

MFIC CORP  
Form 10-K  
March 30, 2006

# UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

## FORM 10-K

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

For the fiscal year ended December 31, 2005

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Commission File Number: 0-11625

## MFIC CORPORATION

(Exact name of registrant as specified in its charter)

**Delaware**

(State or other jurisdiction of  
incorporation or organization)  
**30 Ossipee Road, P.O. Box 9101**

**Newton, Massachusetts**  
(Address of principal executive offices)

**04-2793022**

(I.R.S. Employer Identification No.)

**02464-9101**

(Zip Code)

Registrant's telephone number, including area code: **(617) 969-5452**

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

Securities registered pursuant to Section 12(g) of the Act: **Common Stock, \$.01 par value**

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

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

Indicate by check mark whether the registrant; (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

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

Indicate by check mark whether the registrant is an accelerated filer (as defined in Rule 12b-2 of the Act) Large Accelerated Filer   
Accelerated Filer  Non-Accelerated Filer

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

The aggregate market value of Common Stock held by non-affiliates of the registrant (without admitting that any person whose shares are not included in determining such value is an affiliate), based upon the closing sale price of the Common Stock on June 30, 2005 and on March 28, 2006 respectively as reported on the NASDAQ Over-the-Counter Bulletin Board was approximately \$19,993,000 and \$11,407,000.

The number of shares outstanding of the registrant's Common Stock as of March 28, 2006 was 9,963,845 shares.

**Portions of the definitive Proxy Statement to be delivered to shareholders in connection with the Company's Annual Meeting of Stockholders are incorporated by reference into Part III.**

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**MFIC Corporation**  
**2005 Form 10-K Annual Report**  
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This Report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Such statements are subject to certain risks and uncertainties, including without limitation those discussed in Item 1A "Risks Factors" and Item 7 under the heading "Certain Factors and Cautionary Statement Regarding Forward-Looking Statements." Such forward-looking statements speak only as of the date on which they are made, and the Company cautions readers not to place undue reliance on such statements.

Microfluidizer® is a trademark of the Company, which has been registered with the United States Patent and Trademark Office. All other trademarks or trade names referred to herein are the property of their respective owners.

**Item 1. BUSINESS:**

*Company Overview:*

MFIC Corporation (MFIC or the Company) has, for over 20 years, specialized in manufacturing and marketing a broad line of high shear fluid processing systems used in numerous applications in the chemical, pharmaceutical, biotech, food and cosmetics industries.

MFIC's line of high shear fluid processor equipment, marketed under the Company's Microfluidizer® trademark and trade name, create nanoparticles (commonly defined as particles having dimensions less than 100 nanometers) including nanostructures, microemulsions and nanosuspensions. The equipment produces commercial quantities of such materials important to producers of pharmaceuticals, coatings and other products.

Additionally, the Company commercializes its proprietary equipment, processes and technology for the continuous creation of nanoparticles. The Company has undertaken commercialization efforts for its patented Microfluidizer Mixer/Reactor (MMR), which is a high pressure multiple stream mixer/reactor.

The Company's technology embodied within its Microfluidizer high shear fluid processing technology is used for formulation of products that are normally very difficult to mix and stabilize. Microfluidizer processors allow manufacturers in the chemical, pharmaceutical, cosmetic, and food processing industries to produce higher quality products with better characteristics on a more consistent basis than with other blending, mixing or homogenizing techniques. Additionally, the equipment is used for cell disruption to harvest the cultivated contents of bacterial, yeast, mammalian and/or plant cells and for liposomal encapsulation of materials for the cosmetics and biotech/biopharma industries.

The Company's management believes that future commercialization and growth of nanotechnology may be, in large part, enabled by the manufacturing capability of the Company's materials processor and MMR equipment. Further, the Company guarantees scaleup of formulations and results on its processor equipment from 10 milliliters per minute on its laboratory and benchtop models to more than 15 gallons per minute on its pilot and production models.

The Company was incorporated in Delaware in 1983. The Company, formerly named Biotechnology Development Corporation, changed its name effective June 8, 1993 to Microfluidics International Corporation, and again changed its name effective July 12, 1999 to MFIC Corporation. From August, 1998 until its sale on February 9, 2004, the Company also operated another division, known as the Morehouse-COWLES Division, which manufactured and sold a broad line of mechanical fluid materials processing systems used for a variety of dispersing, milling, and mixing applications across a variety of industries. The Company's principal executive offices are located at 30 Ossipee Road, in Newton, Massachusetts 02464-9101 and its telephone number is (617) 969-5452.

*The Technologies:*

*Fluid Processing Equipment.* The Company's Microfluidizer high shear fluid processing equipment is based on patents and related technology that were licensed by the Company from Arthur D. Little & Co. in 1983 and subsequently purchased by the Company in 1985. The Company holds one unexpired United States patent related to the method used to intimately mix liquids and disperse particulate solids in micro emulsions. See Patents and Proprietary Rights Protection.

Microfluidizer high shear fluid processors differ from conventional mechanical mixing and processing technologies in that the Company's equipment utilizes highly pressurized product streams that travel at high velocities in precisely defined microchannels producing high shear forces and then collide at ultra-high velocities in a small, confined space producing high forces of impact. There are no moving parts in this mixing and collision zone ( fixed geometry ). Combined forces of shear and impact in the fixed

geometry design act upon products to cause deagglomeration and particle size reduction. These forces result in what the Company believes are smaller, more uniform, highly stable, and reproducible dispersions and emulsions than can be produced by any other means. Microfluidizer processors also differ from conventional mixing and homogenization equipment in that Microfluidizer processors permit a linear scaleup from 10 milliliters per minute to more than 15 gallons per minute with no basic change in product formulation or equipment design and engineering. The formulations processed may be liquid/liquid or liquid/solid combinations.

*MMR.* The Company has introduced its patented Microfluidizer Mixer-Reactor (MMR) system as a continuous chemical reactor, which the Company believes may become a standard device for conducting chemical reactions, many of which can be configured to produce nanoparticles. This system produces uniform nanoparticles with phase purity previously unachievable with conventional batch reaction technology. This degree of reaction chemistry control can lead to cost-effective product improvements and the development and manufacture of new nanomaterials in scalable quantities.

*Commercial Applications:*

Microfluidizer processor technology allows manufacturers in the chemical, pharmaceutical, biotechnology, cosmetic, and food processing industries to produce higher quality products with better characteristics on a more consistent basis than with other blending, mixing or homogenizing techniques. Further, the proprietary equipment enables manufacture of unique products which cannot otherwise be produced. Microfluidizer processor equipment is generally used in the processing of high value-added end-products that require extremely small and uniform particle sizes. New applications include deagglomeration of carbon nanotubes for subsequent formatting or alignment for specific uses.

Microfluidizer processor equipment can be used to mix and formulate stable emulsions, dispersions and liposomes, and for cell disruption.

Emulsions are homogenous mixtures of oil and water components (or other normally immiscible components), which, if mixed properly, do not readily separate. Emulsions comprise many products, such as food additives, medicines (including injectable drugs), photographic films, and polymers. The Company believes that, generally, an emulsion processed with Microfluidizer processor equipment will exhibit improved stability and require reduced concentrations of costly emulsifying agents that are otherwise needed to create and/or maintain product stability.

Dispersions are mixtures of fine solids suspended in liquid so that the two do not separate readily after processing. Similar to emulsions, dispersions are used in a variety of consumer and industrial products, including pharmaceutical products (including injectable drugs), coatings, pigment dispersions for inkjet inks and toners, phosphorescent coatings for TV screens and fluorescent lamps, and barium titanate for capacitors and toners.

Liposomes are biodegradable cell-like structures, formed from materials such as cholesterol and lecithin, which can be used to encapsulate medications or nutrients. Pharmaceutical and cosmetic manufacturers use liposomes as a delivery system to target active ingredients for specific anatomical sites and to prolong their efficacy. To date, liposomes have been used commercially in two predominant applications: medical diagnostic agents and cosmetics. Applications include the encapsulation of dye to be used as a marker in medical diagnostic tests and the encapsulation of ingredients for deeper skin penetration, or time-release control, as well as pharmaceutical, food and specialized agricultural applications.

In the biotechnology industry, Microfluidizer processor equipment is currently used to harvest, by cell rupture, protein grown in bacteria, plant or mammalian cells. The controlled forces of shear and impact produced by Microfluidizer processor equipment allow the cell wall to be ruptured without damage to, or

contamination of, the cell contents. The Microfluidizer processor equipment eliminates grinding media contamination, thus minimizing downstream processing requirements.

Microfluidizer processor equipment is generally used in commercial applications where a scientist, formulator or chemist is trying to develop or improve a product formulation for a high value-added end product. The Company believes that its laboratory equipment uniquely facilitates modern formulation development and production capability. Microfluidizer processor equipment is initially employed in a research laboratory, with the equipment subsequently being used in scale-up to pilot scale production of new or improved products, and ultimately, for production scale volumes as the improved product comes to market. From laboratory to production, the Company guarantees scale-up of formulations and results on its equipment from 10 milliliters per minute on its laboratory and benchtop models up to more than 15 gallons per minute on its pilot and production models.

The Company currently manufactures and markets the following lines of equipment:

*The HC Series:* The HC Series, also known as Homogenizers, is a laboratory-scale series of equipment that is intended to impart moderate levels of energy into a customer's product with greater flow rates than the more energy intensive Microfluidizer processor devices. Operating pressures of products in the Company's HC Series can range from 250 psi to as high as 8,000 psi, and will process as much as two liters of fluid per minute.

*The M-110 Series:* The M-110 Series is a laboratory product line that is designed primarily for research and development applications. Standard models can generate pressures as high as 23,000 psi and have a product flow rate on the order of one-half liter per minute. The M-110EH includes an on-board hydraulic pump system for high performance lab scale micro-mixing at processing pressures up to 30,000 psi and flow rates up to 320 ml/min. It has numerous standard features including ceramic plungers, diamond interaction chambers, and options including explosion-proof motors, and steam sterilization.

*The M-140 Series:* The M-140K Series is a laboratory-scale unit developed for customers in the chemical, biotechnology, pharmaceutical, cosmetic and food processing industries that require elevated operating pressures and higher shear forces to achieve better performance. The M-140K can achieve operating pressures up to 40,000 psi. The M-140K has a built-in hydraulic system and utilizes a bi-directional intensifier pump that provides a highly uniform pressure profile. It has been designed with many accessories and options including an explosion proof motor, control package and solvent seal quench. The M-140K has flow rates up to 500 ml/min.

*The M-210 Series:* The M-210 Series is a pilot unit and is primarily marketed to pharmaceutical, cosmetic and food product manufacturers who have successfully created a new or improved formulation on the M-110 Series unit and would like to increase their production capacity. The M-210 Series unit is typically used for testing formulations at greater volume levels before initiating full-scale production. For some customers (such as biotechnology and pharmaceutical product manufacturers), the M-210 Series may have the capacity to function as a production unit.

*The M-700 Series:* The M-700 Series was introduced at the end of fiscal 1998 and was initially designed, engineered, and constructed for use in rugged industrial environments such as coatings, paints and pigments research and manufacturing. This product line was especially designed to withstand such hazards as dust, grease, and water spray. Through use of our own proprietary design of an intensifier pump and other components, the system has also proven to be more cost-effective in many user applications.

More recently, because of the market demands of the pharmaceutical, biotech and cosmetic industries, the M-700 product line was upgraded to all stainless steel construction to conform to the U.S. Food and Drug Administration's current Good Manufacturing Practices (cGMP) requirements.



(See discussion under heading "Government Regulations" .) It also offers steam in place (SIP) and ultra clean in place (UCIP) options.

The M-700 Series equipment is available in a variety of configurations and flow rates depending upon motor size and the number of intensifier pumps. The M-700 series equipment can achieve operating pressures up to 40,000 psi. On the low end of the spectrum is the 15 HP, single intensifier pump M-7115 machine with flow rates ranging from 0.9 gpm at 10,000 psi to 0.4 gpm at 30,000 psi. The next size up is the 25 HP, single intensifier pump, M-7125 machine with flow rates ranging from 2.3 gpm at 10,000 psi to 0.6 gpm at 30,000 psi. The largest offering of the M-700 series product line is the 50 HP, dual intensifier pump M-7250 machine with flow rates ranging from 4.5 gpm at 10,000 psi to 1.2 gpm at 30,000 psi. The M-7250 machine is available with a recently introduced "constant pressure" option in which operating pressure is maintained to within 5% of peak operating pressure resulting in lengthened component life, reduced operating costs, and quieter operation.

In September 2003, Microfluidics introduced a new addition to the M-700 series product line, the 100 HP, a dual intensifier pump, Model M-710 machine with flow rates ranging from 15 gpm at 5,000 psi to 3.0 gpm at 30,000 psi. This model has the equivalent throughput of the larger and more expensive M-610-100 HP model.

Additionally, during 2003 the Company introduced several new options and equipment features to the M-700 series product offerings including:

- (i) The M-700 Microfluidizer Containment System, which is utilized for the protection of personnel engaged in the processing of highly toxic cancer therapeutic drugs and other hazardous materials.
- (ii) The M-700 Microfluidizer Split System (separating the power source from the mixing/processing apparatus) accommodates demands of limited space within clean rooms and for noise abatement within pharmaceutical production facilities. In conjunction with this system, the Company also introduced a Level II Steam Sterility Option for all pilot and production systems used for production of injectable and other pharmaceuticals. This option enables compliance with stringent regulatory production requirements.
- (iii) Ultra Clean in Place (UCIP) option, which provides the ability to clean in place (CIP) Microfluidizer processor systems between product batch runs or before storage. This capability differentiates our Microfluidizer materials processor systems from all other competitive products. Several pilot and production systems incorporating this option have already been delivered.
- (iv) Constant pressure is now an available feature that eliminates virtually all process pressure variations which dramatically improves the overall reliability of all M7250 and 710 machines.

*The M-610 Series:* The M-610 Series consists of custom-built models used for large-scale production. These units have flow rates of up to 18 gallons per minute and generate operating pressures up to 40,000 psi. Generally, these models are available in 100 HP and 200 HP.

*Microfluidizer Mixer/Reactor (MMR):* The Company has introduced its patented Microfluidizer Mixer/Reactor (MMR) system as a continuous chemical reactor, which the Company believes may become a standard device for conducting chemical reactions, many of which can be configured to produce nanoparticles. This system produces uniform nanoparticles with phase purity previously unachievable with conventional batch reaction technology. This degree of reaction chemistry control can lead to cost-effective product improvements and the development and manufacture of new nanomaterials in scalable quantities. Applications for the new technology include improving the performance of catalysts, planarization polishing media, superconductors, abrasive silica, recording



media, photographic media and pigments. It also may be used in the development and production of unique pharmaceutical products. The Company is proceeding with projects involving other companies seeking to optimize or enable drug delivery, catalysts and coatings products, as well as an internal program on nanopolymer creation for drug delivery and other applications. The Company believes that it cannot accurately assess or anticipate either the timing of receipt of an order or the delivery of its first MMR laboratory development systems. However, management believes that such event will occur in the foreseeable future. The Company believes that the MMR systems and technology make it a leader in the provision of systems for continuous production of uniform, reproducible, microparticles, nanoparticles and nanodroplets.

*Former Company Business Division:*

*Morehouse-COWLES Division:* On February 9, 2004, pursuant to an Asset Purchase Agreement (the Asset Purchase Agreement) dated February 5, 2004 between MFIC and a wholly owned subsidiary of NuSil Corporation, a California corporation (NuSil), MFIC sold substantially all of the assets and selected liabilities of its Morehouse-COWLES Division (the Division), to NuSil. Other than NuSil's prior purchases of products from the Division, there were no preexisting relationships between MFIC and NuSil.

Prior to February 9, 2004, the Company-operated Morehouse-COWLES Division manufactured grinding and dispersing equipment used in a broad number of industries including the coatings and ink industries. The products included high-speed single and multi-shaft dissolvers and dispersers, stone mills, and vertical and horizontal media mills. As one of the early inventors of dispersers, dissolvers, stone mills, and media mills, the one hundred-year-old COWLES name is an industry-accepted symbol of quality, reliable products. The Morehouse-COWLES Division manufactures products that are generally used for blending, mixing, deagglomeration and dispersion of paints and coatings, inks, adhesives, sealants, and pigment dispersions. These applications are more conventional whereby the formulations are less expensive to produce and the volumes of product produced are large. The Morehouse-COWLES product lines are used in broader, high volume, lower value-added applications requiring less stringent particle size reduction.

*Marketing and Sales:*

The Company's marketing and sales activities are conducted through a corporate marketing and sales group that is responsible for the worldwide marketing and sales of all products.

Marketing programs include media advertising, a website, direct mail, seminars, trade shows and telemarketing. In addition, the Company has an active program of field demonstrations. As an aid to the marketing and sales activity for the equipment, the Company provides prospective customers with access to its applications laboratories. These laboratories, located in Newton, Massachusetts, Irvine, California, and Lampertheim, Germany, provide free processing and particle size and distribution analysis of a prospective customer's sample formulation. Additionally, a prospective customer may pay for subsequent laboratory time and services on a fee for services basis, which includes equipment rentals. Typically, about one third of such trials result in equipment orders within twelve months. Finally, the Company has an active domestic and foreign equipment rental program designed to allow customers to use Microfluidizer processor equipment at their own locations to experiment with and develop product formulations and processes. A rental period may last from weeks to several months. The Company has a rental pool of equipment to service the needs of customers, including laboratory and pilot machines. A significant percentage of customers who rent the Company's equipment elect to purchase rental equipment or to purchase new equipment.

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Distributors and sales agents worldwide are supported with trade advertising, collateral literature and trade show materials. The distributors and sales agents also advertise directly on their own behalf and attend regional and international trade shows.

The Company sells its equipment in the United States through a network of independent manufacturers' representative firms that are managed by the Company's regional sales managers. In a portion of Canada, the Company has an exclusive distributor for the Company's product line. In Europe, the Company sells its equipment through a network of independent regional sales agents who are managed by the Company's European Sales organization. In Asia and the Pacific Rim, the Company sells through a network of distributors and independent manufacturers' representative firms. Customers in other geographical regions are assisted directly by Company sales staff. In November 2005, the Company appointed a vice-president of sales and marketing, who oversees all regional sales managers, independent manufacturers' representatives, and distributors.

### *Customers:*

The users of the Company's systems are in various industries, including the chemical, pharmaceuticals, food, cosmetic and biotechnology industries. Two companies each accounted for more than 10% of 2005 revenues. Mizuho Industrial Co. Ltd. (Mizuho) a distributor for the Company, and a customer who is a wholly owned subsidiary of Teva Pharmaceuticals Industries Ltd. (Teva) accounted respectively for 19.5% and 18.9% of the Company's revenues from continuing operations in 2005, respectively; 20.5% and 12.8%, respectively, in 2004; and 20.6% and 10.6%, respectively, in 2003. Mizuho, the Company's Japanese distributor of Microfluidizer processor equipment and spare parts, resells the Company's equipment to numerous end-users in Japan, none of which individually represents 10% or more of the Company's revenues. Two customers accounted for 10.8% and 10.7% of the trade accounts receivable from continuing operations as of December 31, 2005, respectively. Three customers accounted for 15.1%, 14.7%, and 13.4% of the trade accounts receivable from continuing operations as of December 31, 2004, respectively. One customer accounted for 16.7% of the trade accounts receivable from continuing operations as of December 31, 2003. A reduction or delay in orders from any of the Company's significant customers could have a material adverse effect on the Company's results of operations.

The Company sells its products in various countries. The Company's sales in North America, including the United States, Canada, and Mexico, accounted for approximately 51.8% of the Company's revenues from continuing operations in 2005; approximately 51.1% of the Company's revenues from continuing operations in 2004; and approximately 51.0% of the Company's revenues from continuing operations in 2003, with almost all of those sales coming from United States and Canada. Sales to the rest of the world accounted for approximately 48.2% of the Company's revenues from continuing operations in 2005; approximately 48.9% of the revenues from continuing operations in 2004; and approximately 49.0% of the revenues from continuing operations in 2003. Sales through the Company's exclusive distributors in Japan accounted for approximately 19.5% of the Company revenues from continuing operations in 2005; 20.5% of the Company's revenues from continuing operations in 2004; and 20.6% of the Company's revenues from continuing operations in 2003. Sales through the Company's representative in Korea accounted for approximately 12.1% of the Company's revenues from continuing operations in 2005; 4.8% of the Company's revenues from continuing operations in 2004; and 5.1% of the Company's revenues from continuing operations in 2003.

### *Competition:*

The patented Microfluidizer processor equipment product line of high shear fluid processors has direct competition in its major markets, including pharmaceutical and coatings/chemical applications, but management believes that the Company's products have a larger installed base and performance advantages over products of our competitors. The Company also believes that its fixed-geometry systems which permit a linear scale up for drops per minute to gallons per minute offer a unique equipment

advantage. The Company further believes that the Microfluidizer processor equipment product line offers the highest shear forces available in the process equipment market today. It has been proven in many instances that for critical formulations, Microfluidizer processors have produced better quality products for our customers.

The M-700 Series of fluid processors, together with the M-210 and M-610 product lines, provide high shear fluid processing capabilities for sanitary, sterile, and industrial applications. The Company believes that the Microfluidizer processor product line provides a distinct advantage over the product lines of our competitors with respect to the processing of abrasive slurries or solids dispersed in liquids in large part because of the Company's unique, wear-resistant, diamond interaction chamber and the special design of the intensifier pumping system. Further, recent incorporation of Company developed components in the M-700 series equipment has reduced the cost of these units, and they are priced competitively with lesser capability processing equipment.

The MMR systems may encounter significant competition and there are other companies that possess patents and claims to equipment or processes that claim to make production quantities of nanoparticles. At least one of these companies, Five Star Technologies Inc. (Five Star), has raised significant investment capital from venture capital sources (\$4.5 million in its second round in October 2003) for its patented technology. Five Star claims the use of hydrodynamic cavitation to achieve production of nano and micro materials. Five Star also claims that its process is inherently scalable. Although the Company believes that its MMR system is superior in design and function there can be no assurance that Five Star, or others, will not pose a competitive impediment to sales of the Company's MMR system.

The Company faces, and will continue to face, intense competition from other companies who manufacture and sell materials processing systems. The Company is subject to significant competition from organizations that are pursuing technologies and products that are similar to the Company's technology and products. The Company's future success will depend in large part on maintaining its current technologically superior product line and competitive position in the fluid processing systems field. Rapid technological development by the Company or others may result in the Company's products or technologies becoming obsolete before the Company recovers the expenses it incurs in connection with their development. Products offered by the Company could be made obsolete by less expensive or more effective technologies. There can be no assurance that the Company will be able to make the enhancements to its technology necessary to compete successfully with newly emerging technologies. The Company expects competition to intensify in the materials processing systems field as technical advances are made and become more widely known.

*Research and Development:*

It is the Company's position that a greater proportion of its sales in the future will be for more advanced processor production systems that will incorporate features not currently included in many of the current production machines. In order to meet such a challenge going forward, it became necessary to hire additional research and development personnel. It also became necessary, as a result of this decision, to increase spending in research and development. Additional resources in both personnel and spending may be required in the future.

The Company's research and development efforts are focused on: (i) developing new processing applications for the process industries; (ii) further enhancements to the functionality, reliability and performance of existing products, and (iii) development of the Microfluidizer Mixer/Reactor (MMR) by: (a) working with customers who assist in the development of the system with both application knowledge and financial support, and (b) internal development program relating to reaction chamber design and creation of a variety of nanomaterials. There can be no assurance that the Company will be able to meet the enhancement challenges posed by applications of its core Microfluidizer processor business. Likewise there can be no assurance that the Company will be able to design and manufacture reaction chambers for

its MMR applications that will deliver the desired result for specific applications. Research and development costs for continuing operations were \$1,701,870, \$1,033,978, and \$785,849, in 2005, 2004, and 2003, respectively. Patent coverage for the MMR has been obtained both in the United States and in Europe (with national entry in process) and the Company is prosecuting the patent application in Canada.

*Cooperative Research Arrangements:*

The Company subsidizes research and development activities centered around Microfluidizer processor technology at a number of research centers and universities. The Company's subsidy of these activities takes the form of substantial reduction or elimination of the customary rental charges for Microfluidizer processor equipment provided for use. The Company has, in past years, subsidized research and development in the following fields at the following universities:

<b>University</b>	<b>Field of Research/Development</b>
University of Massachusetts, Lowell	biotechnology and nanotechnology
Massachusetts Institute of Technology	nanoemulsions for biomedical applications
Marine Biological Laboratory	cell disruption
Lehigh University	polymer chemistry
Université Laval (Quebec)	food science
Worcester Polytechnic Institute	catalytic chemistry
Purdue University	pharmaceuticals
University of Toronto	genomic research and expression

In addition to their research activities, these universities provide the Company with contacts at industrial companies that may utilize Microfluidizer processor technology. Most recently, the Company entered into a Research Collaboration Agreement with the University of Massachusetts, Lowell (UML) in September 2005 to develop new applications, processes and products in the area of nanomaterials utilizing MFIC's leading-edge materials processing and MMR equipment. Additionally, on occasion, research reports, technical papers, and doctoral theses may be published, which document the use of Microfluidizer processor technology. Finally, the Company engages in many informal co-operative development efforts with its customers.

*Patents and Proprietary Rights Protection:*

To protect its proprietary rights, the Company relies on a combination of U.S. patent and trademark laws, trade secrets, confidentiality agreements, contractual provisions and technical means. In the event of patent infringement or breach of confidentiality, there can be no assurance that these measures will be adequate or that the Company will have sufficient resources to prosecute or prevail in an action against a third party. In addition, the Company neither applied for nor obtained patent or trademark protection for its Microfluidizer processor equipment's interaction chamber in any country other than the United States and, as a result, its proprietary rights are not subject to the protection of patent or trademark laws of foreign countries where the Company's equipment is sold. The Company's Microfluidizer processor equipment method patent expires on March 13, 2007 and its device patent expired on August 6, 2002. The Company does not believe that the expiration of its device patent resulted in any material detriment to the Company since the Company has made many alterations, improvements and advances to its equipment over the years with such modification and innovations having been treated by the Company as trade secrets.

In 1997 the Company completed development of a novel adaptation of its Microfluidizer processor equipment—a Multiple Stream High Pressure Mixer/Reactor, commercially designated as the Microfluidizer Mixer/Reactor (MMR). In August 1997, the Company filed a patent application for the device and its processes with the United States Patent and Trademark Office (USPTO), and filed a Patent

Cooperation Treaty (PCT) application on May 5, 1998. In July and November, 2000, the USPTO issued to the Company notices of allowances of utility patent claims regarding the MMR and the use thereof. On September 18, 2002, the European Patent Office advised the Company it would grant its MMR patent substantially as applied for, including its device and process claims. The Company is in the process of pursuing national entry in France, Germany, Italy, The Netherlands, and the United Kingdom. The Company is currently prosecuting its MMR patent in Canada.

The Company maintains confidentiality agreements with its employees and also maintains confidentiality agreements and non-competition agreements with those third parties to whom it discloses non-public technical information relating to its equipment. The Company believes that enforcement of the provisions of such agreements should adequately protect the Company's proprietary information. However, in the event of a material breach of such agreements certain of the Company's valuable intellectual property may be disclosed to third parties (including competitors). In such event, despite provisions for equitable relief and damages, the Company may suffer competitively and be materially and negatively impacted as a result of any unauthorized disclosure.

*Manufacturing:*

At present, the Company subcontracts the manufacture and/or machining and finishing of many of the components of its equipment to third parties, with the Company undertaking the remaining fabrication, assembly and performance testing. The Company has selected certain primary suppliers based upon pricing terms, quality of their products, and the vendor's performance record.

The loss of any primary supplier could have a material, adverse effect on the Company's business, financial condition, or results of operations. Therefore, the Company has identified alternative suppliers for its most critical components (Alternative Sources). There can be no assurance that a transition to such Alternative Sources will not entail transitional delays, quality assurance and quality control difficulties, delivery problems, any or all of which would likely have an impact on the Company's production of equipment and could have a material adverse effect on the Company's business, financial condition, or results of operations.

*Key Management / Personnel:*

The Company's continued operation, innovation and growth are to some significant degree reliant on the continued services of its key executive officers and leading technical personnel. The Company does not maintain employment contracts with its key management or leading technical personnel. Though the Company believes that it can identify and recruit replacement key management and technical personnel, there can be no assurance as to such availability, the length of time required to obtain such replacement management and technical personnel, the salary level that may have to be paid to obtain their respective services, or the impact on operations that may be experienced through the interim absence of such key management and technical personnel. The loss of key management or leading technical personnel could, therefore, have a material adverse effect on the Company's business, financial condition, or results of operations.

*Government Regulation:*

Certain of the Company's customers utilize the Company's products in processes and production that are subject to governmental regulation. For example, the manufacturing and marketing of pharmaceutical products may require the approval of the U.S. Food and Drug Administration (FDA) within the United States and of comparable agencies in foreign countries. The FDA has established mandatory procedures, safety standards and protocols that apply to the manufacture, clinical testing and marketing of new pharmaceutical products in the United States. The process of seeking and obtaining FDA approval of a new product often takes a number of years and often involves the expenditure of substantial resources by

the Company's customers. The FDA approval process can result in long lead times that are attendant to manufacturing equipment orders for these applications.

Further, in addition to product approvals, the FDA imposes requirements as to manufacturing practices, record keeping and reporting (current Good Manufacturing Practices or cGMP). cGMP-regulated companies are subject to inspections by the FDA (inclusive of Microfluidizer processor equipment) and product approvals may be withdrawn if cGMP are not met.

At present, the Company's customers include companies who are making FDA approved drugs, preparations, and products, including sunscreens and cosmetic lotions for external use and companies who utilize Microfluidizer processor equipment for the formulation or production of FDA approved parenteral (injectable) drugs or compounds including vaccines and anesthesia.

For the Company's equipment entering Europe, CE compliance (Regulatory Compliance with European Safety Standards) is required. All products manufactured for European customers (and for any others who may request it) by the Company are CE compliant.

Various laws, regulations and recommendations relating to safe working conditions, laboratory practices and the purchase, storage, movement, import and export, use and disposal of harmful or potentially harmful substances that may be used in connection with the Company's research work are, or may be, applicable to its activities. These laws include, among others, the United States Atomic Energy Act, the Clean Air Act, the Clean Water Act, the Occupational Safety and Health Act, the National Environmental Policy Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act, national restrictions on technology transfer, import, export and customs regulations and other present and possible future local, state or Federal regulation. The extent of adverse governmental regulation, which might result from future legislation or administrative action, cannot be accurately predicted. Certain agreements that may be entered into by the Company involving exclusive license rights may also be subject to antitrust regulatory control, the effect of which cannot be predicted.

To date the Company has not been affected by any United States governmental restrictions on technology transfer, import, export and customs regulations and other present local, state or Federal regulation. The extent of adverse governmental regulation, which might result from future legislation or administrative action, cannot be accurately predicted. In particular, the USA Patriot Act of 2001 and other governmental regulations may impose export restrictions on sale of equipment or transfer of technology to certain countries or groups. There can be no assurance that sale of the Company's equipment will not be impacted by such legislation or designation. Depending upon which countries and sales may be designated for trade restriction such action could have a material adverse effect on the Company's business, financial condition, or results of operations.

*Backlog:*

The Company's sales order backlog related to continuing operations of accepted and unfilled orders at March 28, 2006, and March 11, 2005, was approximately \$3,646,238 and \$3,072,000, respectively. Backlog as of any particular date should not be relied upon as indicative of the Company's net revenues for any future period.

*Employees:*

The Company has approximately 47 full-time employees as of March 28, 2006. None of the Company's employees are covered by a collective bargaining agreement, and the Company considers its relations with its employees to be satisfactory. The Company believes that its future success will depend in large part on its ability to attract and retain highly skilled employees.

**Item 1A. RISK FACTORS**

In addition to the certain risks described in other sections in this annual report and our other filings with the Securities and Exchange Commission, prospective investors should consider the following before making any investment decision.

The Company faces a number of risks and uncertainties that could cause actual results or events to differ materially from those contained in any forward looking statement. Additional risks and uncertainties not presently known to the Company or that are currently deemed to be immaterial may also impair the Company's business operations. Factors that could cause or contribute to such differences include, but are not limited to, the following:

**The Company faces intense competition in many of our markets.**

Our Microfluidizer® product line of high-shear fluid processors has direct competition in its major markets, including its most important markets in the pharmaceutical, biotechnology and coatings/chemical industries. There are a few small, direct competitors in geographical areas where our patents are not protected. The Company does not believe that these competitors, however, offer product lines of comparable breadth or scope as our products and the Company does not believe that they possess high-pressure engineering experience to the extent that the Company does. The Company does not regard the presence of these competitors as an impediment to our growth.

In addition, the Company faces, and will continue to face, intense competition from other companies who manufacture and sell fluid processing systems used in particle size reduction, mixing, milling, dispersing, homogenizing, cell disruption and liposomal encapsulation applications. The Company expects competition to intensify in the fluid processing systems field as technical advances are made and become more widely known, and such increased competition may have a material adverse effect upon our business.

**The Company is subject to significant competition from companies that are pursuing technologies and products that are similar to the Company's technology and products.**

Our future success will depend in large part on the Company's ability to maintain a technologically superior product line. Rapid technological development by the Company or others may result in our products or technologies becoming obsolete before the Company recovers the expenses the Company incurs in connection with their development. Products offered by the Company could be made obsolete by less expensive or more effective technologies. There can be no assurance that the Company will be able to make the enhancements to our technology necessary to compete successfully with newly emerging technologies.

**The Company relies on suppliers, vendors and subcontractors.**

The Company does not manufacture most of the components contained in its Microfluidizer® materials processor equipment but rather subcontracts the manufacture of most components. Based on quality, price, and performance, the Company has selected certain suppliers, vendors, and subcontractors that provide parts, subassemblies, machining and finishing of components that are assembled by the Company's production staff. Although the Company has identified alternate sources for such parts, components, machining and finishing, there can be no assurance that a transition to such alternative sources will not entail quality assurance and quality control difficulties, on-time delivery problems, or other transitional problems, any or all of which would likely have an impact on the Company's production of equipment and could have a material adverse effect on the Company's business, financial condition, or results of operations.

**The Company has only one manufacturing facility**

The Company has only one manufacturing facility located in Newton, Massachusetts. Our success depends on the efficient and uninterrupted operation of our manufacturing facility. Whether as a result of a fire, terrorist attack, natural disaster or other causes, any significant disruption, up to and including substantial destruction, would disrupt our manufacturing operations and significantly impair our ability to operate our business on a day-to-day basis. Although the Company maintains business interruption insurance, our business would be injured by any extended interruption of the operations of our manufacturing facility. Further, although the Company carries property and business interruption insurance, our coverage may not be adequate to compensate us for all losses that may occur. This insurance may not continue to be available to the Company. Finally, if the Company seeks to replicate our manufacturing operations at another location, the Company will face a number of technical as well as financial challenges, which the Company may not be able to address successfully.

**The Company relies on patents and trade secrets to protect our technology.**

To protect its proprietary rights, the Company relies on a combination of U.S. patent and trademark laws, trade secrets, confidentiality agreements, contractual provisions and technical means. In the event of patent infringement or breach of confidentiality, there can be no assurance that these measures will be adequate or that the Company will have sufficient resources to prosecute or prevail in an action against a third party.

The Company's Microfluidizer® equipment process patent expires on March 13, 2007 and its device patent expired on August 6, 2002. In addition, the Company has neither sought patent protection for its Microfluidizer® interaction chamber nor trademark protection of its Microfluidizer® trade name in any country other than the United States. As such, its proprietary rights are not subject to the protection of patent or trademark laws of foreign countries where the Company's equipment is sold. Although the Company has made many alterations, improvements and advances to its equipment over the years and continues to make such advancements with such modification and innovations having been and being treated by the Company as trade secrets, the lack or limited nature of our patent protections will expose the Company to potential competition that would likely have a material adverse effect on the Company.

To protect its other proprietary rights, the Company relies on a combination of trademark laws, trade secrets, confidentiality agreements, contractual provisions and technical means. In the event of a breach of these protections, there can be no assurance that these measures will prove to have been adequate to protect the Company's interests, or that the Company will have sufficient resources to prosecute or prevail in an action against a third party. The Company maintains confidentiality and non-competition agreements with those parties to whom it discloses non-public technical information relating to its equipment. The Company believes that enforcement of the provisions of such agreements should adequately protect the Company's proprietary information. However, in the event of a material breach of such agreements, certain of the Company's valuable intellectual property may be disclosed to third parties (including competitors). In such event, despite provisions for equitable relief and damages in the event of such breaches, the Company may suffer competitively and be materially impacted as a result of such unauthorized disclosure.

In 1997, the Company completed development of a novel adaptation of its Microfluidizer® equipment—a Multiple Stream High Pressure Mixer/Reactor (MMR). In August 1997, the Company filed a patent application for the device and its processes with the United States Patent and Trademark Office (USPTO), and filed a Patent Cooperation Treaty (PCT) application on May 5, 1998. In July and November 2000, the USPTO issued to the Company notices of allowances of utility patent claims regarding the MMR and the use thereof. On September 18, 2002, the European Patent Office advised the Company it would grant its MMR patent substantially as applied for, including its device and process



claims. The Company is in the process of pursuing national entry in France, Germany, Italy, The Netherlands, and the United Kingdom.

**The Company must continue its research and development efforts to maintain competitive.**

The Company's research and development efforts are focused on: (i) developing new processing applications for the process industries and further enhancing the functionality, reliability and performance of existing products, and (ii) development of the Multiple-Stream High Pressure Mixer/Reactor (MMR) by: (a) working with customers who assist in the development of the system with both application knowledge and financial support, and (b) internal development program relating to interaction chamber design and creation of a variety nanomaterials. There can be no assurance that the Company will be able to meet the enhancement challenges posed by applications of its core Microfluidizer® processor business. Likewise there can be no assurance that the Company will be able to design and manufacture chambers for its MMR applications that will deliver the desired result for specific applications. The inability to meet the enhancement challenges or design and manufacture chambers for its MMR applications may have a material adverse effect on the Company.

**The Company's ability to continue planned operations is dependent upon access to financing under a credit facility with its commercial lender.**

The Company's credit facility is comprised of a revolving line of credit in the maximum principal amount of \$1,000,000 and a term loan note in a face amount of \$1,000,000 under which the Company currently owes approximately \$563,000 at December 31, 2005. Under the terms of the credit facility, the Company is subject to a number of restrictions that impact the Company's use of funds. The Company is limited in ability to acquire property and pay dividends, and it must maintain certain financial covenants as defined. The Company's ability to operate is potentially impacted by the Company's ability to achieve future compliance with the financial covenants of the credit facility. The obligations due the lender are essentially demand obligations and under certain circumstances, including the lender's determination that the Company's prospect of payment of all or any part of the obligations due the lender are impaired, the lender may declare a default and accelerate payment of the obligations. Loans under the credit facility are secured by a collateral pledge to the lender of substantially all the assets of the Company and its subsidiary. In the event of a breach of the covenants or events of default under the credit facility there can be no assurance that the Company can obtain a waiver of such breach or default from its lender. Likewise, in the event of that the Company cannot effect a cure or obtain a waiver of a breach or default under the credit facility there can be no assurance either that the lender will not terminate the credit facility or that the Company will be able to obtain alternate financing, or that it can obtain alternate financing on terms that are favorable to the Company. Either event could have a material adverse effect on the Company's business, financial condition, or results of operations.

Pursuant to its agreements with the lender, the Company may not issue, create or incur additional debt in excess of its obligations to lender, except in the ordinary course of business.

There can be no assurance that the Company will have access to sufficient working capital through continued and improving cash flow from sales and ongoing borrowing availability, the latter being subject to the Company's ability to comply with the covenants and terms of the Company's loan agreement with its senior lender.

**The Company may become subject to increased government regulation which could affect our ability to sell our products outside of the United States.**

Although the Company has not historically been significantly affected by any United States governmental restrictions on technology transfer, import, export and customs regulations and other

present local, state or federal regulation, any future legislation or administrative action restricting our ability to sell our products to certain countries outside the United States could significantly affect our ability to make certain foreign sales. The extent of adverse governmental regulation, which might result from future legislation or administrative action, cannot be accurately predicted. In particular, the USA Patriot Act and other governmental regulation may impose export restrictions on sale of equipment or transfer of technology to certain countries or groups. There can be no assurance that sale of the Company's equipment will not be impacted by any such legislation or designation. Depending upon which countries and sales may be designated for trade restriction such action could have a material adverse effect on the Company's business, financial condition, or results of operations. Also, certain agreements that may be entered into by the Company involving exclusive license rights may also be subject to national or supranational antitrust regulatory control, the effect of which cannot be predicted.

**The Company relies on our key management and technical personnel.**

The Company's continued operation, innovation and growth are to some significant degree reliant on the continued services of its key executive officers and leading technical personnel. The Company does not maintain employment contracts with its key management or leading technical personnel. There can be no assurance that the Company will be able to retain such key management and technical personnel if employment is offered by other companies better able to pay higher compensation, provide more and better benefits, or willing to offer longer term job security by entering into employment contracts with the Company's employees. Further, there can be no assurance that key executive officers and leading technical personnel will not either die or become disabled to an extent that they cannot render their services to the Company. Though the Company believes that it can identify and recruit replacement key management and technical personnel, there can be no assurance as to such availability, the length of time required to obtain such replacement management and technical personnel, the salary level that may have to be paid to obtain their respective services, or the impact on operations that may be experienced through the interim absence of such key management and technical personnel. The loss of key management or leading technical personnel could, therefore, have a material adverse effect on the Company's business, financial condition, or results of operations.

**The Company's stock is listed on the OTC Bulletin Board and stockholders may have limited liquidity.**

The Company's common stock is quoted on the OTC Bulletin Board, which provides significantly less liquidity than a securities exchange (such as the American or New York Stock Exchanges or The Nasdaq Stock Market LLC). In general, over the past two years, fewer than 100,000 shares of our common stock have traded on a daily basis. Management expects, when and if the Company qualifies, to seek a listing on a securities exchange, which may increase stockholders liquidity. There is uncertainty that the Company will ever be accepted for a listing on a securities exchange.

**The Company anticipates that shipments of our products to relatively few customers will continue to account for a significant portion of our business.**

Sales to our Japanese distributor accounted for 19.5% of our net revenues in 2005 and 20.5% of our revenues in 2004 and sales to a wholly owned subsidiary of Teva Pharmaceuticals accounted for 18.9% of our revenues in 2005 and 12.8% of our revenues in 2004. The Company expects that a limited number of customers may continue to account for a substantial portion of our net revenues for the foreseeable future. If our current customers delay or cancel their orders, or find other sources for our products, our resulting net income may be impacted.

Although the Company attempts to maintain good relationships with our current customers, the Company cannot be certain that our current customers will continue to place orders with us or that those orders will be significant. The Company continuously seeks out new customers, but there can be no

certainty that the Company will receive orders from new customers or that those new customers will continue to order from us.

**Our quarterly revenues and stock performance are variable.**

The timing of orders and subsequent shipment will significantly affect quarterly revenues and resulting net income results for particular quarters which may cause increased volatility in both the Company's revenues and stock price.

**The Company allows customers to lease some of our products and those leases may not turn into sales.**

We sometimes lease our products to our customers prior to or instead of selling a product to a customer. The Company's products are expensive, and customers frequently want to test out a product's capabilities prior to purchase. We have had reasonable success in converting leases into subsequent sales of the same or a newer product, however there is no guarantee that we will continue to be able to convert any of our leases into sales.

**The Company may be subject to product liability claims from our customers or by persons harmed by our customers' products.**

The Company maintains what it deems to be reasonable levels of product liability coverage through insurance policies with a reasonably small deductible. Nonetheless, inasmuch as the Company sells its equipment to a number of customers who make pharmaceutical preparations and consumer cosmetics, there can be no assurance that if a consumer of end products is injured or dies from such product that a suit by an injured party (or a class of similar situated plaintiffs) will not sue the Company as well as the maker of the drug or cosmetic. Although the Company may have no control over the manufacture of end-products made on its equipments, it may not be able to bar a plaintiff's claims against all parties who products and equipment were involved in the manufacturing process under a variety of legal theories of liability. The Company may be required to present a vigorous and costly defense if it cannot be dismissed from such an action. The cost of such legal defense may significantly impact the cash flow of the Company.

**The Company's international business operations expose us to a variety of risks.**

For the year ended December 31, 2005, shipments outside of North America accounted for approximately 48.2% of the Company's total net revenues as compared to 48.9% in the prior year. In particular, approximately 19.5% and 20.5% of our net revenues in 2005 and 2004 resulted from sales to Japan and approximately 12.1% and 4.8% of our net revenues in 2005 and 2004 resulted from sales to Korea. In addition, approximately 13.0% and 17.9% of our net revenues resulted from sales to Europe in 2005 and 2004 respectively. We expect that shipments outside of North America will continue to account for a significant portion of our total net product revenues.

We attempt to reduce some of our risk related to sales and shipments outside of the United States by requiring that our contracts generally be paid in United States Dollars. Nevertheless, a downturn in the economies of Japan, Korea or across Europe might reduce investment in new technology or products while a weakening of foreign currency against the United States Dollar would make our products more expensive, each of which could have a substantial impact on our operating results.

In addition, a significant portion of our total net revenue is subject to the risks associated with shipping to foreign markets in general, including unexpected changes in legal and regulatory requirements; changes in tariffs; political and economic instability; risk of terrorism; difficulties in managing distributors and representatives; difficulties in protecting our intellectual property overseas; and natural disasters, any of which could have a negative impact on our operating results.

**Changes in accounting treatment of stock options could adversely affect our operating results.**

The Financial Accounting Standards Board has announced its decision to require companies to expense employee stock options in accordance with SFAS 123R, *Accounting for Stock-Based Compensation*, or SFAS 123R, for financial reporting purposes. Such stock option expensing would require us to value our employee stock option grants pursuant to an option valuation model, then amortize that value against our reported earnings over the vesting period in effect for those options.

Prior to January 1, 2006, the Company elected to accelerate all outstanding employee stock options (except those employee stock options held by employees who chose not to participate) to minimize the impact of SFAS 123R on its operating results. The Company estimated that by accelerating the vesting of the employee options, it would not incur approximately \$400,000 of future compensation expense, net of taxes. In general, the Company issues stock options to certain of its employees (except for senior management) every two years and does not anticipate issuing options to a large number of employees until 2008. Nevertheless, all options issued on or after January 1, 2006 must be expensed in accordance with SFAS 123R. The impact of SFAS 123R on our financial results will depend on a variety of factors, including the number of options issued, the length of time until vesting and the amount required to be expensed. The Company has determined that there will be a non-cash charge of approximately \$129,000 in 2006 as a result of this requirement.

**Compliance with internal controls reporting requirements could increase our costs.**

As directed by Section 404 of the Sarbanes-Oxley Act of 2002, the Securities and Exchange Commission adopted rules requiring public companies to include a report of management on the company's internal control over financial reporting in their annual reports on Form 10-K. This report is required to contain an assessment by management of the effectiveness of such company's internal controls over financial reporting. In addition, the public accounting firm auditing a public company's financial statements must attest to and report on management's assessment of the effectiveness of the company's internal controls over financial reporting. We intend to expend resources in developing the necessary documentation and testing procedures required by Section 404. Going forward, there is a risk that we will not comply with all of the requirements imposed by Section 404. If the Company fails to implement required new or improved controls, we may be unable to comply with the requirements of Section 404 in a timely manner. This could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of the Company's financial statements, which could cause the market price of the Company's common stock to decline and make it more difficult for the Company to finance its operations.

Under current rules, the Company is required to comply with the requirements of Section 404 by its first fiscal year ending on or after July 15, 2007.

**Item 1B. UNRESOLVED STAFF COMMENTS**

**None.**

**Item 2. DESCRIPTION OF PROPERTIES**

The Company's corporate headquarters are in Newton, Massachusetts. The Company also maintains a sales office and laboratory facility in Lampertheim, Germany and a sales office in Irvine, California. The Company rents approximately 34,000 square feet of offices, production and research and development facilities at these locations for administrative, development and production activities. A portion of the space at the Newton, Massachusetts facility is sublet to a non-affiliated company for a total of \$21,600 per annum under a tenant-at-will arrangement. The lease terms expire at various times through May 2007 (with an option under which the Company can extend the lease at the Newton facility through May 31, 2008). The Company believes these facilities will be adequate for operations for the next two years.

**Item 3. LEGAL PROCEEDINGS**

The Company is not a party to any material legal proceedings.

**Item 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS**

No matters were submitted to a vote of the Company's security holders during the quarter ended December 31, 2005.

**Item 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS***Market:*

The Company's Common Stock is traded on the Over-the-Counter Bulletin Board under the symbol MFIC. The following table sets forth the range of quarterly high and low bid quotations for the last two fiscal years, as furnished by the National Association of Securities Dealers Automated Quotation System. The quotations represent interdealer quotations without adjustment for retail markups, markdowns, or commissions, and may not necessarily represent actual transactions.

<b>Quarters Ended</b>	<b>12/31 2005</b>	<b>9/30 2005</b>	<b>6/30 2005</b>	<b>3/31 2005</b>	<b>12/31 2004</b>	<b>9/30 2004</b>	<b>6/30 2004</b>	<b>3/31 2004</b>
<b>Low</b>	\$ 1.26	\$ 1.58	\$ 1.50	\$ 1.90	\$ 1.57	\$ 1.10	\$ 1.50	\$ 2.25
<b>High</b>	\$ 1.95	\$ 2.78	\$ 2.90	\$ 3.99	\$ 3.90	\$ 2.34	\$ 3.11	\$ 4.30

*Holder:*

As of March 28, 2006, there were approximately 377 holders of record of the Company's Common Stock.

*Issuance of Warrants:*

On November 17, 2004, the Company entered into a general financial and advisory services agreement with Maxim Group LLC pursuant to which Maxim Group LLC was granted, on April, 1, 2005, a three (3) year warrant to purchase 100,000 shares of the Company's common stock at an exercise price of \$3.20 per share. These warrants were issued pursuant to the exemption to the registration requirements of the Securities Act of 1933, as amended, available under Section 4(2) of that Act. The Company expects to file a registration statement for purposes of registering the shares of common stock underlying the warrants by April 15, 2006.

*Dividends:*

The Company has never paid any cash dividends on its Common Stock and presently anticipates that no dividends on its Common Stock will be declared in the foreseeable future. The Company's current policy is to retain all of its earnings to finance future growth.

*Equity Compensation Plan Information:*

The information in the table below is as of December 31, 2005. See also the Consolidated Financial Statements Note 9.

<b>Plan category</b>	<b>Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)</b>	<b>Weighted-average exercise price of outstanding options, warrants and rights (b)</b>	<b>Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a) (c)</b>
Equity compensation plans Approved by security holders	1,718,925	\$ 1.39	757,946
Equity compensation plans not approved by security holders	958,970	3.09	N/A
<b>Total</b>	<b>2,677,895</b>	<b>\$ 2.00</b>	<b>757,946</b>

**Item 6. SELECTED FINANCIAL DATA**

The selected financial information presented below is derived from the audited consolidated financial statements of the Company for each of the five years in the period ended December 31, 2005. The information set forth below should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and the Consolidated Financial Statements and related Notes included elsewhere in this Form 10-K. All fiscal years noted below have been restated to reflect discontinued operations.

**Selected Statement of Operations Data**

	Year Ended December 31, 2005	Year Ended December 31, 2004	Year Ended December 31, 2003	Year Ended December 31, 2002	Year Ended December 31, 2001
Total revenues	\$ 11,645,481	\$ 12,158,919	\$ 10,459,631	\$ 9,514,180	\$ 11,210,375
Total costs and expenses	12,416,631	11,461,749	9,693,551	8,872,465	10,934,902
(Loss) income from continuing operations	(771,150 )	697,170	766,080	641,715	275,473
Interest expense	(58,510 )	(69,383 )	(116,097 )	(179,429 )	(261,754 )
Other expense					(53,142 )
Interest income	26,124	27,965	9,508	7,191	7,032
Net (loss) income from continuing operations before income taxes and extraordinary item	(803,536 )	655,752	659,491	469,477	(32,391 )
Income tax (expense) benefit	(185,000 )	450,000			
Net (loss) income from continuing operations before discontinued operations and extraordinary item	(988,536 )	1,105,752	659,491	469,477	(32,391 )
(Loss) from discontinued operations (net of loss from disposal of discontinued operations of \$1,422,715 in 2003)		(231,380 )	(4,109,925 )	(2,983,451 )	(492,795 )
Net (loss) income	(988,536 )	874,372	(3,450,434 )	(2,513,974 )	(525,186 )
Weighted-average shares outstanding:					
Basic	9,756,221	9,345,560	7,767,712	7,426,586	7,375,102
Diluted	9,756,221	10,329,313	8,501,110	7,470,090	7,375,102
Basic amounts per common share:					
Net (loss) income per share from continuing operations	\$ (.10 )	\$ .11	\$ .08	\$ .06	\$ (.00 )
Basic net (loss) income per share from discontinued operations		\$ (.02 )	\$ (.52 )	\$ (.40 )	\$ (.07 )
Basic, as reported	\$ (.10 )	\$ .09	\$ (.44 )	\$ (.34 )	\$ (.07 )
Diluted amounts per common share:					
Diluted net (loss) income per share from continuing operations	\$ (.10 )	\$ .10	\$ .08	\$ .06	\$ (.00 )
Diluted net (loss) income per share from discontinued operations		\$ (.02 )	\$ (.52 )	\$ (.40 )	\$ (.07 )
Diluted, as reported	\$ (.10 )	\$ .08	\$ (.44 )	\$ (.34 )	\$ (.07 )

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

*Certain Factors And Cautionary Statement Regarding Forward-Looking Statements*

Management believes that this report contains forward-looking statements that are subject to certain risks and uncertainties including statements relating to the Company's plan to achieve, maintain and/or increase revenue growth, and/or operating profitability, and to achieve, maintain, and/or increase net operating profitability. Such statements are based on management's current expectations and are subject to a number of factors and uncertainties that could cause actual results achieved by the Company to differ materially from those described in the forward-looking statements. The Company cautions investors that there can be no assurance that the actual results or business conditions will not differ materially from those projected or suggested in such forward-looking statements as a result of various factors, including but not limited to, the following risks and uncertainties: (i) whether the performance advantages of the Company's Microfluidizer materials processing equipment will be realized commercially or that a commercial market for the equipment will continue to develop, (ii) whether the timing of orders will significantly affect quarter to quarter revenues and resulting net income results for a particular quarter, (iii) whether the Company will have access to sufficient working capital through continued and improving cash flow from sales and ongoing borrowing availability, the latter being subject to the Company's ability to comply with the covenants and terms of the Company's loan agreement with its senior lender, (iv) whether the Company's technology will be adopted by customers as a means of producing MMR innovative materials in large quantities, (v) whether the Company is able to deploy prototype MMR placements and then manufacture and introduce commercial production MMR equipment as well as those risks set forth in Item 1A, Risk Factors, and (vi) whether the Company will achieve a greater proportion of its sales in the future through the sale of advanced processor production systems.

*Critical Accounting Policies*

The Company considers certain accounting policies related to revenue recognition and related receivables as well as the valuation of inventories to be critical policies due to the estimation processes involved in each.

**Revenue Recognition**

Revenue from the sale of machines and spare parts is generally recognized upon shipment of the product or when the earnings process is complete. Rental income for the lease of equipment is recognized on a straight-line basis over the term of the lease agreement. Rental income and equipment sales are classified as revenues in the consolidated statement of operations.

The Company has adopted Securities and Exchange Commission (SEC) Staff Accounting Bulletin (SAB) No. 104, *Revenue Recognition in Financial Statements*. The Company recognizes sales at the time of shipment of the system to the customer. Management believes the customer's post-delivery acceptance provisions and installation are routine. The Company has never failed to successfully complete a system installation. With few exceptions, the Company limits its liability to the return of the equipment sold. Installation costs are predictable and insignificant to the total purchase price. The Company has demonstrated a history of customer acceptance subsequent to shipment and installation of these systems.

Judgments are required in evaluating the creditworthiness of our customers. In all instances, revenue is not recognized until the Company has determined that collection is reasonably assured. Should changes in conditions cause management to determine the aforementioned criteria are not met for certain future transactions, revenue recognized for any reporting period could be adversely affected.



*Allowance for Doubtful Accounts.* The Company's policy is to maintain allowances for estimated losses resulting from the inability of our customers to make scheduled payments. The Company regularly evaluates the collectibility of our trade receivable balances based on a combination of factors. When a customer's account balance becomes past due, we initiate dialogue with the customer to determine the cause. If it is determined that the customer will be unable to meet its financial obligation to us we record a specific allowance to reduce the related receivable to the amount we expect to recover given all information presently available. We believe our reported allowances are adequate as of December 31, 2005 and 2004.

*Inventory Valuation.* The Company values its inventory at the lower of cost or net realizable value on a first-in-first-out method. Management regularly evaluates inventory quantities on hand and records a provision for obsolete or excess inventory levels greater than those of anticipated usage in the subsequent two years. There are external factors that may require an adjustment to the anticipated demand including, but not limited to, technological changes in our markets, our ability to meet changing customer requirements, competitive pressures in products and prices, and the availability of key components from our suppliers. Purchasing requirements and alternative usage avenues are explored within these processes to mitigate inventory exposure. When recorded, our reserves are intended to reduce the carrying value of our inventory to its net realizable value.

*Impairment.* It has been the Company's policy to review the carrying values of long-lived assets and amortizable intangibles for impairment under Statement of Financial Accounting Standards ( SFAS ) No. 144 whenever an event or changes in circumstances indicated that the carrying amount of an asset may not be recoverable.

*Product Warranties.* Our products are generally sold with a twelve month warranty provision that requires us to remedy deficiencies in quality or performance of our products at no cost to our customers only after it has been determined that the cause of the deficiency is not due to the actions of the machine operator or product used in the machine. The Company has established a policy for replacing parts that wear out or break prematurely. The policy calls for replacing the parts or repairing a machine within one year of the sale. The Company is now selling more advanced processor production systems than past years that may require more costly parts. A reserve balance has now been established. We believe the reserve balance in the amount of \$58,000 to be adequate as of December 31, 2005.

#### *Fiscal 2005 Compared to Fiscal 2004*

#### **Results of Continuing Operations**

Total revenues for the year ended December 31, 2005 from continuing operations were \$11,645,481 as compared to revenues of \$12,158,919 for the year ended December 31, 2004, representing decrease of \$513,438, or 4.2%.

North American sales for the year ended December 31, 2005 decreased to approximately \$6,028,000, or 3.0%, as compared to North American sales of approximately \$6,212,000 for the year ended December 31, 2004. This decrease in North American sales was principally due to a decrease in the sale of machines of approximately \$1,478,000, and an increase in the sale of spare parts of approximately \$1,294,000. Foreign sales were approximately \$5,618,000 for the year ended December 31, 2005, compared to \$5,947,000 for the year ended December 31, 2004, a decrease of \$329,000, or 5.5%. This decrease in foreign sales was principally due to an increase in the sale of machines of approximately \$1,044,000, and a decrease in the sale of spare parts of approximately \$1,373,000. The decline in the sale of machines is a result, in part, of longer lead times associated with the increased complexity of manufactured automated operating controls, data acquisition systems, and sterilization features of systems orders received from biopharma customers. The decline is also the result of increased competition from several companies that sell laboratory units. The Company believes its laboratory machines are superior in terms of technology,

and that, with relatively minor modifications to these units that are currently in development, the Company hopes to regain market share.

Total cost of goods sold for 2005 was \$5,917,994, or 50.8% of revenue, as compared to \$5,607,755, or 46.1% of revenue for 2004. The increase in cost of goods sold reflects primarily the increased costs resulting from the manufacture and sales of production units, as opposed to manufacturing laboratory machines. Production units have a higher cost to manufacture, and correspondingly, a lower gross profit margin than laboratory machines. A substantial contributor to the increased cost of goods sold in 2005 was the Company's production of a highly customized production system for the Korean Institute of Industrial Technology (KITECH). This customized production machine accounted for 2.8% of the total revenues for 2005 or approximately \$324,000, and 5.2% of the total costs of goods sold for the year ended December 31, 2005 or approximately \$308,000.

The Company believes that the construction and design of this customized production system for KITECH enhanced the Company's knowledge and skills in producing advanced systems, and will allow the Company to quote other significant equipment orders at higher profit margins in the future. The Company also believes that, because KITECH provides high visibility for its equipment to companies that work with KITECH, it may lead those companies to consider purchasing our equipment to scale up the production of products developed on this system.

The Company's major product lines have different profit margins, as well as multiple profit margins within each product line. In the course of the periods compared, there may be significant changes in the cost of revenues as a percentage of revenue depending on the mix of product sold. Also, the cost of sales as a percentage of revenue will differ between laboratory and pilot plant units sold, due to the difference in costs between air driven and electric-hydraulic units.

Total operating expenses for 2005 were \$6,498,637 or 55.8% of revenue, as compared to \$5,853,994 or 48.1% of revenue for 2004, which is an increase of \$644,643 or 11.0%.

It is the Company's position that a greater proportion of its sales in the future will be for more advanced processor production systems that will incorporate features not currently included in many of the current production machines. In order to meet that challenge going forward, it became necessary to hire additional research and development personnel, and also to increase spending in research and development.

Research and development expenses for 2005 were \$1,701,870 compared to \$1,033,978 for 2004, an increase of \$667,892 or 64.6%. The increase in research and development expenses is primarily due to a planned increase in payroll and related costs of approximately \$419,000, an increase in consulting costs of approximately \$134,000, and an increase in development costs of approximately \$101,000. The development costs were primarily for outside contractors and supplies.

Selling expenses for 2005 decreased approximately \$175,000, from \$2,587,658 in 2004 to \$2,412,550 or 6.8%. The decreases were due principally to a decrease in commission expense of approximately \$136,000, a decrease of approximately \$35,000 in delivery costs, a decrease of approximately \$33,000 in payroll and related costs, a decrease in advertising expenses of approximately \$19,000, partially offset by an increase in facility operating costs of approximately \$40,000, and an increase in printing costs of approximately \$20,000. The decrease in commission costs was caused by a decrease in direct sales. Sales made in Asia, where the Company's products are sold primarily through distributors, were 35.2% of sales for the year ended December 31, 2005, compared to 31.0% of sales for the year ended December 31, 2004. Sales made to distributors are sold net of a discount, but without a commission. Accordingly, these sales generally reflect a lower gross margin offset by lower selling costs. The decrease in payroll was due to a reduction in personnel. The decrease in delivery costs was principally due to a change in vendors. The increase in

printing costs was due to increased purchases of general brochures and cost data sheets compared to the previous year.

General and administrative expenses for 2005 increased by approximately \$152,000, from \$2,232,358 for the year ended December 31, 2004, to \$2,384,217, or 6.8%. The increase in general and administrative expenses is primarily due to an increase in consultants costs of approximately \$166,000, an increase in facility operating costs of approximately \$74,000, an increase in corporate expenses of approximately \$53,000, and an increase in professional fees of approximately \$17,000, offset in part by a decrease in payroll costs of approximately \$114,000. The increase in consultant costs was caused by the use of outside consultants that included a non-cash charge for warrants issued in the amount of \$119,000, and a recruiting placement fee of \$41,000. The increases in facility operating costs were primarily rent and energy related. The increase in corporate costs is due to the expense incurred in accelerating employees' stock options of approximately \$65,000. The decrease in payroll is a result of a planned decrease in payroll costs, including both a reduction in personnel and no bonuses paid employees for 2005, due to the loss from operations.

Interest expense for 2005 decreased from \$69,383 in 2004 to \$58,510, a decrease of \$10,873, or 15.7%. The decrease was principally due to a reduction in the term debt outstanding.

Interest income for 2005 decreased to \$26,124 from \$27,965 for 2004, a decrease of \$1,841. The decrease is due to less cash available for investing.

### ***Results of Discontinued Operations***

In 1998, the Company purchased the assets and liabilities of Morehouse-COWLES, Inc. (Morehouse-COWLES). This was done to complete a strategic combination with Microfluidics, in order to enhance the Company's position in the coatings market, which, at the time, was the dominant part of the Company's business.

Since that time, the direction of the core business of the Company changed significantly from coatings to other areas, in particular the health care sector. The Company determined that it could no longer support the previous strategic plan and the Company, therefore, prepared a plan to divest the Morehouse-COWLES Division.

It was expected that the sale would positively impact the Company's cash flow, and would allow the Company to focus on the core business, and expand its sales and marketing resources for the Company's Microfluidizer processor systems line, and promote its new MMR nanoparticle production systems.

During the fourth quarter of 2003, management committed to a plan to sell substantially all the assets and associated liabilities of Morehouse-COWLES. Accordingly, at fiscal year end 2003, the Company reported the division as discontinued operations and reclassified the assets and associated liabilities as available for sale. The search for a buyer eventually resulted in NuSil Corporation, a California corporation (NuSil) making an offer in December 2003 to purchase the Morehouse-COWLES Division's assets and related liabilities at a price that was acceptable to the Company.

On February 9, 2004, pursuant to an Asset Purchase Agreement (the Asset Purchase Agreement) dated February 5, 2004 between MFIC and a wholly owned subsidiary of NuSil, MFIC sold substantially all of the assets and selected liabilities of its Morehouse-COWLES Division (the Division), to NuSil. Other than NuSil's prior purchases of products from the Division, there were no preexisting relationships between MFIC and NuSil.

The assets of the Division that were sold included accounts receivable, furniture, fixtures and equipment, inventory and supplies, books and records, bids, contracts, prepaid expenses, leases, intellectual property, goodwill, domain names and claims, all as described in the Asset Purchase Agreement (collectively, the Assets). In addition, certain rights and obligations arising after February 9,

2004 under the Division's PacificCare Group Health Insurance Policy were assigned. The Division's cash or cash equivalents on hand on February 9, 2004 were excluded from the assets being sold. Under the Asset Purchase Agreement, the Division's executory obligations under certain contracts and bids, and the Division's accounts payable as of February 9, 2004 in the amount of \$623,240, were assumed by NuSil.

The purchase price (other than the assumption of accounts payable described in the preceding paragraph) paid under the Asset Purchase Agreement was \$918,238. Of the purchase price, \$768,238 (the Closing Cash) was paid in cash, \$100,000 was paid in the form of a Promissory Note (the Purchase Note) and \$50,000 (the Holdback Payment) was withheld for payment at a future date subject to any purchase price adjustments and offsets, as provided for in the Asset Purchase Agreement.

The Closing Cash was paid directly to PNC Bank, National Association (PNC), to be applied to MFIC's outstanding balance under MFIC's Revolving Credit Loan with PNC (the Revolving Credit Loan).

The aforementioned Purchase Note bore interest at 5 percent per annum, was secured by the Assets pursuant to a Security Agreement dated February 5, 2004 (the Security Agreement) between the parties and was subject to certain offsets as provided in the Asset Purchase Agreement. Principal and interest on the Purchase Note were payable on February 9, 2005. NuSil forwarded a payment to the Company on that date which, in conjunction with an allowable offset of approximately \$8,300 paid by NuSil for the benefit of the Company, satisfied the claim.

Pursuant to the Asset Purchase Agreement, MFIC entered into a Noncompetition and Nonsolicitation Agreement, dated February 5, 2004, which limits MFIC's ability to compete with the business of the Division for a period of five years.

The sale generated a loss of approximately \$1,420,000. Due to the sale of the Morehouse-COWLES Division, goodwill associated with the 1998 purchase of this division in the amount of \$2,100,000 was impaired in 2003.

In the three months ended March 31, 2004, the Company sold the assets and selected liabilities of the Division to NuSil. During the year ended December 31, 2005, the Company had no discontinued operations. Thus, all items of discontinued operations decreased 100% when compared to the comparable periods for the prior year.

Total Company revenues for the year ended December 31, 2005 from discontinued operations were \$0, as compared to revenues of \$323,635 for the comparable period for the prior year. The decrease during this period is due to the sale of the Division to NuSil on February 9, 2004.

Cost of goods sold for the year ended December 31, 2005 were \$0, compared to \$308,548 for the year ended December 31, 2004. The decrease in cost of goods sold is attributable to the sale of the Division to NuSil on February 9, 2004.

Total operating expenses for the year ended December 31, 2005, which include research and development, selling, and general administrative expenses, were \$0, compared to \$238,760 for the year ended December 31, 2004. The decrease in operating expenses is due to the sale of the Division to NuSil on February 9, 2004.

### *Fiscal 2004 Compared to Fiscal 2003*

#### **Results of Continuing Operations**

Total revenues for the year ended December 31, 2004 from continuing operations were \$12,158,919 as compared to revenues of \$10,459,631 for the year ended December 31, 2003, representing an increase of \$1,699,288, or 16%.

North American sales for the year ended December 31, 2004 were approximately \$6,212,000, a 16% increase as compared to North American sales of approximately \$5,337,000 for the year ended December 31, 2003. This increase in North American sales was principally due to an increase in the sale of machines of approximately \$680,000. Foreign sales were approximately \$5,947,000 for the year ended December 31, 2004 compared to \$5,123,000 for the year ended December 31, 2003, an increase of \$824,000, or 16%. The increase in foreign sales was principally due to an increase in the sale of spare parts of approximately \$977,000 compared to 2003.

Total cost of goods sold for 2004 was \$5,607,755 or 46% of revenue, as compared to \$4,988,226 or 48% of revenue for 2003. The increase in cost of goods sold in absolute dollars reflects principally the increase in sales generated by the Company compared to the previous year. The Company's major product lines have different profit margins, as well as multiple profit margins within each product line. In the course of the periods compared, there may be significant changes in the cost of revenues as a percentage of revenue depending on the mix of product sold. Also, the cost of sales as a percentage of revenue will differ between laboratory and pilot plant units sold, due to the difference in costs between air driven and electric-hydraulic units.

Total operating expenses for 2004 were \$5,853,994, or 48% of revenue, as compared to \$4,705,325, or 45% of revenue, for 2003, which is an increase of \$1,148,669, or 24%.

Research and development expenses for 2004 were \$1,033,978 compared to \$785,849 for 2003, an increase of \$248,129, or 32%. The increase in research and development expenses is principally due to an increase in payroll costs, as a result of both an increase in headcount and pay increases of approximately \$253,000, an increase in consultants of approximately \$41,000, an increase in travel and related costs of approximately \$10,000, partially offset by a decrease in testing materials of approximately \$79,000.

Selling expenses for 2004 increased approximately \$400,000, or 18%, from \$2,187,389 to \$2,587,658. The increase was due principally to an increase in outside commissions of approximately \$194,000, an increase in advertising costs of approximately \$115,000, an increase in payroll costs of approximately \$91,000, an increase in public relations costs of approximately \$36,000, partially offset by a decrease in travel and related costs of approximately \$38,000.

For the year ended December 31, 2004, general and administrative expenses increased by approximately \$500,000, or 29%, from \$1,732,087 for the year ended December 31, 2003, to \$2,232,358. The increase in general and administrative expenses was principally due to an increase in payroll and related costs of approximately \$241,000, professional fees of approximately \$148,000, and investor relation expenses of approximately \$73,000, general overhead costs of approximately \$71,000, partially offset by a decrease in bad debt expense of approximately \$76,000.

Interest expense for 2004 decreased to \$69,383 from \$116,097 for 2003, a decrease of \$46,714, or 40%. The decrease was due primarily to the reduction in the line of credit caused by the paydown of the debt from proceeds received from the sale of the Morehouse-COWLES Division.

Interest income for 2004 increased to \$27,965 from \$9,508 in 2003, an increase of \$18,457, or 194%. The increase is due to available cash being invested in money markets and certificates of deposit.

### **Results of Discontinued Operations**

Total revenues for the year ended December 31, 2004 were \$323,635 as compared to revenues of \$3,655,237 for the year ended December 31, 2003, representing a decrease of \$3,331,602, or 91%.

The decrease in revenue is due to the sale of the discontinued operation to NuSil Corporation (NuSil) on February 9, 2004.

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Total cost of goods sold for 2004 was \$308,548, or 95% of revenue, as compared to \$2,601,957, or 71% of revenue for 2003. The decrease in cost of goods sold in absolute dollars is due to the sale of the discontinued operation to NuSil Corporation (NuSil) on February 9, 2004.

Total operating expenses for 2004 were \$238,760, or 74% of revenue, as compared to \$1,640,490, or 45% of revenue, for 2003, which is a decrease of \$1,401,730, or 85%.

Research and development expenses for 2004 were \$37,413 compared to \$318,105 for 2003, a decrease of \$280,692, or 88%. The decrease in research and development expenses was due to the sale of the discontinued operation to NuSil Corporation (NuSil) on February 9, 2004.

Selling expenses for 2004 decreased approximately \$729,243, or 84%, from \$863,337 to \$134,094. The decrease in selling expenses is due to the sale of the discontinued operation to NuSil Corporation (NuSil) on February 9, 2004.

For the year ended December 31, 2004, general and administrative expenses decreased by \$391,795 from \$459,048 for the year ended December 31, 2003, to \$67,253, or 85%. The decrease in general and administrative expenses is due to the sale of the discontinued operation to NuSil Corporation (NuSil) on February 9, 2004.

**QUARTERLY RESULTS OF OPERATIONS**

The following table sets forth, for the periods presented, certain data from our consolidated statements of operations. In the opinion of our management, the unaudited quarterly consolidated statement of operations data have been prepared on substantially the same basis as our audited consolidated financial statements and include all adjustments, consisting only of normal recurring adjustments, necessary for a fair presentation of the financial information for the periods presented. This information should be read in conjunction with the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. The operating results in any quarter are not necessarily indicative of the results that may be expected for any future period.

Summarized unaudited quarterly financial data are as follows

	<b>Fiscal 2005 Quarters</b>			
	<b>First</b>	<b>Second</b>	<b>Third</b>	<b>Fourth</b>
Revenues	\$ 2,536,469	\$ 3,163,645	\$ 2,881,267	\$ 3,064,100
Gross profit	1,387,540	1,556,366	1,354,132	1,429,449
Net (loss) from continuing operations before income tax benefit (expense)	(193,066 )	(36,193 )	(297,291 )	(276,986 )
Income tax benefit (expense)	77,000			(262,000 )
Net (loss)	(116,066 )	(36,193 )	(297,291 )	(538,986 )
Basic net (loss) income per share from continuing operations:	\$ (0.01 )	\$ (0.00 )	\$ (0.03 )	\$ (0.06 )
Diluted net (loss) income per share from continuing operations	\$ (0.01 )	\$ (0.00 )	\$ (0.03 )	\$ (0.06 )

	<b>Fiscal 2004 Quarters</b>			
	<b>First</b>	<b>Second</b>	<b>Third</b>	<b>Fourth</b>
Revenues	\$ 2,251,452	\$ 3,081,977	\$ 3,163,785	\$ 3,661,705
Gross profit	1,238,579	1,675,974	1,813,584	1,823,027
Net (loss) income from continuing operations before income tax benefit	(55,183 )	256,495	282,050	172,390
Income tax benefit				450,000
Net (loss) income from continuing operations	(55,183 )	256,495	282,050	622,390
(Loss) from discontinued operations	(231,380 )			
Net (loss) income	(286,563 )	256,495	282,050	622,390
Basic net (loss) income per share:				
Net (loss) income per share from continuing operations	\$ (.01 )	\$ .03	\$ .03	\$ .06
Basic net (loss) income per share from discontinued operations	\$ (.02 )	\$ .00	\$ .00	\$ .00
Basic, as reported	\$ (.03 )	\$ .03	\$ .03	\$ .06
Diluted net income (loss) per share:				
Net (loss) income per share from continuing operations	\$ (.01 )	\$ .02	\$ .03	\$ .06
Diluted net loss per share from discontinued operations	\$ (.02 )	\$ .00	\$ .00	\$ .00
Diluted, as reported	\$ (.03 )	\$ .02	\$ .03	\$ .06

## LIQUIDITY AND CAPITAL RESOURCES

On March 31, 2004, the Company completed a private placement offering of investment units (each unit consisting of one share of common stock and a 3-year warrant to purchase an additional one-half share of common stock). A total of 1,426,616 units were sold, yielding gross proceeds of \$3,566,536. The units were priced at \$2.50 and the associated warrants totaling 713,308 units are exercisable at \$3.05. Additionally, the placement agent for the offering received 5-year warrants to purchase 142,662 shares of common stock at an exercise price of \$3.20 per share. The value of the warrants granted to the placement agent was approximately \$351,000. The shares of common stock underlying these warrants have been registered with the Securities and Exchange Commission.

The Company used cash of \$396,456 and \$142,299 in 2005 and 2004 respectively from operations and generated cash of \$236,292 in 2003. In 2005, the Company's principal operating cash requirements were to fund its net loss, its decrease in current liabilities, and an increase in prepaid expenses, offset by a decrease in receivables, inventories, and other current assets. In 2004, the Company's principal operating cash requirements were to fund its increase in inventories, trade and other receivables, prepaid expenses, and a decrease in current liabilities, partially offset by net income. In 2003, the Company's principal operating cash requirements were to fund its net loss, its increase in prepaid expenses, inventory, and a decrease in current liabilities, offset by a decrease in trade and other receivables, and other current assets.

The Company used cash of \$96,048 generated cash of \$513,083, and used cash of \$53,172 for investing activities in 2005, 2004, and 2003, respectively. Net cash used in investing activities for 2005 was used for the purchase of capital equipment. Net cash provided by investing activities in 2004 was generated through the sale of the Morehouse-COWLES Division, partially offset by the purchase of capital equipment. Net cash used in investing activities for 2003 included the proceeds from the sale of assets, net of the purchase of capital equipment. The Company's sale of assets principally related to used equipment. As of December 31, 2005, the Company had no material commitments for capital expenditures.

For financing activities, the Company used cash of \$83,252 in 2005, generated cash of \$1,607,060 in 2004, and used cash of \$217,806 in 2003. In 2005, cash was generated from the issuance of common stock for options exercised, from proceeds from stock issued from the employee stock purchase plan, and the collection of a note receivable, offset by payments on a term note and subordinated debt to a related party. In 2004, cash was generated from the net proceeds from the private placement offering, the issuance of common stock for options exercised, proceeds from stock issued from the employee stock purchase plan, and net proceeds from a new term loan and line of credit from the New Lender, offset by payments on the previous line of credit, the term note and subordinated debt. In 2003, cash was used to pay down the line of credit, subordinated debt, and the line of credit term note, partially offset by the issuance of common stock.

The cash and cash equivalents at December 31, 2005 was \$1,452,358, a decrease of \$575,756 from the December 31, 2004 balance of \$2,028,114.

On March 3, 2004, the Company entered into a Revolving Credit and Term Loan Agreement with a new lender, Banknorth, N.A. (the New Lender), providing the Company with a \$2 million credit facility. The proceeds drawn down from the New Lender under the credit facility were used to pay off both the line of credit and term loan owed PNC Bank N.A. (the Previous Lender).

The Credit Facility was comprised of (i) a \$1 million dollar four-year revolving line of credit, (Revolving Credit Line) and (ii) a \$1 million dollar four year term promissory note (Term Loan). The Company borrows funds on the Revolving Credit Line at the prime rate. The \$1 million Term Loan is payable ratably over a four year period at the fixed rate calculated equal to the Federal Home Loan Bank Classic Rate plus 2.5%, or 5.7%. See discussion of New Credit Facility in the notes to the Consolidated Financial Statements.



Under the terms of agreement with the New Lender, the Company has two covenants that it must meet on an annual basis. As of December 31, 2005, the Company was not in compliance with the debt service coverage ratio covenant of its Credit Facility with the New Lender. On March 23, 2006 the Company obtained a waiver from the New Lender for this covenant as of December 31, 2005. The Company expects to be in full compliance with both debt covenants related to the debt with the New Lender at December 31, 2006. As of December 31, 2005, the Company had no balance due and additional availability of up to \$1,000,000 under its Revolving Credit Line, and a balance of \$562,507 under its Term Loan facility.

The proceeds of the new line of credit and term note were used to pay off the balance due the Previous Lender. As of December 31, 2005 and March 21, 2006, the Company had borrowings of \$562,507 and \$500,008 outstanding under its Term Loan facility, respectively.

The Company's ability to continue planned operations is dependent upon access to financing which is potentially impacted by the Company's ability to achieve future compliance with the financial covenants.

Additionally, although the Company raised approximately \$3.6 million in a private placement offering which closed in March 2004, the Company may, from time to time, seek to raise additional capital for various initiatives that management believes advance the interests of the Company. The terms upon which the Company may raise such additional capital may include private placements of its stock, which placements are usually priced at discount to the then-current market price of the Company's stock (in order to compensate for the fact that the stock being sold is not freely-tradable) or upon other terms that management believes appropriate under the circumstances.

Assuming that there is no significant change in the Company's business, the Company believes that cash flows from operations, together with existing cash balances, will be sufficient to meet its working capital and debt service requirements for at least the next twelve months.

**The Company's contractual obligations as of December 31, 2005 are as follows:**

Contractual Obligations	At December 31, 2005	Fiscal Year 2006	Fiscal Year 2007	Fiscal Year 2008
Long term debt	\$ 562,507	\$ 250,000	\$ 250,000	\$ 62,507
Operating leases	503,565	355,189	148,376	
Capital leases	50,546	38,507	12,039	
Total contractual obligations	\$ 1,166,618	\$ 643,696	\$ 410,415	\$ 62,507

**Recent Accounting Pronouncements**

In November 2004, the FASB issued FASB Statement No. 151, *Inventory Costs* an amendment of ARB No. 43 (SFAS 151), which is the result of its efforts to converge U.S. accounting standards for inventories with international Accounting Standards. SFAS No. 151 requires idle facility expenses, freight, handling costs, and wasted material (spoilage) costs to be recognized as current-period charges. It also requires that allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. SFAS No. 151 will be effective for inventory costs incurred during fiscal years beginning after June 15, 2005. The Company believes there is no impact from this standard on our consolidated financial statements.

In December 2004, the FASB issued SFAS No. 123 (Revised 2004) *Share-Based Payment* (SFAS No. 123R). SFAS No. 123R addresses all forms of share-based payment (SBP) awards, including shares issued under employee stock purchase plans, stock options, restricted stock and stock appreciation rights. SFAS No. 123R will require the Company to expense SBP awards with compensation cost for SBP transactions measured at fair value. The FASB originally stated a preference for a lattice model because it believed that a lattice model more fully captures the unique characteristics of employee stock options in the estimate of fair value, as compared to the Black-Scholes model which the Company currently uses for

its disclosure. The FASB decided to remove its explicit preference for a lattice model and not require a single valuation methodology. SFAS No. 123R requires the Company to adopt the new accounting provisions beginning in our fiscal year 2006. The Company has evaluated the impact of this standard and expects that there will be a non-cash charge of approximately \$129,000 on its consolidated financial statements.

In May 2005, the FASB issued FASB statement No. 154, Accounting Changes and Corrections. SFAS No. 154 addressed the accounting and reporting for changes in accounting principles. It replaces APB 20 and FIN 20, and is effective for all fiscal years beginning after December 15, 2005. It requires that the cumulative effect of a change in accounting principle be recorded directly in the opening retained earnings balance. The Company has evaluated this standard, and has determined there is no impact from this standard on our consolidated financial statements.

**Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

The Company's financial instruments are generally not subjected to changes in market value as a result of changes in interest rates due to the short maturities of the instruments. The Company's fixed rate debt is not exposed to cash flow or interest rate changes but is exposed to fair market value changes in the event of refinancing this fixed rate debt. The Company does not have significant exposure to fluctuations in foreign exchange rates.

The Company had no variable rate borrowings outstanding under its revolving credit agreement at December 31, 2005. Therefore, until the Company decides to borrow under its revolving credit agreement, an adverse change in interest rates for this variable rate debt would have no material effect on the Company's earnings and cash flows on an annual basis.

For additional information about the Company's financial instruments, see Note 6 to the Consolidated Financial Statements.

**Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

The following Consolidated Financial Statements of the Company and its Subsidiaries appear at the end of this report starting on Page F-1 and include:

	<b>Page</b>
<u>Report of Independent Registered Public Accounting Firm</u>	F-1
<u>Consolidated Balance Sheets as of December 31, 2005 and 2004</u>	F-2
<u>Consolidated Statements of Operations for the years ended December 31, 2005, 2004, and 2003</u>	F-3
<u>Consolidated Statements of Cash Flows for the years ended December 31, 2005, 2004, and 2003</u>	F-4
<u>Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2005, 2004, and 2003</u>	F-5
<u>Notes to Consolidated Financial Statements</u>	F-6

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

None.

**Item 9A. CONTROLS AND PROCEDURES**

(a) Evaluation of disclosure controls and procedures. Based on their evaluation as of the end of the fiscal quarter ended December 31, 2005, each of our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended) are effective to ensure that material information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms.

(b) Changes in internal control over financial reporting. There were no significant changes in our internal control over financial reporting during the fiscal quarter ended December 31, 2005 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

**Item 9B. OTHER INFORMATION**

None.

**Item 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT**

*Code of Ethics*

The Company has adopted a Code of Ethics that applies to all of the Company's employees, officers and directors, and which is attached to this Report as Exhibit 14. Any person may receive a copy, without charge, of the Company's Code of Ethics by sending a request for the Code of Ethics to MFIC Corporation., 30 Ossipee Road, Newton, MA 02464-9101, ATTN: Investor Relations. The Code of Ethics is also viewable on the Company's website at the following URL: <http://www.mficcorp.com/nethics.html>

The information required by this Item 10 will be incorporated by reference from the Company's definitive proxy statement or will be filed as an amendment to the Company's Form 10-K within 120 days of the Company's fiscal year end.

**Item 11. EXECUTIVE COMPENSATION**

The information required by this Item 11 will be incorporated by reference from the Company's definitive proxy statement or will be filed as an amendment to the Company's Form 10-K within 120 days of the Company's fiscal year end.

**Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT**

The information required by this Item 12 will be incorporated by reference from the Company's definitive proxy statement or will be filed as an amendment to the Company's Form 10-K within 120 days of the Company's fiscal year end.

**Item 14. INDEPENDENT ACCOUNTANT FEES FOR FISCAL 2005 AND FISCAL 2004**

*Audit Fees*

During the years ended December 31, 2005 and December 31, 2004, Brown & Brown, LLP was paid approximately \$87,000, and \$139,000 respectively for services rendered for the audit of the Company's financial statements and review of financial statements included in the Company's reports on Form 10-Q or services that are normally provided by Brown & Brown, LLP in connection with statutory and regulatory filings or engagements for those fiscal years. All services were approved by the Audit Committee.

*Audit-Related Fees*

During the years ended December 31, 2005 and December 31, 2004, Brown & Brown, LLP was paid approximately \$0, and \$0 respectively for assurance and related services reasonably related to the performance of audit or review of the Company's financial statements and are not reported under Item 9(e) of the Company's definitive proxy statement. All services were approved by the Audit Committee.

*Tax Fees*

During the years ended December 31, 2005 and December 31, 2004, Brown & Brown LLP was paid approximately \$16,000 and \$14,000 respectively for tax compliance, tax advice and tax planning services. All tax services were approved by the Audit Committee.

*All Other Fees*

During the years ended December 31, 2005 and December 31, 2004, Brown & Brown LLP was paid approximately \$27,000 and \$56,000 respectively, for non-audit services. All of these services were approved by the Audit Committee.

The Audit Committee pre-approves audit and non-audit services provided to the Company by the independent auditors (or subsequently approves non-audit services in those circumstances where a subsequent approval is necessary and permissible).

The Audit Committee has considered whether the provision of non-core audit services to the Company by the Company's principal auditor is compatible with maintaining independence, and have affirmed, in each instance, that the provision of such service was compatible with the principal auditor's independent role.

**Item 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES AND REPORTS ON FORM 8-K**

**(a) Consolidated Financial Statements.**

The following Consolidated Financial Statements are included in Item 8:

	<b>Page</b>
Reports of Independent Registered Public Accounting Firm	F-1
Consolidated Balance Sheets as of December 31, 2005 and 2004	F-2
Consolidated Statements of Operations for the years ended December 31, 2005, 2004, and 2003	F-3
Consolidated Statements of Cash Flows for the years ended December 31, 2005, 2004, and 2003	F-4
Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2005, 2004, and 2003	F-5
Notes to Consolidated Financial Statements	F-6

**(b) Exhibits.**

The Company hereby files as part of this Form 10-K the Exhibits listed below.

**(c) Financial Statement Schedules.**

The following Consolidated Financial Statement Schedule of the Registrant is filed as part of this report:

Schedule II Valuation and Qualifying Accounts and Reserves

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**Report of Independent Registered Public Accounting Firm**

The Board of Directors and Stockholders of MFIC Corporation:

We have audited the accompanying consolidated balance sheets of MFIC Corporation and subsidiaries as of December 31, 2005 and 2004 and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2005. Our audits also included the financial statement schedule listed in the Index at Item 15(c). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements and schedule based on our audits.

We conducted our audits in accordance with the auditing standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the 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 circumstance, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of MFIC Corporation and subsidiaries at December 31, 2005 and 2004 and the consolidated results of their operations and their cash flows for the three years in the period ended December 31, 2005, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

/s/ BROWN & BROWN, LLP

Boston, Massachusetts  
March 1, 2006, except for Note 6,  
as to which the date is March 23, 2006

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**MFIC CORPORATION**  
**CONSOLIDATED BALANCE SHEETS**

	December 31, 2005	2004
<b>ASSETS</b>		
<i>Current Assets:</i>		
Cash and cash equivalents	\$ 1,452,358	\$ 2,028,114
Accounts receivable, less allowance for doubtful accounts of \$43,175 and \$13,203 in 2005 and 2004, respectively.	1,864,451	2,056,522
Note receivable NuSil		100,000
Note receivable current		25,000
Inventories, net	1,849,446	1,888,138
Prepaid expenses	269,370	227,607
Other current assets	32,949	45,167
Deferred income taxes	265,000	450,000
<b>TOTAL CURRENT ASSETS</b>	<b>5,733,574</b>	<b>6,820,548</b>
<i>Property and Equipment, at cost:</i>		
Furniture, fixtures and office equipment	507,852	451,341
Machinery and equipment	420,172	368,374
Leasehold improvements	89,935	85,795
	<b>1,017,959</b>	<b>905,510</b>
Less: accumulated depreciation and amortization	(611,589 )	(511,170 )
<b>Net property and equipment</b>	<b>406,370</b>	<b>394,340</b>
Patents, licenses and other assets (net of accumulated amortization of \$231,515 in 2005 and \$225,885 in 2004)	71,783	77,413
<b>TOTAL ASSETS</b>	<b>\$ 6,211,727</b>	<b>\$ 7,292,301</b>
<b>LIABILITIES AND STOCKHOLDERS EQUITY</b>		
<i>Current Liabilities:</i>		
Accounts payable	\$ 115,461	\$ 120,841
Accrued expenses	148,609	162,554
Accrued commissions	160,491	193,073
Accrued compensation and vacation pay	74,313	132,970
Accrued warranty	58,000	
Customer advances	615,929	775,327
Current portion of term note payable	250,000	250,000
Current portion of long-term debt- related party		6,250
Current portion capital leases	38,507	
<b>TOTAL CURRENT LIABILITIES</b>	<b>1,461,310</b>	<b>1,641,015</b>
Capital leases payable	12,039	
Term note	312,507	562,503
Commitments (Note 10)		
<i>Stockholders Equity:</i>		
Common Stock, par value \$.01 per share, 20,000,000 shares authorized; 10,166,430 and 9,921,984 shares issued; 9,905,984 and 9,661,538 shares outstanding at December 31, 2005 and 2004, respectively	101,665	99,220
Additional paid-in capital	16,809,007	16,485,828
Accumulated deficit	(11,797,100 )	(10,808,564 )
Less: Treasury Stock, at cost, 260,446 shares at December 31, 2005 and 2004, respectively	(687,701 )	(687,701 )
<b>TOTAL STOCKHOLDERS EQUITY</b>	<b>4,425,871</b>	<b>5,088,783</b>
<b>TOTAL LIABILITIES AND STOCKHOLDERS EQUITY</b>	<b>\$ 6,211,727</b>	<b>\$ 7,292,301</b>

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





**MFIC CORPORATION**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**

	Years Ended December 31,		
	2005	2004	2003
Revenues	\$ 11,645,481	\$ 12,158,919	\$ 10,459,631
Cost of goods sold	5,917,994	5,607,755	4,988,226
Gross profit	5,727,487	6,551,164	5,471,405
Operating expenses:			
Research and development	1,701,870	1,033,978	785,849
Selling	2,412,550	2,587,658	2,187,389
General and administrative	2,384,217	2,232,358	1,732,087
Total operating expenses	6,498,637	5,853,994	4,705,325
(Loss) income from continuing operations	(771,150 )	697,170	766,080
Interest expense	(58,510 )	(69,383 )	(116,097 )
Interest income	26,124	27,965	9,508
Net (loss) income from continuing operations before income tax (expense) benefit	(803,536 )	655,752	659,491
Income tax (expense) benefit	(185,000 )	450,000	
Net (loss) income from continuing operations	(988,536 )	1,105,752	659,491
Loss from discontinued operations (net of loss from disposal of discontinued operations of \$1,422,715 in 2003)		(231,380 )	(4,109,925 )
Net (loss) income	\$ (988,536 )	\$ 874,372	\$ (3,450,434 )
Weighted average number of common and common equivalent shares outstanding:			
Basic	9,756,221	9,345,560	7,767,712
Diluted	9,756,221	10,329,313	8,501,110
Basic amounts per common share:			
Net (loss) income per share from continuing operations	\$ (0.10 )	\$ .11	\$ .08
Basic net (loss) per share from discontinued operations	\$	\$ (.02 )	\$ (.52 )
Basic, as reported	\$ (0.10 )	\$ .09	\$ (.44 )
Diluted amounts per common share:			
Net (loss) income per share from continuing operations	\$ (0.10 )	\$ .10	\$ .08
Diluted net (loss) per share from discontinued operations	\$	\$ (.02 )	\$ (.52 )
Diluted, as reported	\$ (0.10 )	\$ .08	\$ (.44 )

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

**MFIC CORPORATION**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**

	<b>Years Ended December 31,</b>		
	<b>2005</b>	<b>2004</b>	<b>2003</b>
<i>Cash flows from operating activities:</i>			
Net (loss) income	\$ (988,536 )	\$ 874,372	\$ (3,450,434 )
Adjustments to reconcile net (loss) income to net cash used in operating activities:			
Impairment of goodwill			2,100,000
Income tax expense (benefit)	185,000	(450,000 )	
Disposal of discontinued operations			1,422,715
Depreciation and amortization	186,126	111,829	264,101
Provision for loss on trade receivables	29,972	(45,297 )	24,378
Provision for other receivables		46,190	76,000
Provision for obsolete and excess inventory	22,000	53,000	60,000
Provision for warranty expense	58,000		
Gain on sale of assets			(26,931 )
Share based payments consultants	119,000		
Acceleration stock options	65,129		
Share based compensation	21,987		
<i>Changes in assets and liabilities:</i>			
Receivables	162,099	(196,641 )	146,573
Inventories	16,692	(257,435 )	(49,733 )
Prepaid expenses	(49,530 )	(20,397 )	(50,209 )
Other current assets	45,567	(46,578 )	51,281
Current liabilities	(269,962 )	(15,127 )	(331,449 )
Assets and liabilities available for sale		(196,215 )	
Net cash (used in) provided by operating activities	(396,456 )	(142,299 )	236,292
<i>Cash flows from investing activities:</i>			
Proceeds from sale of fixed assets			26,931
Purchase of fixed assets	(96,048 )	(305,155 )	(96,532 )
Proceeds from note receivable			16,429
Proceeds from sale of assets available for sale		818,238	
Net cash (used in) provided by investing activities	(96,048 )	513,083	(53,172 )
<i>Cash flows from financing activities:</i>			
Principal payments on bank line of credit PNC		(2,425,613 )	(256,374 )
Proceeds from term loan Banknorth		1,000,000	
Principal payments on term note PNC		(58,735 )	(95,004 )
Principal payments on term loan Banknorth	(249,996 )	(187,497 )	
Principal payments- notes payable capital leases	(38,165 )		
Issuance of common stock under employee stock purchase plan	42,688	20,993	11,713
Issuance of common stock under employee stock option plan	76,820	343,973	144,859
Issuance of common stock purchased through warrants			52,000
Proceeds from private placement (net of closing costs of \$577,601)		2,988,939	
Proceeds from notes receivable NuSil	91,651		
Payments on subordinated debt-related party	(6,250 )	(75,000 )	(75,000 )
Net cash (used in) provided by financing activities	(83,252 )	1,607,060	(217,806 )
Net (decrease) increase in cash and cash equivalents	(575,756 )	1,977,844	(34,686 )
Cash and cash equivalents, beginning of year	2,028,114	50,270	84,956
Cash and cash equivalents, end of year	\$ 1,452,358	\$ 2,028,114	\$ 50,270
Supplemental disclosure of cash flow information:			
Assets acquired in exchange for notes	\$ 88,711	\$	\$
Cash paid for interest	\$ 60,666	\$ 67,942	\$ 130,967

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

**MFIC CORPORATION**  
**CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS EQUITY**

	Number of Shares	\$0.01 Par Value	Additional Paid-in Capital	Accumulated Deficit	Number of Shares	Stated at Cost	Total Stockholders Equity
Balance, December 31, 2002	7,705,064	\$ 77,051	\$ 12,945,520	\$ (8,232,502 )	260,446	\$ (687,701 )	\$ 4,102,368
Stock options exercised	186,377	1,863	142,996				144,859
Issuance of common stock under employee stock purchase plan	36,717	367	11,346				11,713
Stock warrants exercised	100,000	1,000	51,000				52,000
Net loss				(3,450,434 )			(3,450,434 )
Balance, December 31, 2003	8,028,158	80,281	13,150,862	(11,682,936 )	260,446	(687,701 )	860,506
Stock options exercised	440,532	4,406	339,567				343,973
Issuance of common stock from private placement	1,426,616	14,266	2,974,673				2,988,939
Issuance of common stock under employee stock purchase plan	26,678	267	20,726				20,993
Net income				874,372			874,372
Balance, December 31, 2004	9,921,984	99,220	16,485,828	(10,808,564 )	260,446	(687,701 )	5,088,783
Stock options exercised	128,796	1,288	75,532				76,820
Issue of common stock under employee stock purchase plan	23,289	233	42,455				42,688
Stock warrants issued			119,000				119,000
Correction exercised options Stock based	70,374	704	(704 )				
compensation directors	21,987	220	21,767				21,987
Acceleration of stock options			65,129				65,129
Net loss				(988,536 )			(986,536 )
Balance, December 31, 2005	10,166,430	\$ 101,665	\$ 16,809,007	\$ (11,797,100 )	260,446	\$ (687,701 )	\$ 4,425,871

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

**MFIC CORPORATION**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**Note 1 ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

**Organization**

MFIC Corporation (MFIC or the Company), through its wholly-owned subsidiary, Microfluidics Corporation (Microfluidics), its operating division, operates in one segment, specializing in producing and marketing a broad line of proprietary fluid materials processing systems used for a variety of grinding, mixing, milling, and blending applications across a variety of industries and for use in numerous applications within those industries. Microfluidizer materials processor systems are produced at Microfluidics.

**Managements Plan**

The Company incurred a net loss before income tax expense from continuing operations of \$803,536 for the year ended December 31, 2005. As of a result of the loss, the Company was not in compliance with its debt service coverage ratio covenant of its Credit Facility with Banknorth, N.A. (the Lender). The Company was granted a waiver of this covenant as of December 31, 2005, but must meet this covenant requirement in the future as of December 31, 2006. Assuming the Company does not continue to incur substantial operating losses, management believes that cash flows from operations and available credit from the Credit Facility, along with the existing cash balances, will be sufficient to meet its working capital requirements for at least the next twelve months. In the event that the Company continues to incur significant operating losses, the Company anticipates that it would be able to fund its working capital requirements for the next 12 months if it sufficiently decreased expenditures to avoid further operating losses. Although there can be no assurance of success, the Company's management is confident that it could modify the Company's business plan and operation to achieve positive cash flows from its base level of operations and thereby have sufficient capital resources to accommodate its working capital requirements for the next 12 months.

**Principles of Consolidation**

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

**Reclassifications**

Morehouse-COWLES Division: On February 9, 2004, pursuant to an Asset Purchase Agreement (the Asset Purchase Agreement) dated February 5, 2004 between MFIC and a wholly owned subsidiary of NuSil Corporation, a California corporation (NuSil), MFIC sold substantially all of the assets and selected liabilities of its Morehouse-COWLES Division (the Division), to NuSil. As such, in accordance with Generally Accepted Accounting Principles, results of operations have been reclassified to reflect Morehouse-COWLES' operating results, net of income taxes, as Discontinued Operations. Further, certain prior period balances have been reclassified to conform to the current period presentation.

**Use of Estimates**

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America (Generally Accepted Accounting Principles) requires

management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

### **Revenue Recognition**

Revenue from the sale of machines and spare parts is generally recognized upon shipment of the product or when the earnings process is complete. Rental income for the lease of equipment is recognized on a straight-line basis over the term of the lease agreement. Rental income and equipment sales are classified in revenues in the consolidated statement of operations.

The Company has adopted Securities and Exchange Commission (SEC) Staff Accounting Bulletin (SAB) No. 104, *Revenue Recognition in Financial Statements*. The Company recognizes sales at the time of shipment of the system to the customer. Management believes the customer's post-delivery acceptance provisions and installation are routine. The Company has never failed to successfully complete a system installation. With few exceptions, the Company limits its liability to the return of the equipment sold. Installation costs are predictable and insignificant to the total purchase price. The Company has demonstrated a history of customer acceptance subsequent to shipment and installation of these systems.

The Company has adopted FASB Interpretation No. 46R, Consolidation of Variable Interest Entities, (FIN46). The Company has evaluated this interpretation, and has determined that it has no Variable Interest Entities that would require consolidation within the Company's December 31, 2005 Consolidated Financial Statements.

### **Cash and Cash Equivalents**

The Company considers all highly liquid securities with initial maturities of 90 days or less, at the time of acquisition, to be cash equivalents.

### **Allowance for Doubtful Accounts**

The Company maintains an allowance for estimated losses resulting from the inability of its customers to make required payments. An estimate of uncollectible amounts is made by management based upon historical bad debts, current customer receivable balances, age of customer receivable balances, customer's financial condition and current economic trends. If the actual uncollected amounts significantly exceed the estimated allowance, the Company's operating results would be significantly adversely affected.

### **Inventories**

Inventories consist of material, labor and manufacturing overhead and are stated at the lower of cost or market. Cost is determined on a first-in, first-out basis (FIFO).

The Company periodically reviews quantities of inventory on hand and compares these amounts to expected usage of each particular product line. Reserves are established to record provisions for slow moving inventories in the period in which it becomes reasonably evident that the item is not useable, salable or the market value is less than cost.

### **Property and Equipment**

The Company's property and equipment is recorded at cost. Depreciation is computed using the straight-line method, based upon estimated useful lives of 3 to 7 years. Leasehold improvements are amortized using the straight-line method based upon the shorter of the estimated useful lives or remaining life of the lease. Expenditures for maintenance and repairs are expensed as incurred. Upon retirement or

sale of property and equipment, the cost of the disposed asset and the related accumulated depreciation are removed from the accounts and any resulting gain, or loss is credited or charged to operations.

#### **Long-Lived Assets**

In accordance with Statements of Financial Accounting Standards ( SFAS ) No.144, *Accounting for the Impairment or Disposal of Long-Lived Assets* ( SFAS No. 144 ), the Company reviews long-lived assets and all amortizing intangible assets for impairment whenever events or changes in circumstances indicate the carrying amount of such assets may not be recoverable. Recoverability of these assets is determined by comparing the forecasted undiscounted net cash flows of the operation to which the assets relate, to the carrying amount. If the operation is determined to be unable to recover the carrying amount of its assets, then intangible assets are written down first, followed by the other long-lived assets of the operation, to fair value. Fair value is determined based on discounted cash flows or appraised values, depending upon the nature of the assets.

#### **Patents, Licenses, and Other Intangible Assets**

Patents, patent applications and rights are stated at acquisition cost. Amortization is recorded using the straight-line method over the shorter of the legal lives or useful life of the patents. Patents, licenses and other intangible assets are being amortized over a period of 3 to 17 years.

#### **Reserve for Warranty Expenses**

The Company generally sells its products with a twelve month warranty that requires it to remedy deficiencies or quality on performance not caused by the actions of the customer. The Company has established a reserve for these costs, based upon historical data.

#### **Research and Development Expenses**

The Company charges research and development expenses to operations as incurred.

#### **Earnings (Loss) per Share**

Basic and diluted net loss per share is presented in conformity with SFAS No. 128, *Earnings per Share* ( SFAS No. 128 ), for all periods presented. In accordance with SFAS No. 128, basic and diluted net loss per common share was determined by dividing net income or loss applicable to common stockholders by the weighted average number of common shares outstanding during the period. Options to purchase 1,718,925, 1,788,213 and 1,929,662 shares of common stock were outstanding for the years ended 2005, 2004, and 2003, respectively. Basic and diluted net loss per share are \$(.10) for 2005. Basic and diluted net incomes per share are \$.09 and \$.08 respectively per share for 2004. Basic and diluted net loss per share are \$(.44) per share for 2003.

#### **Fair Value of Financial Instruments**

The carrying amount of cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximates fair value due to the short term nature of these accounts. The Company's bank debt, because it carries a variable interest rate, is stated at its approximate fair market value.

#### **Income Taxes**

The Company accounts for income taxes under SFAS No. 109, *Accounting for Income Taxes* ( SFAS No. 109 ). Under SFAS No. 109, deferred tax assets or liabilities are computed based on the differences between the financial statement and income tax bases of assets and liabilities using the effective tax rates. Deferred income tax expense or credits are based on changes in the asset or liability from period to period.

The Company records a valuation allowance against any net deferred tax assets if it is more likely than not that they will not be realized.

### Stock Based Compensation

As allowed by SFAS No. 123, *Accounting for Stock-Based Compensation*, the Company has elected to account for stock-based compensation at intrinsic value with disclosure of the effects of fair value accounting on net income and earnings per share on a pro forma basis. At December 31, 2005, the Company had one stock incentive plan, which is described more fully in Note 9. The Company accounts for awards issued to employees under its stock incentive plan pursuant to the recognition and measurement principles of Accounting Principles Board (APB) Opinion No. 25, *Accounting for Stock Issued to Employees*, and related interpretations. No stock-based employee compensation cost is reflected in net income, as all options granted under the plan had an exercise price equal to the market value of the underlying common stock on the date of grant.

The following table illustrates the effect on net (loss) income and (loss) income per share if the Company had applied the fair value recognition provisions of SFAS No. 123:

	2005	2004	2003
Net (loss) income, as reported	\$ (988,536 )	\$ 874,372	\$ (3,450,434 )
Deduct: total stock-based expense determined under fair value based method for all awards net, met of related tax effects	(130,791 )	(231,886 )	(113,509 )
Pro forma net (loss) income	\$ (1,119,327 )	\$ 642,486	\$ (3,563,943 )
Net (loss) income per share:			
Basic as reported	\$ (0.10 )	\$ .09	\$ (0.44 )
Diluted as reported	\$ (0.10 )	\$ .08	\$ (0.44 )
Basic pro forma	\$ (0.11 )	\$ .07	\$ (0.46 )
Diluted pro forma	\$ (0.11 )	\$ .06	\$ (0.46 )

Stock options granted to non-employees are accounted for in accordance with SFAS No. 123 and the Emerging Issues Task Force (EITF) Abstract No. 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services*, and related interpretations, which generally requires the value of options to be periodically remeasured and charged to expense as they are earned over the performance period. Compensation related to stock appreciation rights and other variable stock option or award plans should be measured at the end of each period. The Company did not grant any stock options to non-employees, with the exception of granting options to non-employee directors, during 2005, 2004, or 2003.

### Recent Accounting Pronouncements

In November 2004, the FASB issued FASB Statement No. 151, *Inventory Costs* an amendment of ARB No. 43 ( SFAS No. 151 ), which is the result of its efforts to converge U.S. accounting standards for inventories with international Accounting Standards. SFAS No. 151 requires idle facility expenses, freight, handling costs, and wasted material (spoilage) costs to be recognized as current-period charges. It also requires that allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. SFAS No. 151 will be effective for inventory costs incurred during fiscal years beginning after June 15, 2005. The Company believes there is no impact from this standard on its consolidated financial statements.

In December 2004, the FASB issued SFAS No. 123 (Revised 2004) Share-Based Payment ( SFAS No. 123R ). SFAS No. 123R addresses all forms of share-based payment ( SBP ) awards, including shares issued under employee stock purchase plans, stock options, restricted stock and stock appreciation rights. SFAS No. 123R requires the Company to expense SBP awards with compensation cost for SBP transactions measured at fair value. The FASB originally stated a preference for a lattice model because it believed that a lattice model more fully captures the unique characteristics of employee stock options in the estimate of fair value, as compared to the Black-Scholes model which the Company currently uses for its disclosure. The FASB decided to remove its explicit preference for a lattice model and not require a single valuation methodology. SFAS No. 123R requires the Company to adopt the new accounting provisions beginning in our fiscal year 2006. The Company is has evaluated the impact of this standard and expects that there will be a non-cash charge of approximately \$129,000 on its consolidated financial statements.

In May 2005, the FASB issued FASB statement No. 154, Accounting Changes and Corrections. SFAS No. 154 addressed the accounting and reporting for changes in accounting principles. It replaces APB 20 and FIN 20, and is effective for all fiscal years beginning after December 15, 2005. It requires that the cumulative effect of a change in accounting principle be recorded directly in the opening retained earnings balance. The Company has evaluated this standard, and has determined there is no impact on our consolidated financial statements.

## Note 2 INDUSTRY SEGMENT, GEORGRAPHIC AND ENTERPRISE-WIDE REPORTING

SFAS No. 131, *Disclosures about Segments of an Enterprise and Related Information*, ( SFAS No. 131 ), requires companies to report selected information about operating segments, as well as enterprise-wide disclosures about products, services, geographic areas and major customers. Operating segments are determined based on the way management organizes its business for making operating decisions and assessing performance. The Company's chief decision-maker, as defined under SFAS No. 131, is the chairman and chief executive officer. The Company has determined that it conducts its operations in one business segment: the development, manufacture, marketing and sale of process and formulation equipment. The Company's sales are primarily to companies with processing needs in the chemical, pharmaceutical, food, cosmetic, and biotechnology industries. The Company has less than 1% of total assets in foreign countries. As a result, the financial information disclosed herein represents all of the material financial information related to the Company's principal operating segment.

Approximate sales to customers from continuing operations by geographic markets, are as follows:

	2005	2004	2003
North America	\$ 6,028,000	\$ 6,212,000	\$ 5,337,000
Asia	4,100,000	3,774,000	3,204,000
Europe	1,518,000	2,173,000	1,919,000
	<b>\$ 11,646,000</b>	<b>\$ 12,159,000</b>	<b>\$ 10,460,000</b>

### Customers:

The users of the Company's systems are in various industries, including the chemical, pharmaceuticals, food, cosmetic and biotechnology industries. Mizuho Industrial Co. Ltd. (Mizuho) and a wholly owned subsidiary of Teva Pharmaceuticals Industries Ltd. (Teva) accounted for 19.5% and 18.9% of the Company's revenues from continuing operations in 2005, respectively; 20.5% and 12.8%, respectively, in 2004; and 20.6% and 10.6%, respectively, in 2003. Mizuho, the Company's Japanese distributor of Microfluidizer processor equipment and spare parts, resells the Company's equipment to numerous end-users in Japan, none of which individually represents 10% or more of the Company's revenues. Two customers accounted for 10.8% and 10.7% of the trade accounts receivable from continuing operations as



of December 31, 2005, respectively. Three customers accounted for 15.1%, 14.7%, and 13.4% of the trade accounts receivable as of December 31, 2004, respectively. One customer accounted for 16.7% of the trade accounts receivable as of December 31, 2003. A reduction or delay in orders from any of the Company's significant customers could have a material adverse effect on the Company's results of operations.

The Company sells its products in various countries. The Company's sales in North America, including the United States, Canada, and Mexico, accounted for approximately 51.8% of the Company's revenues from continuing operations in 2005; approximately 51.1% of the Company's revenues from continuing operations in 2004; and approximately 51.0% of the Company's revenues from continuing operations in 2003, with almost all of those sales coming from United States and Canada. Sales to the rest of the world accounted for approximately 48.2% of the Company's revenues from continuing operations in 2005; approximately 48.9% of the revenues from continuing operations in 2004; and approximately 49.0% of the revenues from continuing operations in 2003. Sales through the Company's exclusive distributors in Japan accounted for approximately 19.5% of the Company revenues from continuing operations in 2005; 20.5% of the Company's revenues from continuing operations in 2004; and 20.6% of the Company's revenues from continuing operations in 2003. Sales through the Company's representative in Korea accounted for approximately 12.1% of the Company's revenues from continuing operations in 2005; 4.8% of the Company's revenues from continuing operations in 2004; and 5.1% of the Company's revenues from continuing operations in 2003.

### Note 3 INVENTORIES

The components of inventories are as follows at December 31:

	2005	2004
Raw materials	\$ 1,711,661	\$ 1,786,427
Work in progress	73,844	147,376
Finished goods	248,941	117,335
	2,034,446	2,051,138
Less: provision for excess inventory	185,000	163,000
<b>TOTAL</b>	<b>\$ 1,849,446</b>	<b>\$ 1,888,138</b>

### Note 4 ASSETS AVAILABLE FOR SALE

In the fourth quarter of 2003 the Company determined that its Morehouse-COWLES Division (the Division) was not strategic to the Company's on-going objectives and in December 2003, management committed to a plan to sell substantially all the assets and associated liabilities of the Division. Accordingly, the Company reported the Division as a discontinued operation in accordance with SFAS No. 144. The consolidated financial statements were reclassified to segregate the assets and associated liabilities available for sale and operating results of these discontinued operations for all periods presented.

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Summary Operating Results of the Discontinued Operations of Morehouse-COWLES are as follows:

	2005	2004	2003
Revenue	\$	\$ 323,635	\$ 3,655,237
Cost of sales		308,548	2,601,957
Gross profit		15,087	1,053,280
Total operating expenses		238,760	3,740,490
Loss from discontinued operations before cumulative effect of change in accounting principle and disposal		(223,673 )	(2,687,210 )
Loss on disposal of discontinued operations		(7,707 )	(1,422,715 )
Cumulative effect of change in accounting principle			
Loss from discontinued operations		\$ (231,380 )	\$ (4,109,925 )

In December 2003, in conjunction with the establishment of management's plan to sell the Morehouse-COWLES Division, the Company determined that the remaining goodwill of \$2,100,000 was fully impaired and accordingly charged to Discontinued Operations.

On February 9, 2004, pursuant to an Asset Purchase Agreement (the "Asset Purchase Agreement") dated February 5, 2004 between MFIC and a wholly owned subsidiary of NuSil Corporation ("NuSil"), MFIC sold substantially all of the assets and selected liabilities of its Morehouse-COWLES Division (the "Division"), to NuSil. Other than NuSil's prior purchases of products from the Division, there were no preexisting relationships between MFIC and NuSil.

The assets of the Division that were sold included accounts receivable, furniture, fixtures and equipment, inventory and supplies, books and records, bids, contracts, prepaid expenses, leases, intellectual property, goodwill, domain names and claims, all as described in the Asset Purchase Agreement (collectively, the "Assets"). In addition, certain rights and obligations arising after February 9, 2004 under the Division's PacifiCare Group Health Insurance Policy were assigned. The Division's cash on hand on February 9, 2004 were excluded from the assets being sold. Under the Asset Purchase Agreement, the Division's executory obligations under certain contracts and bids, and the Division's accounts payable as of February 9, 2004 in the amount of \$623,240, were assumed by NuSil.

The purchase price (other than the assumption of accounts payable described in the preceding paragraph) paid under the Asset Purchase Agreement was \$918,238. Of the purchase price, \$768,238 (the "Closing Cash") was paid in cash, \$100,000 was paid in the form of a Promissory Note (the "Purchase Note") and \$50,000 (the "Holdback Payment") was withheld for payment subject to any purchase price adjustments and offsets, as provided for in the Asset Purchase Agreement. In accordance with the Asset Purchase Agreement, this Company received the holdback payment on March 26, 2004.

The Closing Cash was paid directly to PNC Bank, National Association ("PNC"), to be applied to MFIC's outstanding balance under MFIC's Revolving Credit Loan with PNC (the "Revolving Credit Loan").

The aforementioned Purchase Note bore interest at 5 percent per annum, and was secured by the Assets pursuant to a Security Agreement dated February 5, 2004 (the "Security Agreement") between the parties and was subject to certain offsets as provided in the Asset Purchase Agreement. Principal and interest on the Purchase Note were payable on February 9, 2005. NuSil forwarded a payment to the Company on that date which, in conjunction with allowable offset of approximately \$8,300 paid by NuSil for the benefit of the Company, satisfied the claim.

Pursuant to the Asset Purchase Agreement, MFIC entered into a Noncompetition and Nonsolicitation Agreement, dated February 5, 2004, which limits MFIC's ability to compete with the business of the Division for a period of five years.

**Note 5** INTANGIBLES AND OTHER ASSETS

In 2001, the Company capitalized \$64,528 of costs related to the Multiple-Stream Mixer High Pressure Reactor patent, with an additional \$28,582 of costs related to this patent capitalized in 2004. These costs are being amortized over a 17-year period, beginning in the last quarter of 2001. Amortization of these costs was \$5,630 in 2005, \$9,747 in 2004, and \$3,800 in 2003.

Costs incurred in connection with the debt refinancing that occurred on March 3, 2004 are being amortized over four years, the initial term of the line of credit. The total of such costs was approximately \$36,533. Amortization of these costs amounted to \$7,767 in 2005 and \$8,978 in 2004.

Costs incurred in connection with the debt refinancing that occurred on February 28, 2000 were amortized over three years, the initial term of the line of credit. The total of such costs, which are fully amortized, was approximately \$207,000. Amortization of these costs amounted to \$11,534 in 2003.

**Note 6** DEBT

Long-term debt as of the following dates consisted of:

	<b>December 31,</b>	
	<b>2005</b>	<b>2004</b>
10% subordinated note payable to related party	\$	\$ 6,250
Term note payable	562,507	812,503
Capital lease notes payable	50,546	
	613,053	818,753
Less current portion	(288,507 )	(256,250 )
Long term debt, net of current portion	<b>\$ 324,546</b>	<b>\$ 562,503</b>

The capital lease notes payable consist of three capitalized leases with bargain purchase options that the Company is obligated to pay over a three year period.

Future minimum capital lease payments required under the capital leases are as follows:

2006	\$ 40,475
2007	12,654
Total Capital lease payments	53,129
Less: Interest expense	2,583
Net	\$50,546

**Subordinated Note Payable**

The subordinated note was payable to Lake Shore Industries Inc., a related party as defined and disclosed in Note 11 of the financial statements.

**Credit Facility**

On March 3, 2004, the Company and its Microfluidics Corporation subsidiary, as co-borrowers, entered into a revolving credit and term loan agreement with Banknorth, N.A. (the New Lender ) providing the Company with a \$2,000,000 demand revolving credit and four year term loan facility (the Credit Facility ). The Credit Facility was comprised of (i) a \$1,000,000 demand revolving line of credit ( The Revolving Credit Line ), and (ii) a \$1,000,000 four year term promissory note ( The Term Loan ). The Revolving Credit Line obtains advances there under bearing interest at an interest rate equal to the prime rate (the Prime Rate for United States borrowings from Banknorth, N.A. as publicly announced

from time to time). All borrowings under the Revolving Credit Line were evidenced by a \$1,000,000 demand promissory note (the Revolving Note ), and (ii) a \$1,000,000 term promissory note, amortized over a four year period but having a maturity date of March 3, 2008 and bearing interest at an interest rate equal to the Federal Home Loan Bank Classic Rate at March 4, 2004 plus two and one-half percent (2.50%). Loans under the Credit Facility are secured by a collateral pledge to the New Lender of substantially all the assets of the Company and its subsidiaries. The Company's Microfluidics Corporation subsidiary guaranteed the Company's obligations to the New Lender under the Credit Facility. The Company also pledged to the New Lender all shares of Microfluidics Corporation owned by the Company. The Company is required to meet two covenants on an annual (calendar) basis as of December 31 of a given year: (i) The Company's senior debt may not be more than four times the amount of its tangible capital base, and (ii) its debt service coverage ratio may not be less than 1.20 to 1. At December 31, 2005, the Company was not in compliance with the debt service coverage ratio, and required a waiver from the New Lender, which was granted on March 23, 2006. The Company will be required to meet both covenant requirements at December 31, 2006. The Company expects to be in compliance as of that date.

Due to the subjective acceleration clause, and the lock-box arrangement with the New Lender, the revolving credit line is classified as a current liability in the consolidated balance sheet. On December 31, 2005 and 2004, there was no outstanding balance on the Revolving Credit Line. The balance outstanding on the term loan was \$562,507, at an interest rate of 5.67%.

**Note 7 EMPLOYEE BENEFIT PLANS**

The Company offers a 401(k) profit-sharing plan (the 401K Plan) to its employees. All Company and related entity employees who are eighteen years of age and have completed one hour of service are eligible to participate in the 401K Plan. Employees may contribute from 1% to 20% of their compensation. The Company's contribution is discretionary, with contributions made from time to time as management deems advisable. The Company made no matching contributions during 2005, 2004, or 2003. The Company also instituted a cafeteria plan in 1992, giving the employees certain pre-tax advantages on specific payroll deductions.

**Note 8 INCOME TAXES**

The (expense) benefit for income taxes is as follows:

	Year ended December 31		
	2005	2004	2003
Deferred:			
Federal	\$ (141,000 )	\$ 345,000	\$
State	\$ (44,000 )	105,000	
	\$ (185,000 )	\$ 450,000	\$

The amount reported as an income tax expense for 2005 is the result of an increase to the valuation allowance reserve that was recorded against the Company's deferred tax assets.

The amount reported as an income tax expense in 2004 is the result of the reversal of tax reserves recorded in prior years.

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The total income tax benefit differs from the income tax at the statutory federal income tax rate due to the following:

	2005		2004		2003
Federal income tax at statutory rate	34.00	%	34.0	%	34.0
State income taxes, net of federal benefit	6.3	%	6.3	%	6.3
Permanent adjustments	(6.5)	)%	2.6	)%	
Net research and development and other tax credits	(11.7)	)%			
Valuation allowance	25.9	)%	(42.8)	)%	(40.3)
Reversal of valuation allowance recorded in prior years	(25.0)	)%	(68.7)	)%	
Total income tax expense (benefit)	23.0	)%	(68.6)	)%	0

The following is a summary of the significant components of the Company's deferred tax assets and liabilities:

	Year ended December 31	
	2005	2004
Deferred tax assets (liabilities) :		
Purchased Intangibles	\$ 0	\$ 11,000
Net operating loss carry forwards	3,958,000	4,683,000
Research and development and other credits	93,000	180,000
Accruals and allowances not currently deductible for tax purposes	122,000	129,000
Depreciation and other	7,000	(440,000 )
Valuation allowance	(3,915,000 )	(4,063,000 )
Total deferred tax assets	\$ 265,000	\$ 450,000

At December 31, 2005, the Company has available federal net operating loss carryforwards for income tax purposes of approximately \$10,274,000 and state net operating losses of approximately \$7,420,000 which expire at various dates through 2025, federal research and development credit carry forwards of approximately \$84,000 expiring in varying amounts during the period through 2011 and state research and development credit carryforwards of approximately \$9,000 expiring in varying amounts during the period through 2011. Ownership changes, as defined in the Internal Revenue Code, may have limited the amount of new operating loss carry forwards that can be utilized annually to offset future taxable income. Subsequent ownership changes could further affect the limitation in future years.

Based on our review of the evidence available, we believe that the valuation allowance is adequate as of the year ended December 31, 2005, based on our projected results for 2006. If there is any significant change between actual and budgeted results, we would revisit the valuation allowance at the end of June 30, 2006, and make the appropriate adjustment.

**Note 9** STOCKHOLDERS EQUITY

The Company adopted the 1988 Stock Plan (the Plan) as the successor plan to the 1987 Stock Plan, which, as amended at the 2002 stockholders meeting, authorizes the grant of Stock Rights for up to 3,500,000 shares of common stock, and the 1989 Non-Employee Director Stock Option Plan which, as amended at the 1996 stockholders meeting, authorizes the grant of nonqualified stock options for up to 500,000 shares of common stock.

**Stock Option Plans**

Options granted under the plans vest over a three-to-five-year period and expire 5 - 10 years from the grant date. At December 31, 2005, 757,946 shares were available for future grants under the plans. Information with respect to activity under the plans is as follows:

	Number of Shares	Weighted Average Exercise Price
Outstanding, December 31, 2001	1,612,980	0.88
Granted	532,045	0.52
Exercised	(19,375 )	0.31
Canceled	(115,000 )	0.60
Outstanding, December 31, 2002	2,010,650	0.90
Granted	257,409	0.47
Exercised	(186,377 )	0.78
Canceled	(152,020 )	1.13
Outstanding, December 31, 2003	1,929,662	0.74
Granted	392,668	2.27
Exercised	(440,532 )	0.79
Canceled	(93,585 )	0.67
Outstanding, December 31, 2004	1,788,213	1.14
Granted	424,900	2.14
Exercised	(221,157 )	.57
Canceled	(273,031 )	1.07
Outstanding, December 31, 2005	1,718,925	\$ 1.37
Exercisable, December 31, 2003	1,102,020	\$ 0.96
Exercisable, December 31, 2004	979,763	\$ 0.79
Exercisable, December 31, 2005	1,338,954	\$ 1.30

The following table summarizes information relating to outstanding and exercisable stock options as of December 31, 2005:

Outstanding			Exercisable		
Exercise Price	Number of Shares	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price	Number of Shares	Weighted Average Exercise Price
\$ 0.30-.95	638,564	5.5	\$ .50	530,439	\$ .50
\$ 1.00-1.75	603,215	7.0	1.23	517,715	\$ 1.45
\$ 2.06-4.25	477,146	9.5	2.70	290,800	\$ 2.47
	1,718,925			1,338,954	

### **Acceleration of Stock Options**

The Company, upon recommendation of its Compensation Committee, approved the accelerated vesting of all currently outstanding unvested stock options ( Options ) to purchase shares of common stock of the Company. These Options were previously awarded to officers and employees under the Company's 1988 Employee Stock Option Plan. The Company has recognized a one-time compensation expense in accordance with Accounting Principles Board Opinion No. 25, Accounting for Stock Issued to Employees ( APB No.25 ), of approximately \$65,000 in the fourth quarter of fiscal 2005 with respect to the acceleration of in-the-money options.

Options to purchase 480,915 shares of the Company's common stock, which would otherwise have vested from time to time over the next five years, became immediately exercisable on December 31, 2005 as a result of the Board's actions. The number of shares and exercise prices of the Options subject to acceleration are unchanged. The remaining terms for each of the Options granted remain the same.

The accelerated Options included 139,350 Options held by executive officers as identified in the Company's June 3, 2005 proxy statement increased by subsequent grants dated December 6, 2005, and 341,565 Options held by other employees. Based on the Company's closing stock price of \$1.35 per share on the date of accelerated vesting, 48% of the total accelerated Options would have an exercise price above the closing market price at the time of acceleration. All of the accelerated Options have exercise prices between \$.30 and \$4.25 per share, with total weighted average exercise price per share \$1.72.

The decision to accelerate the vesting of these Options was made primarily to reduce non-cash compensation expense that would have been recorded in its income statement in the future periods upon the adoption of Financial Accounting Standards Board Statement No. 123R (Share-Based Payment) on January 1, 2006. As of December 31, 2005, option holders exercised the opt-out right with respect to 284,971 Options, and the Company will recognize a one-time non-cash compensation charge of approximately \$87,000 in 2006 with regard to those Options.

### **Correction Regarding Exercised Options**

On April 7, 2004, an officer of the Company exercised 80,000 options that had been granted in 1998 at an exercised price of \$1.2375 per share, for a total expenditure of \$99,000.

A review of the 1988 employee stock plan occurred in 2005. At that time, it was discovered that the employee, due to his degree of ownership in the Company, could not exercise these options after five years, or 2003.

Instead of having the money returned, the employee exercised other options held and exercisable. The net result of the transaction was no overall change to equity, but an increase to Common Stock, and a corresponding decrease to Additional-Paid-In-Capital.

### **Accounting for Stock-Based Compensation**

SFAS No. 123, *Accounting for Stock-Based Compensation*, requires the measurement of the fair value of stock options to be included in the statement of income or disclosed in the notes to the financial statements. The Company has determined that it will continue to account for stock-based compensation for employees under APB Opinion No. 25, *Accounting for Stock issued to Employees*, and elect the disclosure-only alternative under No. SFAS 123.

The Company has computed the pro forma disclosures required under SFAS No. 123 for its stock compensation plan for employees during the years ended December 31, 2005, 2004 and 2003 using the Black-Scholes option pricing model under the fair value method as prescribed by SFAS No. 123. The assumptions used for the years ended December 31, 2005, 2004 and 2003 are as follows:

	December 31,					
	2005		2004		2003	
Risk-free interest rates	4.35	%	3.55	%	4.75	%
Expected lives	5 years		5 years		5 years	
Expected volatility	129	%	106	%	164	%
Dividend yield	0	%	0	%	0	%

### Private Placement

On March 31, 2004, the Company completed a private placement of investment units (each unit consisting of one share of common stock and a 3-year warrant to purchase an additional ½ share of common stock). A total of 1,426,616 units were sold, yielding gross proceeds of \$3,566,540. The units were priced at \$2.50 and the associated warrants are exercisable at \$3.05. Additionally, the placement agent for the offering received 5 year warrants to purchase 142,662 shares of common stock at an exercise price of \$3.20 per share. The value of the warrants granted to the placement agent is approximately \$351,000, and was accounted for as a non cash financing activity.

### Warrants

On September 23, 1999, the Chief Executive Officer of the Company, Irwin J. Gruverman, was granted warrants to purchase up to 100,000 shares of the Company's common stock at a price of \$0.52 per share, having an expiration date of July 2, 2004. The warrants were exercised on November 25, 2003.

On November 17, 2004, the Company entered into a twelve month general financial and advisory services agreement with Maxim Group LLC (Maxim) pursuant to which Maxim was granted on April 1, 2005 a three (3) year warrant to Purchase 100,000 shares of the Company's common stock at an exercise price of \$3.20 per share. The Company expects to file a registration statement for purposes of registering the shares of common stock underlying the warrants by April 15, 2006. The estimated value of these warrants, included in general and administrative expense, was amortized to expense pursuant to the term of the agreement. The Company recognized \$119,000 in expenses for the year ended December 31, 2005.

### Employee Stock Purchase Plan

The Company has an employee stock purchase plan (the Purchase Plan). Under the Purchase Plan, participants are granted options to purchase the Company's common stock twice a year at the lower of 85% of market value at the beginning or end of each period. Calculation of the number of options granted, and subsequent purchase of these shares, is based upon voluntary payroll deductions during each six-month period. The number of options granted to each employee under this plan is limited to a maximum amount of 1,000 shares for each six-month period. The number of shares issued pursuant to this plan totaled 23,289, 26,678 and 36,717, in 2005, 2004, and 2003, respectively.



**Note 10** COMMITMENTS

The Company leases its facilities under non-cancelable operating leases expiring through May 2007. Future minimum rental payments under the operating leases at December 31, 2005 are as follows:

2006	\$	355,189
2007		148,376
<b>Total Lease Payments</b>	<b>\$</b>	<b>503,565</b>

Rent expense for 2005, 2004, and 2003, was approximately \$468,000, \$357,000, \$439,000, respectively. A portion of the space is sublet to a non-affiliated company under a tenant-at-will arrangement for a total of \$21,600 per annum.

**Note 11** RELATED PARTY TRANSACTIONS

As discussed in Notes 6 and 12, the Company owed the former principals of Morehouse and Epworth \$0, \$6,250, and \$81,250, at December 31, 2005, 2004, and 2003, respectively. Interest capitalized on the \$300,000 note in connection with the Settlement Agreement discussed in Note 12 amounted to \$88,750 and is being amortized over 5 years. Total payments in 2005, 2004 and 2003 were \$54, \$4,757 and \$12,340, respectively.

**Note 12** SETTLEMENT AGREEMENT, DEBT RESTRUCTURING AND REFINANCING

On December 20, 1999 the Company signed an agreement in principle (the Agreement In Principle) with J.B. Jennings and Bret A. Lewis, the former owners of the Epworth Mill and Morehouse-COWLES businesses (the Sellers), Lake Shore Industries, Inc., and JLJ Properties, Inc., entities owned and controlled by the Sellers. The Agreement In Principle sets forth understandings among the parties concerning restructuring of the Company's subordinated debt and resolution of various disputes. On January 17, 2000, a definitive settlement agreement incorporating these subject matters was executed between the parties (the Settlement Agreement). In connection with the closing of the Credit Facility, and pursuant to a Settlement Agreement dated January 17, 2000 with the Company's subordinated debt holders, the subordinated debt of the Company was restructured in the following manner. The outstanding August 14, 1998 \$500,000 subordinated promissory note, having a remaining \$475,000 principal balance together with accrued interest at the Closing Date in the approximate amount of \$77,500, and accrued interest on the August 14, 1998 \$300,000 subordinated note were converted to 500,000 shares of MFIC restricted common stock (the Conversion Shares).

The fair market value of the Company's Common Stock on the date of the Agreement In Principle was \$0.31 per share. MFIC was granted the right for a three-year period to repurchase the Conversion Shares at a purchase price of \$1.75 per share. The August 14, 1998 \$300,000 subordinated note was replaced with a new \$300,000 subordinated promissory note dated February 28, 2000 (the 2000 Subordinated Note). The 2000 Subordinated Note had a maturity date of February 28, 2005 and bore interest at a rate of ten percent (10%) per annum. The final payment on the note was made on January 25, 2005 for \$6,304 including interest of \$54.

**Note 13**      **QUARTERLY RESULTS OF OPERATIONS**

Summarized unaudited quarterly financial data are as follows:

	<b>Fiscal 2005 Quarters</b>			
	<b>First</b>	<b>Second</b>	<b>Third</b>	<b>Fourth</b>
Revenues	\$ 2,536,469	\$ 3,163,645	\$ 2,881,267	\$ 3,064,100
Gross profit	1,387,540	1,556,366	1,354,132	1,429,449
Net (loss) from continuing operations before income tax benefit (expense)	(193,066 )	(36,193 )	(297,291 )	(276,986 )
Income tax benefit (expense)	77,000			(262,000 )
Net (loss)	(116,066 )	(36,193 )	(297,291 )	(538,986 )
Basic net (loss) income per share from continuing operations:	\$ (0.01 )	\$ (0.00 )	\$ (0.03 )	(\$0.06 )
Diluted net (loss) income per share from continuing operations	\$ (0.01 )	\$ (0.00 )	\$ (0.03 )	\$ (0.06 )

	<b>Fiscal 2004 Quarters</b>			
	<b>First</b>	<b>Second</b>	<b>Third</b>	<b>Fourth</b>
Revenues	\$ 2,251,452	\$ 3,081,977	\$ 3,163,785	\$ 3,661,705
Gross profit	1,238,579	1,675,974	1,813,584	1,823,027
Net (loss) income from continuing operations before income tax benefit	(55,183 )	256,495	282,050	172,390
Income tax benefit				450,000
Net (loss) income from continuing operations	(55,183 )	256,495	282,050	622,390
(Loss) from discontinued operations	(231,380 )			
Net (loss) income	(286,563 )	256,495	282,050	622,390
Basic net (loss) income per share:				
Basic net (loss) income per share from continuing operations	\$ (.01 )	\$ .03	\$ .03	\$ .06
Basic net (loss) income per share from discontinued operations	\$ (.02 )	\$ .00	\$ .00	\$ .00
Basic, as reported	\$ (.03 )	\$ .03	\$ .03	\$ .06
Diluted net income (loss) per share:				
Diluted net (loss) income per share from continuing operations	\$ (.01 )	\$ .02	\$ .03	\$ .06
Diluted net loss per share from discontinued operations	\$ (.02 )	\$ .00	\$ .00	\$ .00
Diluted, as reported	\$ (.03 )	\$ .02	\$ .03	\$ .06

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**Exhibit Index**

**Exhibit**

<b>Number</b>	<b>Description of Exhibit</b>
3(a)	Certificate of Incorporation for the Company, as amended (filed as Exhibit 2A to Registration Statement No. 0-11625 on Form 8-A and as Exhibit 3.1(a) to the Company's Report on Form 10-Q for the quarterly period ended September 30, 1999 and incorporated herein by reference).
3(b)	Amended and Restated By-Laws for the Company (filed as Exhibit 3.3(b) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1996 and incorporated herein by reference).
4.2	Form of Warrant issued to placement agent under the Placement Agent Agreement (filed as Exhibit 10.62 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004 and incorporated herein by reference).
4.3	Form of Warrant issued to investors in the private placement described in the Placement Agency Agreement (filed as Exhibit 10.62 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004 and incorporated herein by reference).
10.1	1987 Stock Plan (filed as Exhibit 10(g) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1987 and incorporated herein by reference).
10.2	1988 Stock Plan (filed as Exhibit 10(g) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1988 and incorporated herein by reference).
10.3	1989 Non-Employee Directors Stock Option Plan (filed as Exhibit 10.1 to the Company's registration statement on Form S-8 filed October 22, 1996 and incorporated herein by reference).
10.4	Lease for 30 Ossipee Road, Newton, Massachusetts dated May 23, 1997 between Microfluidics International Corporation and J. Frank Gerrity, Trustee of 1238 Chestnut Street Trust under Declaration of Trust dated May 23, 1969, recorded with Middlesex South Registry of Deeds in Book 11682, Page 384 (filed as Exhibit 3.10(a) to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 1997 and incorporated herein by reference).
10.5	Letter of Understanding between Microfluidics International Corporation and Worcester Polytechnic Institute dated as of April 3, 1992 (filed as Exhibit 3.10(f) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1993 and incorporated herein by reference).
10.6	Agreement between Microfluidics International Corporation and Catalytica, Inc. dated as of October 18, 1993 (filed as Exhibit 3.10(g) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1993 and incorporated herein by reference). With amendments dated September 1, 1994 and March 31, 1995.
10.7	Amendment to agreement dated September 1, 1994 between Microfluidics International Corporation and Catalytica, Inc. dated as of October 18, 1993 (filed as Exhibit 3.10(g) to the Company's Annual Report Form 10-K for the fiscal year ended December 31, 1993, and incorporated herein by reference).

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- 10.8 Amendment to agreement dated March 31, 1995 between Microfluidics International Corporation and Catalytica, Inc. dated as of October 18, 1993 (filed as Exhibit 3.10(g) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1993, and incorporated herein by reference)
  - 10.9 License Agreement among Microfluidics International Corporation, Worcester Polytechnic Institute and Catalytica, Inc. dated as of October 18, 1993 (filed as Exhibit 3.10(h) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1993 and incorporated herein by reference).
  - 10.10 Amendment to agreement dated September 1, 1994 between Microfluidics International Corporation and Catalytica, Inc. dated as of October 18, 1993 (filed as Exhibit 3.10(g) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1993, and incorporated herein by reference).
  - 10.11 Letter, dated August 15, 1995, from Microfluidics International Corporation to Michael T. Rumley (filed as Exhibit 3.10(j) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1995 and incorporated herein by reference).
  - 10.12 Letter, dated December 31, 1995 from Microfluidics International Corporation to Irwin J. Gruverman (filed as Exhibit 3.10(k) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1996 and incorporated herein by reference).
  - 10.13 Warrant for the Purchase of Shares of Common Stock, dated July 14, 1993, in favor of Ladenburg, Thalmann & Co. Inc. (filed as Exhibit 3.10(l) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1996 and incorporated herein by reference).
  - 10.14 Letter, dated December 31, 1996, from Microfluidics International Corporation to Irwin J. Gruverman (filed as Exhibit 3.10(o) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1996 and incorporated herein by reference).
  - 10.15 Agreement between Microfluidics International Corporation and Catalytica, Inc. dated January 1, 1995 regarding participation in and management of the Advanced Technology Program (ATP). (filed as Exhibit 3.10(p) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1996 and incorporated herein by reference).
  - 10.16 Consulting Agreement with James Little (filed as Exhibit 3.10(q) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1996 and incorporated herein by reference).
  - 10.17 Supplemental Agreement between Catalytica Advanced Technologies, Inc. and Microfluidics International Corporation dated December 31, 1997 (filed as Exhibit 3.10(r) to the Company's 10-K for the fiscal year ended December 31, 1997, and incorporated herein by reference)
  - 10.18 1988 Stock Plan as amended (filed as Exhibit 10(a) to the Company's Form 10-Q for the quarterly period ended March 31, 1997 and incorporated herein by reference)
  - 10.19 Asset Purchase Agreement, dated as of June 19, 1998, by and among the Company, Epworth Manufacturing Company and Morehouse-COWLES, Inc. (filed as Exhibit 2.1 to Schedule 13D of Bret A. Lewis, File No. 005-35850, and incorporated herein by Reference).
  - 10.20 Stockholders Agreement, dated August 14, 1998, by and among the Company and J.B. Jennings and Bret A. Lewis (filed as Exhibit 2.2 to Schedule 13D of Bret A. Lewis, File No. 005-35850, and incorporated herein by reference).
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- 10.21 \$500,000 Subordinated Promissory Note issued by the Company to Epworth Manufacturing Company (filed as Exhibit 99.2 to the Company's Form 8-K on August 27, 1998, File No. 000-11625, and incorporated herein by reference).
  - 10.22 \$300,000 Subordinated Promissory Note issued by the Company to Epworth Manufacturing Company (filed as Exhibit 99.2 to the Company's Form 8-K on August 27, 1998, File No. 000-11625, and incorporated herein by reference).
  - 10.23 Revolving Credit and Term Loan Agreement among MFIC Corporation and National Bank of Canada dated February 28, 2000. (Filed as Exhibit 10.26 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
  - 10.24 Revolving Credit Note of the Company in favor of National Bank of Canada in the amount of \$4,000,000.00 dated February 28, 2000. (Filed as Exhibit 10.27 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
  - 10.25 Term Note of the Company in favor of National Bank of Canada in the amount of \$475,000.00 dated February 28, 2000. (Filed as Exhibit 10.28 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
  - 10.26 Security Agreement of the Company in favor of National Bank of Canada dated February 28, 2000. (Filed as Exhibit 10.29 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
  - 10.27 Trademark and Trademark Applications Security Agreement of the Company in favor of National Bank of Canada, dated February 28, 2000. (Filed as Exhibit 10.30 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
  - 10.28 Patent and Patent Applications Security Agreement of the Company in favor of National Bank of Canada, dated February 28, 2000. (Filed as Exhibit 10.31 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
  - 10.29 Unlimited Guaranty of Microfluidics Corporation in favor of National Bank of Canada dated February 28, 2000. (Filed as Exhibit 10.32 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
  - 10.30 Stock Pledge Agreement between the Company and National Bank of Canada dated February 28, 2000. (Filed as Exhibit 10.33 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
  - 10.31 Subordination Agreement among the Company, Lake Shore Industries, Inc. and National Bank of Canada dated as of February 28, 2000. (Filed as Exhibit 10.34 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000 and incorporated herein by reference.)
  - 10.32 Subordinated Promissory Note on the Company in favor of Lake Shore Industries, Inc. in the amount of \$300,000.00 dated February 28, 2000. (Filed as Exhibit 10.35 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
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- 10.33 Settlement Agreement, dated January 17, 2000 by and among the Company, Bret A. Lewis, J. B. Jennings, Lake Shore Industries, Inc., and JLJ Properties, Inc., with \$300,000 Subordinated Promissory Note dated February 28, 2000, issued by the Company to Lake Shore Industries, Inc. (FKA Epworth Manufacturing Company, Inc). (Filed as Exhibit 10.37 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
- 10.34 Letter, dated December 31, 1999, from MFIC Corporation to Irwin J. Gruverman and G&G Diagnostics Corp. (Filed as Exhibit 10.38 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
- 10.35 Letter, dated December 31, 1999, from MFIC Corporation to Irwin J. Gruverman. (Filed as Exhibit 10.39 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
- 10.36 First Amendment to Revolving Credit and Term Loan Agreement between the Company and National Bank of Canada dated March 30, 2000. (Filed as Exhibit 10.40 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
- 10.37 Lease between ABB and Microfluidics dated April 14, 2000 for space at Lampertheim, Germany. (Filed as Exhibit 10.41 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
- 10.38 Security Agreement between MFIC Corporation and J.M. Huber Corporation dated October 18, 2000. (Filed as Exhibit 10.42 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
- 10.39 Settlement agreement between MFIC Corporation and J.M. Huber Corporation dated December 18, 2000. (Filed as Exhibit 10.43 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
- 10.40 Letter, dated December 31, 2000, from MFIC Corporation to Irwin J. Gruverman and G&G Diagnostics Corporation. (Filed as Exhibit 10.45 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
- 10.41 Letter, dated December 31, 2000, from MFIC Corporation to Irwin J. Gruverman. (Filed as Exhibit 10.46 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
- 10.42 Lease for 30 Ossipee Road, Newton, Massachusetts dated October 19, 2001, between Microfluidics International Corporation and King Real Estate Corp., Trustee of 1238 Chestnut Street Trust under Declaration of Trust dated May 23, 1969, recorded with Middlesex South Registry of Deeds in Book 11682, Page 384. (Filed as Exhibit 10.47 to the Company's Annual Report on Form 10-K for the fiscal year ended December 21, 2001, and incorporated herein by reference.)
- 10.43 Consulting agreement with Vincent Cortina dated January 2, 2002. (Filed as Exhibit 10.48 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001, and incorporated herein by reference.)
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- 10.44 Letter dated December 31, 2001 from MFIC Corporation to Irwin J. Gruverman. (Filed as Exhibit 10.49 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001, and incorporated herein by reference.)
  - 10.45 Second Amendment to Revolving Credit and Term Loan Agreement between the Company and PNC Bank, N.A. dated March 29, 2002. (Filed as Exhibit 10.50 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001, and incorporated herein by reference.)
  - 10.46 1986 Employee Stock Purchase Plan as Amended (Filed as Exhibit 10.51 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001, and incorporated herein by reference.)
  - 10.47 1988 Stock Plan as Amended. (Filed as Exhibit 10.52 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001, and incorporated herein by reference.)
  - 10.48 Letter dated December 31, 2002 from MFIC Corporation to Irwin J. Gruverman. (filed as Exhibit 10.53 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2002, and incorporated herein by reference)
  - 10.49 Third Amendment to Revolving Credit and Term Loan Agreement between the Company and PNC Bank N.A. dated February 19, 2003. (Filed as Exhibit 10.54 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2002, and incorporated herein by reference)
  - 10.50 Fourth Amendment and Waiver to Revolving Credit and Term Loan Agreement between the Company and PNC Bank, N.A. dated February 6, 2004 (filed as Exhibit 10.54 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
  - 10.51 Asset Purchase Agreement dated February 5, 2004, by and among MFIC Corporation and Morehouse Cowles, Inc. (filed as Exhibit 2 to the Company's Form 8K dated February 13, 2004, and incorporated herein by reference).
  - 10.52 Revolving Line of Credit Note in the amount of \$1,000,000 in favor of Banknorth, N.A. dated March 3, 2004 (Filed as Exhibit 10.56 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
  - 10.53 Letter dated December 31, 2003 from MFIC Corporation to Irwin Gruverman (Filed as Exhibit 10.57 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
  - 10.54 Secured Term Note in the amount of \$1,000,000 in favor of Banknorth, N.A. dated March 3, 2004 (Filed as Exhibit 10.58 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
  - 10.55 Loan and Security Agreement between Banknorth, N.A. and the Company dated March 3, 2004 (Filed as Exhibit 10.59 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
  - 10.56 Trademark Security Agreement of the Company in favor of Banknorth, N.A., dated March 3, 2004 (Filed as Exhibit 10.60 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
  - 10.57 Patent Security Agreement of the Company in favor of Banknorth, N.A., dated March 3, 2004 (Filed as Exhibit 10.61 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
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- 10.58 Placement Agency Agreement between the Company and Casimir Capital L.P. dated February 13, 2004 (Filed as Exhibit 10.62 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
- 10.59 First Amendment to Placement Agency Agreement between the Company and Casimir Capital L.P. dated March 12, 2004 (Filed as Exhibit 10.63 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004, and incorporated herein by reference).
- 10.60 Registration Rights Agreement between the Company and Purchasers dated March 16, 2004 (Filed as Exhibit 10.64 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
- 10.61 Lease between ABB and MFIC Corporation dated April 1, 2004 for space at Lampertheim, Germany (filed as Exhibit 10.65 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004 and incorporated herein by reference).
- 10.62 Letter Agreement between Maxim Group LLC and MFIC Corporation dated November 17, 2004 to provide general financial advisory and investment banking services to the Company (filed as Exhibit 10.66 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004 and incorporated herein by reference).
- \*10.63 Research Collaboration Agreement between University of Massachusetts, Lowell and MFIC Corporation, dated September 21, 2005.
- \*10.64 Warrant issued to Maxim Group LLC dated April 1, 2005
- \*14. Code of Ethics, as adopted by the Company.
21. Subsidiary of the Company, Microfluidics Corporation, a Delaware corporation
- \*23(a) Consent of Brown & Brown, LLP
- \*31.1 Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2003.
- \*31.2 Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2003.
- \*32.1 Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- \*32.2 Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

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\* Filed herewith

\*\* Management contracts or compensatory plan or arrangement required to be filed as an exhibit to this Form 10-K pursuant to Item 15 (b) of this report.

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**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized, in the city of Newton, Commonwealth of Massachusetts, on the 30th day of March 2006.

By: /s/ IRWIN J. GRUVERMAN  
 Irwin J. Gruverman  
 Chief Executive Officer

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

Signature	Title	Date
/s/ IRWIN J. GRUVERMAN Irwin J. Gruverman	Chief Executive Officer (Principal Executive Officer), Chairman of the Board of Directors and Secretary	March 30, 2006
/s/ DENNIS P. RIORDAN Dennis P. Riordan	Controller (Principal Financial and Accounting Officer)	March 30, 2006
/s/ JAMES N. LITTLE James N. Little	Director	March 30, 2006
/s/ VINCENT CORTINA Vincent Cortina	Director	March 30, 2006
/s/ LEO PIERRE ROY Leo Pierre Roy	Director	March 30, 2006
/s/ GEORGE UVEGES George Uveges	Director	March 30, 2006
/s/ ERIC G. WALTERS Eric G. Walters	Director	March 30, 2006

## SCHEDULE II

## MFIC CORPORATION

Valuation and Qualifying Accounts and Reserves  
For the years ended December 31, 2005, 2004, and 2003

	Balance at Beginning of Period	Additions Charged to Costs and Expenses	Deductions and Adjustments	Balance at End of Period
<b>ALLOWANCE FOR DOUBTFUL ACCOUNTS</b>				
For the year ended December 31, 2005	\$ 13,203	\$ 30,015	\$ 43	\$ 43,175
For the year ended December 31, 2004	58,500	25,447	70,744	13,203
For the year ended December 31, 2003	33,500	25,000		58,500
<b>INVENTORY RESERVE</b>				
For the year ended December 31, 2005	\$ 163,000	\$ 80,000	\$ 58,000	\$ 185,000
For the year ended December 31, 2004	110,000	98,000	45,000	163,000
For the year ended December 31, 2003	50,000	60,000		110,000
<b>ACCUMULATED AMORTIZATION RELATED TO GOODWILL AND OTHER INTANGIBLES</b>				
For the year ended December 31, 2005	\$ 0	\$	\$	\$ 0
For the year ended December 31, 2004	6,918,244		6,918,244	
For the year ended December 31, 2003	4,814,444	2,103,800		6,918,244
<b>WARRANTY RESERVE</b>				
For the year ended December 31, 2005	\$ 0	\$ 91,511	\$ 33,511	\$ 58,000
For the year ended December 31, 2004	\$ 0	\$ 52,194	\$ 52,194	\$ 0
For the year ended December 31, 2003	\$ 0	\$ 48,415	\$ 48,415	\$ 0

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