costs associated with sales and marketing efforts throughout all of our product lines, ongoing litigation matters, loss from a buy-out of a capital lease, increased facility related costs, and stock-based compensation costs. The increase in selling, general and administrative expenses as a percentage of sales and revenues were due to the overall increase in costs while sales and revenues decreased. Selling, general and administrative expense includes approximately $209,000 of stock based compensation in 2006, due to the adoption of SFAS 123(R), as compared to zero stock based compensation in 2005.

INTERNAL RESEARCH AND DEVELOPMENT EXPENSES

The 45% decrease in internal research and development expense in 2006 versus 2005 was primarily due to decreased development efforts within the solar equipment and biomedical services group and an allocation of certain internal research and development costs at Bandwidth to cost of sales in 2006. The decrease in internal research and development expenses as a percentage of sales and revenues was due to the decrease in costs.

OTHER INCOME (EXPENSE), NET

The Company earned $268,000 and $74,000 of interest income for the years ended December 31, 2006 and 2005, respectively. The Company incurred interest expense of $154,000 and $274,000 for the years ended December 31, 2006 and 2005, respectively. The increased interest income is due to interest earned on short-term investments made with the net proceeds of approximately $7.7 million received from a private placement of common equity in April 2006. The decrease in interest expense is primarily associated with interest incurred on capital leases associated with the semiconductor foundry.

The Company recorded $14,000 and $104,000 of currency transaction loss related to the conversion of a Japanese Yen account into U.S. dollars for the years ended December 31, 2006 and 2005, respectively.

INCOME TAXES

The Company did not record an income tax provision for years ended December 31, 2006 and 2005 as earnings (loss) before income taxes is expected to be substantially offset by net operating loss carryforwards of approximately $10,200,000. A valuation allowance was provided against the deferred tax assets generated in 2006 and 2005 due to uncertainty regarding the realization of the net operating loss in the future. At December 31, 2006, the Company had gross deferred tax assets of $6,450,000, against which a valuation allowance of $6,400,000 had been applied. Gross deferred tax liabilities of $50,000 were applied against the net deferred tax asset.

NET EARNINGS (LOSS)

The Company reported a net loss for the year ended December 31, 2006 of $8,151,000, compared to net income of $44,000 in 2005. In 2006 the Company did not record any gains from the sale of technology licenses compared to a $6,320,000 gain on the sale of licenses to the Company's solar and biomedical technology and the $593,000 gain on extinguishment of purchase commitment realized in 2005. The Company is likely to continue to report losses unless it can increase revenues significantly or sell additional technology licenses. If additional sources of revenue are not identified the

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Company can take measures to reduce costs but it is unclear whether cost reductions alone can eliminate all of the potential future losses.

LIQUIDITY AND CAPITAL RESOURCES

	December 31, 2006	December 31, 2005	(Decrease) $	(Decrease) %
Cash and cash equivalents	$1,536,000	$3,630,000	$(2,094,000)	(58%)
Working capital	$3,938,000	$5,270,000	$(1,332,000)	(25%)

Included in working capital at December 31, 2006, is $5,000,000 of certificates of deposit with a bank, classified on the balance sheet as short-term investments. $1,969,000 of this short-term investment is restricted as security for a letter of credit.

On April 26, 2006, the Company entered into Stock Purchase Agreements with two accredited institutional investors in connection with the private placement of 941,176 shares of the Company's common stock at a purchase price of $8.50 per

share. On April 28, 2006, the Company completed the private placement. The net proceeds of the sale were approximately $7.7 million after deducting placement fees and other closing costs. The proceeds were used to fund additions to property plant and equipment, short-term investments and operating losses.

Under the terms of the Stock Purchase Agreements, the Company was obligated to file a registration statement on Form S-3 with the Securities and Exchange Commission (the "SEC") registering the resale of the shares of common stock sold. The Company filed the Form S-3 on May 3, 2006 and the SEC declared it effective on May 12, 2006. In the event that this registration statement ceases to be effective and available to the investors for an aggregate period of 30 days in any 12 month period, the Company must pay liquidated damages starting on the 61st day (in the aggregate) of any suspensions in any 12 month period, and each 30th day thereafter until the suspension is terminated an amount equal to 1% of the aggregate purchase price paid by the investors. However, the Company is not obligated to pay liquidation damages on shares not owned by the investors at the time of the suspension or shares that are tradable under Rule 144(k). The Company reviewed Emerging Issues Task Force ("EITF") 00-19: ACCOUNTING FOR DERIVATIVE FINANCIAL INSTRUMENTS INDEXED TO, AND POTENTIALLY SETTLED IN, A COMPANY'S OWN STOCK, and EITF 05-04: THE EFFECT OF A LIQUIDATED DAMAGES CLAUSE ON A FREESTANDING FINANCIAL INSTRUMENT SUBJECT TO EITF ISSUE NO. 00-19, to determine if these liquidation damages provisions require a portion of the equity raised needs to be accounted under Financial Accounting Standards ("FAS") No. 133: ACCOUNTING FOR DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES. It determined that the liquidated damages provisions did not require treatment under FAS No. 133 and therefore will treat all of the funds raised under these agreements as additions to permanent equity.

The Company has a $2,000,000 Loan Agreement (the "Agreement") with Citizens Bank of Massachusetts (the "Bank"), which expires on June 26, 2007. The Agreement provides Standby Letter of Credit guarantees, for certain foreign and domestic customers, which are 100% secured with cash. In December 2006 the Company temporarily expanded its line of credit to $3,000,000 in order to facilitate its purchase of production equipment for Bandwidth. On March 31, 2007 the credit line will revert back to the original $2,000,000. At December 31, 2006, the Company had approximately $390,000 of restricted cash and $1,969,000 of restricted short-term investments associated with outstanding letters of credit. Standby letters of credit under this Agreement bear interest at 1%, however, the Company retains all interest earned on the restricted investments. The Agreement also provides the Company with the ability to convert to a $2,000,000 revolving line of credit, based upon eligible accounts receivable and certain conversion covenants. Loans under this revolving line of credit bear interest at the Bank's prime rate as determined plus 1/2% (8.75% at December 31, 2006). At December 31, 2006, the Company had not exercised its conversion option and no amounts were outstanding under the revolving line of credit. A commitment fee of .25% is charged on the unused portion of the borrowing base. The Agreement contains covenants including certain financial reporting requirements. At December 31, 2006, the Company was in compliance with its financial reporting requirements and cash balance covenants.

The Company maintains allowances for doubtful accounts for estimated losses resulting from the inability of its customers to pay amounts due. The Company actively pursues collection of past due receivables as the circumstances warrant. Customers are contacted to determine the status of payment and senior accounting and operations management are included in these efforts as is deemed necessary. A specific reserve will be established for past due accounts over 60 days and over a specified amount, when it is probable that a loss has been incurred and the Company can reasonably estimate the amount of the loss. The Company does not record an allowance for government receivables and invoices backed by letters of credit as realizeability is reasonably assured. Bad debts are written off against the allowance when identified. There is no dollar threshold for account balance write-offs. While rare, a write-off is only

recorded when all efforts to collect the

receivable have been exhausted and only in consultation with the appropriate business line manager.

At December 31, 2006, the Company's accumulated deficit was approximately $9,756,000, compared to accumulated deficit of approximately $1,605,000 as of December 31, 2005.

The Company has incurred significant operating losses in 2006 and 2005. Loss from operations, before gain on sales of licenses and extinguishment of purchase commitment, were $8.3 million and $6.6 million in 2006 and 2005, respectively. These losses from operations have resulted in a cash loss from operations of approximately $5.4 million and $4.2 million in 2006 and 2005, respectively. The Company has funded these cash losses from cash receipts of $7.7 million from the sale of equity in 2006 and $6.7 million related to the sale of certain licenses to its medical products and solar technologies in 2005. As of December 31, 2006, the Company had unrestricted cash and cash equivalents of $1.5 million and unrestricted short-term investments of $3.0 million. While the Company believes it has inherent assets and technology that it could sell or license in the near term, there is no guarantee that the Company would be able to sell or license those assets on a timely basis and at appropriate values that would allow the Company to continue to fund its operating losses. The Company has developed several plans to mitigate cash losses primarily from increased revenues and, if required, potential cost reduction efforts and outside financing. As a result, the Company believes it has sufficient resources to continue as a going concern for the foreseeable future. The table below details the Company's cash loss from operations.

	Years Ended December 31,	
	2006	2005
Earnings (loss) from operations	$(8,251,000)	$ 348,000
Gain on licenses	--	(6,320,000)
Gain on purchase commitment	--	(593,000)
Adjusted earnings (loss) from operations	(8,251,000)	(6,565,000)
Depreciation and amortization	2,027,000	2,451,000
Loss on lease buyout	105,000	--
Deferred comp	35,000	--
Unearned purchase discount	--	(65,000)
Stock-based compensation	256,000	--
Additions to reserves	467,000	(30,000)
Cash loss from operations	$(5,361,000)	$(4,209,000)

CONTRACTUAL OBLIGATIONS, COMMERCIAL COMMITMENTS AND OFF-BALANCE SHEET ARRANGEMENTS.

The following table summarizes the Company's gross contractual obligations

at December 31, 2006 and the maturity periods and the effect that such obligations are expected to have on its liquidity and cash flows in future periods:

Contractual Obligations	Total	Payments Due by Period Less than 1 Year	2 - 3 Years	4 - 5 Years
PURCHASE OBLIGATIONS	$6,415,000	$6,358,000	$ 57,000	--
CAPITAL LEASES:				
Related party capital lease	$1,598,000	$1,103,000	$495,000	--
OPERATING LEASES:				
Unrelated party operating leases	$ 226,000	$ 110,000	$116,000	--
Related party operating lease	$1,247,000	$1,247,000	--	--

Purchase obligations include all open purchase orders outstanding regardless of whether they are cancelable or not. Included in purchase obligations are raw material and equipment needed to fulfill customer orders.

Capital lease obligations outlined above include both the principal and interest components of these contractual obligations.

On October 8, 1999, the Company entered into an agreement with BP Solarex ("BPS") in which BPS agreed to purchase certain production equipment built by the Company, for use in the Company's Chicago factory ("Spire Solar Chicago") and in return the Company agreed to purchase solar cells of a minimum of two megawatts per year over a five-year term for a fixed fee from BPS (the "Purchase Commitment"). BPS had the right to reclaim the equipment if the Company failed to meet its obligations in the Purchase Commitment. The proceeds from the sale of the production equipment purchased by BPS were classified as an unearned purchase discount in the Company's consolidated balance sheets in prior periods. The Company had amortized this discount as a reduction to cost of sales as it purchased materials from BPS. In 2003 the Company and BPS retroactively amended the agreement to include all purchases of solar modules, solar systems, inverter systems and other system equipment purchased by the Company from BPS in the purchase commitment calculation. Amortization of the purchase discount amounted to approximately $65,000 for the year ended December 31, 2005. The production equipment had been classified as a component of fixed assets. Depreciation amounted to approximately $211,000 for the year ended December 31, 2005.

In addition, the agreement contained a put option for BPS to have the Company create a separate legal entity for Spire Solar Chicago and for BPS to convert the value of the equipment and additional costs, as defined, into equity of the new legal entity. The percentage ownership in the joint venture would be determined based on the cumulative investments by BPS and the Company. The amended agreement also allowed the Company to terminate the agreement on 30 days notice in consideration for a termination payment based on the aggregate amount of Spire purchases of BPS products and the fair market value of the production equipment purchased by BPS at the time of the termination election.

On August 16, 2005, the Company entered into a Settlement and Contract Termination Agreement (the "Termination Agreement") with BPS effective September 30, 2005. Under the terms of the Termination Agreement, the Company and BPS

agreed to terminate the amended agreement including the Purchase Commitment. In exchange for release of the purchase commitment, the Company paid BPS $275,000 and retained ownership of the production equipment. The unamortized unearned purchase discount as of the effective date was approximately $1,205,000 and the net book value of the production equipment was approximately $287,000. As result of this action, Spire reevaluated the recoverability of the long-lived assets associated with this segment as part of its third quarter review. Based on cash flow projections for the Solar System segment, the Company determined that the production equipment was impaired and should be written-off.

The Company has recorded an approximate $593,000 gain from these actions, which is reflected as a gain on extinguishment of purchase commitment in the accompanying consolidated statement of operations for the year ended December 31, 2005. The components of this gain are outlined below:

Unearned purchase discount	$1,205,000
Net book value of production equipment	(287,000)
Payment to extinguish purchase commitment	(275,000)
Accrued relocation costs	(50,000)
Gain on extinguishment of purchase commitment	$ 593,000

In October 2002, the Company sold an exclusive patent license for a hemodialysis split-tip catheter to Bard Access Systems, Inc. ("Bard"), a wholly owned subsidiary of C. R. Bard, Inc., in exchange for $5,000,000 upon the execution of the agreement, with another $5,000,000 due upon the earlier to occur of: (a) the date of the first commercial sale of a licensed product by Bard; or (b) no more than 18 months after signing. The agreement further provided for two additional contingent cash payments of $3,000,000 each upon the completion of certain milestones by Bard in 2004 and 2005. Bard had the right to cancel the agreement at any time subsequent to the second payment. During the year ended December 31, 2002, the Company recorded the initial payment under the agreement, resulting in a gain of $4,465,000, net of direct costs. Due to the potential length of time between the first and second payments and the cancellation provisions within the agreement, the Company did not record the potential remaining payments at that time. During June 2003, in accordance with the agreement, the Company received notification from Bard of the first commercial sale, collected the $5,000,000 payment due and recorded a gain of $4,989,000, net of direct costs. In June 2004, the Company received the first contingent milestone payment and recorded a gain of $3,000,000. In June 2005, the Company received the second and final contingent milestone payment and recorded a gain of $3,000,000. There were no direct costs associated with these payments. The June 2005 payment has been recorded as a gain in the accompanying consolidated statements of operations for the year ended December 31, 2005.

In conjunction with the sale, the Company received a sublicense, which permits the Company to continue to manufacture and market hemodialysis catheters for the treatment of chronic kidney disease. In addition, the Company granted Bard a right of first refusal should the Company seek to sell the product lines associated with the licensed intellectual property.

On May 26, 2005, the Company entered into a global consortium agreement (the "Agreement") with Nisshinbo Industries, Inc. ("Nisshinbo") for the development, manufacturing, and sales of solar photovoltaic module manufacturing equipment. Nisshinbo's prior relationship with Spire was as a sub-licensee of Marubeni Corporation with whom the Company had a license arrangement that was originally signed in 1997, extended in 2003, and terminated in May 2005. Nisshinbo's role as sub-licensee was to manufacture equipment for Marubeni to

sell to the Japanese market based upon the Company's proprietary technology. Under the terms of the Agreement, Nisshinbo purchased a license to manufacture and sell the Company's module manufacturing equipment on a semi-exclusive basis for an upfront fee plus additional royalties based on ongoing equipment sales over a ten-year period. In addition, the Company and Nisshinbo agreed, but are not obligated, to pursue joint research and development, product improvement activities and sales and marketing efforts. The companies may share market costs such as product collateral and trade show expenses. It may also collaborate on sales leads and have the other company manufacture and service its equipment in the field. Both companies have reciprocal rights to participate in the other company's R&D efforts on a going-forward basis. Nisshinbo can request the Company to further develop a technology but Nisshinbo must (a) share in the costs of these development efforts equally with the Company (and thereafter have joint ownership) otherwise the Company will own the technology under a partial contribute or no participation by Nisshinbo with the Company receiving a royalty from Nisshinbo if it utilizes the technology. At the end of the license all non-jointly owned technology developed under the Agreement will revert back to the owner, with the other party being required to purchase a new license based upon the fair market value of that technology in order to continue to utilize the technology.

On June 27, 2005, the Company received JPY 400,000,000 from the sale of this permanent license. The Company determined that the Nisshinbo Agreement contains multiple elements consisting of (1) the granting of a license to utilize the Company's technology and (2) the semi-exclusive right to utilize the technology for a period of 10 years. The Company believes the granting of the license meets the criteria of Emerging Issues Task Force ("EITF") 00-21, "Accounting for Revenue Arrangements with Multiple Elements", paragraph 9(a), as the license to utilize the technology has value to Nisshinbo on a stand-alone basis. Further, Question 1 to Securities and Exchange Commission ("SEC") Staff Accounting Bulletin Topic 13A-3f "Nonrefundable Up-Front Fees", was directly considered as guidance for determining if the upfront fee under the Nisshinbo Agreement should be recognized upon the signing of contract or recognized over the term of the license. It is the Company's belief that a separate earnings process was complete as Nisshinbo was purchasing access to utilize technology it already had in its possession; therefore, recognition of the gain on the sale was appropriate. The Company has determined the fair value of the license and royalty based on an appraisal. As a result, a $3,320,000 gain was recognized as a gain on sale of license in the accompanying consolidated statements of operations for the year ended December 31, 2005. The balance of $350,000 was determined to represent an advanced royalty payment and was recorded as an advance on contracts in progress. This amount is being credited as royalty income over the ten year license period on a straight-line basis.

The Company maintains a Japanese yen account (approximately JPY 44,680,000 as of December 31, 2006.) As of December 31, 2006, approximately $375,000 has been reflected in cash and cash equivalents in the accompanying consolidated balance sheet utilizing the closing yen/dollar exchange rate as of December 31, 2006. Total currency translation loss of $14,000 and $104,000 for the years ended December 31, 2006 and 2005, respectively, is reflected in other expense, net in the accompanying consolidated statement of operations.

Outstanding letters of credit totaled $2,359,000 at December 31, 2006. The letters of credit secure performance obligations and purchase commitments, and allow holders to draw funds up to the face amount of the letter of credit if the Company does not perform as contractually required. These letters of credit expire through 2007 and are 100% secured by cash and short term-investments.

RECENT ACCOUNTING PRONOUNCEMENTS

In June 2006, the FASB issued FIN 48, Accounting for Uncertainty in Income Taxes - an interpretation of FASB Statement No. 109. FIN 48 is effective for

fiscal years beginning after December 15, 2006. Earlier application is encouraged if the enterprise has not yet issued financial statements, including interim financial statements, in the period the Interpretation is adopted. This interpretation of FAS 109 is not expected to have a material impact on the Company's financial position or results of operations.

In September 2006, the FASB issued FAS No. 157, Fair Value Measurement ("FAS 157"). FAS 157 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. FAS 157 is effective for financial statements issued for fiscal years beginning after November 15, 2007 and interim periods within those fiscal years. The Company is evaluating the impact of adopting FAS 157 on the Company's financial position, results of operations and cash flow.

In September 2006, the Securities and Exchange Commission (SEC) issued Staff Accounting Bulletin No. 108 (SAB 108). Due to diversity in practice among registrants, SAB 108 expresses SEC staff views regarding the process by which misstatements in financial statements are evaluated for purposes of determining whether financial statement restatement is necessary. SAB 108 is effective for fiscal years ending after November 15, 2006, and early application is encouraged. We do not believe SAB 108 will have a material impact on our results from operations or financial position.

IMPACT OF INFLATION AND CHANGING PRICES

Historically, the Company's business has not been materially impacted by inflation. Manufacturing equipment and solar systems are generally quoted, manufactured and shipped within a cycle of approximately nine months, allowing for orderly pricing adjustments to the cost of labor and purchased parts. The Company has not experienced any negative effects from the impact of inflation on long-term contracts. The Company's service business is not expected to be seriously affected by inflation because its procurement-production cycle typically ranges from two weeks to several months, and prices generally are not fixed for more than one year. Research and development contracts usually include cost escalation provisions.

FOREIGN CURRENCY FLUCTUATION

The Company sells only in U.S. dollars, generally against an irrevocable confirmed letter of credit through a major United States bank. Therefore the Company is not directly affected by foreign exchange fluctuations on its current orders. However, fluctuations in foreign exchange rates do have an effect on the Company's customers' access to U.S. dollars and on the pricing competition on certain pieces of equipment that the Company sells in selected markets. The Company received Japanese yen in exchange for the sale of a license to its solar technology. In addition, purchases made and royalties received under the Company's Consortium Agreement with its Japanese partner will be in Japanese yen. The Company has committed to purchase certain pieces of equipment from European vendors; these commitments are denominated in Euros. The Company bears the risk of any currency fluctuations that may be associated with these commitments. The Company does not believe that foreign exchange fluctuations will materially affect its operations.

RELATED PARTY TRANSACTIONS

The Company subleased 77,000 square-feet in a building leased by Mykrolis Corporation, who in turn leased the building from SPI-Trust, a Trust of which Roger Little, Chairman of the Board, Chief Executive Officer and President of the Company, is the sole trustee and principal beneficiary. The 1985 sublease,

originally for a period of ten years, was extended for a five-year period expiring on November 30, 2000 and was further extended for a five-year period expiring on November 30, 2005. The sublease agreement provided for minimum rental payments plus annual increases linked to the consumer price index. Effective December 1, 2005, the Company entered into a two-year Extension of Lease Agreement (the "Lease Extension") directly with SPI-Trust.

The Company assumed certain responsibilities of Mykrolis, the tenant under the former lease, as a result of the Lease Extension including payment of all building and real estate related expenses associated with the ongoing operations of the property. The Company will allocate a portion of these expenses to SPI-Trust based on pre-established formulas utilizing square footage and actual usage where applicable. These allocated expenses will be invoiced monthly and be paid utilizing a SPI-Trust escrow account of which the Company has sole withdrawal authority. SPI-Trust is required to maintain three (3) months of its anticipated operating costs within this escrow account. On December 1, 2006, the Company and SPI-Trust amended the Lease Extension to include the lease of an additional 15,000 square feet from SPI-Trust for a one-year term. The additional space is being leased at a rate of $8.06 per square foot on annual basis. The additional space will be used to expand the Company's solar operations. Rent expense under this sublease as extended and amended, for the year ended December 31, 2006 and 2005 was $1,262,000 and $1,093,000, respectively. In connection with this lease, the Company was invoiced and paid certain SPI-Trust related expenses, including building maintenance and insurance. The Company invoiced SPI-Trust on a monthly basis and SPI-Trust reimbursed the Company for all such costs. Approximately $14,000 was due from SPI-Trust as of December 31, 2006 for building related costs. The Company believes that the terms of the Lease Extension, as amended, are commercially reasonable.

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In conjunction with the acquisition of Bandwidth by the Company, the Company released Bandwidth from a lease agreement that had existed between Bandwidth and the Company. In November 2001, Bandwidth, under its previous owner, abandoned the space being subleased from the Company in Bedford, Massachusetts, to move to a new building and wafer fabrication lab in Hudson, New Hampshire. At that time, there were 48 months left on the lease. Subsequent to the move to Hudson, New Hampshire, Bandwidth was unable to sublease the Bedford, Massachusetts space, and was paying the Company for the unused space. In conjunction with the acquisition of Bandwidth in May 2003, the Company released Bandwidth from the remaining lease payments. However, the Company continued to be obligated to Mykrolis Corporation for the entire amount of the remaining lease agreement. As a result, the present value of the remaining lease obligation associated with the unused space was recorded as an assumed liability of $1,247,000 in the purchase accounting. This lease obligation terminated in November 2005. The difference between the actual rent payment and the discounted rent payment was accreted to the consolidated statements of operations as interest expense. Interest of 4.75% had been assumed on this obligation. For the year ended December 31, 2005, interest expense was approximately $11,000.

Also in conjunction with the acquisition of Bandwidth by the Company, SPI-Trust, a Trust of which Roger G. Little, Chairman of the Board, Chief Executive Officer and President of the Company, is sole trustee and principal beneficiary, purchased from Stratos Lightwave, Inc. (Bandwidth's former owner) the building that Bandwidth occupies in Hudson, New Hampshire for $3.7 million. Subsequently, the Company entered into a lease for the building (90,000 square feet) with SPI-Trust whereby the Company will pay $4.1 million to the SPI-Trust over an initial five-year term expiring in 2008 with a Company option to extend for five years. In addition to the rent payments, the lease obligates the Company to keep on deposit with SPI-Trust the equivalent of three months rent ($236,000 as of December 31, 2006.) The lease agreement does not provide for a

transfer of ownership at any point. Interest costs were assumed at 7%. Interest expense was approximately $136,000 and $179,000 for the years ended December 31, 2006 and 2005, respectively. This lease has been classified as a related party capital lease and a summary of payments (including interest) follows:

Year	Rate Per Square Foot	Annual Rent	Monthly Rent	Security Deposit
June 1, 2003 - May 31, 2004	$6.00	$ 540,000	$45,000	$135,000
June 1, 2004 - May 31, 2005	7.50	675,000	56,250	168,750
June 1, 2005 - May 31, 2006	8.50	765,000	63,750	191,250
June 1, 2006 - May 31, 2007	10.50	945,000	78,750	236,250
June 1, 2007 - May 31, 2008	13.50	1,215,000	101,250	303,750
		$4,140,000		

At December 31, 2006, $1,027,000 and $486,000 are reflected as the current and long-term portions of capital lease obligation - related party, respectively, in the consolidated balance sheet.

CRITICAL ACCOUNTING POLICIES

The preparation of financial statements in accordance with accounting principles generally accepted in the United States requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Among the significant estimates affecting our consolidated financial statements are those relating to revenue recognition, reserves for doubtful accounts and sales returns and allowances, reserve for excess and obsolete inventory, impairment of long-lived assets, income taxes, and warranty reserves. We regularly evaluate our estimates and assumptions based upon historical experience and various other factors that we believe to be 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. To the extent actual results differ from those estimates, our future results of operations may be affected. We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements. Refer to Footnote 2 of our notes to consolidated financial statements for a description of our significant accounting policies.

REVENUE RECOGNITION

The Company derives its revenues from three primary sources: (1) commercial products including, but not limited to, solar energy manufacturing equipment, solar energy systems and hemodialysis catheters; (2) biomedical and semiconductor processing services; and (3) United States government funded research and development contracts.

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We generally recognize product revenue upon shipment of products provided there are no uncertainties regarding customer acceptance, persuasive evidence of an arrangement exists, the sales price is fixed or determinable, and collectibility is reasonably assured. These criteria are generally met at the time of shipment when the risk of loss and title passes to the customer or distributor, unless a consignment arrangement exists. Revenue from consignment

arrangements is recognized based on product usage indicating sales are complete.

The Company utilizes a distributor network to market and sell its hemodialysis catheters domestically. The Company generally recognizes revenue when the catheters are shipped to its distributors. Gross sales reflect reductions attributable to customer returns and various customer incentive programs including pricing discounts and rebates. Product returns are permitted in certain sales contracts and an allowance is recorded for returns based on the Company's history of actual returns. Certain customer incentive programs require management to estimate the cost of those programs. The allowance for these programs is determined through an analysis of programs offered, historical trends, expectations regarding customer and consumer participation, sales and payment trends, and experience with payment patterns associated with similar programs that had been previously offered. An analysis of the sales return and rebate activity for the years ended December 31, 2006 and 2005, is as follows:

	Rebates	Returns	Total
Balance - December 31, 2004	$ 56,000	$ 29,000	$ 85,000
Provision	362,000	96,000	458,000
Utilization	(326,000)	(106,000)	(432,000)
Balance - December 31, 2005	92,000	19,000	111,000
Provision	387,000	60,000	447,000
Utilization	(341,000)	(62,000)	(403,000)
Balance - December 31, 2006	$138,000	$ 17,000	$155,000

- Credits for rebates are recorded in the month of the actual sale.
- Credits for returns are processed when the actual merchandise is received by Spire.
- Substantially all rebates and returns are processed no later than three months after original shipment by Spire.

The reserve percentage has been approximately 13% to 15% of inventory held by distributors over the last two years. Spire performs various sensitivity analyses to determine the appropriate reserve percentage to use. To date, actual quarterly reserve utilization has approximated the amount provided. The total inventory held by distributors was approximately $1,210,000 at December 31, 2006.

If sufficient history to make reasonable and reliable estimates of returns or rebates does not exist, revenue associated with such practices is deferred until the return period lapses or a reasonable estimate can be made. This deferred revenue will be recognized as revenue when the distributor reports to us that it has either shipped or disposed of the units (indicating that the possibility of return is remote).

The Company's OEM capital equipment solar energy business builds complex customized machines to order for specific customers. Substantially all of these orders are sold on a FOB Bedford, Massachusetts (or EX-Works Factory) basis. It is the Company's policy to recognize revenues for this equipment as the product is shipped to the customer, as customer acceptance is obtained prior to shipment and the equipment is expected to operate the same in the customer's environment as it does in the Company's environment. When an arrangement with the customer includes future obligations or customer acceptance, revenue is recognized when those obligations are met or customer acceptance has been achieved. The Company's solar energy systems business installs solar energy systems on customer-owned properties on a contractual basis. Generally, revenue is recognized once the systems have been installed and the title is passed to the

customer. For arrangements with multiple elements, the Company allocates fair value to each element in the contract and revenue is recognized upon delivery of each element. If the Company is not able to establish fair value of undelivered elements, all revenue is deferred.

The Company recognizes revenues and estimated profits on long-term government contracts on the accrual basis where the circumstances are such that total profit can be estimated with reasonable accuracy and ultimate realization is reasonably assured. The Company accrues revenue and profit utilizing the percentage of completion method using a cost-to-cost methodology. A percentage of the contract revenues and estimated profits is determined utilizing the ratio of costs incurred to date to total estimated cost to complete on a contract by contract basis. Profit estimates are revised periodically based upon changes and facts, and any losses on contracts are recognized immediately. Some of the contracts include provisions to withhold a portion of the contract value as retainage until such time as the United States government performs an audit of the cost incurred under the contract. The Company's policy is to take into revenue the full value of the

contract, including any retainage, as it performs against the contract since the Company has not experienced any substantial losses as a result of audits performed by the United States government.

IMPAIRMENT OF LONG-LIVED ASSETS

Long-lived assets, including fixed assets and intangible assets, are continually monitored and are evaluated at least annually for impairment. The determination of recoverability is based on an estimate of undiscounted cash flows expected to result from the use of an asset and its eventual disposition. The estimate of cash flows is based upon, among other things, certain assumptions about expected future operating performance. Our estimates of undiscounted cash flows may differ from actual cash flows due to, among other things, technological changes, economic conditions, changes to our business model or changes in our operating performance. If the sum of the undiscounted cash flows (excluding interest) is less than the carrying value, we recognize an impairment loss, measured as the amount by which the carrying value exceeds the fair value of the asset.

STOCK-BASED COMPENSATION

On January 1, 2006, the Company adopted the fair value recognition provisions of Financial Accounting Standards Board ("FASB") Statement No. 123(R), Share-Based Payment ("Statement 123(R)") using the modified prospective method. In accordance with the modified prospective method, the Company has not restated its consolidated financial statements for prior periods. Under this transition method, stock-based compensation expense for 2006 includes stock-based compensation expense for all of the Company's stock-based compensation awards granted prior to, but not yet vested as of, January 1, 2006, based on the grant-date fair value estimated in accordance with the provisions of FASB Statement No. 123, Accounting for Stock-Based Compensation ("Statement 123"). Stock-based compensation expense for all stock-based compensation awards granted on or after January 1, 2006 will be based on the grant-date fair value estimated in accordance with the provisions of Statement 123(R). The impact of Statement 123(R) on the Company's results of operations resulted in recognition of stock-based compensation expense of approximately $256,000 for the year ended December 31, 2006.

ITEM 7. FINANCIAL STATEMENTS

CONSOLIDATED FINANCIAL STATEMENTS

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders
of Spire Corporation:

We have audited the consolidated balance sheet of Spire Corporation and subsidiaries as of December 31, 2006 and the related consolidated statements of operations, stockholders' equity and comprehensive income/(loss), and cash flows for the years ended December 31, 2006 and 2005. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States of America). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not

required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. An audit includes 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 our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Spire Corporation and subsidiaries as of December 31, 2006, and the results of their operations and their cash flows for the years ended December 31, 2006 and 2005, in conformity with accounting principles generally accepted in the United States of America.

As discussed in Note 2 to the financial statements, effective January 1, 2006 the Company adopted the provisions of Statement of Financial Accounting Standard No. 123R " Share-Based Payment".

/s/ Vitale, Caturano & Company, Ltd.

VITALE, CATURANO & COMPANY, LTD.

March 30, 2007
Boston, Massachusetts

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SPIRE CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEET

	December 31, 2006
ASSETS	
Current assets	
Cash and cash equivalents	$ 1,536,000
Restricted cash - current portion	269,000
	1,805,000
Short-term investments	3,031,000
Restricted short-term investments	1,969,000
Accounts receivable - trade, net	4,010,000
Inventories, net	4,217,000
Deposits on equipment for inventory	2,580,000
Prepaid expenses and other current assets	737,000
Total current assets	18,349,000
Property and equipment, net	6,673,000

Intangible and other assets (less accumulated amortization of $790,000)	844,000
Available-for-sale investments, at quoted market value (cost of $1,361,000)	1,461,000
Restricted cash - long-term	121,000
Deposit - related party	236,000
Total other assets	2,662,000
Total assets	$ 27,684,000

LIABILITIES AND STOCKHOLDERS' EQUITY

Current liabilities	
Current portion of capital lease obligation - related party	$ 1,027,000
Accounts payable	1,982,000
Accrued liabilities	5,006,000
Advances on contracts in progress	6,396,000
Total current liabilities	14,411,000
Long-term portion of capital lease obligation - related party	486,000
Long-term portion of advances on contracts in progress	1,823,000
Deferred compensation	1,461,000
Deferred taxes	40,000
Total long-term liabilities	3,810,000
Total liabilities	18,221,000
Commitments and Contingencies	
Stockholders' equity	
Common stock, $0.01 par value; shares authorized 20,000,000; 8,236,663 shares issued and outstanding	82,000
Additional paid-in capital	19,077,000
Accumulated deficit	(9,756,000)
Accumulated other comprehensive income, net	60,000
Total stockholders' equity	9,463,000
Total liabilities and stockholders' equity	$ 27,684,000

The accompanying notes are an integral part of these consolidated financial statements.

SPIRE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

	Years Ended December 31,	
	2006	2005

Net sales and revenues		
Contract research, service and license revenues	$ 10,563,000	$ 11,151,000
Sales of goods	9,562,000	11,271,000
Total net sales and revenues	20,125,000	22,422,000
Costs and expenses		
Cost of contract research, services and licenses	8,819,000	8,779,000
Cost of goods sold	9,029,000	10,322,000
Selling, general and administrative expenses	9,794,000	8,540,000
Internal research and development expenses	734,000	1,346,000
Total costs and expenses	28,376,000	28,987,000
Gain on extinguishment of purchase commitment	--	593,000
Gain on sales of licenses	--	6,320,000
Earnings (loss) from operations	(8,251,000)	348,000
Other income (expense), net	100,000	(304,000)
Earnings (loss) before income taxes	(8,151,000)	44,000
Income tax benefit (expense)	--	--
Net income (loss)	$ (8,151,000)	$ 44,000
Earnings (loss) per share of common stock - basic	$ (1.03)	$ 0.01
Earnings (loss) per share of common stock - diluted	$ (1.03)	$ 0.01
Weighted average number of common and common equivalent shares outstanding - basic	7,898,320	6,975,347
Weighted average number of common and common equivalent shares outstanding - diluted	7,898,320	7,237,129

The accompanying notes are an integral part of these consolidated financial statements.

SPIRE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY AND COMPREHENSIVE INCOME/(LOSS)

Accumulated

	Common Stock		Additional	Other	
	Shares	Amount	Paid-in Capital	Comprehensive Income	(Accum Def
Balance, December 31, 2004	6,848,541	$ 68,000	$ 9,448,000	$ 25,000	$(1,6
Exercise of stock options	374,446	4,000	1,315,000	--	
Net income	--	--	--	--	
Balance, December 31, 2005	7,222,987	72,000	10,763,000	25,000	(1,6
Exercise of stock options	72,500	1,000	337,000	--	
Proceeds from issuance of common stock, net of offering costs	941,176	9,000	7,721,000	--	
Stock based compensation	--	--	256,000	--	
Net unrealized gain on available for sale marketable securities, net of tax	--	--	--	35,000	
Net loss	--	--	--	--	(8,1
Balance, December 31, 2006	8,236,663	$ 82,000	$19,077,000	$ 60,000	$(9,7

	Yea
	2
Comprehensive income is calculated as follows:	
Net income (loss)	$(8,1
Other comprehensive gain on available for sale marketable securities	
Comprehensive income (loss)	$(8,1

The accompanying notes are an integral part of these consolidated financial statements.

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SPIRE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

	YEARS ENDED DECEMBER 31	
	2006	2005
Cash flows from operating activities:		
Net income (loss)	$(8,151,000)	$ 44,0
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:		
Depreciation and amortization	2,027,000	2,451,0
Loss on buy-out of capital lease	105,000	--
Gain on sale of licenses	--	(6,320,0
Gain on extinguishment of purchase commitment	--	(593,0

Deferred compensation	35,000	--
Unearned purchase discount	--	(65,0
Stock-based compensation	256,000	--
Increase in accounts receivable reserves	86,000	31,0
Increase (decrease) in inventory reserves	381,000	(62,0
Changes in assets and liabilities:		
Restricted cash	536,000	(98,0
Accounts receivable	(400,000)	500,0
Interest receivable	(158,000)	--
Inventories	(1,938,000)	126,0
Deposits, prepaid expenses and other current assets	(2,552,000)	(52,0
Accounts payable, accrued liabilities and other liabilities	3,839,000	(770,0
Deposit - related party	(45,000)	(23,0
Advances on contracts in progress	6,461,000	(840,0
Net cash provided by (used in) operating activities	482,000	(5,671,0
Cash flows from investing activities:		
Purchase of short-term investments	(7,500,000)	--
Sale of short-term investments	2,500,000	--
Proceeds from sale of licenses	--	6,320,0
Purchase of property and equipment	(4,085,000)	(428,0
Payment to extinguish purchase commitment	--	(275,0
Increase in intangible and other assets	(268,000)	(22,0
Net cash provided by (used in) investing activities	(9,353,000)	5,595,0
Cash flows from financing activities:		
Proceeds from issuance of common stock, net of offering costs	7,730,000	--
Principal payments on capital lease obligations - related parties	(734,000)	(548,0
Principal payments and buy-out of capital lease obligations	(557,000)	(402,0
Proceeds from exercise of stock options	338,000	1,319,0
Net cash provided by financing activities	6,777,000	369,0
Net increase (decrease) in cash and cash equivalents	(2,094,000)	293,0
Cash and cash equivalents, beginning of year	3,630,000	3,337,0
Cash and cash equivalents, end of year	$ 1,536,000	$ 3,630,0
Supplemental disclosures of cash flow information:		
Interest paid	$ 18,000	$ 83,0
Interest received	$ 110,000	$ 74,0
Interest paid - related party	$ 136,000	$ 190,0
Income taxes paid (refunded)	$ (155,000)	$ 150,0

The accompanying notes are an integral part of these consolidated financial statements.

SPIRE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

DECEMBER 31, 2006

1. DESCRIPTION OF THE BUSINESS

Spire Corporation ("Spire" or the "Company") develops, manufactures and markets highly-engineered products and services in three principal business areas: (i) solar equipment and solar systems, (ii) biomedical and (iii) optoelectronics, generally bringing to bear expertise in materials technologies, surface science and thin films across all three business areas.

In the solar area, the Company develops, manufactures and markets specialized equipment for the production of terrestrial photovoltaic modules from solar cells. The Company's equipment has been installed in approximately 190 factories in 46 countries. The Company also provides custom and building integrated photovoltaic modules, stand alone emergency power backup and electric power grid-connected distributed power generation systems employing photovoltaic technology developed by the Company and others.

In the biomedical area, the Company provides value-added surface treatments to manufacturers of orthopedic and other medical devices that enhance the durability, antimicrobial characteristics or other material characteristics of their products; develops and markets hemodialysis catheters and related devices for the treatment of chronic kidney disease; and performs sponsored research programs into practical applications of advanced biomedical and biophotonic technologies.

In the optoelectronics area, the Company provides custom compound semiconductor foundry and fabrication services on a merchant basis to customers involved in biomedical/biophotonic instruments, telecommunications and defense applications. Services include compound semiconductor wafer growth, other thin film processes and related device processing and fabrication services. The Company also provides materials testing services and performs services in support of sponsored research into practical applications of optoelectronic technologies.

Operating results will depend upon revenue growth and product mix, as well as the timing of shipments of higher priced products from the Company's solar equipment line and delivery of solar systems. Export sales, which amounted to 33% of net sales and revenues for 2006, continue to constitute a significant portion of the Company's net sales and revenues.

The Company has incurred significant operating losses in 2006 and 2005. Loss from operations, before gain on sales of licenses and extinguishment of purchase commitment, were $8.3 million and $6.6 million in 2006 and 2005, respectively. These losses from operations have resulted in cash losses (earnings (loss) from operations excluding gain on sales of licenses plus or minus non-cash adjustments) of approximately $5.4 million and $4.2 million in each of 2006 and 2005, respectively. The Company has funded these cash losses from cash receipts of $7.7 million from proceeds of a common stock offering in 2006 and $6.7 million related to the sale of certain licenses to its medical products and solar technologies in 2005. As of December 31, 2006, the Company had cash and cash equivalents of $1.5 million and unrestricted short-term investments of $3.0 million. While the Company believes it has inherent assets and technology that it could sell or license in the near term, there is no guarantee that the Company would be able to sell or license those assets on a timely basis and at appropriate values that would allow the Company to continue to fund its operating losses. The Company has developed several plans to mitigate cash losses primarily from increased revenues and, if required,

potential cost reduction efforts and outside financing. As a result, the Company believes it has sufficient resources to continue as a going concern at least through December 31, 2007.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(A) PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. All significant intercompany balances and transactions have been eliminated in consolidation.

(B) REVENUE RECOGNITION

The Company derives its revenues from three primary sources: (1) commercial products including, but not limited to, solar energy manufacturing equipment, solar energy systems and hemodialysis catheters; (2) biomedical and semiconductor processing services; and (3) United States government funded research and development contracts.

We generally recognize product revenue upon shipment of products provided there are no uncertainties regarding customer acceptance, persuasive evidence of an arrangement exists, the sales price is fixed or determinable, and collectibility is reasonably assured. These criteria are generally met at the time of shipment when the risk of loss and title passes to the customer or distributor, unless a consignment arrangement exists. Revenue from consignment arrangements is recognized based on product usage indicating sales are complete.

The Company utilizes a distributor network to market and sell its hemodialysis catheters domestically. The Company generally recognizes revenue when the catheters are shipped to its distributors. Gross sales reflect reductions attributable to customer returns and various customer incentive programs including pricing discounts and rebates. Product returns are permitted in certain sales contracts and an allowance is recorded for returns based on the Company's history of actual returns. Certain customer incentive programs require management to estimate the cost of those programs. The allowance for these programs is determined through an analysis of programs offered, historical trends, expectations regarding customer and consumer participation, sales and payment trends, and experience with payment patterns associated with similar programs that had been previously offered. An analysis of the sales return and rebate activity for the years ended December 31, 2006 and 2005, is as follows:

	Rebates	Returns	Total
Balance - December 31, 2004	$ 56,000	$29,000	$ 85,000
Provision	362,000	96,000	458,000
Utilization	(326,000)	(106,000)	(432,000)
Balance - December 31, 2005	92,000	19,000	111,000
Provision	387,000	60,000	447,000
Utilization	(341,000)	(62,000)	(403,000)
Balance - December 31, 2006	$138,000	$ 17,000	$ 155,000

- Credits for rebates are recorded in the month of the actual sale.
- Credits for returns are processed when the actual merchandise is

received by Spire.

- o Substantially all rebates and returns are processed no later than three months after original shipment by Spire.

The reserve percentage has been approximately 13% to 15% of inventory held by distributors over the last two years. Spire performs various sensitivity analyses to determine the appropriate reserve percentage to use. To date, actual quarterly reserve utilization has approximated the amount provided. The total inventory held by distributors was approximately $1,210,000 at December 31, 2006.

If sufficient history to make reasonable and reliable estimates of returns or rebates does not exist, revenue associated with such practices is deferred until the return period lapses or a reasonable estimate can be made. This deferred revenue will be recognized as revenue when the distributor reports to the Company that it has either shipped or disposed of the units (indicating that the possibility of return is remote).

The Company's OEM capital equipment solar energy business builds complex customized machines to order for specific customers. Substantially all of these orders are sold on a FOB Bedford, Massachusetts (or EX-Works Factory) basis. It is the Company's policy to recognize revenues for this equipment as the product is shipped to the customer, as customer acceptance is obtained prior to shipment and the equipment is expected to operate the same in the customer's environment as it does in the Company's environment. When an arrangement with the customer includes future obligations or customer acceptance, revenue is recognized when those obligations are met or customer acceptance has been achieved. The Company's solar energy systems business installs solar energy systems on customer-owned properties on a contractual basis. Generally, revenue is recognized once the systems have been installed and the title is passed to the customer. For arrangements with multiple elements, the Company allocates total fees under contract to each element using the residual method and revenue is recognized upon delivery of each element. If the Company is not able to establish fair value of undelivered elements, all revenue is deferred.

The Company recognizes revenues and estimated profits on long-term government contracts on the accrual basis where the circumstances are such that total profit can be estimated with reasonable accuracy and ultimate realization is reasonably assured. The Company accrues revenue and profit utilizing the percentage of completion method using a cost-to-cost methodology. A percentage of the contract revenues and estimated profits is determined utilizing the ratio of costs incurred to date to total estimated cost to complete on a contract by contract basis. Profit estimates are revised periodically based upon changes and facts, and any losses on contracts are recognized immediately. Some of the contracts include provisions to withhold a portion of the contract value as retainage until such time as the United States government

performs an audit of the cost incurred under the contract. The Company's policy is to take into revenue the full value of the contract, including any retainage, as it performs against the contract since the Company has not experienced any substantial losses as a result of audits performed by the United States government.

(C) CASH AND CASH EQUIVALENTS

Cash and cash equivalents include cash, time deposits and all highly liquid debt instruments with original maturities of three months or less. These investments are carried at cost, which approximates market value. Cash and cash equivalents are deposited at various area banks, and at times may exceed

federally insured limits.

(D) SHORT TERM INVESTMENTS

Short term investments include highly liquid debt instruments with original maturities of more than three months and less than one year. These investments are carried at cost, which approximates market value.

(E) AVAILABLE-FOR-SALE INVESTMENTS

Available-for-sale securities consist of the following assets held as part of the Spire Corporation Non-Qualified Deferred Compensation Plan:

	December 31, 2006
Equity investments	$1,160,000
Government bonds	262,000
Cash and money market funds	39,000
	$1,461,000

These investments have been classified as long-term available-for-sale and are reported at fair value, with unrealized gains and losses included in accumulated other comprehensive income, net of related tax effect. As of December 31, 2006, the pre-tax unrealized gain on these marketable securities was approximately $99,000.

(F) INVENTORIES

Inventories are stated at the lower of cost or market, cost being determined on a first-in, first-out (FIFO) basis. Judgments and estimates are used in determining the likelihood that goods on hand can be sold to customers. The Company expensed approximately $208,000 to cost of sales, for work in process inventory that was determined to be valued in excess of market value. Historical inventory usage and current revenue trends are considered in estimating both excess and obsolete inventory. If actual product demand and market conditions are less favorable than those projected by management, additional inventory write-downs may be required. No general and administrative expenses are included in inventory.

(G) PROPERTY AND EQUIPMENT

Property and equipment is stated at cost. Depreciation and amortization are provided using the straight-line method over the estimated useful lives of the respective assets, as follows:

Building and equipment under capital lease	Lesser of 5 years or remaining life of lease
Machinery and equipment	5 and 7 years
Furniture and fixtures	5 years
Leasehold improvements	Lesser of 10 years or remaining life of facil

Maintenance and repairs are charged to expense as incurred. Major renewals and betterments are added to property and equipment accounts at cost.

(H) INTANGIBLE AND OTHER ASSETS

Patents amounted to $137,000, net of accumulated amortization of $637,000, at December 31, 2006. Licenses amounted to $172,000 net of accumulated

amortization of $153,000, at December 31, 2006. Patent cost is primarily composed of cost associated with securing and registering patents that the Company has been awarded or that have been submitted to, and the Company believes will be approved by, the government. License cost is composed of the cost to

acquire rights to the underlying technology or know-how. These costs are capitalized and amortized over their useful lives or terms, ordinarily five years, using the straight-line method. There are no expected residual values related to these patents. Amortization expense, relating to patents and licenses, was approximately $94,000 and $84,000, for the years ended 2006 and 2005, respectively.

For disclosure purposes, the table below includes future amortization expense for patents and licenses owned by the Company as well as estimated amortization expense related to patents that remain pending at December 31, 2006 of $535,000. This estimated expense for patents pending assumes that the patents are issued immediately, and therefore are being amortized over five years on a straight-line basis. Estimated amortization expense for the periods ending December 31, is as follows:

Year	Amortization Expense
2007	$ 214,000
2008	187,000
2009	146,000
2010	141,000
2011	136,000
Thereafter	20,000
	$ 844,000

(I) LONG-LIVED ASSETS

The Company accounts for long-lived assets in accordance with the provisions of SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets". SFAS No. 144 requires that long-lived assets and certain identifiable intangibles be reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The Company measures recoverability of assets to be held and used by a comparison of the carrying amount of an asset to future net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceed the fair value of the assets. The Company reports assets to be disposed of at the lower of the carrying amount or fair value less costs to sell.

(J) INCOME TAXES

In accordance with SFAS No. 109, "Accounting for Income Taxes", the Company recognizes deferred income taxes based on the expected future tax consequences of differences between the financial statement basis and the tax basis of assets and liabilities, calculated using enacted tax rates in effect for the year in which the differences are expected to be reflected in the tax return. Valuation allowances are provided if, based on the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

(K) WARRANTY

The Company provides warranties on certain of its products and services. The Company's warranty programs are described below:

Spire Solar Equipment warrants solar energy module manufacturing equipment sold for a total of 360 days, the first 90 days of which include the replacement of defective component parts and the labor to correct the defect and the next 270 days of which include only the cost of defective component parts.

Spire Solar Systems warrants photovoltaic electric power systems sold against defective components for 360 days to include the replacement of defective component parts and the labor to correct the defect. Spire Solar Systems also warrants that its photovoltaic electric power systems will achieve a minimum of 80% of rated electrical power output for 20 years.

Spire Biomedical warrants that any of its catheter products found to be defective will be replaced. No warranty is made that the failure of the product will not occur, and Spire disclaims any responsibility for any medical complications. Spire Biomedical warrants that its services only will meet the agreed upon specifications.

Bandwidth Semiconductor, LLC ("Bandwidth") warrants that its products will meet the agreed upon specifications.

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The Company provides for the estimated cost of product warranties, determined primarily from historical information, at the time product revenue is recognized. Should actual product failure warranties differ from the Company's estimates, revisions to the estimated warranty liability would be required. The Company incurred a high level of warranty expense attributed to one customer in 2006 and does not expect the problem to have a significant impact on earnings in future periods. The changes in the product warranties for the year ended December 31, 2006, are as follows:

Balance at December 31, 2004	$ 50,000
Provision charged to income	30,000
Usage	(30,000)
Balance at December 31, 2005	50,000
Provision charged to income	250,000
Usage	(185,000)
Balance at December 31, 2006	$ 115,000

(L) INTERNAL RESEARCH AND DEVELOPMENT COSTS

Internal research and development costs are charged to operations as incurred. During the years ended December 31, 2006 and 2005, Company funded research and development costs were approximately $734,000 and $1,346,000, respectively.

(M) EARNINGS (LOSS) PER SHARE

Basic earnings (loss) per share is computed by dividing income available to common stockholders by the weighted average number of common shares outstanding during the period. Diluted earnings (loss) per share gives effect to all potential dilutive common shares outstanding during the period. The computation

of diluted earnings (loss) per share does not assume conversion, exercise or contingent exercise of securities that would have an anti-dilutive effect on earnings (loss) per share. The Company did not pay any dividends in 2006 and 2005.

(N) COMPREHENSIVE INCOME (LOSS)

Comprehensive income (loss) is comprised of net income (loss) and other comprehensive income. Other comprehensive income includes certain changes in equity that are excluded from net income (loss). At December 31, 2006, accumulated other comprehensive income was comprised of unrealized gain of available-for-sale investments of approximately $60,000, net of tax.

(o) STOCK-BASED COMPENSATION

On January 1, 2006, the Company adopted the fair value recognition provisions of SFAS No. 123(R) Share-Based Payment ("Statement 123(R)") using the modified prospective method. In accordance with the modified prospective method, the Company has not restated its consolidated financial statements for prior periods. Under this transition method, stock-based compensation expense for the year ended December 31, 2006 includes stock-based compensation expense for all of the Company's stock-based compensation awards granted prior to, but not yet vested as of January 1, 2006, based on the grant-date fair value estimated in accordance with the provisions of FASB Statement No. 123, "Accounting for Stock-Based Compensation" ("Statement 123"). Stock-based compensation expense for all stock-based compensation awards granted on or after January 1, 2006 will be based on the grant-date fair value estimated in accordance with the provisions of Statement 123(R). The impact of Statement 123(R) on the Company's results of operations resulted in recognition of stock-based compensation expense of approximately $256,000 for the year ended December 31, 2006.

(P) USE OF ESTIMATES

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Significant estimates include revenue recognition, valuation of income tax assets, warranty reserves, inventory reserves, and intangible assets. Actual results could differ from those estimates.

(Q) FINANCIAL INSTRUMENTS

Financial instruments of the Company consist of cash and cash equivalents, short-term investments, accounts receivable, available for sale marketable securities, accounts payable and capital leases. The carrying amounts of these financial instruments approximate their fair value.

(R) SHIPPING AND HANDLING COSTS

Shipping and handling costs are included in cost of goods sold.

(S) FOREIGN CURRENCY

The Company sells only in U.S. dollars, generally against an irrevocable confirmed letter of credit through a major United States bank. Therefore the Company is not directly affected by foreign exchange fluctuations on its current

orders. However, fluctuations in foreign exchange rates do have an effect on the Company's customers' access to U.S. dollars and on the pricing competition on certain pieces of equipment that the Company sells in selected markets. The Company received Japanese yen in exchange for the sale of a license to its solar technology. In addition, purchases made and royalties received under the Company's Consortium Agreement with its Japanese partner will be in Japanese yen. The Company has committed to purchase certain pieces of equipment from European vendors; these commitments are denominated in Euros. The Company bears the risk of any currency fluctuations that may be associated with these commitments. The Company does not believe that foreign exchange fluctuations will materially affect its operations.

(T) NEW ACCOUNTING STANDARDS

In June 2006, the FASB issued FIN 48, Accounting for Uncertainty in Income Taxes - an interpretation of FASB Statement No. 109. FIN 48 is effective for fiscal years beginning after December 15, 2006. Earlier application is encouraged if the enterprise has not yet issued financial statements, including interim financial statements, in the period the Interpretation is adopted. This interpretation of FAS 109 is not expected to have a material impact on the Company's financial position or results of operations.

In September 2006, the FASB issued FAS No. 157, Fair Value Measurement ("FAS 157"). FAS 157 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. FAS 157 is effective for financial statements issued for fiscal years beginning after November 15, 2007 and interim periods within those fiscal years. The Company is evaluating the impact of adopting FAS 157 on the Company's financial position, results of operations and cash flow.

In September 2006, the Securities and Exchange Commission ("SEC") issued Staff Accounting Bulletin No. 108 ("SAB 108"). Due to diversity in practice among registrants, SAB 108 expresses SEC staff views regarding the process by which misstatements in financial statements are evaluated for purposes of determining whether financial statement restatement is necessary. SAB 108 is effective for fiscal years ending after November 15, 2006, and early application is encouraged. We do not believe SAB 108 will have a material impact on our results from operations or financial position.

3. ACCOUNTS RECEIVABLE/ADVANCES ON CONTRACTS IN PROGRESS

Net accounts receivable, trade consists of the following:

	December 31, 2006
Amounts billed	$3,876,000
Retainage	8,000
Accrued revenue	399,000
	4,283,000
Less: Allowance for sales returns and doubtful accounts	(273,000)
Net accounts receivable - trade	$4,010,000
Advances on contracts in progress	$8,219,000

Accrued revenue represents revenues recognized on contracts for which billings have not been presented to customers as of the balance sheet date. These amounts are billed and generally collected within one year.

Retainage represents revenues on certain United States government sponsored research and development contracts.

These amounts, which usually represent 15% of the Company's research fee on each applicable contract, are not collectible until a final cost review has been performed by government auditors. Included in retainage are amounts expected to be collected after one year, which totaled approximately $8,000 at December 31, 2006. The government's most recent audit was as of December 31, 2004, with no adverse impact. All other accounts receivable are expected to be collected within one year.

The Company maintains allowances for doubtful accounts for estimated losses resulting from the inability of its customers to pay amounts due. The Company actively pursues collection of past due receivables as the circumstances warrant. Customers are contacted to determine the status of payment and senior accounting and operations management are included in these efforts as is deemed necessary. A specific reserve will be established for past due accounts over 60 days and over a specified amount, when it is probable that a loss has been incurred and the Company can reasonably estimate the amount of the loss. The Company does not record an allowance for government receivables and invoices backed by letters of credit as realizeability is reasonably assured. Bad debts are written off against the allowance when identified. There is no dollar threshold for account balance write-offs. While rare, a write-off is only recorded when all efforts to collect the receivable have been exhausted and only in consultation with the appropriate business line manager.

In addition, the Company maintains an allowance for potential future product returns and rebates related to current period revenues. The Company analyzes the rate of historical returns when evaluating the adequacy of the allowance for sales returns and allowances. Returns and rebates are charged against the allowance when incurred.

Advances on contracts in progress represent contracts for which billings have been presented to the customer, either as deposits or progress payments against future shipments, but revenue has not been recognized.

4. SHORT-TERM INVESTMENTS

Short-term investments at December 31, 2006 consist of $5,000,000 of certificates of deposit maturing March 31, 2007. Interest receivable on these short-term investments amounted to approximately $158,000 at December 31, 2006, and is classified with other current assets. Approximately $1,969,000 of the short-term investment is restricted to back a letter of credit with a bank.

5. INVENTORIES

Inventories, net of $534,000 of reserves, consist of the following:

	December 31, 2006
Raw materials	$1,519,000
Work in process	2,310,000
Finished goods	388,000
	$4,217,000

6. PROPERTY AND EQUIPMENT

Property and equipment consists of the following:

	December 31, 2006
Building under capital lease	$3,390,000
Machinery and equipment	13,448,000
Furniture fixtures and computer equipment	3,760,000
Leasehold improvements	2,078,000
Construction in progress	3,889,000
	26,565,000
Accumulated depreciation and amortization	(19,892,000)
	$6,673,000

Depreciation and amortization expense relating to property and equipment was approximately $1,933,000 and $2,366,000 for the years ended December 31, 2006 and 2005, respectively.

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7. ACCRUED LIABILITIES

Accrued liabilities include the following:

	December 31, 2006
Accrued payroll and payroll taxes	$ 689,000
Accrued legal and audit fees	214,000
Accrued liability for equipment purchases	2,506,000
Accrued accounts payable	812,000
Accrued other	785,000
	$5,006,000

8. NOTES PAYABLE AND CREDIT ARRANGEMENTS

The Company has a $2,000,000 Loan Agreement (the "Agreement") with Citizens Bank of Massachusetts (the "Bank"), which expires on June 26, 2007. The Agreement provides Standby Letter of Credit guarantees, for certain foreign and domestic customers, which are 100% secured with cash. In December 2006, the Company temporarily expanded its line of credit to $3,000,000 in order to facilitate its purchase of production equipment for Bandwidth. On March 31, 2007 the credit line will revert back to the original $2,000,000. At December 31, 2006, the Company had approximately $390,000 of restricted cash and $1,969,000 of restricted short-term investments associated with outstanding letters of credit. Standby Letters of Credit under this Agreement bear interest at 1%; however, the Company retains any interest earned on the restricted investments. The Agreement also provides the Company with the ability to convert to a $2,000,000 revolving line of credit, based upon eligible accounts receivable and certain conversion covenants. Loans under this revolving line of credit bear interest at the Bank's prime rate as determined plus 1/2% (8.75% at December 31, 2006). At December 31, 2006, the Company had not exercised its conversion option and no amounts were outstanding under the revolving line of credit. A commitment fee of .25% is charged on the unused portion of the borrowing base. The Agreement contains covenants including certain financial reporting requirements.

At December 31, 2006, the Company was in compliance with its financial reporting requirements and cash balance covenants.

9. STOCK-BASED COMPENSATION

The Company has one employee stock option plan: the 1996 Equity Incentive Plan. This plan was approved by stockholders and provides that the Board of Directors may grant options to purchase the Company's common stock to key employees and directors of the Company. Incentive and non-qualified options must be granted at least at the fair market value of the common stock or, in the case of certain optionees, at 110% of such fair market value at the time of grant. The options may be exercised, subject to certain vesting requirements, for periods up to ten years from the date of issue.

At December 31, 2006, the Company has outstanding under its 1996 Equity Incentive Plan, 72,187 non-qualified stock options held by the unaffiliated directors of the Company for the purchase of common stock at an average price of $6.08 per share. The options may be exercised, subject to certain vesting requirements, for periods up to ten years from the date of issue.

A summary of the activity of this plan follows:

	Number of Shares	Weighted Average Exercise Price
Options Outstanding at December 31, 2005	406,314	$4.38
Granted	103,250	$8.18
Exercised	(72,500)	$4.66
Forfeited	(21,062)	$5.67
Options Outstanding at December 31, 2006	416,002	$5.21
Options Exercisable at December 31, 2006	208,387	$3.89
Options Available for Future Grant at December 31, 2006	--	

The 1996 Equity Incentive Plan expired, for future option grants, on December 10, 2006 with 419,849 available options not granted.

On January 1, 2006, the Company adopted the fair value recognition provisions of Statement 123(R) using the modified prospective method. In accordance with the modified prospective method, the Company has not restated its consolidated financial statements for prior periods. Under this transition method, stock-based compensation expense for the year ended December 31, 2006 includes stock-based compensation expense for all of the Company's stock-based compensation awards granted prior to, but not yet vested as of, January 1, 2006, based on the grant-date fair value estimated in accordance with the provisions of Statement No. 123. Stock-based compensation expense for all stock-based compensation awards granted on or after January 1, 2006 will be based on the grant-date fair value estimated in accordance with the provisions of Statement 123(R). The impact of Statement 123(R) on the Company's results of operations resulted in recognition of stock-based compensation expense of approximately

$256,000 for the year ended December 31, 2006. Approximately $209,000 of stock-based compensation expense was charged to selling, general and administrative expenses and approximately $47,000 was charged to cost of sales. This represents an incremental charge of $.03 per basic and diluted share for the year ended December 31, 2006. The adoption had no impact on cash used in operating activities or cash provided by financing activities. No stock-based compensation expense was capitalized during 2006 and no stock-based compensation expense was recorded in 2005. Compensation expense related to stock options to be charged in future periods amount to approximately $760,000 at December 31, 2006, which the Company expects to recognize as follows:

For the years ended December 31,	Expected Compensation Expense
2007	$278,000
2008	243,000
2009	153,000
2010	86,000
	$760,000

Prior to January 1, 2006, the Company accounted for share-based payments under the recognition and measurement provisions for Accounts Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees" ("APB 25"), and related Interpretations, as permitted by Statement 123. In accordance with APB 25 no compensation cost was required to be recognized for options granted to employees that had an exercise price equal to the market value of the underlying common stock on the date of grant.

The following table illustrates the pro forma effect on net loss and net loss per share if the Company had applied the fair value recognition provisions of Statement 123 to stock-based employee compensation for the twelve month period ended December 31, 2005. Since stock-based compensation expense for the year ended December 31, 2006 was calculated and recorded under the provisions of Statement 123(R), no pro forma disclosure for that period is presented.

	Year Ended December 31, 2005
Net income, as reported	$ 44,000
Deduct: Total stock-based employee compensation expense determined under fair value based method for all awards net of related tax effects	(322,000)
Pro forma net loss	$ (278,000)
Earnings per share:	
Basic - as reported	$ 0.01
Basic - pro forma	$ (0.04)
Diluted - as reported	$ 0.01
Diluted - pro forma	$ (0.04)

The Company uses the Black-Scholes option pricing model as its method for determining fair value of stock option grants, which was also used by the

Company for its pro forma information disclosures of stock-based compensation expense prior to the adoption of Statement 123(R). The Company uses the straight-line method of attributing the value of

stock-based compensation expense for all stock option grants. Stock compensation expense for all stock-based grants and awards is recognized over the service or vesting period of each grant or award.

Statement 123(R) requires forfeitures to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates in order to derive the Company's best estimate of awards ultimately expected to vest. Forfeitures represent only the unvested portion of a surrendered option and are typically estimated based on historical experience. Based on an analysis of the Company's historical data, the Company applied 14% forfeiture rates to stock options outstanding in determining its Statement 123(R) stock-based compensation expense which it believes is a reasonable forfeiture estimate for the period. In the Company's pro forma information required under Statement 123 for the periods prior to 2006, the Company accounted for forfeitures as they occurred.

The options outstanding and exercisable at December 31, 2006 were in the following exercise price ranges:

	Options Outstanding				Optio	
Range of Exercise Price	Number of Shares Outstanding	Weighted Average Remaining Contractual Life (Years)	Weighted-Average Exercise Price	Aggregate Intrinsic Value	Number of Shares Exercisable	Weigh Avera Remai Contra Life (Y
$1.78 to$2.70	29,374	3.20	$2.23	$ 178,000	28,874	3.
$2.71 to $3.90	115,496	4.85	$3.90	506,000	115,496	4.
$3.91 to $4.90	143,195	7.54	$4.33	565,000	56,510	6.
$4.91 to $6.36	12,187	8.01	$6.06	27,000	4,377	7.
$6.37 to $10.74	115,750	9.63	$8.28	24,000	3,130	8.
	416,002	7.08	$5.21	$1,300,000	208,387	5.

The aggregate intrinsic value in the table above represents the total intrinsic value, based on the Company's closing stock price of $8.28 as of December 31, 2006, which would have been received by the option holders had all option holders exercised their options as of that date. The total intrinsic value of options exercised was approximately $289,000 and $2,382,000, for the years ended December 31, 2006 and 2005, respectively.

The per-share weighted-average fair value of stock options granted was $5.41 and $3.58 for the years ended December 31, 2006 and 2005, respectively, on the date of grant using the Black-Scholes option-pricing model with the following weighted-average assumptions:

Year	Expected Dividend Yield	Risk-Free Interest Rate	Expected Option Life	Expected Volatility Factor
2005	--	3.97%	7.5 years	66.6%

2006	--	4.71%	4.5 years	83.3%

The risk free interest rate reflects treasury yields rates over a term that approximates the expected option life. The expected option life is calculated based on historical lives of all options issued under the plan. The expected volatility factor is determined by measuring the actual stock price volatility over a term equal to the expected useful life of the options granted.

On November 10, 2005, the Financial Accounting Standards Board ("FASB") issued FASB Staff Position SFAS 123R-3 "Transition Election Related to Accounting for Tax Effects of Share-Based Payment Awards." The Company has elected to adopt the alternative transition method provided by the FASB Staff Position for calculating the tax effects (if any) of stock-based compensation expense pursuant to Statement 123(R). The alternative transition method includes simplified methods to establish the beginning balance of the additional paid-in capital pool related to the tax effects of employee stock-based compensation, and to determine the subsequent impact to the additional paid-in capital pool and the consolidated statements of operations and cash flows of the tax effects of employee stock-based compensation awards that are outstanding upon adoption of Statement 123(R).

10. NASDAQ LISTING

At December 31, 2006, the Company's stockholder's equity was $9.5 million. As a result, the Company did not meet the $10 million minimum stockholder's equity requirement under Standard No. 1 for continued listing on the Nasdaq Global Market. However, the Company believes that it does meet Standard No. 2 for continued listing on the Nasdaq Global Market as the market value of its listed securities currently exceeds $50 million and it meets all other requirements under Standard No. 2. In order to remain in compliance with Standard No. 2, the Company's market value of listed securities cannot fall below $50 million for ten consecutive trading days at any point.

11. INCOME TAXES

There was no income tax provision (benefit) required for 2006 and 2005.

The reconciliation between the amount computed by applying the United States federal statutory tax rate of 34% to pretax income (loss) and the actual provision for income taxes follows:

	2006	2005
Income tax expense (benefit) at statutory rate	$(2,763,000)	$ 15,000
State income taxes net of federal income tax benefit	--	3,000
Increase (decrease) in valuation allowance related to income tax expense	2,674,000	(21,000)
Permanent differences	89,000	18,000
Tax credits	--	(14,000)
Foreign tax credits	--	(1,000)
Other	--	--
Total	$ --	$ --

The tax effects of temporary differences that give rise to significant portions of deferred tax assets and deferred tax liabilities are as follows:

	2006
Deferred tax assets:	
Accounts receivable	$ 110,000
Accruals	1,159,000
Inventories	752,000
Net operating loss carryforwards	4,096,000
General business credit carryforwards	22,000
Alternative minimum tax credit carryforwards	268,000
Foreign tax credit	38,000
Total gross deferred tax assets	$6,445,000
Depreciation	(45,000)
Total gross deferred tax liabilities	(45,000)
Valuation allowance	6,400,000
Net deferred tax assets	$ --

The net change in the total valuation allowance for the period ended December 31, 2006 was an increase of $3.2 million. Gross net operating loss carryforwards were approximately $10.2 million as of December 31, 2006. Included in this amount was approximately $2.5 million attributable to equity based compensation transactions. Approximately $1 million of the valuation allowance will be relieved through equity if these deductions for equity based transactions are realized.

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12. COMMITMENTS

Letters of Credit

Outstanding letters of credit totaled $2,359,000 at December 31, 2006. The letters of credit principally secure performance obligations, and allow holders to draw funds up to the face amount of the letter of credit if the Company does not perform as contractually required. These letters of credit expire through 2007 and are 100% secured by cash and short-term investments.

Property Under Capital Leases and Lease Commitments

At December 31, 2006, the Company had capital leases in effect for a building. The Company also had operating leases for office space and other miscellaneous items.

The components of capitalized costs and carrying value of the property under capital leases were as follows:

	December 31, 2006
Related party capital lease:	
Hudson, New Hampshire building	$3,390,000
Less: accumulated depreciation	(2,430,000)

$ 960,000

At December 31, 2006, future minimum lease payments for the period ended are as follows:

	Related Party Capital Lease	Unrelated Party Operating Leases	Related Operatin
2007	$ 1,103,000	$ 110,000	$ 1,2
2008	495,000	75,000	
2009	--	41,000	
Total minimum lease payments	1,598,000	$ 226,000	$ 1,2
Less amount representing interest	(85,000)		
Present value of minimum lease payments	1,513,000		
Less current portion	(1,027,000)		
Long-term portion of capital lease obligation	$ 486,000		

Unrelated Party Capital Lease

In September 2001, Bandwidth entered into an agreement with GE Capital Leasing Corp, for the lease of a reactor for its wafer production line. The lease was originally accounted for as a capital lease. Under the lease agreement, the Company was making monthly payments of approximately $36,000. After the initial three-year period ending in September 2004, the lease allowed for an additional two-year extension. In September 2004, the Company extended the lease term for the additional two years to September 2006. In September 2006 the Company purchased the equipment from the leasing company for $275,000 resulting in a loss on buyout of capital lease of $105,000. The expense is included in selling, general and administrative expense for the optoelectronics business unit.

Related Party Capital Lease

In conjunction with the acquisition of Bandwidth by the Company, SPI-Trust, a Trust of which Roger G. Little, Chairman of the Board, Chief Executive Officer and President of the Company, is sole trustee and principal beneficiary, purchased from Stratos Lightwave, Inc. (Bandwidth's former owner) the building that Bandwidth occupies in Hudson, New Hampshire for $3.7 million. Subsequently, the Company entered into a lease for the building (90,000 square feet) with SPI-Trust whereby the Company will pay $4.1 million to the SPI-Trust over an initial five-year term expiring in 2008 with a Company option to extend for five years. In addition to the rent payments, the lease obligates the Company to keep on deposit with SPI-Trust the equivalent of three months rent ($236,000 as of December 31, 2006.) The lease agreement does not provide for a transfer of ownership at any point. Interest costs were assumed at 7%. For the years ended December 31,

2006 and 2005, interest expense was approximately $136,000 and $179,000, respectively. This lease has been classified as a related party capital lease

and a summary of payments (including interest) follows:

Year	Rate Per Square Foot	Annual Rent	Monthly Rent	Security Deposit
June 1, 2003 - May 31, 2004	$6.00	$ 540,000	$45,000	$135,000
June 1, 2004 - May 31, 2005	7.50	675,000	56,250	168,750
June 1, 2005 - May 31, 2006	8.50	765,000	63,750	191,250
June 1, 2006 - May 31, 2007	10.50	945,000	78,750	236,250
June 1, 2007 - May 31, 2008	13.50	1,215,000	101,250	303,750
		$ 4,140,000		

At December 31, 2006, $1,027,000 and $486,000 are reflected as the current and long-term portions of capital lease obligation- related party, respectively, in the consolidated balance sheet.

Unrelated Party Operating Leases

Unrelated party operating leases primarily consist of leases for copiers and the telephone system.

Related Party Operating Lease

The Company subleased 77,000 square-feet in a building leased by Mykrolis Corporation, who in turn leased the building from SPI-Trust, a Trust of which Roger Little, Chairman of the Board, Chief Executive Officer and President of the Company, is the sole trustee and principal beneficiary. The 1985 sublease, originally was for a period of ten years, was extended for a five-year period expiring on November 30, 2000 and was further extended for a five-year period expiring on November 30, 2005. The sublease agreement provided for minimum rental payments plus annual increases linked to the consumer price index. Effective December 1, 2005, the Company entered into a two-year Extension of Lease Agreement (the "Lease Extension") directly with SPI-Trust.

The Company assumed certain responsibilities of Mykrolis, the tenant under the former lease, as a result of the Lease Extension including payment of all building and real estate related expenses associated with the ongoing operations of the property. The Company will allocate a portion of these expenses to SPI-Trust based on pre-established formulas utilizing square footage and actual usage where applicable. These allocated expenses will be invoiced monthly and be paid utilizing a SPI-Trust escrow account of which the Company has sole withdrawal authority. SPI-Trust is required to maintain three (3) months of its anticipated operating costs within this escrow account. On December 1, 2006, the Company and SPI-Trust amended the Lease Extension. The amendment increases the leased area to 91,701 square feet. Rent expense under this sublease, lease extension and amendment, for the years ended December 31, 2006 and 2005 was approximately $1,262,000 and $1,093,000, respectively. In connection with this lease, the Company was invoiced and paid certain SPI-Trust related expenses, including building maintenance and insurance. The Company invoiced SPI-Trust on a monthly basis and SPI-Trust reimbursed the Company for all such costs. Approximately $14,000 was due from SPI-Trust as of December 31, 2006 for building related costs. The Company believes that the terms of the Lease Extension, as amended, are commercially reasonable.

In conjunction with the acquisition of Bandwidth by the Company, the Company released Bandwidth from a lease agreement that had existed between

Bandwidth and the Company. In November 2001, Bandwidth, under its previous owner, abandoned the space being subleased from the Company in Bedford, Massachusetts, to move to a new building and wafer fabrication lab in Hudson, New Hampshire. At that time, there were 48 months left on the lease. Subsequent to the move to Hudson, New Hampshire, Bandwidth was unable to sublease the Bedford, Massachusetts space, and was paying the Company for the unused space. In conjunction with the acquisition of Bandwidth in May 2003, the Company released Bandwidth from the remaining lease payments. However, the Company continued to be obligated to Mykrolis Corporation for the entire amount of the remaining lease agreement. As a result, the present value of the remaining lease obligation associated with the unused space was recorded as an assumed liability of $1,247,241 in the purchase accounting. This lease obligation terminated in November 2005. The difference between the actual rent payment and the discounted rent payment was accreted to the consolidated statements of operations as interest expense. Interest of 4.75% had been assumed on this obligation. For the year ended December 31, 2005, interest expense was approximately $11,000.

Agreement with BP Solarex

On October 8, 1999, the Company entered into an agreement with BP Solarex ("BPS") in which BPS agreed to purchase certain production equipment built by the Company, for use in the Company's Chicago factory ("Spire Solar Chicago") and in return the Company agreed to purchase solar cells of a minimum of two megawatts per year over a five-year term for a fixed fee from BPS (the "Purchase Commitment"). BPS had the right to reclaim the equipment if the Company failed to meet its obligations in the Purchase Commitment. The proceeds from the sale of the production equipment purchased by BPS were classified as an unearned purchase discount in the Company's consolidated balance sheets in prior periods. The Company had amortized this discount as a reduction to cost of sales as it purchased materials from BPS. In 2003 the Company and BPS retroactively amended the agreement to include all purchases of solar modules, solar systems, inverter systems and other system equipment purchased by the Company from BPS in the purchase commitment calculation. Amortization of the purchase discount amounted to approximately $65,000 for the years ended December 31, 2005. The production equipment had been classified as a component of fixed assets. Depreciation amounted to approximately $211,000 for the year ended December 31, 2005.

In addition, the agreement contained a put option for BPS to have the Company create a separate legal entity for Spire Solar Chicago and for BPS to convert the value of the equipment and additional costs, as defined, into equity of the new legal entity. The percentage ownership in the joint venture would be determined based on the cumulative investments by BPS and the Company. The amended agreement also allowed the Company to terminate the agreement on 30 days notice in consideration for a termination payment based on the aggregate amount of Spire purchases of BPS products and the fair market value of the production equipment purchased by BPS at the time of the termination election.

On August 16, 2005, the Company entered into a Settlement and Contract Termination Agreement (the "Termination Agreement") with BPS effective September 30, 2005. Under the terms of the Termination Agreement, the Company and BPS agreed to terminate the amended agreement including the Purchase Commitment. In exchange for release of the purchase commitment, the Company paid BPS $275,000 and retained ownership of the production equipment. The unamortized unearned purchase discount as of the effective date was approximately $1,205,000 and the net book value of the production equipment was approximately $287,000. As result of this action, Spire reevaluated the recoverability of the long-lived assets associated with this segment as part of its third quarter review. Based on cash flow projections for the Solar System segment, the Company determined that the

production equipment was impaired and should be written-off.

The Company has recorded an approximate $593,000 gain from these actions, which is reflected as a gain on extinguishment of purchase commitment in the accompanying consolidated statement of operations for the year ended December 31, 2005. The components of this gain are outlined below:

Unearned purchase discount	$1,205,000
Net book value of production equipment	(287,000)
Payment to extinguish purchase commitment	(275,000)
Accrued relocation costs	(50,000)
Gain on extinguishment of purchase commitment	$ 593,000

13. EMPLOYEE BENEFIT PLANS

Profit Sharing Plan

In 1985, the Company adopted a profit sharing plan under Section 401(k) of the Internal Revenue Code. This plan allows employees to defer up to 17.5% of their income up to certain dollar limits on a pretax basis through contributions to the plan. No matching contributions have been made to the plan for the years ended December 31, 2006 and 2005, respectively.

Deferred Compensation Plan

Effective January 1, 2002, the Company adopted the Spire Corporation Non-Qualified Deferred Compensation Plan (the "Plan") for Roger Little, Chairman of the Board, Chief Executive Officer and President of the Company (the "Participant"). Under this Plan, the Company makes equal monthly contributions to the Spire Corporation Non-Qualified Deferred Compensation Trust (the "Trust") up to the annually required amount of $250,000. The Company records these contributions as selling, general and administrative expense when made. The Trustee makes all investment decisions for the Trust on behalf of the Participant. The Company has not guaranteed a return on investment for the Participant, however, all

earnings and losses on the Plan assets are borne by the Participant. All contributions and earnings are fully vested to the Participant when made but are subject to the Company's creditors in the event of bankruptcy. As a result, the assets held in the Plan have been recorded as available-for-sale investments in the consolidated balance sheet with a corresponding liability being recorded as deferred compensation. Unrealized gains and losses on the available-for-sale investments are recorded as accumulated other comprehensive income within the equity section of the consolidated balance sheet. A corresponding entry to deferred compensation is made to increase (decrease) the amounts due the Participant resulting from the changes in the asset value with an offsetting charge or credit to selling, general and administrative expense. Compensation expense was approximately $250,000 in each of the years ended December 31, 2006 and 2005.

14. EARNINGS (LOSS) PER SHARE

The following table provides a reconciliation of the denominators of the Company's reported basic and diluted earnings (loss) per share computations for the years ended December 31:

	2006	2005
Weighted average number of common and common equivalent shares outstanding - basic	7,898,320	6,975,347
Add: Net additional common shares upon assumed exercise of common stock options	--	261,782
Weighted average number of common and common equivalent shares - diluted	7,898,320	7,237,129

For the year ended December 31, 2005, 32,500 shares of common stock issuable relative to stock options had exercise prices per share that exceeded the average market price of the Company's common stock and were excluded from the calculation of diluted shares since their inclusion would be anti-dilutive.

For the year ended December 31, 2006 416,002 shares of common stock issuable relative to stock options were excluded from the calculation of diluted shares since their inclusion would have been anit-dilutive.

15. LEGAL MATTERS

From time to time, the Company is subject to legal proceedings and claims arising from the conduct of its business operations. The Company does not expect the outcome of these proceedings, either individually or in the aggregate, to have a material adverse effect on its financial position, results of operations, or cash flows.

The Company was named a defendant in 58 cases filed from August 2001 to July 2003 in various state courts in Texas by persons claiming damages from the use of allegedly defective mechanical heart valves coated by a process licensed by the Company to St. Jude Medical, Inc., the heart valve manufacturer, which has also been named as a defendant in these cases. In June 2003, a motion for summary judgment was granted to the Company and most of these cases were dismissed, based on the principle of federal preemption. The Texas Court of Appeals upheld the lower court's decision, and, because these cases were not submitted for review to the Texas Supreme Court, the judgments rendered are now final.

As of January 2007, four cases remain pending in various district courts in Harris County, Texas. One of these cases appears to remain pending despite its inclusion in the original summary judgment which was subsequently upheld by the first court of appeals. This may be the result of an administrative omission; counsel for the Company intends to confirm with the court that this case should in fact no longer be pending. Two of the remaining cases where filed after the motion for summary judgment, but since the appeals court has subsequently ruled in the Company's favor, counsel from the Company is asking the plaintiffs in these cases to consider voluntary dismissal, or alternatively, because the cases are not actively prosecuted, to ask the court to dismiss them. The remaining case was not subject to the preemption argument advanced by the Company's counsel and either may be settled or may go to trial.

During the second quarter of 2005 a suit was filed by Arrow International, Inc. against Spire Biomedical, Inc., a wholly owned subsidiary of the Company, alleging patent infringement by the Company. The complaint claims one of the Company's catheter products induces and contributes to infringement when medical professionals insert it. The Company has responded to the complaint denying all allegations and has filed certain counterclaims. The discovery process in this case has continued and is nearly complete. The Company filed a motion for summary judgment, asserting patent invalidity resulting from plaintiff's failure to follow the administrative procedures of the U.S. Patent and Trademark Office

("USPTO") which failure has remained uncorrected. On August 4, 2006, the Court granted the Company's motion and

dismissed this lawsuit without prejudice. Plaintiffs applied to revive the applicable patent, which application was granted by the USPTO in August 2006. Plaintiffs refiled their lawsuit against the Company in September 2006. The Company has filed its answer and resumed its defense. The Parties are concluding discovery at this time. In January, 2007, a 60 day stay was granted to the parties in order to mediate a settlement in the case. Based on information presently available to the Company, the Company believes that it does not infringe any valid claim of the plaintiff's patent and that, consequently, it has meritorious legal defenses with respect to this action.

In an amended complaint filed December 28, 2006, in the Eastern Division of the U.S. District Court for the Southern District of Ohio, the wife and executor of the estate of Darrell Adams, deceased, alleges that the failure of a hemodialysis catheter manufactured by the Company was a cause of his death. Counsel retained by its insurance underwriters, on behalf of the Company, have filed an answer denying all such allegations and asserting various defenses. Based on the knowledge available to it at this time, the Company determined the likelihood of an unfavorable outcome to be remote and accordingly has not recorded an accrued expense.

16. OPERATING SEGMENTS AND RELATED INFORMATION

The following table presents certain operating division information in accordance with the provisions of SFAS No. 131, "Disclosure about Segments of an Enterprise and Related Information".

	Spire Solar	Spire Biomedical	Optoelectronics	Other	
December 31, 2006					
Net sales and revenues	$ 6,992,000	$10,517,000	$2,616,000	$ --	$
Earnings (loss) from operations	(4,011,000)	(1,241,000)	(2,999,000)	--	
Identifiable assets	7,516,000	4,819,000	6,615,000	8,734,000	
Capital expenditures	14,000	309,000	3,618,000	144,000	
Depreciation and amortization	88,000	374,000	1,421,000	144,000	
Stock-based compensation	40,000	66,000	34,000	116,000	
December 31, 2005					
Net sales and revenues	$9,393,000	$10,578,000	$2,451,000	$ --	$
Earnings (loss) from operations	918,000	2,170,000	(2,740,000)	--	
Identifiable assets	3,262,000	4,043,000	4,392,000	6,255,000	
Capital expenditures	94,000	184,000	84,000	66,000	
Depreciation and amortization	285,000	521,000	1,437,000	208,000	

The following table shows net sales and revenues by geographic area (based on customer location) for the years ended December 31:

	2006	%	2005	%
Foreign	$6,671,000	33%	$7,463,000	33%
United States	13,454,000	67%	14,959,000	67%
	$20,125,000	100%	$22,422,000	100%

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The Company's operations are focused on three primary business areas: Spire Solar (comprised of solar equipment and solar systems), Spire Biomedical (comprised of biomedical and biophotonics research) and optoelectronics (comprised primarily of Bandwidth Semiconductor, LLC). In previous years, solar equipment and solar systems had been reported as separate business segments. During 2006 solar equipment and solar systems have been merged under common management and are no longer reported separately. Spire Solar and Spire Biomedical operate out of the Company's facility in Bedford, Massachusetts. Bandwidth Semiconductor LLC operates out of the Company's facility in Hudson, New Hampshire. Each business area is independently managed and has separate financial results that are reviewed by the Board of Directors and Chief Executive Officer and the chief executive officers of each operating division.

Earnings (loss) from operations is net sales less cost of sales, selling, general and administrative expenses and gain on sales of licenses, but is not affected either by non-operating income or by income taxes. The Spire Biomedical segment benefited from a $3,000,000 gain on sale of license in 2005. The Solar segment benefited from a $3,320,000 gain on sale of license in 2005. In calculating earnings from operations for individual business units, substantial administrative expenses incurred at the operating level that are common to more than one segment are allocated on a net sales basis. Certain

corporate expenses of an operational nature are also allocated to the divisions based on factors including occupancy, employment, and purchasing volume. All intercompany transactions have been eliminated.

Revenues from contracts with United States government agencies for 2006 and 2005 were approximately $2,261,000 and $3,233,000, or 11% and 14% of consolidated net sales and revenues, respectively.

One customer accounted for 10% of gross sales in 2006, and no customer accounted for more than 10% of gross sales during 2005. Two customers represented approximately 14% and 10% of net accounts receivable, trade at December 31, 2006 and one customer represented approximately 19% of net account receivables, trade at December 31, 2005.

Germany is the only foreign country that accounted for more than 10% of sales in 2006 and no foreign countries accounted for more that 10% of sales in 2005. Net sales to customers in Germany accounted for $2,568,000 in 2006.

17. SALE OF LICENSES

On May 26, 2005, the Company entered into a global consortium agreement (the "Agreement") with Nisshinbo Industries, Inc. ("Nisshinbo") for the development, manufacturing, and sales of solar photovoltaic module manufacturing equipment. Nisshinbo's prior relationship with Spire was as a sub-licensee of Marubeni Corporation with whom the Company had a license arrangement that was originally signed in 1997, extended in 2003, and terminated in May 2005. Nisshinbo's role as sub-licensee was to manufacture equipment for Marubeni to sell to the Japanese market based upon the Company's proprietary technology. Under the terms of the Agreement, Nisshinbo purchased a license to manufacture and sell the Company's module manufacturing equipment on a semi-exclusive basis for an upfront fee plus additional royalties based on ongoing equipment sales over a ten-year period. In addition, the Company and Nisshinbo agreed, but are not obligated, to pursue joint research and development, product improvement activities and sales and marketing efforts. The companies may share market costs such as product collateral and trade show expenses. It may also collaborate on

sales leads and have the other company manufacture and service its equipment in the field. Both companies have reciprocal rights to participate in the other company's R&D efforts on a going-forward basis. Nisshinbo can request the Company to further develop a technology but Nisshinbo must (a) share in the costs of these development efforts equally with the Company (and thereafter have joint ownership) otherwise the Company will own the technology under a partial contribute or no participation by Nisshinbo with the Company receiving a royalty from Nisshinbo if it utilizes the technology. At the end of the license all non-jointly owned technology developed under the Agreement will revert back to the owner, with the other party being required to purchase a new license based upon the fair market value of that technology in order to continue to utilize the technology.

On June 27, 2005, the Company received JPY 400,000,000 from the sale of this permanent license. The Company determined that the Nisshinbo Agreement contains multiple elements consisting of (1) the granting of a license to utilize the Company's technology and (2) the semi-exclusive right to utilize the technology for a period of 10 years. The Company believes the granting of the license meets the criteria of Emerging Issues Task Force ("EITF") 00-21, "Accounting for Revenue Arrangements with Multiple Elements", paragraph 9(a), as the license to utilize the technology has value to Nisshinbo on a stand-alone basis. Further, Question 1 to Securities and Exchange Commission ("SEC") Staff Accounting Bulletin Topic 13A-3f "Nonrefundable Up-Front Fees", was directly considered as guidance for determining if the upfront fee under the Nisshinbo Agreement should be recognized upon the signing of contract or recognized over the term of the license. It is the Company's belief that a separate earnings process was complete as Nisshinbo was purchasing access to utilize technology it already had in its possession; therefore, recognition of the gain on the sale was appropriate. The Company has determined the fair value of the license and royalty based on an appraisal. As a result, a $3,320,000 gain was recognized as a gain on sale of license in the accompanying consolidated statements of operations for the year ended December 31, 2005. The balance of $350,000 was determined to represent an advanced royalty payment and was recorded as an advance on contracts in progress. This amount is being credited as royalty income over the ten year license period on a straight-line basis. The Company recognized $35,000 and $17,500 of royalty income associated with this license in 2006 and 2005 respectively.

18. PRIVATE PLACEMENT OF EQUITY

On April 26, 2006, the Company entered into Stock Purchase Agreements with two accredited institutional investors in connection with the private placement of 941,176 shares of the Company's common stock at a purchase price of $8.50 per share. On April 28, 2006, the Company completed the private placement. The net proceeds of the sale were approximately $7.7 million after deducting placement fees and other closing costs.

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Under the terms of the Stock Purchase Agreements, the Company was obligated to file a registration statement on Form S-3 with the SEC, registering the resale of the shares of common stock sold. The Company filed the Form S-3 on May 3, 2006 and the SEC declared it effective on May 12, 2006. In the event that this registration statement ceases to be effective and available to the investors for an aggregate period of 30 days in any 12 month period, the Company must pay liquidated damages starting on the 61st day (in the aggregate) of any suspensions in any 12 month period, and each 30th day thereafter until the suspension is terminated an amount equal to 1% of the aggregate purchase price paid by the investors. However, the Company is not obligated to pay liquidation damages on shares not owned by the investors at the time of the suspension or shares that are tradable under Rule 144(k). The Company reviewed EITF 00-19,

"Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock", and EITF 05-04, "The Effect of a Liquidated Damages Clause on a Freestanding Financial Instrument Subject to EITF Issue No. 00-19", to determine if these liquidation damages provisions require a portion of the equity raised needs to be accounted under FASB Statement No. 133, "Accounting for Derivative Instruments and Hedging Activities" ("Statement 133"). It determined that the liquidated damages provisions did not require separate treatment under Statement 133 and therefore will treat all of the funds raised under these agreements as additions to permanent equity.

19. MANUFACTURING AGREEMENTS

On August 29, 2006, the Company's wholly owned subsidiary, Bandwidth Semiconductor, LLC ("Bandwidth"), entered into a five-year manufacturing agreement in which it will be the exclusive supplier to Principia Lightworks, Inc. ("Principia"), of semiconductor wafers, enabling Principia, a Woodland Hills, California firm, to begin high volume production of its patented device, an electron beam pumped vertical cavity surface emitting laser ("eVCSEL") as a light source for production display applications, including rear-projection consumer televisions. Bandwidth will manufacture epitaxial wafers which will be further processed by Principia to produce red, blue, and green colored lasers.

Under the terms of this agreement, Bandwidth will be producing III/V and II/VI wafers for Principia with full production expected to start in mid 2007. Bandwidth will begin the scale-up of its existing metalorganic chemical vapor deposition ("MOCVD") and related processing facilities to satisfy Principia's requirements. Principia made an up-front payment for nonrecurring engineering and facility access costs and, in addition, will make monthly facility availability payments throughout the term of the agreement. The first eighteen months of the facility availability payments have been secured by a pledge of Principia common equity which shall be returned after eighteen months upon receipt of the monthly payments. The Company reviewed FASB Statement No. 140, "Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Debt", and determined that the Company shall not recognize the pledged shares and only will recognize if Principia defaults under the terms of the agreement. Principia has no right of repayment with respect to these payments. Bandwidth has an obligation to purchase and qualify MOCVD equipment to manufacture the wafers and make available the facility for Principia's manufacturing needs for a period of 5 years. Upon qualification, Principia has an obligation to purchase a minimum quantity of wafers for the first two years of the Agreement. A fixed price has been established for each wafer produced with some discounting contingent upon Principia committing to certain volume commitments. Until Bandwidth qualifies the new equipment, it will defer the revenue recognition of any advance payments related to the facility preparation and availability. Bandwidth shall have full ownership of the equipment and may utilize any excess capacity for other customers. In September 2006, the Company entered into a purchase order with a manufacturer of MOCVD equipment. Although the Company will be committing capital resources to complete the scale-up, it anticipates the up-front payment plus the monthly payments will be sufficient to meet its capital requirements under the agreement. Providing the parties meet their respective obligations over the term of the Agreement, no net outlay of capital will be needed. The new equipment has been received and installed at Bandwidth and is currently being qualified for Principia.

On March 16, 2006, Company entered into a Turn-Key Project Agreement to provide a privately owned solar firm located in Europe (the "Purchaser"), a commercially sized multi-megawatt turn-key Photovoltaic Cell Manufacturing Line (the "Cell Line") for $6.75 million (to be paid over the course of two years upon the achievement of certain milestones). The agreement was subsequently amended to include automation equipment bringing the total value of the contract to $9 million. The Cell Line is scheduled to ship during the second quarter of 2007 and is subject to various design, manufacturing and performance

specifications. Actual shipment of the equipment will depend on the availability of the customer's facility which is currently under construction. The Company is subject to certain penalty provisions if the Cell Line does not meet agreed-upon performance criteria within a set period of time. Under this agreement, the Company also agreed to supply the Purchaser up to 1,500,000 mono-crystalline wafers or multi-crystalline wafers (meeting certain electrical capacity and efficiency standards) prior to the starting date of production of cells by the Cell Line or within 60 days after shipment of the Cell Line. The actual amount of wafers ordered and the price of such wafers is subject to the mutual agreement of the parties, and the Purchaser may cancel this non-exclusive arrangement at any time. The price for such wafer supply is in addition to the purchase price for the Cell Line. At December 31, 2006, the criteria for revenue

recognition under Staff Accounting Bulletin No. 104, "Revenue Recognition in Financial Statements", have not been met therefore no revenue has been recognized.

In addition, concurrently with the execution of the Turn-Key Project Agreement, the Company and the Purchaser entered into a Wafer Supply Agreement under which the Company agreed to supply the Purchaser up to an additional 4,500,000 wafers (meeting certain electrical capacity and efficiency standards) during the first three quarters of 2007. The actual amount of wafers ordered and the price of such wafers is subject to the mutual agreement of the parties, and the Purchaser may cancel this non-exclusive arrangement at any time.

ITEM 8. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 8A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), the Company carried out an evaluation under the supervision and with the participation of the Company's management, including the Chief Executive Officer and President and the Chief Financial Officer, of the effectiveness of the Company's disclosure controls and procedures as of December 31, 2006. In designing and evaluating the Company's disclosure controls and procedures, the Company and its management recognize that there are inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures. Accordingly, even effective disclosure controls and procedures can only provide reasonable assurance of achieving their desired control objectives. Additionally, in evaluating and implementing possible controls and procedures, the Company's management was required to apply its reasonable judgment. Furthermore, management considered certain matters deemed by the Company's independent auditors to constitute a material weakness in the Company's internal control over financial reporting, as described below. Based upon the required evaluation, the Chief Executive Officer and President and the Chief Financial Officer concluded that as of December 31, 2006, due to the material weakness in internal control over financial reporting described below, the Company's disclosure controls and procedures were not effective to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and

Exchange Commission's rules and forms.

On March 27, 2007, the Company's independent auditor, Vitale, Caturano & Company, Ltd. ("VCC") issued a letter advising management and the Audit Committee, that, in connection with its audit of the Company's consolidated financial statements for the year ended December 31, 2006, it noted certain matters involving internal control and its operation that it considered to be a material weakness under standards of the Public Company Accounting Oversight Board. VCC noted that, since its March 2006 letter, in which VCC noted material weaknesses in the Company's internal controls in connection with its audit of the Company's 2005 financial statements, the Company continues to improve its internal control over financial reporting; however, account reconciliations still contained errors that resulted in material audit adjustments and were not always prepared, reviewed and approved in a timely manner.

In addition, the Company continued to suffer due to turnover in the Finance department, but has worked diligently to fill these positions. During 2006, the Company hired a Cost Accountant to assist in analyzing revenue transactions, but still had to supplement its staff with outside assistance. The Company remained significantly resource constrained and the established controls, policies and procedures could not be properly performed with the then current staffing.

In January 2007, the Company hired a Corporate Controller and recently appointed him to Chief Accounting Officer. Lastly, in March 2007 the Company has hired a Director of Corporate Compliance and Controls, who will have the primary responsibility of analyzing, improving, formalizing, documenting and testing the internal control over financial reporting.

Changes in Internal Control Over Financial Reporting

There was no change in the Company's internal control over financial reporting that occurred during the fourth fiscal quarter of 2006 that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

The Sarbanes-Oxley Act of 2002 imposed many new requirements on public companies, the most significant of which involves the documentation, testing and reporting of the effectiveness of our internal control over financial reporting. We expect this effort will involve substantial time and expense. Because we have limited resources we can devote to this effort we cannot be sure that we will be able to complete the task in a timely manner or that our internal controls will meet the standards that are currently required. We have various significant control deficiencies identified by our registered public accounting firm. These deficiencies include, among other things, inadequate staffing in our finance area and the need to improve and update the documentation of our policies, procedures, and related internal controls surrounding our accounting and financial reporting functions. Although we are not yet required to report on our assessment of the effectiveness of our internal control over financial reporting, until at least the end of the next fiscal year (or provide auditor attestation until the end of fiscal 2008) there is a reasonable likelihood that our registered public accounting firm will inform us of one or more material weaknesses before we complete our compliance and remediation efforts. We are working to address the issues raised by these control deficiencies, but we may not be successful in remediating them within the required time frame.

ITEM 8B. OTHER INFORMATION

None

PART III

ITEM 9. DIRECTORS, EXECUTIVE OFFICERS, PROMOTERS, CONTROL PERSONS AND CORPORATE GOVERNANCE; COMPLIANCE WITH SECTION 16(A) OF THE EXCHANGE ACT

Information concerning the directors, executive officers, promoters, control persons and corporate governance of the Company is set forth in the Proxy Statement for the Special Meeting in Lieu of 2006 Annual Meeting of Stockholders ("Proxy Statement") and is incorporated herein by reference. Information concerning compliance with Section 16(a) of the Exchange Act is set forth under "Compliance with Section 16(a) of the Securities Exchange Act of 1934" in the Proxy Statement and is incorporated herein by reference.

The Company has adopted a Code of Business Conduct and Ethics (the "Code") that applies to its principal executive officer, principal financial officer and principal accounting officer or controller, as well as to directors, officers and employees generally. The Code sets forth written standards that are reasonably designed to deter wrongdoing and to promote (1) honest and ethical conduct, (2) full, fair, accurate, timely and understandable disclosure in reports and documents that the Company files with the SEC and in other public communications made by the Company, (3) compliance with applicable governmental laws, rules and regulations, (4) the prompt internal reporting of violations of the Code to an appropriate person or persons identified in the Code and (5) accountability for adherence to the Code. The Company will provide to any person without charge, upon request, a copy of the Code. Any person wishing a copy should write to Michael W. O'Dougherty, Clerk, Spire Corporation, One Patriots Park, Bedford, Massachusetts 01730-2396.

A copy of the Code is incorporated by reference as Exhibit 21 to the 2003 Form 10-KSB.

ITEM 10. EXECUTIVE COMPENSATION

Information concerning executive compensation is set forth in the Proxy Statement and is incorporated herein by reference.

ITEM 11. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information concerning security ownership of certain beneficial owners and management, and related stockholder matters, is set forth in the Proxy Statement and is incorporated herein by reference.

ITEM 12. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information concerning certain relationships and related transactions, and director independence, is set forth in the Proxy Statement and is incorporated herein by reference.

ITEM 13. EXHIBITS

The following Exhibits are either filed herewith or are incorporated by reference as may be indicated.

3(a) Articles of Organization as amended, incorporated by reference to Exhibit 3(a) to the Company's Form 10-QSB for the quarter ended June 30,

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3(b) By-Laws, as amended, incorporated by reference to Exhibit 3(b) to the Company's Form 10-K for the year ended December 31, 1989

10(a) Sublease Agreement with Millipore Corporation as landlord for facility at Bedford, Massachusetts dated November 25, 1985, incorporated by reference to Exhibit 10(a) to the Company's Form 10-K for the year ended December 31, 1985

10(b) Amendment to Sublease Agreement with Millipore Corporation as landlord for facility at Bedford, Massachusetts dated December 30, 1999, incorporated by reference to Exhibit 10(b) to the Company's Form 10-KSB for the year ended December 31, 1999 ("1999 10-KSB")

10(c) Sublease Agreement with Methode Electronics, Inc. as tenant for a portion of the facility at Bedford, Massachusetts dated December 29, 1999, incorporated by reference to Exhibit 10(c) to the 1999 10-KSB

10(d) Asset Purchase Agreement dated as of November 18, 1999 with Methode Electronics, Inc. and Methode Massachusetts, Inc., incorporated by reference to Exhibit 1 to the Company's Form 8-K dated December 29, 1999

10(e) Employment Agreement with Roger G. Little dated as of January 1, 2002, incorporated by reference to Exhibit 10(e) to the Company's Form 10-KSB for the year ended December 31, 2001 ("2001 10-KSB")

10(f) Deferred Compensation Plan with Roger G. Little dated as of January 1, 2002, incorporated by reference to Exhibit 10(f) to 2001 10-KSB

10(g) Spire Corporation 1985 Incentive Stock Option Plan, incorporated by reference to Exhibit 10(d) to the Company's Form 10-K for the year ended December 31, 1984

10(h) Spire Corporation 401(k) Profit Sharing Plan, incorporated by reference to Exhibit 10(h) to the Company's Form 10-KSB for the year ended December 31, 2003 ("2003 10-KSB")

10(i) Spire Corporation 1996 Equity Incentive Plan, incorporated by reference to Appendix A to the Company's Proxy Statement dated April 15, 2004

10(j) Purchase Agreement dated May 23, 2003 with Stratos Lightwave and Bandwidth Semiconductor, LLC, incorporated by reference to Exhibit 10(h) to the Company's Form 10-QSB for the quarter ended June 30, 2003

10(k) Lease Agreement dated May 23, 2003 by and between Roger G. Little, Trustee of SPI-Trust as Landlord and Spire Corporation as Tenant, incorporated by reference to Exhibit 10(i) to the Company's Form 10-QSB for the quarter ended June 30, 2003

10(l) Trust Agreement dated April 1, 2004 between the Company and Riggs Bank N.A. as Trustee of the Company's 401(k) Profit Sharing Plan, incorporated by reference to Exhibit 10(1) to the Company's Form 10-KSB for the year ended December 31, 2004 ("2004 10-KSB")

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10(m) Amendment No. One dated November 18, 2004 to Employment Agreement for Roger G. Little, incorporated by reference to Exhibit 10(m) to the Company's 2004 10-KSB

10(n) Development, Manufacturing, and Sales Consortium Agreement between Nisshinbo Industries, Inc. and Spire Corporation, with an effective date of 16 May 2005, incorporated by reference to Exhibit 10(n) to the Company's For 10-QSB for the quarter ended June 30, 2005.*

10(o) Extension of Lease Agreement dated November 11, 2005 between Roger G. Little, Trustee of SPI-Trust and Spire Corporation (lease of premises, 77,037 sq. ft.), incorporated by reference to Exhibit 10(o) to the Company's 2005 10-KSB

10(p) Amendment Number Four to the Spire Corporation 401(k) Profit Sharing Plan dated November 21, 2005, incorporated by reference to Exhibit 10(p) to the Company's 2005 10-KSB

10(q) Turn-Key Project Agreement, dated March 16, 2006, incorporated by reference to Exhibit 10(s) to the Company's 2006 10-QSB for the quarter ended March 31, 2006 **

10(r) Wafer Supply Agreement, dated March 16, 2006, incorporated by reference to Exhibit 10(r) to the Company's 2006 10-QSB for the quarter ended March 31, 2006 **

10(s) Manufacturing Agreement, dated August 29, 2006, by and between Bandwidth Semiconductor, LLC, a wholly owned subsidiary of Spire ("Bandwidth"), and Principia Lightworks, Inc. ("Principia"), incorporated by reference to Exhibit 10(s) to the Company's 2006 10-QSB for the quarter ended September 30, 2006 **

10(t) First Amendment to Extension of Lease Agreement dated December 1, 2006 between Roger G. Little, Trustee of SPI-Trust and Spire Corporation (lease of premises, approximately 91,701 sq. ft.) (filed herewith)

10(u) Amendment Number Five to the Spire Corporation 401(k) Profit Sharing Plan dated December 22, 2006, (filed herewith)

14 Code of Business Conduct and Ethics incorporated by reference to Exhibit 14 to the 2003 10-KSB

21 Subsidiaries of the Registrant incorporated by reference to Exhibit 21 to the 2003 10-KSB

23 Consent of Independent Registered Public Accounting Firm (filed herewith)

31.1 Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to ss.302 of the Sarbanes-Oxley Act of 2002 (filed herewith)

31.2 Certification of the Chief Financial Officer pursuant to ss.302 of the Sarbanes-Oxley Act of 2002 (filed herewith)

32.1 Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to 18 U.S.C. ss.1350, as adopted pursuant to ss.906 of the Sarbanes-Oxley Act of 2002 (filed herewith)

32.2 Certification of the Chief Financial Officer pursuant to 18 U.S.C. ss.1350, as adopted pursuant to ss.906 of the Sarbanes-Oxley Act of 2002 (filed herewith)

* Portions of this Exhibit have been omitted pursuant to a grant of confidential treatment.

** Portions of this Exhibit have been omitted pursuant to a request for confidential treatment.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information concerning principal accountant fees and services is set forth in the Proxy Statement and incorporated herein by reference.

SIGNATURES

In accordance with Section 13 or 15(d) of the Exchange Act, the registrant caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

SPIRE CORPORATION

By: /s/ Roger G. Little March 30, 2007

Roger G. Little
Chairman of the Board, Chief
Executive Officer, and President

In accordance with the Exchange Act, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Roger G. Little Roger G. Little	Chairman of the Board, Chief Executive Officer and President	March 30, 2007
/s/ Christian Dufresne Christian Dufresne	Chief Financial Officer and Treasurer	March 28, 2007
/s/ Richard P. Thomley Richard P. Thomley	Chief Accounting Officer	March 28, 2007
/s/ Udo Henseler Udo Henseler	Director	March 30, 2007
/s/ David R. Lipinski David R. Lipinski	Director	March 28, 2007
/s/ Mark C. Little Mark C. Little	Chief Executive Officer, Spire Biomedical and Director	March 28, 2007
/s/ Michael J. Magliochetti Michael J. Magliochetti	Director	March 30, 2007

/s/ Guy L. Mayer	Director	March 30, 2007
Guy L. Mayer		
/s/ Roger W. Redmond	Director	March 30, 2007
Roger W. Redmond		

EXHIBIT INDEX

Exhibit	Description
10(t)	First Amendment to Extension of Lease Agreement dated December 1, 2006 between Roger G. Little, Trustee of SPI-Trust and Spire Corporation (lease of premises, approximately 91,701 sq. ft.) (filed herewith)
10(u)	Amendment Number Five to the Spire Corporation 401(k) Profit Sharing Plan dated December 22, 2006, (filed herewith)
23	Consent of Independent Registered Public Accounting Firm
31.1	Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to ss.302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of the Chief Financial Officer pursuant to ss.302 of the Sarbanes-Oxley Act of 2002
32.1	Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to 18 U.S.C. ss.1350, as adopted pursuant to ss.906 of the Sarbanes-Oxley Act of 2002
32.2	Certification of the Chief Financial Officer pursuant to 18 U.S.C. ss.1350, as adopted pursuant to ss.906 of the Sarbanes-Oxley Act of 2002