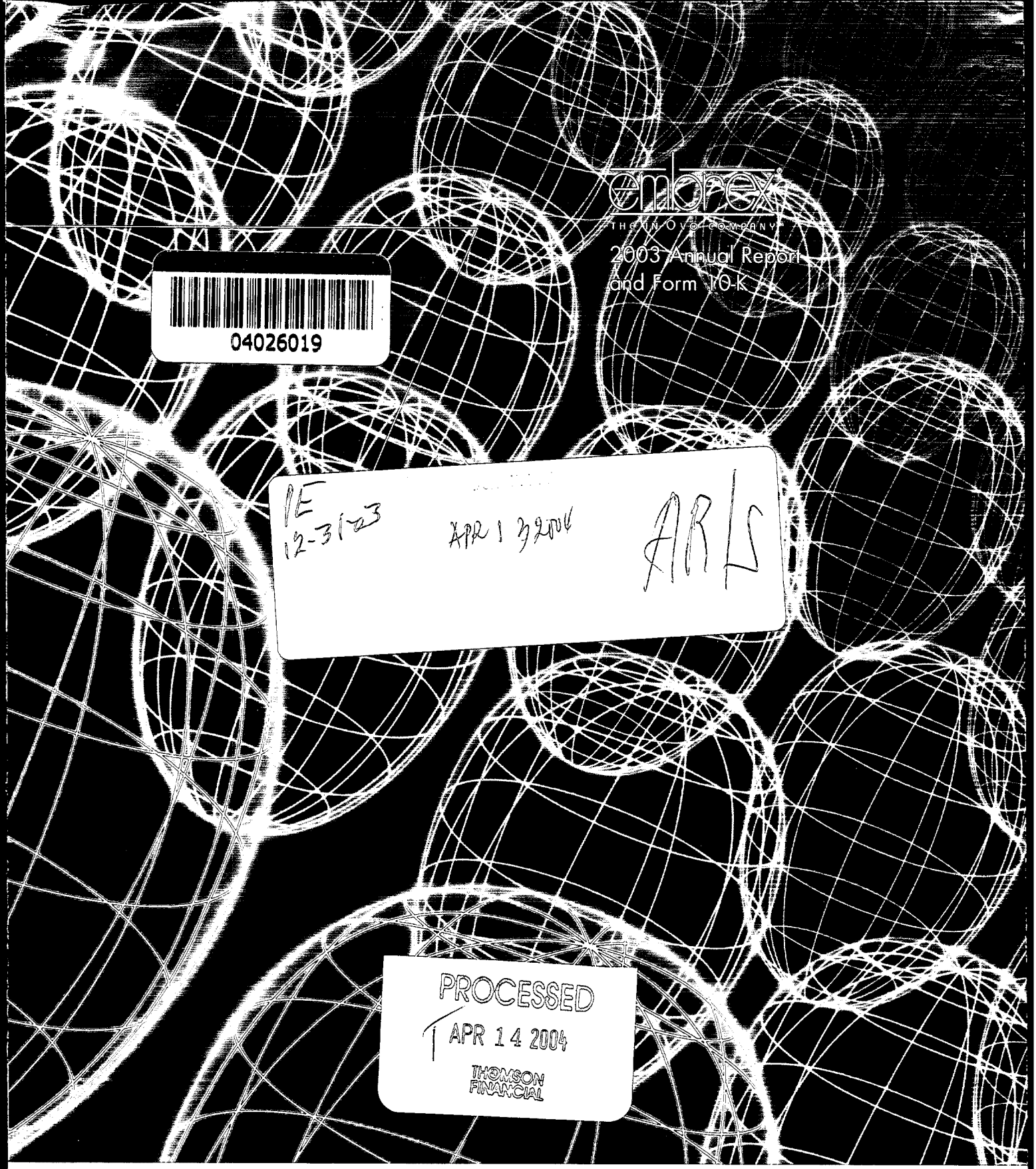





WE KNOW EGGS INSIDE OUT

## About Embrex, Inc.

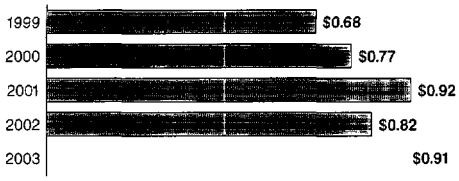
Embrex, Inc., The In Ovo Company,™ is the world leader in providing *in ovo* solutions to the global poultry industry. The company's platform technology, the Inovoject® system, vaccinates chickens while they are still in the egg (*in ovo*), thereby eliminating the need for vaccination against certain diseases after hatch. Embrex's Inovoject® system has revolutionized the industry in the United States, Canada, Australia and Spain, while other countries' acceptance and implementation of *in ovo* injection continue to grow.

## 2003 Highlights

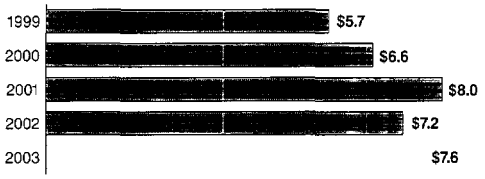
- Embrex's Newplex™ Newcastle disease vaccine received marketing approval from the U.S. Department of Agriculture
- Construction of a new biological manufacturing facility for producing the company's Inovocox™ *in ovo* coccidiosis vaccine substantially completed
- Inovocox™ vaccine patent position further enhanced as we received two key U.S. patents related to a method of vaccinating domesticated birds including chicken or turkey against coccidiosis before hatch
- Gender Sort patent position further enhanced as we received two key U.S. patents: one related to a method of determining the gender of a bird *in ovo* and one related to a method for localizing the allantoic fluid of avian eggs

*Note:* This Annual Report contains forward-looking statements. See Item 7 of the Form 10-K included in this Annual Report.

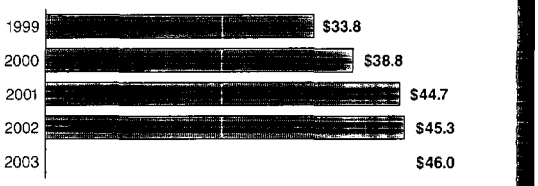
EARNINGS PER SHARE




NET INCOME *(in millions)*




REVENUE *(in millions)*




## Financial Highlights *(in millions except per share data)*

| Year Ended | 1999 | 2000 | 2001 | 2002 | 2003 | % increase '02 to '03 |
|---|---|---|---|---|---|---|
| Earnings per share | $ 0.68 | $ 0.77 | $ 0.92 | $ 0.82 | $ 0.91 | 11% |
| Net income | 5.7 | 6.6 | 8.0 | 7.2 | 7.6 | 6% |
| Revenue | 33.8 | 38.8 | 44.7 | 45.3 | 46.0 | 2% |

# TO OUR SHAREHOLDERS:

At Embrex,® The In Ovo Company,℠ we like to say, "We know eggs inside out." This simple phrase captures the essence of our corporate mission which says we will "provide ever increasing value to the poultry industry via application of our innovative *in ovo* (in the egg) know-how." I believed in that statement in 1996 when we wrote it; and frankly, I believe it more strongly today because we have continued to show that the products we have developed based on this unique knowledge add value to the global poultry industry.

2003 was a challenging year for Embrex. In February, we announced that our revenues were likely to increase only a few percentage points after several years of double-digit growth. The continued effects of 2002's Russian trade war, higher feed prices, and excess supplies of poultry and other meats still needed more time to resolve themselves during 2003. We announced our concerns based on the industry trends we were seeing that impacted production levels here and abroad, as well as impacting our potential for international expansion—a key component of our growth strategy. Despite our changed revenue projections, we also announced that we intended to continue investing in key research and development projects rather than slow or postpone critical projects. This, of course, meant our pre-tax earnings likely would be lower than originally anticipated. While a difficult choice to make, we believe it was the right choice. We determined it was in the best interest of the company to aggressively pursue these programs in 2003 and 2004 to benefit the company and shareholders long term. Fortunately, we could do this because we believe the business, financial and technical foundations of the company are secure.

## INOVOCOX™ VACCINE UPDATE

Because of our solid financial condition, we were able to fund construction of our new $11.6 million Inovocox™ *in ovo* coccidiosis vaccine manufacturing facility in Laurinburg, North Carolina. Construction of this 30,000 square-foot plant was essentially completed on time and on budget. We received our Certificate of Occupancy in March 2004 and are now gearing up to produce pre-licensing serial vaccines of our Inovocox™ *in ovo* coccidiosis vaccine to be used in field trials during 2004 and 2005. Results from these efforts will be used as part of our application to the USDA for product registration which is targeted for late 2005.

Coccidiosis is an insidious disease of the bird's digestive system caused by a parasite. Currently, nearly all birds worldwide in commercial operations receive a treatment against this disease whose symptoms can include weight depression, intestinal lesions, diarrhea, occasional bloody feces and poor feed conversion rates (turning feed into meat protein). Existing anti-coccidial products are delivered after the birds hatch either in feed or by sprays which are swallowed or absorbed by the mucus membranes of the birds. Our Inovocox™ *in ovo* coccidiosis vaccine will be targeted to compete with the existing anti-coccidial products which we estimate to be a $350 million annual market worldwide. Embrex is positioning itself to provide the global poultry industry an alternative vaccine treatment method delivered precisely before hatch via our growing installed base of Inovoject® systems worldwide.

## GENDER SORT UPDATE

In addition, we believe we made solid progress with our Gender Sort program—even in the context of our November announcement that reported our project timelines were being extended based on key information that we learned during field trials in 2003. This system is being developed to automate the process of separating poultry by gender prior to hatching. Commercial-scale trials with our prototype system at one of the world's largest breeder companies, Cobb-Vantress, gave us substantial insight into various methods of targeting and sampling as well as the assay processes and sorting procedures. As a result we have significantly enhanced our ability to draw better samples from the eggs than before, and improved the speed and timeliness of testing those samples to determine the gender of the birds before hatch. We found that advancements in certain technologies had progressed to

a point where they were faster, the sample size needed was smaller, and projected costs could be lower. These are all significant accomplishments as we strive to provide ever increasing value to the poultry industry. We believe these improvements, successfully scaled up to meet commercial requirements, may enable us to access the broiler industry earlier than previously anticipated. Initially, we planned to target the breeder, layer and turkey industries first, because they sort 100 percent of their birds by gender. We still do. However, now we believe we may have the opportunity to address the much larger broiler market at or around the same time. Additional study must be done in these areas to confirm these developments, but we remain cautiously optimistic that our progress will allow us to access all these markets a little later than originally expected for the breeder, layer and turkey markets, yet earlier for the broilers.

## INTELLECTUAL PROPERTY

Establishing a solid intellectual property portfolio is the cornerstone of Embrex's business strategy. We currently control 43 issued U.S. patents as well as 20 that are pending. Worldwide, we control 153 issued patents and 150 that are pending. We will continue to seek patents on novel discoveries to maintain our leadership position as "The In Ovo Company.℠"

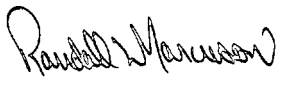
In June 2002, a key patent licensed to Embrex by the USDA covering *in ovo* injection expired, potentially opening the door for competitors who wished to market *in ovo* injection machines in the United States. While we are seeing some competitive efforts, the inroads to date have been extremely limited. We credit our state-of-the-art, reliable equipment; superior customer service; the value and convenience of our leasing business model; and our other injection device-related patents with much of our success. Likewise, the addition of the Egg Remover® system to our product line has also created further barriers against successful competitive entry to the *in ovo* injection market. This device identifies infertile and early dead eggs and removes them before they are vaccinated by the Inovoject® system. During 2003, we installed more than 80 Egg Remover® systems worldwide with acceptance in the U.S. market especially favorable. We believe this is a clear example of how Embrex continues to provide its customers with value-added solutions based on our innovative *in ovo* know-how. We do not rest on our laurels.

In the past, Embrex has demonstrated its willingness to defend its patent portfolio with successful results. In December, Embrex filed a patent infringement lawsuit against Breuil S.A. and New Tech Solutions, Inc. claiming that an *in ovo* injection device designed by these companies to compete with the Inovoject® system violates our U.S. Patent Nos. 5,745,228 and 5,900,929. Progress on this matter will be reported in the coming months.

## CONCLUSION

At the beginning of 2003 we made the right, albeit not easy, decision to move forward with key projects which together with existing products are designed to allow us to target an estimated $800 million-plus market. In the face of slower revenue growth projections, we remained focused during the year, even as the global poultry industry was challenged in ways not envisioned at the outset of 2003. We're proud of the progress we've made due to the commitment of our employees around the world who are dedicated to providing value to our customers and shareholders. Our pledge is to continue to focus on the Embrex mission and deliver on the opportunities we've identified so that we may further provide value to our customers, shareholders and employees based on knowing the egg inside out.

Sincerely,

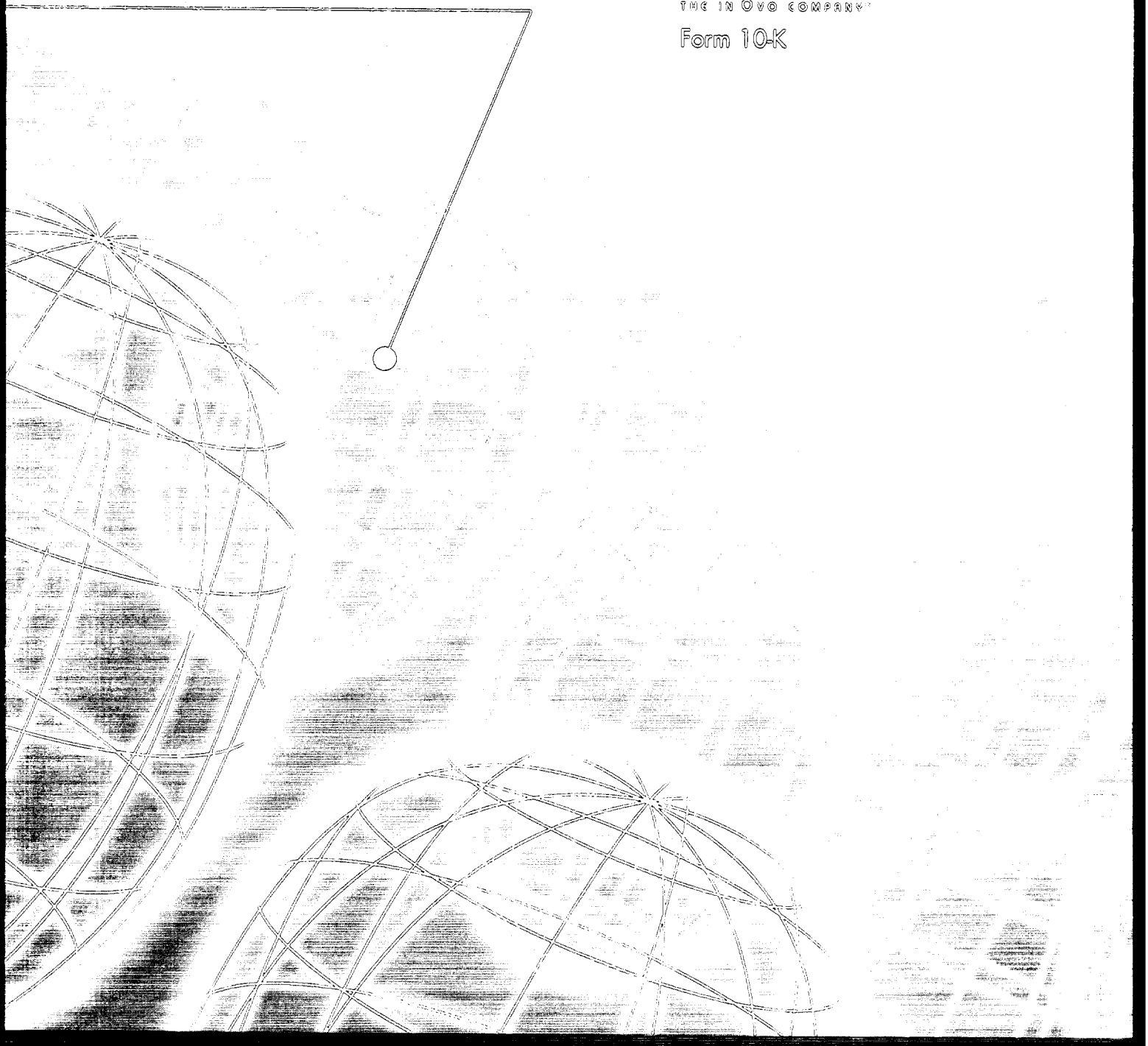


Randall L. Marcuson
President and Chief Executive Officer
March 22, 2004

embrex

THE IN OVO COMPANY

Form 10-K



WE KNOW EGGS INSIDE OUT

# UNITED STATES SECURITIES AND EXCHANGE COMMISSION
# WASHINGTON, D.C. 20549
# Form 10-K

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

For the fiscal year ended December 31, 2003
Commission file number 000-19495

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

| North Carolina | 56-1469825 |
|---|---|
| (State or other jurisdiction of incorporation or organization) | (I.R.S. Employer Identification Number) |

| 1040 Swabia Court, Durham, North Carolina | 27703 |
|---|---|
| (Address of principal executive offices) | (Zip Code) |

(919) 941-5185
(Registrant's telephone number, including area code)

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 Per Share (and Rights Attached Thereto)
(Title of class)

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 _X_ 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). Yes _X_ No ___

As of June 30, 2003, the aggregate market value of the voting and non-voting common stock held by non-affiliates was $85,668,377 million, based on 8,158,893 outstanding common shares and a price per common share of $10.50 at the close of business on that date.

As of February 27, 2004 there were 8,134,810 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

| Document | Where Incorporated |
|---|---|
| Portions of the Proxy Statement relating to the Annual Meeting of Shareholders to be held on May 20, 2004, to be filed with the Securities and Exchange Commission | Part III |

INDEX

# PART I

## ITEM 1. BUSINESS

### GENERAL

Embrex, Inc. ("Embrex" or the "Company") is an international agricultural biotechnology company engaged in the development of innovative *in ovo* ("in the egg") solutions that meet the needs of the global poultry industry. The company's unique integration of several scientific and engineering disciplines enables it to be the leading provider of *in ovo*, value-added solutions with its automated injection and detection devices as well as certain select vaccines. Embrex is focused on developing patented biological and mechanical products that improve bird health, help reduce production costs and provide other economic benefits to the poultry industry. The Company was incorporated in 1985 in North Carolina and is headquartered in the Research Triangle Park, North Carolina area.

Embrex has developed and commercialized the Inovoject® system, a proprietary, automated in-the-egg injection system which can inoculate 20,000 to 60,000 eggs per hour and eliminates the need for manual, post-hatch injection of certain vaccines. The Inovoject® system is designed to inject vaccines and other compounds into targeted compartments within the egg. Some of these *in ovo* vaccines and other compounds are marketed by Embrex while others are marketed by third parties. Embrex primarily markets the Inovoject® system to commercial poultry producers, charging a fee for each egg injected. The Company has also introduced the Vaccine Saver® option and Egg Remover® system to provide additional automation benefits to the poultry hatchery. The Vaccine Saver® option for the Inovoject® system identifies infertile and early-dead eggs and selectively prevents vaccination to these eggs. The Egg Remover® system works alone or in conjunction with the Inovoject® system to remove infertile and early-dead eggs from incubator trays prior to transfer or inoculation through the Inovoject® system.

In addition to the Inovoject® system and related devices, Embrex has developed an antigen-antibody complex technology ("AAC"), formerly known as VNF®, useful in the development of certain avian vaccines. Based on AAC, the Company has developed and is marketing Bursaplex® for protection against avian infectious bursal disease ("IBD"). Embrex is also developing various other proprietary mechanical and biological products to improve bird health, reduce bird production costs and provide other economic benefits to the poultry industry. These products are in various stages of development, and some are being developed or manufactured in collaboration with major animal health companies, federal agencies, major poultry producers and leading universities in the field of avian science. These products are being designed to be delivered through the Inovoject® system, and some may also be administered prior to incubation as well as post-hatch.

### EXISTING PRODUCTS

Inovoject® Egg Injection System and Other Devices

Embrex has developed and commercialized a proprietary, automated in-the-egg injection system, which can inoculate 20,000 to 60,000 eggs per hour and eliminates the need for manual, post-hatch injection of certain vaccines. This proprietary system, called the Inovoject® system, is designed to inject vaccines and other compounds in precisely calibrated volumes into targeted compartments within the egg. Embrex primarily markets the Inovoject® system to commercial poultry producers, charging a fee for each egg injected.

In 2003, the Company converted a number of hatcheries to the Inovoject® system and continued operating Inovoject® systems in hatcheries converted prior to 2003. The Company estimates that its Inovoject® system inoculates in excess of 80% of all eggs produced for the United States and Canadian broiler poultry markets and it expects diminished growth in the number of system installations and only minor Inovoject® system revenue growth in this market. Therefore, the Company must expand its Inovoject® system, along with its Vaccine Saver® option and Egg Remover® system, installations and vaccine product sales in worldwide markets in order to realize sustainable overall revenue growth. The Company estimates that approximately 70% or more of the world broiler production occurs outside the United States and Canada. Accordingly, the Company is continuing its strategy to further market its Inovoject® system and other products outside the United States and Canada.

During 2003, the Company placed a number of Inovoject® systems for trial and on contract at locations outside the United States and Canada. The Company's initial expansion outside the United States and Canada was focused on Europe, the Middle East, and Africa. In 1997, the Company began expansion efforts in Asia and, in 1998, Latin America. Currently, the Company has Inovoject® systems either operating on contract or on trial in 35 countries. Overall, the placement of Inovoject® systems outside the United States and Canada is dependent on market acceptance of various *in ovo* ("in the egg") vaccines and obtaining regulatory approval of these vaccines in numerous countries.

Embrex has developed and introduced the Vaccine Saver® option for the Inovoject® system, which identifies infertile and early-dead eggs and selectively prevents vaccination to these eggs. It is designed for use in select markets where vaccine prices are high. The Vaccine Saver® option was first introduced in Europe in 1999, and later introduced in North America in 2001 and Asia in 2002. Embrex has also developed the Egg Remover® system that works alone or in conjunction with the Inovoject® system to remove infertile and early-dead eggs from incubator trays. The Egg Remover® system has had initial commercial success with installations in, and revenues received from, all of the Company's marketing regions in 2003. The Company anticipates continued growth in Egg Remover® system revenues during 2004.

Certain poultry diseases are more prevalent in some geographic regions than in others. For example, Marek's disease, for which the Inovoject® system primarily is used in the United States, is not as widespread in Europe as in North America. Infectious bursal disease (also known as Gumboro disease) is prevalent in Northern Europe, the Middle East, Asia, parts of Latin America and, to a lesser extent, the United States. The Company expects that the primary usage of its Inovoject® systems will vary by geographic region according to the prevailing diseases as well as regulatory approval and market acceptance of vaccines for *in ovo* delivery. There are a number of poultry vaccines marketed by various animal health companies in the United States and other markets, which can be used with the Inovoject® system or post-hatch. The relative demand and cost for these vaccines and customer willingness to use *in ovo* delivery or substitute *in ovo* vaccines for post-hatch vaccines will influence Inovoject® system, Vaccine Saver® and Egg Remover® usage.

AAC Technology (Antigen-Antibody Complex Technology)

Embrex has developed, patented and commercialized the antigen-antibody complex ("AAC") technology – a concept that allows safe *in ovo* administration of moderately attenuated viruses. By using the AAC technology to form virus-antibody complex vaccines, safe and effective immunization is generally possible in a single step, thus reducing or eliminating the need for multiple vaccinations. The presence of the antibody delays the onset of virus replication without compromising the virus' capacity to stimulate the immune system. Prior to 2004, Embrex referred to the AAC technology as virus neutralizing factor, or VNF®. The Company believes AAC more accurately describes the technology and plans to use that term going forward in lieu of VNF®.

The AAC technology is the subject of five issued U.S. patents and several foreign patents and foreign patent applications. The U.S. patents are owned by the University of Arkansas and exclusively licensed to Embrex for avian use on a royalty basis for the life of the patents. The Company's vaccine for infectious bursal disease, Bursaplex®, and the Company's Newcastle disease vaccine, Newplex™, described below, were developed based on the AAC technology. Embrex has also researched the potential application of AAC technology to other avian disease vaccines, but there is no assurance that the Company's research will result in additional product opportunities.

Embrex also owns or licenses method-of-use patents for the *in ovo* administration of AAC vaccines and other compounds to elicit various beneficial responses in poultry. Two U.S. patents issued in 1995 for methods of treating IBD virus infections using AAC vaccines, including *in ovo* administration, are owned by the University of Arkansas and licensed exclusively to Embrex. A U.S. patent claiming the use of AAC viral vaccines in all non-primate animals was issued in February 1999. A U.S. patent claiming the use of AAC bacterial vaccines was issued in 2002. These patents and additional patent applications encompass the use of AAC vaccine compounds regardless of the source of the AAC. These AAC patents additionally include composition-of-matter claims to AAC vaccines against IBD virus disease and composition-of-matter claims to AAC vaccines for combating viral diseases in non-primate animals. These patent claims cover the vaccine preparation, regardless of the manner in which the preparation is used.

Infectious Bursal Disease (IBD) Vaccines

AAC technology has been used in the Company's Bursaplex® vaccine, which combats avian IBD, an infectious disease that weakens a bird's immune system. Birds infected by IBD typically exhibit poor growth or can succumb to other diseases because of a compromised immune system. This disease is currently widespread in Northern Europe, the Middle East, Asia, parts of Latin America and, to a lesser extent, the United States. Apart from *in ovo* vaccines, IBD vaccines are administered post-hatch via day of age injection or by drinking water. Existing post-hatch IBD vaccines are associated with certain limitations, and certain IBD vaccines cannot be used safely or effectively *in ovo*. The Company estimates the worldwide market for IBD vaccines is approximately $60 million annually.

To date, regulatory approval for Bursaplex® has been received in 23 countries, and regulatory approval is temporary or pending in 11 additional countries. Currently, Bursaplex® vaccine is being marketed in most of these countries where regulatory approval has been obtained. Regulatory approval and market acceptance of various *in ovo* vaccines can facilitate the placement of Inovoject® systems in certain markets. Pending regulatory approvals are being sought in Latin American, Middle Eastern and Asian markets for *in ovo* and post-hatch use of Bursaplex® vaccine.

PRODUCTS UNDER DEVELOPMENT

Embrex is developing, independently and in collaboration with others, additional products and devices which address poultry health and performance needs *in ovo*. These additional products are in various stages of development. There can be no assurance that Embrex will successfully develop or market any of these products. Also, there is no assurance regulatory approval will be obtained. Marketing products developed jointly with others may require royalty or other payments by Embrex to its co-developers.

*In Ovo* Products for Control of Newcastle Disease

The registration application for Newplex™, Embrex's Newcastle disease ("ND") *in ovo* vaccine, which like Bursaplex® is based on AAC technology, received U.S. Department of Agriculture ("USDA") approval in May 2003. ND is a contagious and sometimes fatal viral respiratory disease affecting all species of birds. Birds infected with ND typically exhibit respiratory problems, lower egg production and increased flock mortality. Currently, birds are vaccinated for ND using vaccines derived from both live and dead viruses. These vaccines are typically administered by several methods including drinking water, eye drop, spray cabinets in the hatchery and hand held sprayers in the field. Embrex has contracted with Lohmann Animal Health International ("LAHI") to manufacture and supply its requirements for Newplex™. Embrex plans to pursue additional regulatory approvals for Newplex™ in key markets worldwide, particularly in Asia, Latin America, the Middle East, and South Africa, where ND is more prevalent. Although this product has received USDA approval, there is no assurance that registrations in other markets will be granted or that Newplex™ will be sold in commercial quantities. The Company estimates that the worldwide market for products that control ND is approximately $50 million per year.

*In Ovo* Products for Control of Coccidiosis

The Company is developing a novel *in ovo* biological control method (vaccine) for coccidiosis. Coccidiosis is caused by a protozoan parasite, which attacks the gut of the chicken, causing significant problems with the intake and digestion of feed and, therefore, the physical and economic performance of the bird. Currently, virtually all broiler chickens, and most poultry in general, receive anti-coccidiosis treatments using chemical compounds called coccidiostats which are incorporated into poultry feed. Over the years, coccidia have developed levels of resistance to many of these compounds, which have not only reduced their effectiveness, but have forced the poultry industry to continually evaluate treatment programs. Additionally, in certain countries and regions environmental and food safety groups are lobbying to have coccidiostats removed from the market. While Embrex believes that these factors will lead to a change in the market where coccidiosis vaccines are favored over coccidiostats, there is no assurance that such a change will occur. Currently, a limited number of live vaccines have been developed and are administered orally soon after hatch. However, due to difficulties in providing a precise oral dose to each bird, growth depression and non-uniformity can occur in broiler flocks. Therefore, such live vaccines are used primarily in parent stock. Using its Inovoject® system technology and its knowledge of avian embryology, the Company is

developing a novel, efficacious and cost-effective vaccine for coccidiosis control in broiler chickens. This program is aimed at overcoming many of the problems associated with current practices. The Company estimates that the worldwide market for products that control coccidiosis is approximately $350 million per year.

In 1997, the Company established the feasibility of an *in ovo* biological control method for coccidiosis and began working with Pfizer Inc. in this area. In 1999, the two companies entered into a collaborative program to research and develop a live coccidiosis vaccine for *in ovo* delivery to poultry. During 2000 and 2001, Embrex conducted large-scale field trials, coordinated with two major U.S. poultry producers, that demonstrated that Inovocox™, Embrex's *in ovo* coccidiosis vaccine under development, is safe and efficacious, with performance equivalent to the commonly used coccidiostats. In June 2001, the Company announced that it had acquired an exclusive worldwide license from Pfizer Inc. to all pending patents relating to *in ovo* poultry coccidiosis vaccines. Under the license agreement, Pfizer will receive milestone payments from Embrex and royalties on future sales of the vaccine. Two patents covering the process of vaccination *in ovo*, against coccidiosis, issued in the United States in December 2002. A third patent covering the same process issued in the European Union in December 2003. Collectively these patent rights, held by Pfizer and licensed exclusively to Embrex, cover the use of various life stages of the parasite for immunization *in ovo*. Continued development of Inovocox™ will involve further clinical and field trials. Embrex has initiated the USDA regulatory approval process with respect to these development efforts and does not expect any coccidiosis product developed by the Company to be marketed until USDA approval is obtained.

In January 2003, Embrex initiated construction of an $11.6 million biological manufacturing facility located in Scotland County, North Carolina for the purpose of manufacturing Inovocox™, with facility completion expected during the first quarter of 2004. After facility completion and optimization, pre-licensing vaccine serials will be produced and field tested under USDA auspices to fulfill final requirements for licensure of both the product and the facility. Although significant information has been submitted for licensure of the product, there is no assurance that USDA approvals will be obtained. In addition to USDA approval for the Inovocox™ product, the biological manufacturing facility must also receive a USDA facility license to manufacture Inovocox™. Delays in obtaining either product or manufacturing facility approvals may adversely affect the marketing of, and the ability to receive revenues from, Inovocox™. Marketing this product in foreign countries will also require Embrex to pursue separate approvals from foreign regulatory agencies. See "Production, Marketing and Distribution—Production--Inovocox™", below.

Gender Sorting Device

During 2003, Embrex continued its efforts to automate avian gender sorting. The Company believes that the economical and efficient *in ovo* determination of a bird's gender before it hatches will lead to an increase in the practice of raising birds separately by gender. In a number of independent studies, gender-separate rearing has been shown to increase the efficiency of feed utilization, improve processing plant operations and ultimately provide consumers with more uniform and economic poultry. In addition, certain segments of the poultry industry, such as layers (female birds raised to produce table eggs), breeders (female birds which produce fertile eggs for the meat industry) as well as turkeys, are manually sorted by gender where the chick or poult is newly hatched.

In July 2001, Embrex entered into an agreement with Cobb-Vantress, a world leader in broiler breeding, under which Cobb-Vantress agreed to provide funds for Embrex's ongoing development of patented technology and a device to determine the gender of poultry *in ovo*. Embrex subsequently received initial funding from Cobb-Vantress. Upon the achievement of certain milestones in the development and commercialization of Embrex's gender sort device technology, to the mutual satisfaction of the parties, Embrex has received non-refundable payments from Cobb-Vantress and has the right to receive a subsequent payment upon successful demonstration of a device in a commercial hatchery. In return, Cobb-Vantress will receive favorable commercial terms upon adopting the gender sort device, if and when the device is ultimately commercialized.

In July 2001, Embrex entered into a Research, Development and Marketing Agreement with LifeSensors, Inc. under which Embrex and LifeSensors were collaborating in the development and production of a gender sorting assay for the gender sort device. The assay was not stable in a commercial environment and the relationship was concluded in May 2003. The Company entered into a Beta License and Non-Disclosure Agreement with Luminex Corporation

for evaluation of an alternative assay for gender sorting in August 2002. The Luminex bead-based assay continues to be under development.

In April 2001, Embrex entered into a Credit Agreement with Advanced Automation, Inc. ("AA") of Greenville, S.C. under which Embrex agreed to loan AA up to $3.4 million in connection with development and construction of a gender sorting automation multi-egg system ("Gender Sort system"). The Company also entered into a Development and Supply agreement with AA in September 2001 and a Services Agreement in April 2003. In April 2003, Embrex and AA agreed to rollover the $2.5 million outstanding principal and accrued interest under the Credit Agreement that had matured April 1, 2003 into a seven-year 6% fixed-rate collateralized term loan (the "Term Loan"). Subsequently, in December 2003, the Company acquired the first Gender Sort system developed exclusively for Embrex by AA for $2.3 million, AA repaid its term loan due to Embrex in the same amount, and the related Services Agreement between Embrex and AA to build the first Gender Sort system was terminated. A related Development and Supply Agreement between the two companies remains in effect. The Company accounted for the purchase of the Gender Sort system as a write down and recorded it as a research and development expense of $2.3 million in Embrex.

Additionally, Embrex obtained two patents in 2003, both relating to methods of determining the gender of a bird *in ovo*. One patent covers methods of detecting the elevated levels of a sex-related hormone, such as estrogen, in eggs. The other patent is related to a method for localizing the allantoic fluid of avian eggs. The allantoic fluid contains the sex-related hormones and the patent describes methods that allow a probe to be inserted into the fluid, or a substance injected into the fluid.

Through the Company's research and development work to date, additional approaches and component improvements have been identified that the Company believes could have application on subsequent Gender Sort system development. Specifically, Embrex is assessing new sampling approaches and refined assay options that could provide faster results and may appeal to a broader market in the poultry industry. Refining these approaches has extended the Company's original development timeline and target commercial launch date. Although the Company's research and development has enhanced understanding regarding Gender Sort technological challenges and market requirements, no assurances can be made that Embrex's development work will lead to a commercial device.

OTHER DEVELOPMENT PROJECTS

In July 2001, Embrex and Origen Therapeutics, Inc. ("Origen") announced that the two companies had been awarded a four-year Advanced Technology Program (ATP) grant totaling $4.7 million from the National Institute of Standards and Technology ("NIST"), a division of the U.S. Department of Commerce. Approximately $2.8 million of this grant funding would be directed to Embrex for development of technology aimed at the large-scale production of poultry utilizing avian embryonic stem cells and *in ovo* technology. Subsequently, Origen was removed from the grant arrangement by NIST because of its inability to adequately fund its portion of the project, resulting in a suspension of grant funding. NIST informed Embrex that the grant could be transferred to the Company, but would remain in suspension until a suitable partner was found to continue the research covered by the original award. Also, North Carolina State University ("NCSU") informed the Company that it would not grant its embryonic stem cell technology license, originally held by Origen but reacquired by NCSU when Origen failed to meet its license obligations, to Embrex. The NIST subsequently withdrew the remaining grant because NCSU did not sub-license its technology to the Company. In light of this grant withdrawal, Embrex discontinued funding of this project in 2004.

Embrex routinely enters into collaborative agreements with major animal health companies, pharmaceutical companies and federal agencies, as well as leading universities in the field of avian science to evaluate the utility of certain of their compounds, technologies and devices when delivered or applied *in ovo*. Depending upon the outcome of these evaluations, Embrex may or may not proceed with these collaborations for further development. There is no assurance that these efforts will yield products or further collaborations.

## PATENTS AND PROPRIETARY RIGHTS

Embrex controls (either through direct ownership or exclusive license) 43 issued U.S. patents, 20 pending U.S. patent applications, 153 issued foreign patents and 150 pending foreign patent applications. In addition, Embrex has executed confidentiality agreements with its collaborators, subcontractors, employees and directors.

The Inovoject® system utilizes a process of injecting viral, bacterial or fungal vaccines into avian eggs that was patented in the United States by the USDA in 1984 (the "Sharma Patent"). Embrex held the exclusive license to this patent through its expiration in June 2002. Embrex has supplemented this process with seven additional issued U.S. patents (and numerous foreign patents and patent applications) covering specific design features of the Inovoject® system including Embrex's Egg Remover® system and Vaccine Saver® option.

Embrex licenses method-of-use patents for the *in ovo* administration of AAC vaccines and other compounds to elicit various beneficial responses in poultry. The AAC technology is the subject of five issued U.S. patents and several foreign patents and foreign patent applications. The U.S. patents are owned by the University of Arkansas and exclusively licensed to Embrex for avian use on a royalty basis for the life of the patents. The last of these U.S. patents will expire during 2012. Of these U.S. patents, two were issued in 1995 for methods of treating IBD virus infections using AAC technology, including *in ovo* administration; one patent claiming the use of AAC vaccines in any animal was issued in October, 2001; and one patent claiming the use of AAC bacterial vaccines was issued in 2002. These patents and additional patent applications encompass the use of AAC vaccine compounds regardless of the source of the AAC. These AAC patents additionally include composition-of-matter claims to AAC vaccines against IBD virus disease and composition-of-matter claims to AAC vaccines for combating viral diseases in non-primate animals. These patent claims cover the vaccine preparation, regardless of the manner in which the preparation is used. Three patents owned by Pfizer that cover the process of vaccination *in ovo* against coccidiosis are exclusively licensed to Embrex. Two were issued in the United States in December 2002 and a third patent was issued for the European Union in September, 2003.

The Company filed six new U.S. patent applications in 2000, six new U.S. patent applications in 2001, 12 new U.S. patent applications in 2002 and 9 new U.S. patent applications in 2003. During 2003, Embrex also filed 6 new foreign patent applications. Each application covered various aspects of *in ovo* technology.

Embrex continues its efforts to patent methods of delivering compounds *in ovo*, including early intervention methods and devices. During the years 1998 through 2003, 31 U.S. patents were issued or allowed, further expanding Embrex's proprietary position with respect to *in ovo* technology.

Additionally, Embrex has registered the trademarks Embrex®, Inovoject®, VNF®, Bursaplex®, Vaccine Saver® and Egg Remover® in the United States and certain foreign countries, and has applied for United States and some foreign registrations of these and other various trademarks including Newplex™, Inovocox™ and The In Ovo Company℠.

See "Competition" below and Item 3, "Legal Proceedings", below.

## COMPETITION

The Company estimates that its Inovoject® system inoculates in excess of 80% of all the eggs produced for the United States and Canadian broiler poultry markets. In addition, the Company has Inovoject® systems either operating on a contract or trial basis in 35 countries. The competition for the Inovoject® system primarily is the manual, post-hatch administration of biological products, which was the primary method of administration prior to market acceptance of Inovoject® in the United States and Canada. Post-hatch administration remains the primary method of delivery of biological products in many foreign markets. In addition, Embrex is aware of four companies that are marketing *in ovo* injection systems to poultry companies. Although there has not been widespread commercial acceptance of any of these competing systems, the Company is aware of direct competition for customers and limited commercial placements by one of these companies. Embrex believes that it will continue to compete effectively against other companies based on performance of products, pricing, quality, product features, and customer service. In order for the Company to expand placements of the Inovoject® system worldwide, the

Inovoject® system and *in ovo* products must continue to be accepted within the foreign markets and operated as intended under long-term commercial conditions.

The Inovoject® system utilizes a process that was patented in the United States by the USDA in 1984. Embrex held the exclusive license to this "Sharma" patent until June 2002, when the Sharma patent expired. Embrex owns seven additional issued U.S. patents and numerous foreign patents covering specific design features of the Inovoject® system. Embrex relies on these patents to protect its intellectual properties and to afford a competitive advantage. In the event that Embrex believes that a competitive system infringes any Embrex patent, the Company plans to take all appropriate steps to protect its patent rights. These matters are discussed in more detail under "Patents and Proprietary Rights" and "Legal Proceedings".

The majority of Embrex's revenues are derived from fees received for use of its Inovoject® system, rather than from sales of Embrex's biological products. In marketing its biological products, the Company competes with much larger animal health companies that typically market a broad range of vaccines and other animal products. Embrex's strategy is to develop and market higher performing *in ovo* delivered biological products which compete effectively against other biologicals based on factors such as superior efficacy and cost-effectiveness. Competition for the Company's *in ovo* biological products comes primarily from products that are administered post-hatch. Embrex's Bursaplex® vaccine for IBD competes with vaccines that are administered post-hatch either manually through injections or in drinking water. Newplex™, Embrex's vaccine for Newcastle disease, will compete with vaccines that are administered through drinking water, eye drops or spraying. Embrex's Inovocox product for coccidiosis, for which USDA approval is pending, would compete with coccidiostats that are incorporated into poultry feed and to a lesser extent with vaccines that are administered orally. The Company is building a biological manufacturing facility for Inovocox™. While Embrex believes that the marketplace is developing such that coccidiosis vaccines will be favored over coccidiostats, there is no assurance that this will occur or that Embrex will obtain necessary regulatory approvals for Inovocox™ and the manufacturing facility. Overall, in order for the Company to expand sales of its *in ovo* biological products, these products must obtain necessary regulatory approvals and be commercially accepted worldwide, and the Inovoject® system must also continue to be accepted in the marketplace. To date, biological products have accounted for a small portion of Embrex's revenues.

See Item 3, "Legal Proceedings", below.

## PRODUCTION, MARKETING AND DISTRIBUTION

### Production

*General*

Embrex currently outsources production of nearly all its mechanical and biological products and expects to continue to do so for the foreseeable future. However, the Company believes that alternative sources of manufacturing and supply generally exist for products currently manufactured for Embrex by contract manufacturers. In addition, the Company expects to begin to manufacture Inovocox™ in its Embrex Poultry Health LLC biological manufacturing facility in Scotland County, North Carolina, once USDA approves the Inovocox™ product and grants facility licensure to manufacture Inovocox™.

*Inovoject® System, Vaccine Saver® Option and Egg Remover® System.*

Embrex's in-house engineering staff designs the Inovoject® system, Vaccine Saver® option and Egg Remover® system, which incorporate certain proprietary mechanical, pneumatic and electronic sub-systems and concepts. The Company uses one contract manufacturer, Precision Automation Company, Inc., to fabricate its Inovoject® and Egg Remover® systems. While other machine fabricators exist and have constructed limited numbers of these devices, a change in fabricators could cause a delay in manufacturing and a possible delay in the timing of future Inovoject® and Egg Remover® system installations and revenues from those installations. The Vaccine Saver® option is assembled in the manufacturing area at the Company's corporate headquarters and the components are sourced from multiple vendors.

*AAC Vaccines (Antigen-Antibody Complex Vaccines)*

Since 1993, Charles River Laboratories, Inc., through its SPAFAS Avian Products Services Division ("SPAFAS", formerly SPAFAS, Inc.), has supplied Embrex with the bursal disease antibody ("BDA") component for Bursaplex® vaccine. In January 2004, Embrex signed a new agreement with SPAFAS under which SPAFAS will continue to supply the Company's requirements for BDA for approximately three years. In connection with this agreement, Embrex seeks to maintain appropriate inventory levels and places orders with SPAFAS to allow Embrex to satisfy anticipated customer demand for the Bursaplex® vaccine. The regulatory approval granted by the USDA for Bursaplex® vaccine in 1997 specifically covers vaccines produced with SPAFAS-manufactured BDA. Additional agreements covering the Company's needs for Newcastle disease antibody ("NDA") for the Company's Newplex™ vaccine for the next four years are in negotiation with SPAFAS and are expected to be finalized in the first half of 2004.

The Company has granted Merial Select, Inc. ("Select") (a Merck and Aventis company) exclusive rights to manufacture, in the United States, Bursaplex® vaccine, an IBD virus-antibody complex vaccine, for Embrex to market in North America, Latin America, Asia, the Middle East and South Africa. Abic Ltd. has been granted similar rights to manufacture and market an IBD AAC vaccine, known as GuMBryo™, in Israel. The Company has also granted LAHI exclusive rights to manufacture, in the United States, a Newcastle vaccine, known as Newplex™, based on Embrex's AAC technology, that Embrex intends to market in North America, Latin America and Asia. The manufacture of vaccines produced by Select, Abic, and LAHI along with the specific vaccine antibodies produced by SPAFAS, generally must be performed in licensed facilities or under approved regulatory methods. Although there are other manufacturers who are capable of manufacturing the IBD AAC products and the BDA and NDA, a change of supplier for the Company could adversely affect Embrex's future operating results due to the time it would take a new supplier to obtain regulatory approval of its production process or manufacturing facilities. The Company seeks to minimize this exposure through multi-year supply agreements and the maintenance of adequate inventories.

*Inovocox™ In Ovo Coccidiosis Vaccine*

In January 2003, the Company initiated construction of a biological manufacturing facility estimated to cost $11.6 million and located in Scotland County, North Carolina. The facility is designed to manufacture the Company's Inovocox™ *in ovo* coccidiosis vaccine upon approval from the USDA. Design and construction of Embrex's biological manufacturing facility is being managed by Lockwood Greene, a firm with extensive experience in the design and construction of pharmaceutical manufacturing facilities. The site will include a main manufacturing facility, poultry brooder houses and a facility for the initial steps of the production process. Certain aspects of the novel manufacturing process are unique and proprietary to Embrex. The Company anticipates that construction of the facility will be completed in the first quarter of 2004.

See "Products Under Development—*In Ovo* Products for Control of Coccidiosis", above.

Marketing and Distribution

Because of the geographical and industrial concentration of the poultry industry in the United States and other global markets, Embrex markets its products and provides ongoing service directly to the industry. Embrex's marketing is focused principally on the broiler chicken segment of the poultry industry, but the Company also has adapted its products for use by, and initiated trials and entered into commercial contracts with, broiler breeder companies and a limited number of layer, turkey and human flu vaccine producers.

In order to encourage proper use of the Inovoject® system technology within an appropriate production environment, Embrex leases and licenses Inovoject®, Vaccine Saver® and Egg Remover® devices to hatcheries. The lease agreements cover the use of the mechanical equipment and ongoing field service, maintenance and technical support provided by Embrex. The agreements include a license with royalty fees payable for use of Embrex's proprietary injection process. Also, in a very limited number of markets, under specific circumstances, Embrex may sell the Inovoject® system to a distributor or a human flu vaccine manufacturer. Products, which are delivered *in ovo*, are sold separately by Embrex, and also by third parties.

The Company has initiated arrangements for international distribution of Bursaplex®, subject in each case to the availability of required regulatory approvals. The Company has agreements with other parties to distribute Bursaplex® in 21 countries. All of these countries have granted regulatory approval for Bursaplex® except two. An agreement in Israel also entitles a distributor, Abic Ltd., to manufacture and market a IBD AAC vaccine mentioned above. Subject to these agreements, the Company also will conduct international marketing directly. To date, regulatory approval for Bursaplex® has been granted in 23 countries, and regulatory approval is temporary or pending in 11 countries. Embrex has also added staff for selected Asian and Latin American markets and installed Inovoject® systems on a commercial or trial basis in certain Asian markets. In 1998, Embrex established Embrex BioTech Trade (Shanghai) Co., Ltd. in China, to focus on marketing and distribution of Embrex products in China. Also in 1998, Embrex established Embrex Inc. Sucursal Argentina, a branch office in Argentina, responsible for commercial development and customer service and support. Initially, this office only served Argentina but now extends to other regional markets such as Bolivia, Chile, Paraguay or Uruguay. In 1999, Embrex established a subsidiary in Brazil, Inovoject do Brasil Ltda. In 2001, Embrex established subsidiaries in France and Spain to market and service Inovoject® systems in those countries. In 2003, the Company began efforts to establish an office in Mexico to market, service and support Inovoject® systems and other Devices, as well as to market Bursaplex®.

In Japan, Embrex has a distribution agreement with Ishii Company, Ltd. ("Ishii"), a subsidiary of I.P. Tsusho Co., Ltd., a leading chick producer and the dominant supplier of hatchery equipment in Japan. The Japanese Ministry of Agriculture, Fisheries and Forestry granted veterinary medical device regulatory approval for the Inovoject® system in 1999. Ishii is marketing the Inovoject® egg injection system to poultry producers throughout Japan. In 2000, Boehringer Ingelheim Shionogi Vetmedica, formerly Shionogi & Co., LTD, Embrex's exclusive distributor in Japan for Bursa-BDA [NP], the Japanese product name for Bursaplex®, gained the necessary regulatory registration of the product for the Japanese market. In December 2002, Embrex signed a distribution agreement with Kaketsuken for the development, registration and marketing of Newplex™ in Japan.

The Company's revenues attributable to international operations in 2003, 2002, and 2001 were 32%, 31% and 31% of the Company's consolidated revenues, respectively. The Company's identifiable assets attributable to international operations in 2003, 2002 and 2001 were 18%, 25%, and 32% of the Company's consolidated assets, respectively.

The Company's gross profit attributable to international operations in 2003, 2002 and 2001 was 15%, 21% and 19% of the Company's consolidated gross profit, respectively. See "Notes to Consolidated Financial Statements."

## RESEARCH AND DEVELOPMENT EXPENDITURES

Research and development expense was $8.1 million in 2001, $10.2 million in 2002, and $12.5 million in 2003. The increase in research and development expense from 2001 to 2003 largely reflects additional research activities in several areas including: increased outside contract research, analytical lab supply consumption, additional Inovoject® system, Vaccine Saver® option and Egg Remover® system design and development, global technical support activity, the write down of the Gender Sort system purchased from Advanced Automation for $2.3 million, and preparations for commencement of operations at the Embrex Poultry Health manufacturing facility. Research and development is principally Company sponsored and funded primarily from internal sources and supplemented by grant and other sources of funds as appropriate. See "Products Under Development" above.

## GOVERNMENTAL REGULATION

Regulation by governmental authorities in the United States and other countries is a significant factor in the production and marketing of Embrex's products and in its on-going research and development activities. Although the use of the Inovoject® system or its other devices are not subject to regulatory approval in the United States, animal health products being developed by Embrex and other companies must receive approval for marketing from either the USDA or the Food and Drug Administration (the "FDA") and from similar regulatory agencies in foreign countries where the Company has begun or contemplates doing business. These countries also may require approval of the Inovoject® system or its other devices. Regulatory agencies require that products be tested and demonstrate appropriate levels of safety and efficacy. Generally, with respect to animal health products in the United States, the USDA has regulatory authority over products which are biological in origin or which stimulate or affect an animal's immune system and the FDA has authority over all other animal health products. The time and cost for USDA

approvals are generally less than those for FDA approvals. FDA approvals generally require more extensive animal and toxicology testing than USDA approvals and may take five or more years to obtain, whereas USDA approvals generally take one to three years to obtain.

Management believes that compliance with environmental regulations currently has no material adverse effect on the Company's capital expenditures, earnings or competitive position.

## EMPLOYEES

At December 31, 2003, Embrex employed 270 persons, 269 of whom were full-time employees, an increase of 28 persons or 12% from the 241 full-time employees at December 31, 2002.

## SIGNIFICANT CUSTOMERS

Tyson Foods, Inc. ("Tyson") accounted for approximately 20% of Embrex's consolidated 2003 revenues. Based on millions of pounds of ready-to-cook poultry meat produced in 2003, Tyson accounted for approximately 22% of the broilers grown in the United States. During 1997, Tyson extended its contract with Embrex through 2004. The only other customer representing greater than 10% of total consolidated revenues is Pilgrim's Pride Inc. ("Pilgrim's"), representing 12% of consolidated revenues. Pilgrim's accounts for approximately 16% of the broilers grown in the United States, based on millions of pounds of ready-to-cook poultry meat produced in 2003. Embrex's three largest customers, including Tyson and Pilgrim's, accounted for approximately 37% of consolidated 2003 revenues, up from 30% in 2002. The increase in 2003 is largely the result of Pilgrim's purchase of ConAgra's poultry production unit. Revenues from Tyson and Pilgrim's are primarily associated with the United States segment of Embrex's business. See "Segments" in Note to Consolidated Financial Statements.

## AVAILABLE INFORMATION

Embrex maintains an Internet website, http://www.embrex.com, that contains additional information concerning the Company. Embrex makes available free of charge through its Internet site its annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after Embrex electronically files such material with, or furnishes it to, the Securities and Exchange Commission ("SEC"). Information on the Company's Internet site is not part of or incorporated into this report on Form 10-K.

## ITEM 2. PROPERTIES

Embrex leases its corporate headquarters and research and development facilities, which occupy approximately 48,000 square feet and are located adjacent to Research Triangle Park, North Carolina. About one-third of the space is devoted to research and development. The lease has an initial six-year term expiring 2005 with annual rent increases of approximately 3% and an additional six-year optional renewal term with annual rent increases of approximately 4%. Embrex paid an annual rent of approximately $0.5 million during 2003. In addition to research and development activities conducted at its corporate headquarters, Embrex has a 12,800 square-foot research facility near its headquarters. The lease has a 10-year term expiring in 2007, with a five-year renewal option. The annual rent paid in 2003 was approximately $0.2 million, with annual increases of approximately 3% through the first 10 years and approximately 4% during the five-year renewal term.

Embrex purchased approximately 60 acres in Scotland County, North Carolina in December 2002 for the purpose of constructing and equipping the Embrex Poultry Health vaccine manufacturing and testing facility. In January 2003, construction was initiated for this 40,000 square foot facility. The Company anticipates that construction of the facility will be completed in the first quarter of 2004 at a cost of approximately $11.6 million.

In addition to the Company's facilities in North Carolina, Embrex has leased office and warehouse space in some of its offsite and international operations.

## ITEM 3. LEGAL PROCEEDINGS

In December 2003, Embrex filed a patent infringement suit in the U.S. District Court for the Eastern District of North Carolina against Breuil S.A. of Landivisiau, France, and New Tech Solutions, Inc. of Gainesville, Georgia. The suit alleges that each of the defendants' development of an *in ovo* injection device, designed to compete with Embrex's patented Inovoject® system injection method, infringes two Embrex patents related to Embrex's proprietary methods for distinguishing live eggs from infertile or "dead" eggs and for injecting specific eggs identified as suitable for inoculation as well as the apparatus performing this function. Embrex seeks injunctive relief and monetary damages and is demanding a jury trial.

The Company filed a lawsuit in April 2002 against Fort Dodge Australia, Pty. Ltd. and Wyeth, alleging breach of contractual obligations to develop, register and market Bursamune®, an IBD vaccine based upon the Company's AAC technology, in the territories of Europe, the Middle East and Africa, unfair and deceptive trade practices and related claims. In July 2002, Wyeth asserted a counterclaim against Embrex alleging breach of contract and related claims. On June 30, 2003, Embrex announced that it had reached settlement in this litigation with Wyeth. Under the terms of the settlement, Embrex and Fort Dodge dismissed all claims pending between them in return for payment to Embrex by Fort Dodge of $5.0 million. This settlement resulted in net other income of $3.7 million after legal expenses related to the settlement.

In 1996, Embrex filed a patent infringement suit in the U.S. District Court for the Eastern District of North Carolina against Service Engineering Corporation, a Maryland corporation, and Edward G. Bounds, Jr., a Maryland resident and officer of Service Engineering Corporation. The suit alleged that each of the defendants' development of an *in ovo* injection device, designed to compete with Embrex's patented Inovoject® system injection method, infringes at least one claim of U.S. Patent No. 4,458,630 exclusively licensed to Embrex for the *in ovo* injection of vaccines into an avian embryo (the "Sharma Patent"). Further, Embrex claimed that the defendants had violated the terms of a Consent Judgment and Settlement Agreement entered into with Embrex in November 1995 in which prior litigation was concluded with Service Engineering Corporation and Edward G. Bounds, Jr. agreeing not to engage in future activities violating the Sharma Patent. Embrex sought injunctive relief to prevent infringement of the Sharma Patent as well as monetary damages. In November 1996, Service Engineering Corporation and Edward G. Bounds, Jr., responded to Embrex's patent infringement suit by asserting various affirmative defenses and denying the substantive allegations in Embrex's complaint. This suit concluded in July 1998 with a jury verdict in favor of Embrex. The verdict fully upheld the validity of all claims of the Sharma Patent, finding that the defendants had willingly infringed all asserted claims of the patent. The jury also found that Service Engineering Corporation and Edward G. Bounds, Jr., had breached the 1995 Consent Judgment and Settlement Agreement and that such breach was not in good faith. The jury awarded Embrex damages of $500,000 plus litigation expenses and court costs. The U.S. District Court for the Eastern District of North Carolina entered a Judgment in favor of Embrex in September 1998, which included a monetary award of $2,612,885 and an injunction prohibiting Service Engineering Corporation and Edward G. Bounds, Jr., from practicing methods claimed in, or otherwise infringing, the Sharma Patent. That injunction expired with the expiration of the Sharma Patent in June 2002. Following an appeal by Service Engineering Corporation and Edward G. Bounds, Jr. to the U.S. Court of Appeals for the Federal Circuit seeking a reversal of the Judgment, in July 2000, the United States Court of Appeals for the Federal Circuit affirmed the district court's decision to award to Embrex litigation expenses plus interest valued at approximately $1.5 million. In addition, the appeals court upheld the finding that Service Engineering Corporation and Edward G. Bounds, Jr. had willfully infringed all asserted claims of the Sharma Patent. However, the appeals court vacated the award of direct infringement damages, finding that the district court erroneously awarded direct damages without proper evidence to support the award. Therefore, the appeals court remanded that award ($500,000 which was trebled) to the district court for further proceedings for determination of a reasonable royalty for the infringement of the patented method by Service Engineering Corporation and Edward G. Bounds, Jr. These proceedings were opened in August 2000, but have been stayed since 2001 pending the conclusion of a bankruptcy proceeding initiated by Edward G. Bounds, Jr.

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

No matters were submitted to a vote of security holders during the fourth quarter of the fiscal year ended December 31, 2003.

## PART II

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

*Common Stock Market Information.* The Company's Common Stock trades on the Nasdaq National Market under the symbol EMBX. The quarterly trading ranges of the sales prices of the Company's Common Stock (based on each day's closing prices during the specified quarter) for the last two fiscal years were as shown in the table below:

| | Common Stock Price Per Share | |
|---|---|---|
| Quarter Ended | High | Low |
| March 31, 2002 | $20.85 | $16.55 |
| June 30, 2002 | $25.30 | $19.05 |
| September 30, 2002 | $21.70 | $10.20 |
| December 31, 2002 | $13.10 | $10.63 |
| March 31, 2003 | $11.80 | $6.41 |
| June 30, 2003 | $10.50 | $7.63 |
| September 30, 2003 | $10.64 | $9.37 |
| December 31, 2003 | $14.50 | $9.85 |

*Holders and Dividends.* At February 27, 2004, there were 390 holders of record of the Common Stock. This number does not include beneficial owners of the Company's Common Stock whose stock is held in nominee or "street" name accounts through brokers. The Company has paid no dividends on any stock since inception and has no plans to pay dividends on its Common Stock in the foreseeable future. Additionally, pursuant to the Company's line of credit with its bank, the Company may not declare or pay any dividends until payment in full of any indebtedness and performance of all obligations under the related loan documents without the prior written consent of the bank.

*Sales of Unregistered Securities.* There were no sales of unregistered securities during the fourth quarter of fiscal 2003.

*Issuer Purchases of Equity Securities.* During the fourth quarter of 2003, the Company purchased certain shares pursuant to its current share repurchase program as set forth in the following table.

ISSUER PURCHASES OF EQUITY SECURITIES

| Period | (a) Total Number of Shares Purchased | (b) Average Price Paid per Share | (c) Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (1) | (d) Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs |
|---|---|---|---|---|
| 10/1/2003 – 10/31/2003 | - | - | 169,500 | 330,500 |
| 11/1/2003 – 11/30/2003 | 21,000 | $10.98 | 190,500 | 309,500 |
| 12/1/2003 – 12/31/2003 | 23,400 | $12.97 | 213,900 | 286,100 |
| Total | 44,400 | $12.07 | 213,900 | 286,100 |

(1) On August 5, 2002, the Company announced that the Board of Directors had authorized a share repurchase program (the "2002 Repurchase Program") to purchase up to 6% of outstanding shares of Common Stock, or up to approximately 500,000 shares over 17 months, in open market or privately negotiated transactions. On November 24, 2003, the Company announced that the Board of Directors had approved an extension of the program's term to June 30, 2004.

ITEM 6. SELECTED FINANCIAL DATA

SUMMARY OF OPERATIONS BY QUARTERS (UNAUDITED)

The selected financial data below should be read in conjunction with the Company's consolidated financial statements and related notes appearing elsewhere in this report.

(In Thousands, Except Per Share Amounts)

| | 2003 | | | | 2002 | | | |
|---|---|---|---|---|---|---|---|---|
| | 1st Qtr | 2nd Qtr | 3rd Qtr | 4th Qtr | 1st Qtr | 2nd Qtr | 3rd Qtr | 4th Qtr |
| Revenues | $10,898 | $12,113 | $11,507 | $11,507 | $11,356 | $10,845 | $11,659 | $11,465 |
| Gross Profit | $6,745 | $6,780 | $6,971 | $6,615 | $7,279 | $6,466 | $7,163 | $6,859 |
| Net income (loss) | $1,275 | $3,885 | $2,648 | ($197) | $2,267 | $1,717 | 1,779 | $1,408 |

| | 2003 | | | | 2002 | | | |
|---|---|---|---|---|---|---|---|---|
| | 1st Qtr | 2nd Qtr | 3rd Qtr | 4th Qtr | 1st Qtr | 2nd Qtr | 3rd Qtr | 4th Qtr |
| Net income (per share of Common Stock) | | | | | | | | |
| Basic | $0.16 | $0.48 | $0.32 | $(.02) | $0.28 | $0.21 | $0.22 | $0.17 |
| Diluted | $0.15 | $0.46 | $0.32 | $(.02) | $0.26 | $0.19 | $0.21 | $0.16 |
| Number of Shares Used in Per Share Calculation | | | | | | | | |
| Basic | 8,154 | 8,143 | 8,159 | 8,117 | 8,031 | 8,125 | 8,156 | 8,153 |
| Diluted | 8,383 | 8,379 | 8,398 | 8,482 | 8,741 | 8,985 | 8,519 | 8,525 |

## 5-YEAR SUMMARY OF SELECTED FINANCIAL DATA

| (In Thousands, Except Per Share Amounts) | 2003 | 2002 | 2001 | 2000 | 1999 |
|---|---|---|---|---|---|
| CONSOLIDATED STATEMENTS OF OPERATIONS DATA | | | | | |
| Revenues | $46,025 | $45,325 | $44,660 | $38,796 | $33,750 |
| Research and development expenses | 12,540 | 10,162 | 8,120 | 6,725 | 5,857 |
| Other operating expenses | 9,951 | 9,107 | 9,681 | 8,341 | 8,181 |
| Net income | 7,611 | 7,171 | 7,967 | 6,631 | 5,744 |
| Net income per share of Common Stock | | | | | |
| Basic | $0.94 | $0.88 | $1.00 | $0.84 | $0.70 |
| Diluted | $0.91 | $0.82 | $0.92 | $0.77 | $0.68 |
| Number of Shares Used in Per Share Calculation | | | | | |
| Basic | 8,119 | 8,116 | 8,007 | 7,901 | 8,151 |
| Diluted | 8,369 | 8,692 | 8,644 | 8,639 | 8,488 |
| CONSOLIDATED BALANCE SHEET DATA | | | | | |
| Working capital | $15,746 | $14,005 | $9,670 | $7,695 | $7,858 |
| Total assets | 59,717 | 42,013 | 34,058 | 26,770 | 26,233 |
| Long-term liabilities | 6,404 | 46 | 43 | 37 | 20 |
| Accumulated deficit | (948) | (8,559) | (15,730) | (23,697) | (30,328) |
| Shareholders' equity | 45,692 | 37,164 | 29,314 | 22,661 | 21,035 |

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

### INTRODUCTION

Embrex is an international biotechnology company engaged in the development of innovative *in ovo* solutions that meet the needs of the global poultry industry. The Company derives most of its global revenues from fees for the number of eggs processed by the Inovoject® system. Other revenue sources for the Company come from lease fees related to the Egg Remover® system and Vaccine Saver® option. In addition to these sources, the Company may sell each of these devices to distributors under special circumstances in selected countries and to human flu vaccine manufacturers. Revenues from these sources are categorized as Device revenues in the Company's financial statements. Another source of revenues for the Company is product sales, which currently consists of sale of an *in ovo* vaccine for infectious bursal disease. The Company also derives some revenues from contract R&D, grant sources and other minor products. The Company's cost of revenue are primarily attributable to the costs of supporting the Company's Devices at customer locations around the world. These costs include the labor, travel and parts necessary to ensure proper operation and maintenance of Embrex's Devices located at hatcheries of the Company's customers, as well as associated depreciation, sales and property tax expenses.

The following discussion and analysis should be read in conjunction with the Company's consolidated financial statements and related notes appearing elsewhere in this report.

## RESULTS OF OPERATIONS

### NET INCOME

| | 2003 vs. 2002 | | | | 2002 vs. 2001 | | | |
|---|---|---|---|---|---|---|---|---|
| | 2003 | 2002 | Change ($) | Change (%) | 2002 | 2001 | Change ($) | Change (%) |
| Consolidated Revenue | $46,025 | $45,325 | $ 700 | 2% | $45,325 | $44,660 | $ 665 | 1% |
| Operating Income | 4,620 | 8,498 | (3,878) | -46% | 8,498 | 8,735 | 237 | -3% |
| Net Income | $7,611 | $7,171 | $440 | 6% | $7,171 | $7,967 | ($796) | -10% |
| Earnings per share – basic | $0.94 | $0.88 | $0.06 | 7% | $0.88 | $1.00 | ($0.12) | -12% |
| Earnings per share – diluted | $0.91 | $0.82 | $0.09 | 11% | $0.82 | $0.92 | ($0.10) | -11% |

Consolidated net income for 2003 increased to $7.6 million, 6% higher than 2002 net income of $7.2 million, which was 10% lower than 2001 net income of $8.0 million. Diluted earnings per share were $0.92 in 2001, $0.82 in 2002 and $0.91 in 2003. The increase in 2003 net income compared to 2002 was primarily due to the $3.7 million settlement of the Company's litigation with Fort Dodge, net of legal fees.

### OUTSTANDING SHARES

(In Thousands)

| | 2003 | 2002 | 2001 |
|---|---|---|---|
| Weighted Average Shares Outstanding | 8,119 | 8,116 | 8,007 |
| Diluted Average Shares Outstanding | 8,369 | 8,692 | 8,644 |

The weighted average shares outstanding increased 109,000 shares or approximately 1.4% from 2001 to 2002, and increased by an additional 3,000 shares from 2002 to 2003, or less than 0.1%. These increases are primarily attributable to the issuance of new shares upon the exercise of stock options during both 2002 and 2003, which were partially offset by common stock repurchases by the Company during each year.

The diluted average shares outstanding increased by 48,000 shares from 2001 to 2002, or approximately 0.6%. This increase is primarily attributable to an increase of approximately $1.00 in the average closing price of Embrex's stock for 2002 compared to the average closing price for 2001, which increased the number of outstanding stock options with exercise prices that were less than the market price of Embrex's stock (i.e., "in-the-money" stock options). Because only in-the-money stock options are counted in computing diluted average shares outstanding, the higher average closing price for the Company's common stock in 2002 as compared to 2001 resulted in more stock options being taken into account in 2002. The increase in diluted average shares outstanding attributable to increased in-the-money stock options in 2002 was partially offset by common stock repurchases by the Company during 2002. The decrease in diluted average shares outstanding from 2003 to 2002 of 323,000 shares, or approximately 3.7%, is due to common stock repurchases by the Company during 2003 as well as the decrease in the average closing share price of the Company's common stock from $16.66 per share in 2002 to $9.82 per share in 2003, which resulted in fewer in-the-money stock options being taken into account in computing diluted average shares outstanding.

REVENUES
(In Thousands)

| | 2003 vs. 2002 | | | | 2002 vs. 2001 | | | |
|---|---|---|---|---|---|---|---|---|
| | 2003 | 2002 | Change ($) | Change (%) | 2002 | 2001 | Change ($) | Change (%) |
| Device revenue | $43,458 | $40,160 | $3,298 | 8% | $40,160 | $39,719 | $441 | 1% |
| Product revenue | 1,970 | 3,079 | (1,109) | -36% | 3,079 | 3,379 | (300) | -9% |
| Other revenues | 597 | 2,086 | (1,489) | -71% | 2,086 | 1,562 | 524 | 34% |
| Consolidated revenues | $46,025 | $45,325 | $700 | 2% | $45,325 | $44,660 | $665 | 1% |

Consolidated revenues in 2003 totaled $46.0 million, representing an increase of 2% over 2002 revenues of $45.3 million, which were 1% over 2001 revenues of $44.7 million. Device revenues totaled $43.5 million in 2003 compared to $40.2 million in 2002 and $39.7 million in 2001, representing increases of 8% from 2002 to 2003, and 1% from 2001 to 2002. The 2003 revenue increase derives mainly from increased Device fees, which is primarily due to an increase in the Inovoject® system customer base, as well as new Egg Remover® installations. Other revenues decreased 71% from $2.1 million in 2002 to $0.6 million in 2003. The 2003 other revenues were derived from miscellaneous revenues for minor products, refunds and miscellaneous grants. The 2002 other revenues were primarily derived from funding provided by Cobb-Vantress in support of the Gender Sort project, federal Advanced Technology Program ("ATP") funds supporting the Company's collaborative development project with Origen Therapeutics, Inc. and Small Business Innovation Research funding for device development work. The decrease from 2002 to 2003 is primarily due to grant funding from Cobb-Vantress in support of the Gender Sort project that occurred in 2002 that did not recur in 2003, as well as the withdrawal of the ATP grant. During 2003, the U.S. dollar weakened against selected currencies compared to the same period during 2002. If average exchange rates during 2003 had remained the same as the average exchange rates for these currencies during 2002, then the Company's revenues would have increased approximately $0.3 million rather than the actual increase of $0.7 million.

The 2003 revenues include Device lease fees derived from multi-year contracts and paid trials in the United States and foreign countries, and the sale of Inovoject® and Egg Remover® systems to distributors and human flu vaccine manufacturers. The sale of Inovoject® systems and Egg Remover® systems to distributors and human flu vaccine companies may cause variability in revenue and gross profit on an annual and quarterly basis. Embrex estimates that as of December 31, 2003, it was vaccinating in excess of 80% of the estimated nine billion broiler birds grown in the United States and Canada in 2003. Given its market penetration, the Company expects only minor Inovoject® systems revenue and earnings growth in this market, most of which is anticipated to come from new Egg Remover® installations. In addition, the introduction of competitor machines could affect growth and/or the maintenance of the Company's revenues.

Sales of Bursaplex®, the Company's proprietary vaccine for the treatment of avian infectious bursal disease, was the source of $2.0 million of product revenues in 2003 as compared to $3.1 million of product revenues in 2002 and $3.4 million of product revenues in 2001, representing revenue decreases of 36% for 2003 over 2002 and a 9% decrease for 2002 over 2001. Overall Bursaplex® sales decreased during 2003 primarily due to lower sales caused by the Company's Japanese distributor's excess inventory, a weak market in Latin America and a weak market in Asia caused primarily by lower poultry production in Korea resulting from an oversupply of poultry and poor economic conditions at the end of 2003. The Company anticipates that conditions in the Asian market in 2004 will continue to be challenging as the current avian influenza outbreak may impact poultry production levels as consumption in, and exports from, the region are reduced, which may result in decreased injection activity. Embrex will continue to monitor developments and intends to take appropriate steps as necessary.

Management anticipates minor revenue and earnings growth in 2004 from existing Inovoject® system operations in the United States and Canada, higher revenue and earnings growth from new Inovoject® system leases in other countries, and sales of Bursaplex® and Newplex™ products to poultry producers worldwide. However, the rate at which the marketplace will accept the Inovoject® system technology outside the United States and Canada, the degree of acceptance of our competitor's machines within the United States and elsewhere, the timing of regulatory

approvals of third-party vaccines for *in ovo* use outside the United States and Canada, costs associated with market expansion, possible variability in United States hatchery bird production as a result of grain price fluctuations, and variability in the demand for, and pricing of, U.S. poultry and poultry products both inside and outside the United States, will impact the pace of revenue growth, if any, and sustained profitability from the installation and operational throughputs of Inovoject® systems. In addition, avian disease outbreaks in markets where Embrex has Device placements and sales also may affect future revenues.

COST OF REVENUE

Cost of revenue was 41% of total revenues in 2003 as compared to 39% and 41% of total revenues in 2002 and 2001, respectively.

Year-end 2003 gross margin decreased from 61% in 2002 to 59% in 2003. This is partially due to additional costs related to servicing the Company's Devices, along with the reduction in other revenues, primarily due to the suspension and withdrawal of ATP funding during 2003.

OPERATING EXPENSES

| | 2003 vs. 2002 | | | | 2002 vs. 2001 | | | |
|---|---|---|---|---|---|---|---|---|
| | 2003 | 2002 | Change ($) | Change (%) | 2002 | 2001 | Change ($) | Change (%) |
| General & Administrative | $7,119 | $6,571 | $548 | 8% | $6,571 | $7,053 | $(482) | -7% |
| Sales & Marketing | 2,832 | 2,536 | 296 | 12% | 2,536 | 2,628 | (92) | -4% |
| Research & Development | 12,540 | 10,162 | 2,378 | 23% | 10,162 | 8,120 | 2,042 | 25% |
| Total Operating Expenses | 22,491 | 19,269 | 3,222 | 17% | 19,269 | 17,801 | 1,468 | 8% |

Operating expenses totaled $22.5 million in 2003 compared to $19.3 million in 2002, and $17.8 million in 2001.

General and administrative ("G&A") expenses were $7.1 million in 2003, up 8% from $6.6 million in 2002 which was down 7% from $7.1 million in 2001. The increase in G&A expenses from 2002 to 2003 was primarily due to increased expenses related to legal expenses incurred for accounting and internal controls to comply with the Sarbanes-Oxley Act, additional facilities support and expenses for the Company's Inovocox™ production facility under construction, increased insurance premiums due to increased property and product liability exposures as well as a hardening of the 2003 insurance market, and staff-related increases in support of the business. The decrease in G&A expenses from 2001 to 2002 was principally due to accounting expenses related to the Embrex Europe investigation during 2001 and lower office rent due to renovating the new head office and vacating the old 1035 Swabia Court facility at the end of 2001.

Sales and marketing expenses totaled $2.8 million in 2003 compared to $2.5 million in 2002 and $2.6 million in 2001. The increase from 2002 to 2003 is primarily due to sales tax assessments and staff-related increases to support the business. The decrease from 2001 to 2002 was mainly attributable to the weakening of the Brazilian real and Argentine peso against the U.S. dollar.

R&D expenses were $12.5 million in 2003 compared to $10.2 million in 2002 and $8.1 million in 2001. The increase in R&D expense over the last two years is principally due to additional development work on the Gender Sort project, and the coccidiosis and Newcastle disease *in ovo* vaccines. Additionally, expenses related to the Company's collaboration with Origen Therapeutics, Inc., which was terminated in 2003, added to the increase during both years. The Company continues to manage its research and development effort to leverage its know-how, patent position, market presence and expenditures.

The Company's overall research and development expenses reflect expenditures incurred in three distinct departments:

The first of these, R&D, is responsible for expenditures associated with the work on our product portfolio and in particular the Newplex™ vaccine, Inovocox™, the *in ovo* coccidiosis vaccine, and, prior to its termination, the collaboration with Origen Therapeutics. Operating Expenses for R&D in 2003 were $5.5 million, compared to 2002 expenses of $6.0 million. This decrease in operating expenses is primarily due to lower contract R&D expenses, which partially resulted from a change in the Inovocox team's focus from pure research to the design and building of the Embrex Poultry Health facility.

The second of these, Global Product Development & Supply ("GPDS"), is responsible for development and testing of commercial machine devices and supply of biological products. This group is currently responsible for development and commercial testing related to the Gender Sort project and overseeing construction of the Embrex Poultry Health manufacturing facility for the production of Inovocox™. GPDS operating expenses for 2003 and 2002 were $5.4 million and $2.1 million, respectively. The increase from 2002 to 2003 is primarily due to purchasing the Gender Sort system from Advanced Automation, Inc. and the subsequent write down of the system as an R&D expense, totaling $2.3 million. Additionally, increased staff-related expenses occurred as a result of a realignment of the Gender Sort team from Engineering and Manufacturing to GPDS contributed in the expense increase year-over-year.

The third is Engineering and Manufacturing, which makes design modifications and improvements to the Inovoject® and Egg Remover® systems and the Vaccine Saver® option, as well as final assembly and testing prior to installation of a Company Device at a customer's hatchery. Operating expenses for Engineering and Manufacturing decreased from $2.1 million in 2002 to $1.6 million in 2003. This is due to realignment of contract R&D expenses and engineering personnel to the Gender Sort project.

OTHER INCOME AND EXPENSE

Interest income totaled $163,000, $225,000, and $206,000 in years 2003, 2002 and 2001, respectively. The decreasing interest income from 2002 to 2003 resulted primarily from a decrease in interest income received from outstanding loans in 2003 versus 2002. The increasing interest income from 2001 to 2002 is mainly due to higher cash balances attributable to decreased repurchases of common stock during 2002.

Other Income totaled $3.6 million in 2003, a $3.5 million increase over 2002 which is attributable to the settlement of the $5.0 million Fort Dodge litigation in June 2003, which added $3.7 million of income to the second quarter of 2003 after deducting legal costs. See Item 3, "Legal Proceedings".

Interest expense totaled $20,000 in 2003 compared to $62,000 in 2002 and $21,000 in 2001. The decrease in interest expense was primarily due to interest paid on sales and use tax in 2002 that did not recur in 2003. The increase in interest expense from 2001 to 2002 reflects commitment fees on the Company's $6.0 million line of credit and accruals for unpaid sales taxes. Interest costs of $80,000 related to the term loan for construction of the Embrex Poultry Health biological facility are not reflected in the 2003 interest expense totals as this amount is being capitalized as part of the construction cost of the facility. Management expects to continue to rely principally on the use of internally generated funds to finance the cost of additional Devices in 2003, as was the case in 2002.

## INCOME TAX EXPENSE

Income taxes totaled $0.8 million for 2003, a $0.6 million decrease from $1.4 million in 2002, which was $0.4 million greater than 2001 income tax expense of $1.0 million. The effective tax rate for 2003 was 9% in comparison to 17% in 2002 and 11% in 2001. The income tax expense for 2003 decreased due to the evaluation of the Company's deferred tax asset. The evaluation indicated that the current and non-current deferred tax asset should be $2.6 million. The net income statement effect of this $2.3 million increase from 2002 resulted in a lower full year tax rate and the incurred income tax expense. Income from the Fort Dodge settlement was offset by net operating loss carry forwards in Embrex Europe, Ltd. as a jurisdiction analysis indicated that the settlement should be recorded by the Company's European subsidiary. Therefore no tax provision was recorded for the $3.7 million settlement net of legal expenses. Income tax expense increased from 2001 to 2002 due to the use of all of the Company's prior year net operating loss carryforwards during 2001.

## CRITICAL ACCOUNTING POLICIES

The Company's significant accounting policies are described in Note 1 to the consolidated financial statements in this Form 10-K Report, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these consolidated financial statements requires the Company to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. On an on-going basis, the Company evaluates its estimates including but not limited to those related to:

Allowance for uncollectible accounts
Warranty accruals
Inventory obsolescence
Deferred tax assets
Self-insured employee health plan accrual

The Company bases its estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis of making judgments about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

The Company believes the following critical accounting policies are material to the preparation of its consolidated financial statements.

### Allowance for Uncollectible Accounts

To date, the Company has not experienced any material trade accounts receivable collection issues. However, based on a review of cumulative balances, industry experience and the current economic environment, the Company currently reserves from 2% to 4% of trade accounts receivable, depending on the credit terms in various markets, as an allowance for uncollectible accounts. In addition, adjustments due to the financial stability of individual customers will affect the overall percentage reserved. The consolidated balance reserved for uncollectible accounts as of December 31, 2003 was $0.4 million, which represents 5% of the trade accounts receivable balance at December 31, 2003.

### Warranty Accruals

To date, the Company has not experienced any material Device or product warranty issues in excess of amounts reserved. Based on the sale and lease of Devices and sale of products, the Company has established a reserve for future claims. The reserve is based on the estimated damages that a customer would experience if an Inovoject® system or batch of Bursaplex® should fail to perform to product specifications. The consolidated balance reserved for warranties as of December 31, 2003 was $0.3 million.

Inventory Obsolescence

To date, the Company has not experienced any material inventory obsolescence. However, based on a percentage of the current product and Device parts inventory levels, the Company has established a reserve against future Device parts obsolescence due to technological improvements and limited shelf life of product inventories. The percentage used to calculate the reserve is based on a historical percentage rate adjusted for anticipated technological advances on Devices and shelf life of existing biological product inventories. The consolidated balance reserved for product and parts obsolescence as of December 31, 2003 was $0.3 million.

Deferred Tax Assets

The Company records deferred tax assets based upon amounts that are likely to be realized. Based on the Company's recent profitability and belief that 2004 will result in an overall profit, the Company has recorded deferred tax assets of $2.6 million. In the event the Company was to determine that it would be able to realize its deferred tax assets in the future in excess of its net recorded amount, an adjustment to the deferred tax assets would increase income in the period such determination was made. However, in the event the Company was to determine that it would not be able to realize its net recorded deferred tax asset in the future, an adjustment to the deferred tax asset would decrease income in the period such determination was made.

Self-Insured Employee Health Plan Accrual

The Company has established a reserve related to Embrex's self-insured employee health plan. The amount of the reserve is based on management's estimate of future employee health claims. The reserve covers expected short-term claims and is based on historical data adjusted for major events and anticipated changes in headcount or participation. The net balance reserved for the self-insured employee health plan as of December 31, 2003 was $0.3 million.

## EFFECT OF INFLATION

Management expects cost of product sales and Device revenues, operating expenses and capital equipment costs to change in line with periodic inflationary changes in price levels. While management generally believes that the Company will be able to offset the effect of price level changes by adjusting selling/lease prices and effecting operating efficiencies, any material unfavorable changes in price levels could have a material adverse affect on its results of operations.

## LIQUIDITY AND CAPITAL RESOURCES

At December 31, 2003, the Company's cash and cash equivalents balances totaled $9.6 million compared to $8.0 million and $3.9 million at December 31, 2002 and 2001, respectively. The increase from 2002 to 2003 reflects the cash received from financing the building of the Embrex Poultry Health facility and a favorable currency translation adjustment, offset by a $2.1 million decrease in cash provided by operations and an $8.2 million increase in cash used for investing in capital expenditures. The increase in cash and cash equivalents balances from 2001 to 2002 is due to the Company's stock repurchases that were $2.4 million higher in 2001, the 2001 investment in Embrex Iberica, Embrex's subsidiary in Spain, and the financing of Advanced Automation, Inc. for work on the Gender Sort device in 2001, along with a $1.3 million decrease in fixed asset purchases during 2002 as compared with 2001.

During 2003, operating activities generated $9.8 million in cash, primarily due to net income, non-cash depreciation, a change in the deferred tax asset and the difference in accounts receivable. For investing activities, the Embrex Poultry Health facility used $9.8 million, and Device purchases and other capital expenditures required $8.2 million. These were partially offset by the $1.4 million net effect of $0.9 million of investments in patents and goodwill, and the $2.3 million of cash received from the repayment of the Advance Automation loan. See Part 1, Item 1, "Products Under Development—Gender Sorting Device" for more information regarding this loan. Financing activities provided $7.5 million primarily due to the drawdown of $6.3 million from the Company's bank, Branch Banking and Trust Company ("BB&T"), under the construction/term loan described below and borrowings of $1.1 million under the Company's credit facility with BB&T described below. The issuance of common stock for $1.3 million was offset by common stock repurchases of $1.3 million described below.

The Company obtained a $9.0 million construction/term loan from BB&T, in August 2003, to be used for construction and equipping of the Embrex Poultry Health biological manufacturing facility located in Scotland County, North Carolina. At December 31, 2003, $6.3 million of the construction/term loan had been borrowed.

The Company has a $6.0 million secured revolving line of credit with BB&T, which may be used for working capital purposes. The term of this line of credit previously has been extended to April 2004 and the Company anticipates BB&T will renew this credit facility for a renewal term beyond April 2004. The line of credit carries an interest rate of the current LIBOR rate plus 1.65%. At December 31, 2003, the Company had outstanding borrowings of $1.1 million under this credit facility and the weighted average interest rate for these borrowings was 2.1% for 2003.

In October 1998, the Company announced that the Board of Directors authorized a share repurchase program (the "1998 Repurchase Program") to purchase up to 10% of outstanding shares of Common Stock, or up to approximately 830,000 shares over 18 months, in open market or privately negotiated transactions. During the second quarter of 2000, Management was authorized by the Board of Directors to extend the stock repurchase program (the "2000 Repurchase Program"). This extension allowed for the purchase of up to 6% of outstanding shares, or up to approximately 500,000 shares over 18 months in open market or privately negotiated transactions. During 2001, the Company repurchased 201,216 shares of its Common Stock for $3.2 million at an average price of $16.00 per share under the 2000 Repurchase Program, which ended during the fourth quarter of 2001. During the entire term of the 1998 Repurchase Program, the Company repurchased 830,000 shares of its Common Stock for $9.0 million at an average price of $10.80 per share. During the entire term of the 2000 Repurchase Program, the Company repurchased 345,216 shares of its Common Stock for $5.2 million at an average price of $15.08 per share.

In August 2002, the Company announced that the Board of Directors authorized a share repurchase program (the "2002 Repurchase Program") to purchase up to 6% of outstanding shares of Common Stock, or up to approximately 500,000 shares over 17 months, in open market or privately negotiated transactions. In November 2003, the Board of Directors extended the term of the 2002 Repurchase Program to June 30, 2004. During 2003, the Company purchased 147,400 shares of its Common Stock for $1.3 million at an average price of $9.11 per share. The Company has repurchased an aggregate of 213,900 shares of its Common Stock for $2.1 million at an average price of $9.97 per share under the 2002 Repurchase Program through December 31, 2003. See "Notes to Consolidated Financial Statements."

Based on its current operations, management believes that the Company's available cash and cash equivalents, together with cash flow from operations, its term loan for the construction of the Embrex Poultry Health facility and its bank line of credit, will be sufficient to meet its cash requirements as these currently exist, but may continue to explore additional alternative funding opportunities with respect to collaborative ventures and new product development.

## CONTRACTUAL OBLIGATIONS

Embrex's known contractual obligations as of December 31, 2003 are summarized below:

| Contractual Obligations | Payments due by period (thousands of dollars) | | | | |
|---|---|---|---|---|---|
| | Total | Less than 1 year | 1-3 years | 3-5 years | More than 5 years |
| Long-term debt obligations | $9,629 | - | $2,728 | $2,889 | $4,012 |
| Capital lease obligations | 16 | 7 | 9 | - | - |
| Operating lease obligations | 4,286 | 817 | 2,332 | 1,137 | - |
| Purchase obligations | 8,000 | 6,509 | 1,256 | 235 | - |
| Other long-term liabilities reflected on the Company's balance sheet under GAAP | - | - | - | - | - |
| **Total** | $21,931 | $7,333 | $6,325 | $4,261 | $4,012 |

The long-term debt obligation listed in the chart represents the total amount due plus interest under Embrex's construction term loan with BB&T. Although Embrex had borrowed only $6.3 million as of December 31, 2003,

the Company intends to borrow the full amount and will be obligated to repay the debt as shown in the chart. Short-term obligations equaled $1.1 million as of December 31, 2003.

## OFF-BALANCE SHEET ARRANGEMENTS

The Company does not have any off-balance sheet arrangements that may have a current or future material effect on the Company's financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources.

## FORWARD-LOOKING STATEMENTS

Information set forth in this Annual Report on Form 10-K contains various "forward looking statements" within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. These statements represent the Company's judgment concerning the future and are subject to risks and uncertainties that could cause the Company's actual operating results and financial position to differ materially. Such forward looking statements can be identified by the use of forward looking terminology such as "may," "will," "expect," "plan," "intend," "target," "anticipate," "estimate," "believe," or "continue," or the negative thereof or other variations thereof or comparable terminology.

The Company cautions that any such forward-looking statements include statements with respect to future products, services, markets and financial results. These statements involve risks and uncertainties that could cause actual results to differ materially. Risks include without limitation the degree of growth in the poultry industry in the U.S. and globally, competition arising within the United States since the expiration of the Company's USDA patent in June 2002, market acceptance and cost of expansion in new geographic markets and with new products, including the Company's ability to penetrate new markets and the degree of market acceptance of new products, the complete commercial development of potential future products on a cost effective basis and the ability to obtain regulatory approval of products. Such approval is dependent upon a number of factors, such as results of trials, the discretion of regulatory officials, and potential changes in regulations. Additional information on these risks and other factors which could affect the Company's consolidated financial results are included in the Exhibit 99 – Risk Factors filed with this Form 10-K and in the Company's other filings with the Securities and Exchange Commission, including the Company's Forms 10-K, 10-Q and 8-K.

## ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market risk is the risk of potential loss arising from adverse changes in market rates and prices. The Company's primary market risk exposure is in changes in foreign currency exchange rates. Approximately 32%, 31% and 31% of Embrex's revenues for the years ended 2003, 2002, and 2001, respectively, were derived from our operations outside the United States. Our consolidated financial statements are denominated in U.S. dollars and, accordingly, changes in the exchange rates between foreign currencies and the U.S. dollar will affect the translation of our subsidiaries' financial results into U.S. dollars for purposes of reporting our consolidated financial results. During 2003, the British Pound and selected Latin American currencies strengthened against the U.S. dollar compared to the same period during 2002. If average exchange rates during 2003 had remained the same as the average exchange rates for these currencies during the same period of 2002, then the Company's 2003 revenues would have been $45.6 million instead of $46.0 million representing a year-to-year growth rate of 1% as compared to the actual exchange-adjusted growth rate of 2%.

Accumulated currency translation adjustments recorded as a separate component (reduction) of shareholders' equity were $1.0 million at December 31, 2003 as compared with ($0.5) million at December 31, 2002. This $0.5 million change was mainly attributable to the weakening U.S. dollar with respect to most of the currencies in which the Company has an exchange rate risk. Since Embrex Europe is Embrex's largest subsidiary, the exchange rate change between the U.S. dollar and British Pound and the British Pound and the Euro were the primary contributors to the $0.5 million change in currency translation adjustments. To date, the Company has not utilized any derivative financial instruments or other hedging instruments to affect this exposure.

## ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

### REPORT OF INDEPENDENT AUDITORS

The Board of Directors and Shareholders
Embrex, Inc.

We have audited the accompanying consolidated balance sheets of Embrex, Inc. and Subsidiaries as of December 31, 2003 and 2002, and the related consolidated statements of operations, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2003. Our audits also included the financial statement schedule listed in the Index to Embrex's Form 10-K at Item 15(a)(2). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the 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. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Embrex, Inc. and Subsidiaries at December 31, 2003 and 2002, and the consolidated results of their operations and their cash flows for each of the three years in the period ended December 31, 2003, in conformity with accounting principles generally accepted in the United States. 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.

Ernst & Young LLP

Raleigh, North Carolina
February 7, 2004

CONSOLIDATED BALANCE SHEETS

(Dollars in thousands)

| ASSETS | December 31, 2003 | 2002 |
|---|---|---|
| Current Assets | | |
| Cash and cash equivalents | $9,629 | $8,039 |
| Restricted cash (Note 2) | 373 | 255 |
| Accounts receivable – trade (net of allowance of $418 and $247 in 2003 and 2002, respectively) | 7,776 | 6,565 |
| Inventories: | | |
| Materials and supplies | 1,928 | 1,603 |
| Product | 1,406 | 937 |
| Current deferred tax asset (Note 9) | 468 | -0- |
| Other current assets | 1,787 | 1,409 |
| Total Current Assets | 23,367 | 18,808 |
| Land | 147 | 129 |
| Devices under construction | 3,062 | 1,651 |
| Devices | 39,756 | 34,825 |
| Less accumulated depreciation | (29,920) | (27,162) |
| | 9,836 | 7,663 |
| Equipment, furniture and fixtures | 26,205 | 14,942 |
| Less accumulated depreciation and amortization | (7,803) | (5,781) |
| | 18,402 | 9,161 |
| Other Assets: | | |
| Intangible assets (net of accumulated amortization of $410 in 2003 and $275 in 2002) | 2,746 | 2,158 |
| Long-term deferred tax asset (Note 9) | 2,155 | 300 |
| Other long-term assets (Notes 1 and 9) | 2 | 2,143 |
| Total Other Assets | 4,903 | 4,601 |
| TOTAL ASSETS | $59,717 | $42,013 |

| LIABILITIES AND SHAREHOLDERS' EQUITY | | |
|---|---|---|
| Current Liabilities | | |
| Accounts payable | $1,105 | $755 |
| Accrued expenses | 4,507 | 3,742 |
| Deferred revenue | 586 | 39 |
| Product warranty accrual | 288 | 267 |
| Notes payable – current portion | 1,128 | -0- |
| Current portion of capital lease obligations | 7 | -0- |
| Total Current Liabilities | 7,621 | 4,803 |
| Notes Payable, less current portion | 6,350 | -0- |
| Capital Lease Obligations, less current portion | 9 | -0- |
| Long-term debt, less current portion (Note 4) | 45 | 46 |
| Shareholders' Equity (Notes 5, 6 and 7) | | |
| Common Stock, $.01 par value per share authorized 30,000,000 shares issued and outstanding – 8,152,974 net of 1,389,116 treasury shares and 8,162,362 net of 1,241,716 treasury shares at December 31, 2003 and 2002, respectively | 94 | 93 |
| Additional paid-in capital | 63,572 | 61,895 |
| Accumulated other comprehensive loss | (322) | (1,273) |
| Deferred compensation | (369) | -0- |
| Accumulated deficit | (948) | (8,559) |
| Treasury stock | (16,335) | (14,992) |
| Total Shareholders' Equity | 45,692 | 37,164 |
| TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY | $59,717 | $42,013 |

See accompanying notes.

## CONSOLIDATED STATEMENTS OF OPERATIONS

| (In thousands, except per share amounts) | Year ended December 31, | | |
|---|---|---|---|
| | 2003 | 2002 | 2001 |
| REVENUES | | | |
| Device revenues | $43,458 | $40,160 | $39,719 |
| Product sales | 1,970 | 3,079 | 3,379 |
| Other revenues | 597 | 2,086 | 1,562 |
| Total Revenues | 46,025 | 45,325 | 44,660 |
| Cost of Device Revenues and Product Sales | 18,914 | 17,558 | 18,124 |
| Gross Profit | 27,111 | 27,767 | 26,536 |
| OPERATING EXPENSES | | | |
| General and administrative | 7,119 | 6,571 | 7,053 |
| Sales and marketing | 2,832 | 2,536 | 2,628 |
| Research and development | 12,540 | 10,162 | 8,120 |
| Total Operating Expenses | 22,491 | 19,269 | 17,801 |
| Operating Income | 4,620 | 8,498 | 8,735 |
| Other Income (Expense) | | | |
| Interest income | 163 | 225 | 206 |
| Interest expense | (20) | (62) | (21) |
| Other income (expense) | 3,621 | (41) | 21 |
| Total Other Income | 3,764 | 122 | 206 |
| Income Before Tax Expense (Benefit) | 8,384 | 8,620 | 8,941 |
| Income Tax Expense (Benefit) (Note 9) | 773 | 1,449 | 974 |
| Net Income | $7,611 | $7,171 | $7,967 |
| Net Income per share of Common Stock (Note 11) | | | |
| Basic | $0.94 | $0.88 | $1.00 |
| Diluted | $0.91 | $0.82 | $0.92 |
| Number of Shares Used in Per Share Calculation (Note 11) | | | |
| Basic | 8,119 | 8,116 | 8,007 |
| Diluted | 8,369 | 8,692 | 8,644 |

See accompanying notes.

## CONSOLIDATED STATEMENTS OF CASH FLOWS

| (Dollars in thousands) | Year ended December 31, | | |
|---|---|---|---|
| | 2003 | 2002 | 2001 |
| Operating Activities | | | |
| Net income | $7,611 | $7,171 | $7,967 |
| Adjustments to reconcile net income to net cash provided by operating activities: | | | |
| Depreciation and amortization | 5,320 | 4,878 | 4,448 |
| Loss on sale of fixed assets | (6) | 7 | 238 |
| Change in restricted cash | (118) | -0- | -0- |
| Change in deferred tax asset | (1,855) | -0- | -0- |
| Changes in operating assets and liabilities: | | | |
| Accounts receivable, inventories and other current assets | (2,851) | (324) | (1,663) |
| Accounts payable, accrued expenses, deferred revenue and warranty accrual | 1,682 | 121 | 652 |
| NET CASH PROVIDED BY OPERATING ACTIVITIES | 9,783 | 11,853 | 11,642 |
| Investing Activities | | | |
| Land acquisition | (18) | (129) | -0- |
| Purchases of devices, equipment, furniture and fixtures | (18,019) | (5,921) | (7,211) |
| Changes in patents and other non-current assets | 1,434 | (2,353) | (2,159) |
| NET CASH USED IN INVESTING ACTIVITIES | (16,603) | (8,403) | (9,370) |
| Financing Activities | | | |
| Issuance of common stock | 1,310 | 1,966 | 2,234 |
| Issuance of short-term debt | 1,128 | -0- | -0- |
| Issuance of long-term debt and capital lease obligations | 6,364 | 3 | (17) |
| Repurchase of common stock | (1,343) | (790) | (3,219) |
| NET CASH PROVIDED BY (USED IN) FINANCING ACTIVITIES | 7,459 | 1,179 | (1,002) |
| INCREASE IN CASH AND CASH EQUIVALENTS | 639 | 4,629 | 1,270 |
| CURRENCY TRANSLATION ADJUSTMENTS | 951 | (497) | (329) |
| CASH AND CASH EQUIVALENTS AT BEGINNING OF PERIOD | 8,039 | 3,907 | 2,966 |
| CASH AND CASH EQUIVALENTS AT END OF PERIOD | $9,629 | $8,039 | $3,907 |

SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:

Total interest paid was $78, $62 and $21 for the years ended December 31, 2003, 2002, and 2001, respectively.

Total income taxes paid were $1,512, $2,337 and $955 for the years ended December 31, 2003, 2002, and 2001, respectively.

Restricted stock granted in 2003 was expensed during 2003 for $97. No restricted stock was issued in 2002 or 2001.

See accompanying notes.

## CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(Dollars in thousands)

| | Common Stock | Additional Paid-in Capital | Accumulated Other Comprehensive Income (Loss) | Deferred Compensation | Accumulated Deficit | Treasury Stock | Total |
|---|---|---|---|---|---|---|---|
| BALANCE AT DECEMBER 31, 2000 | $88 | $57,700 | ($447) | $0 | ($23,697) | ($10,983) | $22,661 |
| Stock repurchased | | | | | | (3,219) | (3,219) |
| Stock issued: | | | | | | | |
| Upon exercise of options | 2 | 1,640 | | | | | 1,642 |
| Under employee stock purchase plan | | 162 | | | | | 162 |
| Upon exercise of warrants | | 108 | | | | | 108 |
| Employee compensation | | 322 | | | | | 322 |
| Other comprehensive income, net of tax (Note 1): | | | | | | | |
| Currency translation adjustments | | | (329) | | | | (329) |
| Net income | | | | | 7,967 | | 7,967 |
| Comprehensive income | | | | | | | 7,638 |
| BALANCE AT DECEMBER 31, 2001 | $90 | $59,932 | ($776) | $0 | ($15,730) | ($14,202) | $29,314 |
| Stock repurchased | | | | | | (790) | (790) |
| Stock issued: | | | | | | | |
| Upon exercise of options and issuance of bonus stock | 3 | 1,662 | | | | | 1,665 |
| Under employee stock purchase plan | | 301 | | | | | 301 |
| Other comprehensive income, net of tax (Note 1): | | | | | | | |
| Currency translation adjustments | | | (497) | | | | (497) |
| Net income | | | | | 7,171 | | 7,171 |
| Comprehensive income | | | | | | | 6,674 |
| BALANCE AT DECEMBER 31, 2002 | $93 | $61,895 | ($1,273) | $0 | ($8,559) | ($14,992) | $37,164 |
| Stock repurchased | | | | | | (1,343) | (1,343) |
| Stock issued: | | | | | | | |
| Upon exercise of options and issuance of bonus stock | 1 | 308 | | | | | 309 |
| Under employee stock purchase plan | | 238 | | | | | 238 |
| Issuance of restricted stock | | 466 | | (466) | | | -0- |
| Amortization of deferred compensation | | | | 97 | | | 97 |
| Employee compensation | | 631 | | | | | 631 |
| Payment for services | | 34 | | | | | 34 |
| Other comprehensive income, net of tax (Note 1): | | | | | | | |
| Currency translation adjustments | | | 951 | | | | 951 |
| Net income | | | | | 7,611 | | 7,611 |
| Comprehensive income | | | | | | | 8,562 |
| BALANCE AT DECEMBER 31, 2003 | $94 | $63,572 | ($322) | ($369) | ($948) | ($16,335) | $45,692 |

See accompanying notes.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

### 1. SIGNIFICANT ACCOUNTING POLICIES

#### NATURE OF BUSINESS

Embrex, Inc. is an international agricultural biotechnology company specializing in the poultry industry. Embrex is focused on developing patented biological and mechanical products that improve bird health, help reduce production costs and provide other economic benefits to the poultry industry. Embrex has developed and commercialized the Inovoject® system, a proprietary, automated in-the-egg injection system which can inoculate 20,000 to 50,000 eggs per hour and eliminates the need for manual, post-hatch injection of certain vaccines. The Company also markets the Vaccine Saver® option and Egg Remover® system to provide additional automation benefits to the poultry hatchery. In addition, Embrex has developed and is marketing its AAC technology, useful in the development of certain avian vaccines. The Company also has developed and is marketing Bursaplex®, a vaccine based on AAC technology, for protection against avian infectious bursal disease ("IBD").

#### PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include the accounts of Embrex, Inc. and its wholly owned subsidiaries, Embrex Europe Limited, Embrex France s.a.s., Embrex Iberica, Embrex BioTech Trade (Shanghai) Co., Ltd. and Inovoject do Brasil Ltda. (the "Company"). All significant intercompany transactions and accounts have been eliminated. Currently, international operations account for approximately 32% of the Company's revenues.

#### CASH AND CASH EQUIVALENTS

The Company considers all highly liquid investments with a maturity of three months or less when purchased to be cash and cash equivalents.

#### FAIR VALUE OF FINANCIAL INSTRUMENTS

The carrying value of cash and cash equivalents, accounts receivable and current liabilities approximate fair values at December 31, 2003.

#### INVENTORIES

Items recorded as inventory are generally purchased from others and recorded at the lower of cost or market using the average cost method. Materials and supplies inventories include spare parts for the Inovoject® systems as well as laboratory and general supplies. Product inventories are comprised of biological compounds, principally vaccines based on the Company's AAC technology, Bursaplex® and Newplex™.

#### DEVICES

Devices are comprised of egg injection and related equipment, including the Inovoject system®, Vaccine Saver® option and Egg Remover® system, available for lease to customers. The equipment is recorded at the lower of cost or estimated net realizable value. Depreciation is computed principally by using straight-line methods over the estimated useful life of the equipment and commences after construction is complete and the equipment is placed in service.

#### EQUIPMENT, FURNITURE AND FIXTURES

Equipment, furniture and fixtures are recorded at cost. Depreciation is computed principally by using straight-line methods over the estimated useful lives of the assets placed in service, generally three-to-five years. The Company's total depreciation expense for 2003, 2002 and 2001 including Devices and Equipment, Furniture and Fixtures was $5.2 million, $4.7 million and $4.4 million, respectively.

PATENTS AND EXCLUSIVE LICENSES OF PATENTABLE TECHNOLOGY

Costs incurred to acquire exclusive licenses of U.S. patentable technology and to apply for and obtain U.S. patents on internally developed technology are capitalized and amortized using the straight-line method. Exclusive license agreements are amortized over the period of the license. Patents are amortized over the shorter of the useful or legal life of the patent. The Company's total amortization expense of intangible assets for 2003, 2002 and 2001 was $0.1 million for each year.

OTHER LONG-TERM ASSETS

In 2002 other long-term assets included a loan to Advanced Automation, Inc. ("AA"), of Greenville, S.C. In December 2003, the Company acquired the first Gender Sort system developed exclusively for Embrex by AA for $2.3 million, AA repaid its term loan due to Embrex in the same amount, and the related Services Agreement between Embrex and AA to build the first Gender Sort system was terminated. The Company accounted for the purchase of the Gender Sort system as a write down and recorded it as a research and development expense of $2.3 million in Embrex.

FOREIGN CURRENCY TRANSLATION

All assets and liabilities in the balance sheets of the Company's foreign subsidiaries, Embrex Europe Limited, Embrex France s.a.s., Embrex Iberica, Embrex BioTech Trade (Shanghai) Co., Ltd. and Inovoject do Brasil Ltda, are translated at year-end exchange rates except shareholders' equity which is translated at historical rates. Revenues, costs and expenses are recorded at average rates of exchange during the year. Translation gains and losses are accumulated as a component of shareholders' equity. Foreign currency transaction gains and losses are included in determining net income in the other income (expense) line item.

REVENUE RECOGNITION

Device revenues for Devices subject to lease agreements are recognized based on eggs processed during the period in accordance with lease terms. Device and product sales are recognized upon delivery, as that is when title passes to the customer. Contract research revenue is recognized as services are performed or as milestones are met over the term of the contract. Grant revenue is recognized as expenses related to the specific grants are incurred. Revenue received, but not yet earned, is classified as deferred revenue.

OTHER REVENUES

Other revenues include income derived from contract research, grants from federal agencies, miscellaneous but minor product sales and other miscellaneous sources.

RESEARCH AND DEVELOPMENT COSTS

Research and development costs, including costs incurred to complete contract research, are charged to operations when incurred and are included in operating expenses.

INCOME TAXES

The Company accounts for income taxes under the provisions of Statement of Financial Accounting Standards No. 109, "Accounting for Income Taxes" (SFAS 109). SFAS 109 requires recognition of deferred tax assets and liabilities for the expected future tax consequences of temporary basis differences that have arisen between financial statement and income tax reporting.

COST OF REVENUE

Cost of revenue include costs associated with servicing the Company's Inovoject® systems and other Devices around the world. These costs include replacement parts, labor, travel, depreciation, property taxes and related shipping costs. Cost of revenue also include the costs associated with selling Bursaplex® and Devices.

## ADVERTISING EXPENSES

Advertising expenses include costs associated with creating and printing marketing materials along with the cost of trade shows and other marketing materials needed for these events. The Company has incurred $0.2 million for these activities for each of the years ended December 31, 2003, 2002 and 2001, respectively.

## NET INCOME PER SHARE

Basic net income per share was determined by dividing net income available for common shareholders by the weighted average number of common shares outstanding during each year. Diluted net income per share reflects the potential dilution that could occur assuming conversion or exercise of all convertible securities and issued and unexercised stock options. A reconciliation of the net income available for common shareholders and number of shares used in computing basic and diluted net income per share is set forth in Note 11.

## USE OF ESTIMATES

The presentation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Actual results could differ from these estimates.

## PRINCIPAL CUSTOMERS

Tyson Foods, Inc. ("Tyson") accounted for approximately 20%, 19% and 20% of consolidated 2003, 2002 and 2001 revenues, respectively. Pilgrim's Pride accounted for approximately 12%, 4% and 4% of consolidated 2003, 2002 and 2001 revenues, respectively. Pilgrim's Pride increase in percentage of consolidated revenues from 2002 to 2003 is primarily due to its purchase of ConAgra's poultry operations in 2003. In 2003, Tyson and Pilgrim's Pride were the only customers that represented greater than 10% of total revenues.

## CONCENTRATION OF CREDIT RISK

The Company's principal financial instrument, subject to potential concentration of credit risk, is accounts receivables, which are unsecured. As of December 31, 2003, Tyson Foods, Inc. accounted for approximately 11% of consolidated accounts receivable. Substantially all of the Company's accounts receivables are due from companies in the poultry industry.

## SOURCES OF SUPPLY

*General*

Embrex currently outsources the production of all of its mechanical and biological products, with the exception of the Vaccine Saver® device, and expects to continue to do so for the foreseeable future. The Company believes that alternative sources of manufacture and supply generally exist. The Company expects to produce its Inovocox™ vaccine in-house at the Embrex Poultry Health manufacturing facility in 2004 for USDA registration field trials. The Company signed a purchase commitment in January 2004 that will require the Company to purchase minimum amounts of antigen over the three year term of the contract.

*Inovoject® System, Vaccine Saver® Option and Egg Remover®.*

Embrex's in-house engineering staff designs the Inovoject® system, Vaccine Saver® option and Egg Remover® system, which incorporate proprietary mechanical, pneumatic and electronic sub-systems and concepts. The Company uses one contract manufacturer, Precision Automation Company, Inc., to fabricate its Inovoject® systems and Egg Removers®. While other machine fabricators exist and have constructed limited numbers of these devices, a change in fabricators could cause a delay in manufacturing and a possible delay in the timing of future Inovoject® system and Egg Remover® installations and revenues from those installations. The Vaccine Saver® option is assembled in the manufacturing area at the Company's corporate headquarters and the components are sourced from multiple vendors.

*AAC (Antigen-Antibody Complex) Vaccines*

Since 1993, Charles River Laboratories, Inc., through its SPAFAS Avian Products Services Division ("SPAFAS", formerly SPAFAS, Inc.), has supplied Embrex with the bursal disease antibody ("BDA") component for Bursaplex® vaccine. In January 2004, Embrex signed a new agreement with SPAFAS under which SPAFAS will continue to supply the Company's requirements for BDA for approximately three years. In connection with this agreement, Embrex is required to purchase minimum annual supplies of BDA. The regulatory approval granted by the USDA for Bursaplex® vaccine in 1997 specifically covers vaccines produced with SPAFAS-manufactured BDA. Additional agreements covering the Company's needs for Newcastle disease antibody ("NDA") for the Company's Newplex™ vaccine for the next four years are in negotiation with SPAFAS and are expected to be finalized in the first half of 2004.

The Company has granted Merial Select, Inc. ("Select") (a Merck and Aventis company) exclusive rights to manufacture, in the United States, an IBD vaccine containing Embrex's AAC technology, known as Bursaplex®, for Embrex to market in North America, Latin America and Asia. Abic Ltd. has been granted similar rights to manufacture and market an IBD vaccine, known as GuMBryo™, in Israel. The Company has granted Lohmann Animal Health International (LAHI) exclusive rights to manufacture, in the United States, a Newcastle vaccine containing Embrex's AAC technology, known as Newplex™, for Embrex to market in North America, Latin America and Asia. The manufacture of the IBD vaccines produced by Select and Abic, Newcastle vaccine produced by LAHI, and AAC produced by SPAFAS, generally must be performed in licensed facilities or under approved regulatory methods. Although there are other manufacturers who are capable of manufacturing IBD and Newcastle products and AAC, a change of supplier for the Company could adversely affect Embrex's future operating results due to the time it would take a new supplier to obtain regulatory approval of its production process or manufacturing facilities. The Company seeks to minimize this exposure through multi-year supply agreements and the maintenance of adequate inventories.

## COMPREHENSIVE INCOME

In accordance with the Financial Accounting Standards Board ("FASB") Statement No. 130, Reporting Comprehensive Income, the Company has determined total comprehensive income, net of tax, to be $8.6 million, $6.7 million and $7.6 million for the years ended December 31, 2003, 2002, and 2001, respectively. Embrex's total comprehensive income represents net income plus the after-tax effect of foreign currency translation adjustments for the years presented.

| (in thousands) | 2003 | 2002 | 2001 |
|---|---|---|---|
| Net Income | $7,611 | $7,171 | $7,967 |
| Currency translation adjustment | 951 | (497) | (329) |
| Comprehensive income | $8,562 | $6,674 | $7,638 |

## SEGMENTS

The Company operates in a single segment. The table below presents the Company's operations by geographic area:

| (in thousands) | 2003 | 2002 | 2001 |
|---|---|---|---|
| Net Revenue: | | | |
| United States | $31,292 | $31,217 | $30,959 |
| International | 14,733 | 14,108 | 13,701 |
| Total Assets: | | | |
| United States | $48,770 | $31,570 | $23,230 |
| International | 10,947 | 10,443 | 10,828 |

STOCK BASED COMPENSATION

The Company's stock plans (the "Plans") are designed to provide incentives to eligible employees, officers, and directors in the form of stock, incentive stock options, and non-qualified stock options. The Company accounts for the Plans under the recognition and measurement principles of Accounting Principles Board Option No. 25, "Accounting for Stock Issued to Employees" ("APB 25") and related Interpretations. No stock-based employee compensation cost is reflected in net income under current plans, as all options granted under the Plans had an exercise price equal to the market value of the underlying common stock on the date of grant. However, net income does reflect the cost of restricted stock awards granted in 2003 and unrestricted stock awards in 2002 and 2001. The following table illustrates the effect on net income and earnings per share if the Company had applied the fair value recognition provisions of FASB Statement No. 123, "Accounting for Stock-Based Compensation" ("SFAS 123") (in thousands, except per share amounts):

| | Year Ended December 31 | | |
|---|---|---|---|
| | 2003 | 2002 | 2001 |
| Net income, as reported | $7,611 | $7,171 | $7,967 |
| Add: Non-cash stock-based compensation included in net income | 97 | 227 | 322 |
| Deduct: Total stock-based compensation expense determined under fair value based method for all awards, net of related tax effects | (1,512) | (1,969) | (2,077) |
| Pro forma net income | $6,196 | $5,429 | $6,212 |
| Earnings per share: | | | |
| Basic—as reported | $0.94 | $0.88 | $1.00 |
| Basic—pro forma | $0.76 | $0.67 | $0.78 |
| Diluted—as reported | $0.91 | $0.82 | $0.92 |
| Diluted—pro forma | $0.74 | $0.62 | $0.72 |

The Company computes fair value for purposes of SFAS 123 using the Black-Scholes option pricing model. The weighted-average assumptions used in this model to estimate fair value and resulting values are as follows:

| | Stock Option Plans | | | ESPP | | |
|---|---|---|---|---|---|---|
| | 2003 | 2002 | 2001 | 2003 | 2002 | 2001 |
| Expected dividend yield | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Risk-free interest rate | 2.5% | 3.9% | 5.0% | 1.3% | 1.9% | 3.6% |
| Expected volatility | 57.0% | 50.0% | 42.0% | 57.0% | 50.0% | 42.0% |
| Expected life (in years) | 5.2 | 4.0 | 4.0 | 0.9 | 0.5 | 0.5 |
| Weighted-average fair value per share | $4.91 | $7.60 | $6.16 | $4.95 | $5.55 | $4.28 |

The Black-Scholes option valuation model was developed for use in estimating the fair value of traded options, which have no vesting restrictions and are fully transferable. In addition, option valuation models require the input of highly subjective assumptions including the expected stock price volatility. Because changes in the subjective input assumptions can materially affect the fair value estimate, in management's opinion, the existing models do not necessarily provide a reliable single measure of the fair value of the awards granted under the Plans.

IMPACT OF RECENTLY ISSUED ACCOUNTING STANDARDS

In January 2003, the FASB issued FASB Interpretation No. 46, "Consolidation of Variable Interest Entities, an Interpretation of ARB No. 51" ("FIN 46"), which requires a new approach in determining if a reporting entity should consolidate certain legal entities, including partnerships, limited liability companies, or trusts, among others, collectively defined as variable interest entities, or VIE's. A legal entity is considered a VIE if it does not have sufficient equity at risk to finance its own activities without relying on financial support from other parties. If the legal entity is a VIE, then the reporting entity that is the primary beneficiary must consolidate it. Even if a reporting entity is not obligated to consolidate a VIE, then certain disclosures must be made about the VIE if the reporting entity has a significant variable interest. Certain transition disclosures are required for all financial statements issued after January 31, 2003. The on-going disclosure and consolidation requirements are effective for all interim financial periods beginning after March 31, 2004. The Company completed its evaluation and has not identified any VIE's. Therefore, the adoption of FIN 46 did not impact our results of operations or financial position.

In April 2003, the FASB issued SFAS No. 149, "Amendment of Statement 133 on Derivative Instruments and Hedging Activities" ("SFAS 149"). SFAS 149 amends and clarifies financial accounting and reporting for derivative instruments, including certain derivative instruments embedded in other contracts (collectively referred to as derivatives) and for hedging activities under FASB Statement No. 133, "Accounting for Derivative Instruments and Hedging Activities." The standard becomes effective for us, generally, for contracts entered into or modified after June 30, 2003. The adoption of SFAS 149 had no impact on our results of operations or financial position.

2. RESTRICTED CASH

On October 13, 1997, the Company executed a ten-year collateralized lease relative to the facilities housing the Company's research facility. Such collateral exists in the form of a $0.2 million certificate of deposit, which is required to be maintained at least through the end of the seventh year of the lease. The Company also maintains deposits of restricted cash for VAT import duties, a company credit card, and letters of credit for importation of machines into Peru (which expires in April 2004).

3. LEASES

At December 31, 2003, the Company had approximately $16,000 of assets financed by capital lease agreements. The Company had no assets financed by capital lease agreements at December 31, 2002.

The Company leases its facilities under a number of operating leases extending through November 2007. The Company has the option to cancel one of its operating lease agreements with the payment of a $0.2 million penalty. Total rent expense was $0.9 million, $0.9 million and $1.0 million for the years ended December 31, 2003, 2002, and 2001, respectively. The lease on the Company's corporate headquarters has an initial six-year term expiring in 2005 with annual rent increases of approximately 3% and an additional six-year optional renewal term with annual rent increases of approximately 4%. In addition, the lease at Embrex's research facility is a 10-year term expiring in November 2007, with a five-year renewal option and annual increases of approximately 3% through the first 10 years and approximately 4% during the five-year renewal term.

At December 31, 2003 the Company's minimum future commitments under operating leases were as follows:

| | Operating Leases |
|---|---|
| 2004 | $817,000 |
| 2005 | 802,000 |
| 2006 | 771,000 |
| 2007 | 759,000 |
| Thereafter | 1,137,000 |
| Total | $4,286,000 |

## 4. DEBT

The Company obtained a $9.0 million construction/term loan from its bank, Branch Banking and Trust Company ("BB&T"), in August 2003, to be used for construction and equipping of the Embrex Poultry Health biological manufacturing facility located in Scotland County, North Carolina. The interest rate of the loan is based on the one-month LIBOR rate plus 1.65% with the option of entering into a swap agreement for a 10-year fixed interest rate of 6.4% effective 18 months after the closing date of the loan. The loan has a term of 138 months or 11.5 years with payments of interest only for the first 18 months. Principal repayment on the loan begins at the end of the interest only period over the remaining term of the loan in equal monthly installments of principal plus interest. At December 31, 2003, $6.3 million of the construction/term loan had been borrowed.

The Company has a $6.0 million secured revolving line of credit with BB&T, which may be used for working capital purposes. The term of this line of credit has been extended and will now expire in April 2004. The Company intends to renew this line of credit for another twelve months upon expiration. At December 31, 2003 the Company had outstanding borrowings of $1.1 million under this short-term line of credit.

## 5. SHAREHOLDERS' EQUITY

At December 31, 2003, the Company had reserved a total of 2,813,187 shares of its Common Stock for future issuance as follows:

| | |
|---|---|
| For exercise of Common Stock options and for possible awards of Common Stock to employees and others | 2,483,590 |
| For possible future issuance to employees and others under employee stock purchase plans | 329,597 |
| Total reserved | 2,813,187 |

At December 31, 2003, the Company had no issued and outstanding warrants to purchase Common Stock.

In October 1998, the Company announced that the Board of Directors authorized a share repurchase program (the "1998 Repurchase Program") to purchase up to 10% of outstanding shares of Common Stock, or up to approximately 830,000 shares over 18 months, in open market or privately negotiated transactions. During the second quarter of 2000, Management was authorized by the Board of Directors to extend the stock repurchase program (the "2000 Repurchase Program"). This extension allowed for the purchase up to 6% of outstanding shares, or up to approximately 500,000 shares over 18 months in open market or privately negotiated transactions. During 2001, the Company repurchased 201,216 shares of its Common Stock for $3.2 million at an average price of $16.00 per share under the 2000 Repurchase Program, which ended during the fourth quarter of 2001. During the entire term of the 1998 Repurchase Program, the Company repurchased 830,000 shares of its Common Stock for $9.0 million at an average price of $10.80 per share. During the entire term of the 2000 Repurchase Program, the Company repurchased 345,216 shares of its Common Stock for $5.2 million at an average price of $15.08 per share.

In August 2002, the Company announced that the Board of Directors authorized a share repurchase program (the "2002 Repurchase Program") to purchase up to 6% of outstanding shares of Common Stock, or up to approximately 500,000 shares over 17 months, in open market or privately negotiated transactions. In November 2003, the Board of Directors extended the term of the 2002 Repurchase Program to June 30, 2004. During 2002, the Company purchased 66,500 shares of its Common Stock for $0.8 million at an average price of $11.88 per share. During 2003, the Company purchased 147,400 shares of its Common Stock for $1.3 million at an average price of $9.11 per share. The total purchases for the 2002 Repurchase Program as of December 31, 2003 are 213,900 shares of Common Stock for $2.1 million at an average price of $9.97 per share.

The Company has purchased a total of 1,389,116 shares for $ 16.3 million at an average price of $11.74 per share under all repurchase programs to date.

## 6. STOCK OPTION PLANS

The Company's Plans are designed to provide incentives to eligible employees, officers, and directors in the form of stock, incentive stock options, and non-qualified stock options. As of December 31, 2003, a total of 2,483,590 shares of Common Stock have been reserved for issuance under the Plans. Of this amount, 789,289 shares are available for future stock-based awards.

During the years ended December 31, 2003, 2002, and 2001, 51,500, 12,629, and 20,629 shares of Common Stock, respectively, were issued as stock awards to certain employees of the Company. The stock awards issued during the year ended December 31, 2003 were subject to a four-year vesting schedule. Previous stock awards were fully vested on the date of grant as they were granted in lieu of a cash bonus. The compensation expense recognized in connection with stock awards were $96,992, $227,196, and $322,328 for the years ended December 31, 2003, 2002, and 2001, respectively. As of December 31, 2003, the amount of unamortized compensation expense related to stock awards was $368,568.

Stock options generally vest and become exercisable over a four-year period and expire ten years from the date of grant. In general, the exercise price of stock options is the closing price of the Company's Common Stock on the date of grant.

Stock option activity with respect to all of the Plans follows:

| | Options Outstanding | Weighted-Average Exercise Price |
|---|---|---|
| Balance at December 31, 2000 | 1,371,670 | $ 7.15 |
| Granted | 399,058 | 15.61 |
| Exercised | (277,027) | 6.38 |
| Canceled | (15,947) | 10.13 |
| Balance at December 31, 2001 | 1,477,754 | $ 9.40 |
| Granted | 365,471 | 17.94 |
| Exercised | (182,583) | 7.81 |
| Canceled | (65,883) | 14.77 |
| Balance at December 31, 2002 | 1,594,759 | $ 11.31 |
| Granted | 209,735 | 9.69 |
| Exercised | (52,845) | 5.85 |
| Canceled | (57,348) | 14.33 |
| Balance at December 31, 2003 | 1,694,301 | $ 11.21 |

Selected information regarding stock options as of December 31, 2003 follows:

| | Options Outstanding | | | Options Currently Exercisable | |
|---|---|---|---|---|---|
| Exercise Price | Number Outstanding | Weighted-Average Remaining Contractual Life (yrs.) | Weighted Average Exercise Price | Number Exercisable | Weighted Average Exercise Price |
| $ 4.84 – $ 5.88 | 281,631 | 4.6 | $ 5.21 | 281,631 | $ 5.21 |
| $ 6.13 – $ 7.63 | 311,174 | 2.5 | $ 6.54 | 311,174 | $ 6.54 |
| $ 9.45 – $13.75 | 457,049 | 7.5 | $10.20 | 212,095 | $10.50 |
| $14.56 – $16.00 | 317,297 | 7.2 | $15.61 | 177,658 | $15.60 |
| $16.56 – $17.99 | 327,150 | 8.1 | $17.97 | 109,120 | $17.96 |
| | 1,694,301 | 6.1 | $11.21 | 1,091,678 | $ 9.58 |

## 7. EMPLOYEE STOCK PURCHASE PLAN

The Company maintains an Employee Stock Purchase Plan for its U.S.-based employees (the "U.S. Purchase Plan") and a similar plan for some of its employees outside the U.S. (the "Non-U.S. Purchase Plan", and together with the U.S. Purchase Plan, the "Purchase Plans") to provide an additional opportunity for the Company's employees to share in the ownership of the Company. Under terms of both plans, all regular full-time employees of the Company (or the Company's subsidiaries) may make voluntary payroll contributions thereby enabling them to purchase Common Stock. Contributions are limited to 20% of an employee's compensation. As of December 31, 2003, the maximum number of shares that may be issued under both Purchase Plans together shall not exceed 500,000. Of this amount, 329,597 shares are available for future purchases. The purchase price of the stock is the lesser of 85% of the Fair Market Value on the first business day of the plan year, which runs from July 1st in one year to June 30th in the succeeding year, or 85% of the Fair Market Value on the date of exercise, which can occur at any time during the plan year, as determined by each participating employee.

Under the Purchase Plans, during 2003, 2002, and 2001, 31,007, 22,739 and 23,418 shares of Common Stock, respectively, were purchased.

## 8. 401(k) RETIREMENT SAVINGS PLAN

The Company has a 401(k) plan which is available to all U.S. based employees upon employment who are at least 18 years of age. Employer contributions are voluntary at the discretion of the Company. The Company does not match any employee contributions with stock.

Company contributions amounted to $355,406, $321,791 and $274,361 for the years ended December 31, 2003, 2002, and 2001, respectively.

## 9. INCOME TAXES

The Company's operations separated by those subject to foreign and United States tax jurisdictions for years ended December 31, 2003, 2002 and 2001 are listed as follows:

| | 2003 | 2002 | 2001 |
|---|---|---|---|
| Total income before taxes for operations subject to foreign tax jurisdictions: | $4,902 | $1,252 | $ 883 |
| Total income before taxes for operations subject to United States tax jurisdiction: | 3,482 | 7,368 | 8,058 |
| Income before taxes | $8,384 | $8,620 | $8,941 |

The components of income tax expense for the years ended December 31 are as follows:

| | 2003 | 2002 | 2001 |
|---|---|---|---|
| Current: | | | |
| Federal | $2,297,000 | $702,000 | $601,000 |
| State | 251,000 | 335,000 | 90,000 |
| Foreign | 548,000 | 712,000 | 283,000 |
| Total Current | 3,096,000 | 1,749,000 | 974,000 |
| Deferred | (2,323,000) | (300,000) | -0- |
| Total | $773,000 | $1,449,000 | $974,000 |

The Company's consolidated effective tax rate differed from the statutory rate as set forth below for the years ended December 31:

| | 2003 | 2002 | 2001 |
|---|---|---|---|
| Federal taxes at statutory rate | $2,850,000 | $2,930,000 | $3,047,000 |
| State and local income taxes, net of Federal benefit | 222,000 | 489,000 | 448,000 |
| Non-deductible expenses and credits | (363,000) | (226,000) | 199,000 |
| Foreign losses for which no benefit has been recognized/foreign earnings offset by foreign net operating losses | (809,000) | 372,000 | 156,000 |
| Change in valuation allowance | (1,675,000) | (2,828,000) | (3,159,000) |
| Alternative minimum and foreign withholding taxes | 548,000 | 712,000 | 283,000 |
| | $773,000 | $1,449,000 | $974,000 |

Deferred income taxes reflect the net effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. The tax effects of temporary differences and carryforwards that give rise to deferred tax assets and liabilities consist of the following:

| | At December 31, | |
|---|---|---|
| | 2003 | 2002 |
| Deferred tax assets: | | |
| Book under tax depreciation and amortization | ($1,239,000) | ($1,365,000) |
| Research and experimental tax credit carryforwards | 3,354,000 | 3,036,000 |
| Accrued liabilities and reserves | 467,000 | 269,000 |
| Alternative Minimum Tax credit carryforward | 329,000 | 323,000 |
| Total deferred tax assets | $2,911,000 | $2,263,000 |
| Valuation allowance for deferred tax assets | (288,000) | (1,963,000) |
| Net deferred tax assets | $2,623,000 | $300,000 |

During 2003, 2002 and 2001, the valuation allowance decreased by $1,675,000, $2,828,000 and $3,159,000, respectively.

In addition, the Company has research and experimental tax credit carryforwards totaling approximately $3.4 million, which are available to offset future federal income taxes. These credits expire during the years 2004 through 2017.

## 10. COMMITMENTS AND CONTINGENCIES

The Company is engaged in certain legal and administrative proceedings incidental to its normal business activities. While it is not possible to determine the ultimate outcome of those actions, in the opinion of management after discussion with legal counsel, it is unlikely that the outcome of such litigation and other proceedings will have a material adverse effect on the results of the Company's operations or its financial position.

The Company operates in multiple tax jurisdictions and significant judgment is required in determining its worldwide provision for income taxes. In the ordinary course of a global business, there are many transactions for which the ultimate tax outcome is uncertain. Although the Company believes its approach to determining its various tax provisions is reasonable, no assurance can be given that the final outcome will not be materially different than that which is reflected in the Company's historical income tax provision and accruals upon review by taxing authorities.

## 11. NET INCOME PER SHARE

The following table sets forth the computation of basic and diluted net income per share (in thousands, except per share amounts):

| | 2003 | 2002 | 2001 |
|---|---|---|---|
| Numerator: | | | |
| Net income available to Common Stockholders | $7,611 | $7,171 | $7,967 |
| Effect of dilutive securities: | | | |
| Numerator for diluted earnings per share-income available to common stockholders after assumed conversions | $7,611 | $7,171 | $7,967 |
| Denominator: | | | |
| Denominator for basic net income per share—weighted -average | 8,119 | 8,116 | 8,007 |
| Effect of Dilutive Securities: | | | |
| Employee Stock Options | 245 | 576 | 636 |
| Restricted Stock Grants | 5 | -0- | -0- |
| Warrants | -0- | -0- | 1 |
| Dilutive Potential Shares | 250 | 576 | 637 |
| Denominator for diluted net income per share—adjusted weighted-average shares and assumed conversions | 8,369 | 8,692 | 8,644 |
| Basic net income per share | $0.94 | $0.88 | $1.00 |
| Diluted net income per share | $0.91 | $0.82 | $0.92 |

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

Not applicable.

## ITEM 9A. CONTROLS AND PROCEDURES

An evaluation was carried out under the supervision and with the participation of the Company's management, including its Chief Executive Officer and Vice President, Finance and Administration, of the effectiveness of the design and operation of the Registrant's disclosure controls and procedures (as defined in Rule 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Based upon that evaluation, the Chief Executive Officer and Vice President, Finance and Administration (the Company's principal financial officer) believe, as of the end of the period covered by this report, the Company's disclosure controls and procedures provide reasonable assurances that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms.

Other than arising from the review described below, there have been no changes in internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the period covered by this report that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting. The Company continues to review and evaluate its internal controls, including in its international offices, as part of a review process established in late 2001. In certain of the Company's smaller offices, it is impracticable to maintain a number of personnel to establish separation of responsibilities for review and approval of transactions or other accounting or control functions. In order to address this, the Company has established greater supervision of these functions by personnel in the corporate office and utilizes an internal audit program with respect to these offices. The Company may take further actions as it deems desirable based on its continuing reviews, evaluations and projects to comply with Sarbanes-Oxley internal control procedures during 2004.

# PART III

## ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

Information on the Company's executive officers and directors is incorporated by reference from the Company's Proxy Statement with respect to the Annual Meeting of Shareholders to be held on May 20, 2004 to be filed with the Securities and Exchange Commission.

Embrex has adopted a code of ethics applicable to its directors, officers (including its principal executive officer, principal financial officer, and principal accounting officer or controller, or persons performing similar functions) and employees. The Company will provide a copy of its code of ethics to any person, without charge. All such requests should be in writing and sent to the attention of Don T. Seaquist, Vice President Finance and Administration and Corporate Secretary, Embrex, Inc., Post Office Box 13989, Research Triangle Park, North Carolina 27709. The Company may also in its discretion make its code of ethics available on the Company's Internet website, www.embrex.com. The Company intends to post on its Internet website any amendments to, or waivers from, its code of ethics that apply to its principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, promptly following any such amendment or waiver.

## ITEM 11. EXECUTIVE COMPENSATION

This information is incorporated by reference from the Company's Proxy Statement with respect to the Annual Meeting of Shareholders to be held on May 20, 2004, to be filed with the Securities and Exchange Commission.

## ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

### EQUITY COMPENSATION PLAN INFORMATION

The following table sets forth information as of December 31, 2003 with respect to compensation plans under which equity securities of the Company are authorized for issuance.

| Plan Category | Number of securities to be issued upon exercise of outstanding options, warrants and rights | Weighted average exercise price of outstanding options, warrants and rights | Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in the first column(1)) |
|---|---|---|---|
| Equity compensation plans approved by security holders | 1,694,301 | $ 11.21 | 1,118,886 |
| Equity compensation plans not approved by security holders | -0- | Not Applicable | -0- |
| Total | 1,694,301 | $ 11.21 | 1,118,886 |

(1) The Company's stock plans (the "Stock Plans") are designed to provide incentives to eligible employees, officers, and directors through grants in the form of stock, incentive stock options, and non-qualified stock options. The Company maintains an Employee Stock Purchase Plan for its U.S.-based employees (the "U.S. Purchase Plan") and a similar plan for some of its employees outside the U.S. (the "Non-U.S. Purchase Plan", and together with the U.S. Purchase Plan, the "Purchase Plans") to provide an additional opportunity for the Company's employees to share in the ownership of the Company. As of December 31, 2003, 789,289 shares of Common Stock remain available for future issuance under the Stock Plans and 329,597 shares of Common Stock remain available for grant under the Purchase Plans.

The remainder of the information required to be included under this Item 12 is incorporated by reference from the Company's Proxy Statement with respect to the Annual Meeting of Shareholders to be held on May 20, 2004, to be filed with the Securities and Exchange Commission.

## ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Not applicable.

## ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

This information is incorporated by reference from the Company's Proxy Statement with respect to the Annual Meeting of Shareholders to be held on May 20, 2004, to be filed with the Securities and Exchange Commission.

## PART IV

## ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES, AND REPORTS ON FORM 8-K

(a)(1). The consolidated financial statements listed below are included in Item 8 of this report.

Report of Independent Auditors

Consolidated Financial Statements

Consolidated Balance Sheets at December 31, 2003 and 2002

Consolidated Statements of Operations for each of the three years ended December 31, 2003, 2002, and 2001

Consolidated Statements of Cash Flows for each of the three years ended December 31, 2003, 2002, and 2001

Consolidated Statements of Shareholders' Equity for each of the three years ended December 31, 2003, 2002, and 2001

Notes to Consolidated Financial Statements

(a)(2). Financial Statement Schedule

Schedule II – Valuation and Qualifying Accounts (appears following Signatures in this report)

(a)(3) The exhibits listed below are filed as part of this report. Executive compensation plans and arrangements are listed in Exhibits 10.12 through 10.46.

| Exhibit Number | Description |
|---|---|
| 3.1(1) | Restated Articles of Incorporation |
| 3.2(2) | Articles of Amendment to Restated Articles of Incorporation, effective March 21, 1996 |
| 3.3(3) | Articles of Amendment to Restated Articles of Incorporation, effective May 28, 1996 |
| 3.4(4) | Amended and Restated Bylaws, effective September 21, 2000 |
| 4.1 | Reference is made to Exhibits 3.1, 3.2, 3.3 and 3.4 |
| 4.2(5) | Specimen of Common Stock Certificate |
| 4.3(6) | Rights Agreement dated as of March 21, 1996 between Embrex and Branch Banking and Trust Company, as Rights Agent |
| 4.4(7) | Amendment to Rights Agreement dated as of January 6, 2003 between Embrex and Branch Banking and Trust Company, as Rights Agent |
| 10.1(8) | License Agreement dated December 11, 1991, between Embrex and the National Technical Information Service, a Primary operating unit of the United States Department of Commerce |
| 10.2(8) | Collaborative Research Agreement dated January 17, 1989 between Embrex and the University of Arkansas |
| 10.3(8) | License Agreement dated October 1, 1998 between Embrex and the National Technical Information Service, a Primary operating unit of the United States Department of Commerce |
| 10.4(8) | Lease Agreement dated December 9, 1986 between Embrex, as tenant, and Imperial Center Partnership and Petula Associates, Ltd., as landlord, as amended by First Amendment dated June 11, 1987, Second Amendment dated December 1, 1988, and Third Amendment dated May 2, 1989 |
| 10.5(5) | Fourth Amendment of Lease dated October 1, 1994 between the Company and Glaxo Inc. (as successor in interest to Imperial Center Partnership and Petula Associates, Ltd.) |

| | |
|---|---|
| 10.6(5) | Fifth Amendment of Lease dated December 13, 1996 between the Company and Glaxo Wellcome Inc. (as successor in interest to Glaxo Inc.) |
| 10.7(9) | Lease for Royal Center II dated October 13, 1997 between the Company and Petula Associates, Ltd. |
| 10.8(10) | Sublease Agreement dated October 1, 1999, between Embrex, as subtenant, and Wandel & Goltermann Technologies, Inc., as sublandlord |
| 10.9(10) | First Amendment to Sublease Agreement dated February 29, 2000, among Wandel & Goltermann Technologies, Inc., Embrex and W & G Associates |
| 10.10(8) | Unrestricted Grant Agreement dated November 1, 1986, between Embrex and North Carolina State University, as Amended by Amendment dated May 3, 1989, Amendment dated September 15, 1989, and Amendment dated April 22, 1991 |
| 10.11(8) | Basic Research Agreement dated October 24, 1989, between Embrex and University of Arkansas, as amended on October 23, 1990, February 1, 1991 and July 22, 1991 |
| 10.12(8) | 1988 Incentive Stock Option Plan and form of Incentive Stock Option Agreement |
| 10.13(8) | 1991 Nonstatutory Stock Option Plan and form of Nonstatutory Stock Option Agreement |
| 10.14(11) | Incentive Stock Option and Nonstatutory Stock Option Plan and forms of Stock Option Agreements – June 1993 |
| 10.15(3) | Amendment dated May 16, 1996 to Incentive Stock Option and Nonstatutory Stock Option Plan – June 1993 |
| 10.16(12) | Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan – May 1998 |
| 10.17(13) | Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan – January 1999 and form of Stock Option Agreement |
| 10.18(14) | Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan – July 2000 |
| 10.19(15) | Amendment dated May 16, 2002 to Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan – July 2000 |
| 10.20(15) | Amendment dated July 18, 2002 to Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan – July 2000 |
| 10.21(22) | Form of Restricted Stock Agreement under Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan of the Company |
| 10.22(22) | Form of Stock Option Agreement under Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan of the Company |
| 10.23(5) | Amended and Restated Employee Stock Purchase Plan – November 1996 |
| 10.24(14) | Amended and Restated Employee Stock Purchase Plan – July 2000 |
| 10.25(15) | Amendment dated July 18, 2002 to Amended and Restated Employee Stock Purchase Plan – July 2000 |
| 10.26(23) | Amendment dated May 15, 2003 to Amended and Restated Employee Stock Purchase Plan |
| 10.27(14) | Amended and Restated Employee Stock Purchase Plan for Non-U.S. Employees – July 2000 |
| 10.28(23) | Amendment dated February 6, 2003 to Amended and Restated Non-U.S. Employee Stock Purchase Plan |
| 10.29(23) | Amendment dated May 15, 2003 to Amended and Restated Non-U.S. Employee Stock Purchase Plan |
| 10.30(8) | Employment Agreement dated November 15, 1989, between Embrex and Randall L. Marcuson |
| 10.31(5) | Amendment to Employment Agreement dated May 21, 1996 between Embrex and Randall L. Marcuson |
| 10.32(5) | Change In Control Severance Agreement dated May 21, 1996 between Embrex and Randall L. Marcuson |
| 10.33(16) | Amendment to Change in Control Severance Agreement dated October 1, 1998 between Embrex and Randall L. Marcuson |
| 10.34(8) | Employment Agreement dated October 16, 1989, between Embrex and Catherine A. Ricks |

| | |
|---|---|
| 10.35(5) | Change In Control Severance Agreement dated May 21, 1996 between Embrex and Catherine A. Ricks |
| 10.36(16) | Amendment to Change in Control Severance Agreement dated October 1, 1998 between Embrex and Catherine A. Ricks |
| 10.37(2) | Terms and Conditions of Employment between Embrex Europe Limited and David M. Baines dated May 12, 1994 |
| 10.38(5) | Change In Control Severance Agreement dated June 9, 1996 between Embrex and David M. Baines |
| 10.39(16) | Amendment to Change in Control Severance Agreement dated October 1, 1998 between Embrex and David M. Baines |
| 10.40(5) | Letter Agreement and General Provisions to Employment Agreement dated August 20, 1996 between Embrex and Don T. Seaquist and Amendment to Employment Agreement dated September 9, 1996 between Embrex and Don T. Seaquist |
| 10.41(5) | Change In Control Severance Agreement dated September 9, 1996 between Embrex and Don T. Seaquist |
| 10.42(16) | Amendment to Change in Control Severance Agreement dated October 1, 1998 between Embrex and Don T. Seaquist |
| 10.43(16) | Letter Agreement and General Provisions to Employment Agreement dated February 3, 1999 between Embrex and Brian C. Hrudka |
| 10.44(16) | Change In Control Severance Agreement dated March 24, 1999 between Embrex and Brian C. Hrudka |
| 10.45(25) | Letter Agreement and General Provisions to Employment Agreement dated June 2, 1997 between Embrex and Joseph P. O'Dowd |
| 10.46(25) | Amendment to Employment Agreement dated May 1, 2001 between Embrex and Joseph P. O'Dowd |
| 10.47(13) | Indemnification Agreement among Embrex, Randall L. Marcuson, Charles E. Austin, C. Daniel Blackshear, Lester M. Crawford, Peter J. Holzer, Kenneth N. May, and Arthur M. Pappas dated as of April 1, 1999 |
| 10.48(17) | Amendment to Indemnification Agreement among Embrex, John E. Klein and Walter V. Smiley dated as of May 17, 2001 |
| 10.49(17) | Amendment to Indemnification Agreement between Embrex and Dr. Ganesh M. Kishore, Ph.D., dated as of February 14, 2002 |
| 10.50(22) | Amendment to Indemnification Agreement among Embrex, Inc. and David L. Castaldi dated as of January 13, 2003 |
| 10.51(21) | Change In Control Severance Agreement dated April 12, 2002 between Embrex and Joseph P. O'Dowd |
| 10.52(24) | Amendment to Change in Control Agreement dated September 4, 2003 between Embrex and Joseph P. O'Dowd |
| 10.53(9) | Inovoject® Egg Injection System Lease, Limited License, Supply and Service Agreement dated September 1, 1994 between Embrex and Tyson Foods, Inc. |
| 10.54(9) | Amendment dated March 26, 1997 to the Inovoject® Egg Injection System Lease, Limited License, Supply and Service Agreement dated September 1, 1994 between Embrex and Tyson Foods, Inc. |
| 10.55(2) | Agreement dated as of January 22, 1996 between Embrex and Select |
| 10.56(2) | Letter Agreement dated as of January 22, 1996 between Select and Embrex |
| 10.57(2) | License dated as of January 22, 1996 granted by Select to Embrex |
| 10.58(18) | Loan Agreement between Embrex and Branch Banking and Trust Company dated as of April 7, 1999 |
| 10.59(19) | License and Royalty Agreement between Embrex and Pfizer, Inc. and it Affiliates dated as of June 22, 2001 |
| 10.60(20) | Credit Agreement between Embrex and Advanced Automation, Inc. dated as of April 1, 2001 |
| 10.61(22) | Term Loan and Security Agreement between Embrex and Advanced Automation, Inc. dated as of April 30, 2003 |
| 10.62(22) | Services Agreement between Embrex and Advanced Automation, Inc. dated as of April 30, 2003 |
| 10.63(20) | Amended and Restated Research, Development and Marketing Agreement between Embrex and LifeSensors, Inc. dated as of July 20, 2001 |
| 10.64(15) | Letter Modification dated June 20, 2002 to Amended and Restated Research, Development and Marketing Agreement between Embrex and LifeSensors, Inc. dated as of July 20, 2001 |

| | |
|---|---|
| 10.65(25) | Engineering, Procurement, and Construction Agreement dated November 26, 2002 between Embrex and Lockwood Greene E&C, L.L.C. |
| 10.66(24) | Loan Agreement dated July 31, 2003 between Embrex and Branch Banking and Trust |
| 10.67(24) | Promissory Note dated July 31, 2003 of Embrex issued in favor of Branch Banking and Trust |
| 21 | Subsidiaries |
| 23 | Consent of Ernst & Young LLP, independent auditors, to the incorporation of their report dated February 14, 2003 with respect to the consolidated financial statements and schedule of Embrex, Inc. and subsidiaries included in this Form 10-K in the Registration Statements on Form S-3 (Registration Nos. 333-18231 and 333-31811), as filed with the Securities and Exchange Commission on December 19, 1996 and July 22, 1997, respectively, and into the Registration on Form S-8 (Registration Nos. 33-51582, 33-63318, 333-04109, 333-56279, 333-42676, 333-91304 and 333-105924), as filed with the Securities and Exchange Commission on September 1, 1992, May 25, 1993, May 20, 1996, June 8, 1998, July 31, 2000, June 27, 2002, and June 6, 2003, respectively. |
| 24 | Powers of Attorney (included in the signature page for this report) |
| 31.1 | Certification of Principal Executive Officer of Periodic Report Pursuant to Rule 13a-14(a) or Rule 15d-14 |
| 31.2 | Certification of Principal Financial Officer of Periodic Report Pursuant to Rule 13a-14(a) or Rule 15d-14(a) |
| 32.1 | Certification of Principal Executive Officer of Periodic Report Pursuant to Rule 13a-14(b) or Rule 15d-14(b) and 18 U.S.C. Section 1350 |
| 32.2 | Certification of Principal Financial Officer of Periodic Report Pursuant to Rule 13a-14(b) or Rule 15d-14(b) and 18 U.S.C. Section 1350 |
| 99 | Risk Factors |

(1) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for fiscal year ending December 31, 1991 and incorporated herein by reference

(2) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1995 and incorporated herein by reference

(3) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 1996 and incorporated herein by reference

(4) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended September 30, 2000 and incorporated herein by reference

(5) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1996 and incorporated herein by reference

(6) Exhibit to the Company's Registration Statement on Form 8-A as filed with the Securities and Exchange Commission on March 22, 1996 and incorporated herein by reference

(7) Exhibit to the Company's Form 8-K as filed with the Securities and Exchange Commission on January 9, 2003 and incorporated herein by reference

(8) Exhibit to the Company's Registration Statement on Form S-1 as filed with the Securities and Exchange Commission (Registration No. 33-42482) effective November 7, 1991 and incorporated herein by reference

(9) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1997 and incorporated herein by reference

(10) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1999 and incorporated herein by reference

(11) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1992 and incorporated herein by reference

(12) Exhibit to the Company's Registration Statement on Form S-8 as filed with the Securities and Exchange Commission (Registration No. 333-56279) effective June 8, 1998 and incorporated herein by reference

(13) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended March 31, 1999 and incorporated herein by reference

(14) Exhibit to the Company's Form S-8 as filed with the Securities and Exchange Commission on July 31, 2000 and incorporated herein by reference

(15) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 2002 and incorporated herein by reference

(16) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1998 and incorporated herein by reference

(17) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 2001 and incorporated herein by reference

(18) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 1999 and incorporated herein by reference

(19) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 2001 and incorporated herein by reference

(20) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended September 30, 2001 and incorporated herein by reference

(21) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended March 31, 2003 and incorporated herein by reference

(22) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 2003 and incorporated herein by reference

(23) Exhibit to the Company's Form S-8 as filed with the Securities and Exchange Commission on June 6, 2003 and incorporated herein by reference

(24) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended September 30, 2003 and incorporated herein by reference

(25) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the twelve months ended December 31, 2002 and incorporated herein by reference

(b). Reports on Form 8-K.

On November 4, 2003, the Company furnished a report under Item 12 of Form 8-K regarding a press release issued by the Company on November 4, 2003 announcing results for the period ended September 30, 2003.

Information furnished in such Form 8-K is not deemed filed with the Securities and Exchange Commission.

## SIGNATURES AND POWER OF ATTORNEY

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

EMBREX, INC.

Date : March 15, 2004

By: /s/ Randall L. Marcuson
Randall L. Marcuson
President and Chief Executive Officer

We, the undersigned directors and officers of Embrex, Inc. (the "Company"), do hereby constitute and appoint Randall L. Marcuson and Don T. Seaquist or either of them, our true and lawful attorneys-in-fact and agents, with full power of substitution, to execute and deliver an Annual Report on Form 10-K pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended (the "Act"), with respect to the year ended December 31, 2003, to be filed with the Securities and Exchange Commission, and to do any and all acts and things and to execute any and all instruments for us and in our names in the capacities indicated below, which said attorneys-in-fact and agents, or either of them, may deem necessary or advisable to enable the Company to comply with the Act and any rules, regulations, and requirements of the Securities and Exchange Commission in connection with such Report, including without limitation the power and authority to execute and deliver for us or any of us in our names and in the capacities indicated below any and all amendments to such Report; and we do hereby ratify and confirm all that the said attorneys-in-fact and agents, or either of them, shall do or cause to be done by virtue of this power of attorney.

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

| Signature | Title | Date |
|---|---|---|
| /s/ Randall L. Marcuson<br>Randall L. Marcuson | President, Chief Executive Officer and Director | March 15, 2004 |
| /s/ Don T. Seaquist<br>Don T. Seaquist | Vice President, Finance and Administration (Principal Financial and Accounting Officer) | March 15, 2004 |
| /s/ C. Daniel Blackshear<br>C. Daniel Blackshear | Director | March 15, 2004 |
| /s/ David L. Castaldi<br>David L. Castaldi | Director | March 15, 2004 |
| /s/ Peter J. Holzer<br>Peter J. Holzer | Director | March 15, 2004 |
| /s/ Ganesh M. Kishore, Ph.D.<br>Ganesh M. Kishore, Ph.D. | Director | March 15, 2004 |
| /s/ John E. Klein<br>John E. Klein | Director | March 15, 2004 |

## FINANCIAL STATEMENT SCHEDULE

## SCHEDULE II – VALUATION AND QUALIFYING ACCOUNTS
## EMBREX, INC. AND CONSOLIDATED SUBSIDIARIES

(In thousands)

| DESCRIPTION | BALANCE AT BEGINNING OF PERIOD | ADDITIONS (1) CHARGED TO COSTS AND EXPENSES | (2) CHARGED TO OTHER ACCOUNTS | DEDUCTIONS | BALANCE AT END OF PERIOD |
|---|---|---|---|---|---|
| YEAR ENDED DECEMBER 31, 2003 | | | | | |
| Allowance for doubtful accounts | $247 | $182 | 0 | $(11)(a) | $418 |
| Inventory valuation allowance | 224 | 146 | 0 | (72) | 298 |
| Amortization of intangible assets | 275 | 135 | 0 | 0 | 410 |
| Valuation allowance for deferred tax asset | 1,963 | 0 | 0 | (1,675) | 288 |
| Self-insured employee health plan | 220 | 1,911 | 0 | (1,814) | 317 |
| YEAR ENDED DECEMBER 31, 2002 | | | | | |
| Allowance for doubtful accounts | $171 | $133(a) | 0 | $(57)(a) | $247 |
| Inventory valuation allowance | 222 | 73(a) | 0 | (71)(a) | 224 |
| Amortization of intangible assets | 144 | 131(a) | 0 | 0 | 275 |
| Valuation allowance for deferred tax asset | 4,791 | 0 | 0 | (2,828) | 1,963 |
| Self-insured employee health plan | 280 | 1,501 | 0 | (1,561) | 220 |
| YEAR ENDED DECEMBER 31, 2001 | | | | | |
| Allowance for doubtful accounts | $196 | $103(b) | 0 | $(128)(a) | $171 |
| Inventory valuation allowance | 194 | 62(b) | 0 | (34)(a) | 222 |
| Amortization of intangible assets | 93 | 51 | 0 | 0 | 144 |
| Valuation allowance for deferred tax asset | 7,950 | 0 | 0 | (3,159) | 4,791 |
| Self-insured Employee Health Plan | 300 | 1,310 | 0 | (1.330) | 280 |

(a) Specific account write offs, net of recoveries.
(b) To adjust allowance for change in estimates.

# EXHIBIT INDEX

| Exhibit Number | Description |
|---|---|
| 3.1(1) | Restated Articles of Incorporation |
| 3.2(2) | Articles of Amendment to Restated Articles of Incorporation, effective March 21, 1996 |
| 3.3(3) | Articles of Amendment to Restated Articles of Incorporation, effective May 28, 1996 |
| 3.4(4) | Amended and Restated Bylaws, effective September 21, 2000 |
| 4.1 | Reference is made to Exhibits 3.1, 3.2, 3.3 and 3.4 |
| 4.2(5) | Specimen of Common Stock Certificate |
| 4.3(6) | Rights Agreement dated as of March 21, 1996 between Embrex and Branch Banking and Trust Company, as Rights Agent |
| 4.4(7) | Amendment to Rights Agreement dated as of January 6, 2003 between Embrex and Branch Banking and Trust Company, as Rights Agent |
| 10.1(8) | License Agreement dated December 11, 1991, between Embrex and the National Technical Information Service, a Primary operating unit of the United States Department of Commerce |
| 10.2(8) | Collaborative Research Agreement dated January 17, 1989 between Embrex and the University of Arkansas |
| 10.3(8) | License Agreement dated October 1, 1998 between Embrex and the National Technical Information Service, a Primary operating unit of the United States Department of Commerce |
| 10.4(8) | Lease Agreement dated December 9, 1986 between Embrex, as tenant, and Imperial Center Partnership and Petula Associates, Ltd., as landlord, as amended by First Amendment dated June 11, 1987, Second Amendment dated December 1, 1988, and Third Amendment dated May 2, 1989 |
| 10.5(5) | Fourth Amendment of Lease dated October 1, 1994 between the Company and Glaxo Inc. (as successor in interest to Imperial Center Partnership and Petula Associates, Ltd.) |
| 10.6(5) | Fifth Amendment of Lease dated December 13, 1996 between the Company and Glaxo Wellcome Inc. (as successor in interest to Glaxo Inc.) |
| 10.7(9) | Lease for Royal Center II dated October 13, 1997 between the Company and Petula Associates, Ltd. |
| 10.8(10) | Sublease Agreement dated October 1, 1999, between Embrex, as subtenant, and Wandel & Goltermann Technologies, Inc., as sublandlord |
| 10.9(10) | First Amendment to Sublease Agreement dated February 29, 2000, among Wandel & Goltermann Technologies, Inc., Embrex and W & G Associates |
| 10.10(8) | Unrestricted Grant Agreement dated November 1, 1986, between Embrex and North Carolina State University, as Amended by Amendment dated May 3, 1989, Amendment dated September 15, 1989, and Amendment dated April 22, 1991 |
| 10.11(8) | Basic Research Agreement dated October 24, 1989, between Embrex and University of Arkansas, as amended on October 23, 1990, February 1, 1991 and July 22, 1991 |
| 10.12(8) | 1988 Incentive Stock Option Plan and form of Incentive Stock Option Agreement |
| 10.13(8) | 1991 Nonstatutory Stock Option Plan and form of Nonstatutory Stock Option Agreement |
| 10.14(11) | Incentive Stock Option and Nonstatutory Stock Option Plan and forms of Stock Option Agreements – June 1993 |
| 10.15(3) | Amendment dated May 16, 1996 to Incentive Stock Option and Nonstatutory Stock Option Plan – June 1993 |
| 10.16(12) | Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan – May 1998 |
| 10.17(13) | Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan — January 1999 and form of Stock Option Agreement |
| 10.18(14) | Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan – July 2000 |

| | |
|---|---|
| 10.19(15) | Amendment dated May 16, 2002 to Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan – July 2000 |
| 10.20(15) | Amendment dated July 18, 2002 to Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan – July 2000 |
| 10.21(22) | Form of Restricted Stock Agreement under Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan of the Company |
| 10.22(22) | Form of Stock Option Agreement under Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan of the Company |
| 10.23(5) | Amended and Restated Employee Stock Purchase Plan – November 1996 |
| 10.24(14) | Amended and Restated Employee Stock Purchase Plan – July 2000 |
| 10.25(15) | Amendment dated July 18, 2002 to Amended and Restated Employee Stock Purchase Plan – July 2000 |
| 10.26(23) | Amendment dated May 15, 2003 to Amended and Restated Employee Stock Purchase Plan |
| 10.27(14) | Amended and Restated Employee Stock Purchase Plan for Non-U.S. Employees – July 2000 |
| 10.28(23) | Amendment dated February 6, 2003 to Amended and Restated Non-U.S. Employee Stock Purchase Plan |
| 10.29(23) | Amendment dated May 15, 2003 to Amended and Restated Non-U.S. Employee Stock Purchase Plan |
| 10.30(8) | Employment Agreement dated November 15, 1989, between Embrex and Randall L. Marcuson |
| 10.31(5) | Amendment to Employment Agreement dated May 21, 1996 between Embrex and Randall L. Marcuson |
| 10.32(5) | Change In Control Severance Agreement dated May 21, 1996 between Embrex and Randall L. Marcuson |
| 10.33(16) | Amendment to Change in Control Severance Agreement dated October 1, 1998 between Embrex and Randall L. Marcuson |
| 10.34(8) | Employment Agreement dated October 16, 1989, between Embrex and Catherine A. Ricks |
| 10.35(5) | Change In Control Severance Agreement dated May 21, 1996 between Embrex and Catherine A. Ricks |
| 10.36(16) | Amendment to Change in Control Severance Agreement dated October 1, 1998 between Embrex and Catherine A. Ricks |
| 10.37(2) | Terms and Conditions of Employment between Embrex Europe Limited and David M. Baines dated May 12, 1994 |
| 10.38(5) | Change In Control Severance Agreement dated June 9, 1996 between Embrex and David M. Baines |
| 10.39(16) | Amendment to Change in Control Severance Agreement dated October 1, 1998 between Embrex and David M. Baines |
| 10.40(5) | Letter Agreement and General Provisions to Employment Agreement dated August 20, 1996 between Embrex and Don T. Seaquist and Amendment to Employment Agreement dated September 9, 1996 between Embrex and Don T. Seaquist |
| 10.41(5) | Change In Control Severance Agreement dated September 9, 1996 between Embrex and Don T. Seaquist |
| 10.42(16) | Amendment to Change in Control Severance Agreement dated October 1, 1998 between Embrex and Don T. Seaquist |
| 10.43(16) | Letter Agreement and General Provisions to Employment Agreement dated February 3, 1999 between Embrex and Brian C. Hrudka |
| 10.44(16) | Change In Control Severance Agreement dated March 24, 1999 between Embrex and Brian C. Hrudka |
| 10.45(25) | Letter Agreement and General Provisions to Employment Agreement dated June 2, 1997 between Embrex and Joseph P. O'Dowd |
| 10.46(25) | Amendment to Employment Agreement dated May 1, 2001 between Embrex and Joseph P. O'Dowd |
| 10.47(13) | Indemnification Agreement among Embrex, Randall L. Marcuson, Charles E. Austin, C. Daniel Blackshear, Lester M. Crawford, Peter J. Holzer, Kenneth N. May, and Arthur M. Pappas dated as of April 1, 1999 |
| 10.48(17) | Amendment to Indemnification Agreement among Embrex, John E. Klein and Walter V. Smiley dated as of May 17, 2001 |

| | |
|---|---|
| 10.49(17) | Amendment to Indemnification Agreement between Embrex and Dr. Ganesh M. Kishore, Ph.D., dated as of February 14, 2002 |
| 10.50(22) | Amendment to Indemnification Agreement among Embrex, Inc. and David L. Castaldi dated as of January 13, 2003 |
| 10.51(21) | Change In Control Severance Agreement dated April 12, 2002 between Embrex and Joseph P. O'Dowd |
| 10.52(24) | Amendment to Change in Control Agreement dated September 4, 2003 between Embrex and Joseph P. O'Dowd |
| 10.53(9) | Inovoject® Egg Injection System Lease, Limited License, Supply and Service Agreement dated September 1, 1994 between Embrex and Tyson Foods, Inc. |
| 10.54(9) | Amendment dated March 26, 1997 to the Inovoject® Egg Injection System Lease, Limited License, Supply and Service Agreement dated September 1, 1994 between Embrex and Tyson Foods, Inc. |
| 10.55(2) | Agreement dated as of January 22, 1996 between Embrex and Select |
| 10.56(2) | Letter Agreement dated as of January 22, 1996 between Select and Embrex |
| 10.57(2) | License dated as of January 22, 1996 granted by Select to Embrex |
| 10.58(18) | Loan Agreement between Embrex and Branch Banking and Trust Company dated as of April 7, 1999 |
| 10.59(19) | License and Royalty Agreement between Embrex and Pfizer, Inc. and it Affiliates dated as of June 22, 2001 |
| 10.60(20) | Credit Agreement between Embrex and Advanced Automation, Inc. dated as of April 1, 2001 |
| 10.61(22) | Term Loan and Security Agreement between Embrex and Advanced Automation, Inc. dated as of April 30, 2003 |
| 10.62(22) | Services Agreement between Embrex and Advanced Automation, Inc. dated as of April 30, 2003 |
| 10.63(20) | Amended and Restated Research, Development and Marketing Agreement between Embrex and LifeSensors, Inc. dated as of July 20, 2001 |
| 10.64(15) | Letter Modification dated June 20, 2002 to Amended and Restated Research, Development and Marketing Agreement between Embrex and LifeSensors, Inc. dated as of July 20, 2001 |
| 10.65(25) | Engineering, Procurement, and Construction Agreement dated November 26, 2002 between Embrex and Lockwood Greene E&C, L.L.C. |
| 10.66(24) | Loan Agreement dated July 31, 2003 between Embrex and Branch Banking and Trust |
| 10.67(24) | Promisory Note dated July 31, 2003 of Embrex issued in favor of Branch Banking and Trust |
| 21 | Subsidiaries |
| 23 | Consent of Ernst & Young LLP, independent auditors, to the incorporation of their report dated February 14, 2003 with respect to the consolidated financial statements and schedule of Embrex, Inc. and subsidiaries included in this Form 10-K in the Registration Statements on Form S-3 (Registration Nos. 333-18231 and 333-31811), as filed with the Securities and Exchange Commission on December 19, 1996 and July 22, 1997, respectively, and into the Registration on Form S-8 (Registration Nos. 33-51582, 33-63318, 333-04109, 333-56279, 333-42676, 333-91304 and 333-105924), as filed with the Securities and Exchange Commission on September 1, 1992, May 25, 1993, May 20, 1996, June 8, 1998, July 31, 2000, June 27, 2002, and June 6, 2003, respectively. |
| 24 | Powers of Attorney (included in the signature page for this report) |
| 31.1 | Certification of Principal Executive Officer of Periodic Report Pursuant to Rule 13a-14(a) or Rule 15d-14 |
| 31.2 | Certification of Principal Financial Officer of Periodic Report Pursuant to Rule 13a-14(a) or Rule 15d-14(a) |
| 32.1 | Certification of Principal Executive Officer of Periodic Report Pursuant to Rule 13a-14(b) or Rule 15d-14(b) and 18 U.S.C. Section 1350 |
| 32.2 | Certification of Principal Financial Officer of Periodic Report Pursuant to Rule 13a-14(b) or Rule 15d-14(b) and 18 U.S.C. Section 1350 |
| 99 | Risk Factors |

(1) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for fiscal year ending December 31, 1991 and incorporated herein by reference

(2) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1995 and incorporated herein by reference

(3) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 1996 and incorporated herein by reference

(4) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended September 30, 2000 and incorporated herein by reference

(5) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1996 and incorporated herein by reference

(6) Exhibit to the Company's Registration Statement on Form 8-A as filed with the Securities and Exchange Commission on March 22, 1996 and incorporated herein by reference

(7) Exhibit to the Company's Form 8-K as filed with the Securities and Exchange Commission on January 9, 2003 and incorporated herein by reference

(8) Exhibit to the Company's Registration Statement on Form S-1 as filed with the Securities and Exchange Commission (Registration No. 33-42482) effective November 7, 1991 and incorporated herein by reference

(9) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1997 and incorporated herein by reference

(10) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1999 and incorporated herein by reference

(11) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1992 and incorporated herein by reference

(12) Exhibit to the Company's Registration Statement on Form S-8 as filed with the Securities and Exchange Commission (Registration No. 333-56279) effective June 8, 1998 and incorporated herein by reference

(13) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended March 31, 1999 and incorporated herein by reference

(14) Exhibit to the Company's Form S-8 as filed with the Securities and Exchange Commission on July 31, 2000 and incorporated herein by reference

(15) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 2002 and incorporated herein by reference

(16) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1998 and incorporated herein by reference

(17) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 2001 and incorporated herein by reference

(18) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 1999 and incorporated herein by reference

(19) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 2001 and incorporated herein by reference

(20) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended September 30, 2001 and incorporated herein by reference

(21) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended March 31, 2003 and incorporated herein by reference

(22) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 2003 and incorporated herein by reference

(23) Exhibit to the Company's Form S-8 as filed with the Securities and Exchange Commission on June 6, 2003 and incorporated herein by reference

(24) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended September 30, 2003 and incorporated herein by reference

(25) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the twelve months ended December 31, 2002 and incorporated herein by reference

EXHIBIT 21

EMBREX, INC.
SUBSIDIARIES

| Name | Jurisdiction of Organization |
|---|---|
| Embrex Europe Limited | United Kingdom |
| Embrex Sales, Inc. | North Carolina |
| Embrex BioTech Trade (Shanghai) Co., Ltd. | People's Republic of China |
| Inovoject® do Brasil Ltda. | Brazil |
| Embrex France s.a.s. | France |
| Embrex Iberica | Spain |
| Embrex Poultry Health, LLC | North Carolina |

EXHIBIT 23

Consent of Independent Auditors

We consent to the incorporation by reference in the Registration Statements on Form S-3 (Nos. 333-18231 and 333-31811) and the Registration Statements on Form S-8 (Nos. 33-51582, 33-63318, 333-04109, 333-42676, 333-56279, 333-91304, and 333-105924) of our report dated February 7, 2004, with respect to the consolidated financial statements and schedule of Embrex Inc. and Subsidiaries included in the Annual Report (Form 10-K) for the year ended December 31, 2003.

Ernst & Young LLP

Raleigh, North Carolina
March 12, 2004

EXHIBIT 31.1

# CERTIFICATION

I, Randall L. Marcuson, certify that:

1. I have reviewed this annual report on Form 10-K of Embrex, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) [Paragraph omitted pursuant to SEC Release Nos. 33-8238 and 34-47986];

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 15, 2004

/s/ Randall L. Marcuson
Randall L. Marcuson
President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION

I, Don T. Seaquist, certify that:

1. I have reviewed this annual report on Form 10-K of Embrex, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) [Paragraph omitted pursuant to SEC Release Nos. 33-8238 and 34-47986];

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 15, 2004

/s/ Don T. Seaquist
Don T. Seaquist
Vice President, Finance and Administration

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Embrex, Inc. (the "Company") on Form 10-K for the twelve months ended December 31, 2003 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Randall L. Marcuson, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to my knowledge, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

March 15, 2004

/s/ Randall L. Marcuson
Randall L. Marcuson
President and Chief Executive Officer

EXHIBIT 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Embrex, Inc. (the "Company") on Form 10-K for the twelve months ended December 31, 2003 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Don T. Seaquist, Vice President, Finance and Administration of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to my knowledge, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

March 15, 2004

/s/ Don T. Seaquist
Don T. Seaquist
Vice President, Finance and Administration

EXHIBIT 99

# RISK FACTORS

If any of the following risks occur, our business, financial condition, or results of operations could be materially adversely affected.

## OUR FUTURE GROWTH DEPENDS ON EXPANSION OF INTERNATIONAL REVENUES AND WE WILL BE SUBJECT TO INCREASED RISKS IN THE INTERNATIONAL MARKETPLACE

We estimate that our Inovoject® system inoculates more than 80% of all eggs produced for the United States and Canada broiler poultry markets. Given this market penetration, we expect only limited growth in the number of system installations and only minor system revenue growth in this market. Additionally, due to our market penetration and the significance of the United States and Canada poultry markets to our revenue, any adverse conditions in these markets could have a material and adverse affect on our revenues. For this reason, we must expand our device installations and product sales in markets outside the United States and Canada in order to realize revenue growth. In 2003, international sales accounted for 32% of our consolidated revenues. In each of 2002 and 2001, international sales accounted for 31% of our consolidated revenues. Revenue growth outside the United States and Canada depends on gaining market acceptance of our devices and *in ovo* administration of biological products in markets outside the United States and Canada to treat prevailing poultry diseases in those markets. Lack of market acceptance of our devices and *in ovo* ("in the egg") products in these markets would materially adversely affect our revenue growth.

International sales are also subject to a variety of risks, including risks arising from the following:

- exchange rate risks, trade restrictions, tariffs, trade barriers and taxes;
- adverse changes in local investment or exchange control regulations, potential restrictions on the flow of international capital, and the possibility of confiscatory taxation, price controls or the taking or modification of our property rights by a country in the exercise of its sovereignty; and
- economic and political conditions beyond our control, including country-specific conditions such as political instability, government corruption and civil unrest.

## OUR FUTURE GROWTH ALSO DEPENDS ON THE DEVELOPMENT AND MARKET ACCEPTANCE OF NEW PRODUCTS

In addition to international expansion, we need to develop and market new products in order to continue to generate increased revenues and growth of our business. We currently are developing, both independently and in collaboration with others, various products which address poultry health and performance needs. These products are being designed to be delivered *in ovo* through the Inovoject® system or in conjunction with the Inovoject® system, and are in various stages of development. There is no guarantee that any new products will be successfully developed and marketed. In addition, we have not initiated the regulatory approval process for some of these potential products, and we cannot assure you that regulatory approval will be obtained. Our inability to develop new products or any delay in our development of them may materially adversely affect our revenue growth. Because of a number of factors, a new product may not reach the market without lengthy delays, if at all. Some of the factors which may affect our development and marketing of new products include the following:

- our research and evaluations of compounds and new technologies may not yield product opportunities;
- potential products may involve extensive and time-consuming clinical trials to demonstrate safety and effectiveness, and the results of such trials are uncertain;

- potential products may require collaborative partners and we may be unable to identify partners or enter into arrangements on terms acceptable to us;

- we may not be able to contract for the manufacture of new products at a cost or in quantities necessary to make them commercially viable;

- domestic and international regulatory approval of these products may not be obtained or may be obtained only with lengthy delays;

- we may not be able to secure additional financing that may be needed to bring a potential product to market;

- we may experience unexpected safety or efficacy concerns with respect to marketed products, whether or not scientifically justified, leading to adverse public reaction, product recalls, withdrawals or declining sales;

- marketing products developed jointly with other parties may require royalty payments or other payments by us to our co-developers, which may materially adversely affect our profitability;

- we may be unable to accurately predict market requirements and evolving standards; and

- we may not be able to attract and retain sufficient numbers of qualified development personnel.

We have developed and commercialized two products that work with the Inovoject® System: the Egg Remover® and Vaccine Saver®. These two products have had initial success, however, there is no guarantee that acceptance of these products will continue to grow.

Embrex has initiated the United States Department of Agriculture ("USDA") regulatory approval process with respect to our *in ovo* coccidiosis vaccine, Inovocox™. Although this product has been submitted for registration there is no assurance that USDA approval will be obtained. Marketing this product in foreign countries will require us to pursue separate approvals from foreign regulatory agencies. We are constructing a biological manufacturing facility estimated to cost $11.6 million to commercially produce the Inovocox™ product. In addition to USDA approval for the Inovocox™ product, our biological manufacturing facility must receive a separate USDA approval to manufacture Inovocox™. We cannot assure you that the facility will receive USDA approval to manufacture Inovocox™. Delays in obtaining either product or manufacturing facility approvals may materially adversely affect the marketing of, and the ability to receive revenues from Inovocox™. Additionally, even if we receive USDA product and facility approvals, we cannot assure you that Inovocox™ will be sold in commercial quantities or that product sales will be sufficient to offset our investment in development of the product and construction of the biological manufacturing facility.

We are also developing a device to separate poultry by gender while still in the egg. We cannot assure you that our development work will lead to a successful commercial device.

We have developed and commercialized AAC technology, which the Company uses in its Bursaplex® vaccine. Bursaplex® has been sold in commercial quantities during the past six years, however, there is no assurance that the product will continue to be sold in commercial quantities.

In May 2003, the USDA provided regulatory approval of Newplex™, our *in ovo* Newcastle disease vaccine, within the United States. Newplex™ vaccine is based on AAC technology, as is Bursaplex® vaccine. We are now seeking regulatory approval for Newplex™ in other key markets worldwide. Although this product has received USDA approval, there is no assurance that other registrations will be granted or that Newplex™ will be sold in commercial quantities.

There can be no assurance that we will successfully complete the development and commercialization of any new products or that such products, if developed and commercialized, will meet revenue and profit expectations.

## ECONOMIC FACTORS AFFECTING OUR CUSTOMERS MAY ADVERSELY AFFECT OUR FINANCIAL RESULTS

Our revenues principally come from sales and leases to the poultry industry. If there is a general economic decline in that industry, our operations and financial condition could be materially and adversely affected. Also, domestic and global economic factors beyond our control may adversely impact our customers and, as a result, our revenues and earnings. Examples of these factors include the following:

- fluctuations in the prices of energy and poultry feed;
- disease outbreaks that adversely affect poultry production;
- market demand for poultry products, including the supply and pricing of alternative proteins;
- costs to comply with applicable laws and regulations, including those relating to environmental protection, food safety, market regulation and genetically modified organisms or ingredients;
- product recalls and related adverse publicity and consumer reaction;
- access to foreign markets together with foreign economic conditions, including currency fluctuations and trade restrictions; and
- the extent to which our cost of products and operating expenses increase faster than contractual price adjustments with our customers.

For example, if rising poultry feed prices increase the production costs of commercial poultry producers or a foreign government bans the importation of U.S. chicken, these producers may reduce production. This decreased production could adversely impact our revenues, since a principal component of our revenues are fees charged to customers for the number of eggs injected or processed by Embrex devices.

## WE FACE RISKS OF COMPETITION AND CHANGING TECHNOLOGY

The Inovoject® system uses a process that was patented in the United States by the USDA in 1984. We held the exclusive license to this "Sharma" patent until June 2002, when the Sharma patent expired. With the expiration of the Sharma patent, competitive *in ovo* delivery systems are being developed. We are aware of four companies that are marketing *in ovo* injection systems to poultry companies. Although there has not been widespread commercial acceptance of any of these competing systems, we are aware of direct competition for customers and limited commercial placements by one of these companies. Increased competition could result in lower prices for our products, reduced demand for our products, and a corresponding reduction in our ability to recover development, engineering, manufacturing and service costs. Also, a significant portion of our revenues comes from a relatively small number of customers. If we lose one or more large customers due to competition, our revenues could be significantly lower. Any of these developments could have a material adverse effect on our business, results of operations and financial condition.

The poultry biological products business is especially competitive and dominated by a few large companies with an established global presence. In order for us to expand our sales of *in ovo* biological products, these products must be commercially accepted worldwide and compete effectively against the products of these other companies. Our inability to compete successfully in the poultry biologicals sector could materially adversely affect our revenue growth.

Our competitors and potential competitors include independent companies that specialize in biotechnology, as well as major agricultural or animal health companies, pharmaceutical companies, chemical companies, universities, and public and private research organizations. Many of these competitors are well established and have substantially greater marketing, financial, technological and other resources than we have. Competitors may succeed in developing technologies and products that are more effective than any that have been or are being developed by us or which could render our technology and products obsolete or non-competitive.

## POULTRY HEALTH AND DISEASE FACTORS AFFECTING OUR CUSTOMERS MAY ADVERSELY AFFECT OUR FINANCIAL RESULTS

Any widespread poultry health problem or disease outbreak could have a negative impact on global poultry production. Our revenues and earnings derived from both the U.S. and international poultry industry could be materially and adversely affected. In addition, the emergence of new disease variants, serotypes and strains in the domestic and/or global markets may reduce the efficacy of our biological products and result in reduced revenues and earnings.

## WE DO NOT CURRENTLY MANUFACTURE ANY OF OUR DEVICES OR BIOLOGICAL PRODUCTS AND ARE CURRENTLY DEPENDENT ON A SINGLE CONTRACT MANUFACTURER FOR INOVOJECT® AND EGG REMOVER® DEVICES, FOR AAC PRODUCTION, AND FOR PRODUCTION OF BURSAPLEX® AND NEWPLEX™

We currently do not have facilities for the production of most our devices and biological products. Therefore, we rely principally upon relationships with contract manufacturers. There can be no assurance that we can maintain manufacture and supply agreements on terms and at costs acceptable to us. We have various relationships with manufacturers and suppliers, including those described below. The loss of any of these relationships could materially adversely affect our operating results. There are a number of risks associated with our dependence on contract manufacturers including:

- reduced control over delivery schedules;
- potential inability to monitor and maintain inventory levels;
- reduced control over quality assurance;
- reduced control over manufacturing yields and costs;
- potential lack of adequate capacity during periods of unanticipated demand;
- limited warranties on products supplied to us;
- increases in prices;
- potential misappropriation of our intellectual property;
- catastrophic loss of production capacity due to property damage, either man made or by nature
- the loss of these contract manufacturers due to financial circumstances in their respective businesses or their exit from the business lines that manufacture our devices and products; and
- minimum purchase requirements, which could result in excessive inventories if the demand for products falls short of such minimum purchase requirements.

If our contract manufacturers fail to provide us with an adequate supply of finished Devices or biological products, our business would be harmed. We do not have long-term contracts or arrangements with several of our vendors that guarantee product availability or the continuation of particular payment terms. In addition, we are currently dependent on a single contract manufacturer for several of our key products as described below. Although we believe our relationship with each of the manufacturers is sound, we cannot assure you that we will continue to maintain relationships with them or that they will continue to exist.

### Inovoject® and Egg Remover® Systems

We rely on Precision Automation Company, Inc. (Precision) to fabricate all of our Inovoject® and Egg Remover® systems. While other machine fabricators exist and have constructed limited numbers of Inovoject® systems, we do

not currently have alternative sources for production of either the Inovoject® or Egg Remover® system. If Precision is unable to carry out its manufacturing obligations to our satisfaction, we may be unable to obtain alternative manufacturing, or to obtain such manufacturing on commercially reasonable terms or on a timely basis. Any delays in the manufacturing process may adversely impact our ability to meet commercial demands for Inovoject® and Egg Remover® system installations and delay receipt of revenues from those installations.

### Biological Products

We obtain all of our requirements for the active ingredient in AAC technology from SPAFAS, Inc. (SPAFAS), a subsidiary of Charles River Laboratories, Inc. Under our agreement with SPAFAS, we are required to purchase minimum amounts of AAC based antigen on an annual basis. The manufacture of AAC must be performed in licensed facilities and is subject to USDA regulation. The regulatory approval granted by the USDA for Bursaplex® in January 1997 specifically covers vaccines produced with SPAFAS-manufactured AAC. Although there are other manufacturers that may be capable of manufacturing AAC, we do not currently have alternative sources for production of AAC.

We obtain all of our requirements for Bursaplex® from Merial Select, Inc. ("Select"), a Merck and Aventis company, and all of our requirements for Newplex™ from Lohmann Animal Health International ("LAHI"). The manufacture of all biological products must be performed in licensed facilities, under approved regulatory methods. As the USDA licensed manufacturers of record, Select holds the USDA permit for Bursaplex® and LAHI holds the USDA permit for Newplex™. Although there are other manufacturers that may be capable of manufacturing avian viral vaccines, we do not currently have alternative sources for production of either product.

If either SPAFAS, Select or LAHI is unable to carry out their respective manufacturing obligations (described immediately above) to our satisfaction, we may be unable to obtain alternative manufacturing, or to obtain such manufacturing on commercially reasonable terms or on a timely basis. A change of supplier for the Company could materially adversely affect our future operating results due to the time it would take a new supplier to obtain regulatory approval by the USDA of its production process or manufacturing facilities. Current regulatory approvals in foreign countries are or will be based on product manufactured with SPAFAS AAC or Bursaplex® as manufactured by Select or Newplex™ as manufactured by LAHI. A change of manufacturer would result in the need to reapply for regulatory approval in those countries and may lead to suspended sales of that product until new approvals could be secured. Any delays in securing new approvals would have a material adverse effect on our revenues and growth prospects. We cannot guarantee that we would be able to secure new approvals in every country or that such approvals would be granted in a timely fashion.

## WE ARE DEPENDENT ON DISTRIBUTORS IN CERTAIN MARKETS

We market and distribute our devices principally by leasing and licensing the systems directly to hatcheries. In some markets, such as Japan, we instead rely upon distributors for our devices. We also rely on third parties to market certain biological products, such as products containing AAC technology, and we may enter into other arrangements in the future. There can be no assurance that we can maintain these relationships on terms acceptable to us. The loss of any of these relationships could materially adversely affect our operating results. There are a number of risks associated with our dependence on distributors and other third parties including:

- reduced control over regulatory efforts which may delay local regulatory approvals and thus market introduction;
- reduced control over marketing and sales efforts and in turn the extent of resulting market penetration or acceptance;
- reduced control over distribution and related customer satisfaction; and
- potential delays in distribution associated with securing new distributors, if current relationships are not maintained.

## THE LOSS OF KEY CUSTOMERS COULD ADVERSELY AFFECT OUR FINANCIAL RESULTS

Historically, a significant portion of our revenues has come from a relatively small number of customers. Tyson Foods, Inc. (Tyson) accounted for approximately 20% and 19% of our consolidated 2003 and 2002 revenues, respectively. Our top three customers, including Tyson, accounted for approximately 37%, 30% and 32% of our consolidated 2003, 2002 and 2001 revenues, respectively. We expect a similar level of customer concentration to continue in future years. The poultry market is highly concentrated, with the largest poultry producers dominating the market. For example, in 2002, Tyson supplied approximately 22% of all broilers grown in the United States. The concentration of our revenues with these large customers means factors affecting those customers also will impact our revenues and earnings. If we lose a large customer and fail to add new customers to replace lost revenues, our operating results will be materially and adversely affected. Also, if these customers reduce the number of eggs they produce at hatcheries, we will receive lower device revenues since our fees are based on the number of eggs injected.

## IF WE LOSE THE PROTECTION OF OUR PATENTS AND PROPRIETARY RIGHTS, OUR FINANCIAL RESULTS COULD SUFFER

Some of our products and processes used to produce our products involve proprietary rights, including patents. We own some of the technologies employed in these processes, and some are owned by others and licensed to us. The Inovoject® system utilizes a process that was patented by the USDA in the United States. We held an exclusive license to this primary patent (the "Sharma Patent"), which expired in June 2002. We have supplemented the Sharma Patent with additional U.S. and foreign patents covering specific design features of the Inovoject® system. However, there is a risk that competitive systems currently under development and undergoing trials with major poultry producers could gain acceptance in the United States now that the Sharma Patent has expired.

We believe that patent protection of materials or processes we develop and any products that may result from the research and development efforts of our licensors and us are important to the commercial success of our products. The loss of the protection of these patents and proprietary rights could materially adversely affect our business and our competitive position in the market. The patent position of companies such as ours generally is highly uncertain and involves complex legal and factual questions. Some of the reasons for this uncertainty include the following:

* To date, no consistent regulatory policy has emerged regarding the breadth of claims allowed in biotechnology patents. Consequently, there can be no assurance that patent applications relating to our products or technology will result in patents being issued or that, if issued, the patents will afford protection against competitors with similar technology;

* Some patent licenses held by us may be terminated upon the occurrence of specified events or become non-exclusive after a specified period;

* Companies that obtain patents claiming products or processes that are necessary for or useful to the development of our products could bring legal actions against us claiming infringement (though we currently are not the subject of any patent infringement claim);

* Issuance of a valid patent does not prevent other companies from using alternative, non-infringing technology so we cannot be sure that any of our patents (or patents issued to others and licensed to us) will provide significant commercial protection;

* We may not have the financial resources necessary to obtain patent protection in some countries or to enforce any patent rights we may hold;

* The laws of some foreign countries may not protect proprietary rights to the same extent as the laws of the United States, and many companies have encountered significant problems in protecting their proprietary rights in these foreign countries;

* We may be required to obtain licenses from others to develop, manufacture or market our products. We may not be able to obtain these licenses on commercially reasonable terms, and the patents underlying the licenses may be valid and enforceable; and

* We also rely upon unpatented, proprietary technology, which we may not be able to protect fully if others independently develop substantially equivalent proprietary information or techniques, improperly gain access to our proprietary technology, or disclose this technology to others.

We attempt to protect our proprietary materials and processes by relying on trade secret laws and non-disclosure and confidentiality agreements with our employees and other persons with access to our proprietary materials or processes or who have licensing or research arrangements with us. We plan to continue to use these protections in the future but we cannot be sure that these agreements will not be breached or that we would have adequate remedies for any breach. Even with these protections, others may independently develop or obtain access to these materials or processes, which may materially adversely affect our competitive position.

If we are sued for infringing the patent or other proprietary rights of a third party, we could incur substantial costs and diversion of management and technical personnel, whether or not the litigation is ultimately determined in our favor.

We have been involved in the patent litigation summarized below:

Embrex v. Service Engineering Corporation and Edward G. Bounds, Jr.

In September 1996, we filed a patent infringement suit against Service Engineering Corporation and Edward G. Bounds, Jr. in the U.S. District Court for the Eastern District of North Carolina. We made the following claims against the defendants:

Their development of an *in ovo* injection device, designed to compete with our patented Inovoject® injection method, infringes at least one claim of U.S. Patent No. 4,458,630, exclusively licensed to us for the *in ovo* injection of vaccines into an avian embryo (the Sharma Patent); and

They violated the terms of a Consent Judgment and Settlement Agreement entered into with us in November 1995 in which prior litigation was concluded with Service Engineering Corporation and Edward G. Bounds, Jr. agreeing not to engage in future activities violating the Sharma Patent.

We sought injunctive relief to prevent infringement of the Sharma Patent as well as monetary damages.

In November 1996, Service Engineering Corporation and Edward G. Bounds, Jr. responded to our suit by asserting various affirmative defenses and denying the substantive claims in our complaint.

This suit concluded on July 30, 1998 with a jury verdict in favor of us, which:

* fully upheld the validity of all asserted claims of the Sharma Patent, finding that the defendants had willfully infringed all asserted claims of the patent;

* found that the defendants had breached the 1995 Consent Judgment and Settlement Agreement and that the breach was not in good faith; and

* awarded us damages of $500,000 plus litigation expenses and court costs.

The Court entered a Judgment in favor of us on September 28, 1998, which included a monetary award of $2,612,885 and an injunction prohibiting the defendants from practicing methods claimed in, or otherwise infringing, the Sharma Patent. That injunction has expired with the expiration of the Sharma Patent in June of 2002.

On October 28, 1998, Service Engineering Corporation and Edward G. Bounds, Jr. filed a notice of appeal in the U.S. Court of Appeals for the Federal Circuit seeking a reversal of the Judgment. In July 2000, the U.S. Court of Appeals for the Federal Circuit affirmed the district court's decision to award to Embrex litigation expenses plus costs valued at approximately $1.5 million. In addition, the appeals court upheld the finding that Service Engineering Corporation and Edward Bounds had willfully infringed all asserted claims of the Sharma Patent. However, the appeals court vacated the award of direct infringement damages finding that the district court erroneously awarded direct damages without proper evidence to support the award. Therefore, the appeals court remanded that award ($500,000 which was trebled) to the district court for further proceedings for determination of a reasonable royalty for the infringement of the patented method by Service Engineering Corporation and Edward G. Bounds, Jr. These proceedings were opened on August 28, 2000, but were stayed early in 2001 pending the conclusion of a bankruptcy proceeding initiated by Edward G. Bounds, Jr.

Embrex v. Breuil S.A. and New Tech Solutions, Inc.

In December 2003, we filed suit in the U.S. District Court for the Eastern District of North Carolina against Breuil S.A. of Landivisiau, France, and New Tech Solutions, Inc. of Gainesville, GA, asserting patent infringement. We allege that each of the defendants' development of an *in ovo* injection device, designed to compete with our patented Inovoject® system injection method, infringes two of our patents related to our proprietary methods for distinguishing live eggs from infertile or "dead" eggs' and for injecting specific eggs identified as suitable for inoculation as well as the apparatus performing this function. We seek injunctive relief and monetary damages and have asked for a jury trial. Because of this suit, our results of operations have been impacted and will continue to be impacted by the costs of pursuing this litigation. Moreover, there can be no assurance we will prevail in our claims against Breuil S.A. or New Tech Solutions, Inc. Even if the court finds in our favor, we have no assurances that any damage award will exceed our costs of pursuing this litigation or that we would be able to collect any damages from either defendant.

## THE LOSS OF KEY COLLABORATORS, SUPPLIERS AND OTHER KEY PARTIES COULD ADVERSELY AFFECT OUR FINANCIAL RESULTS

We currently conduct our operations with various third-party collaborators, suppliers, licensors or licensees. We plan to continue developing these relationships and believe our present and future collaborators, suppliers, licensors and licensees will perform their obligations under their agreements with us, based on an economic motivation to succeed. However, financial or other difficulties facing these parties may affect the amount and timing of funds and other resources devoted by the parties under these agreements. In addition, disagreements may arise with these third parties which could delay or lead to the termination of the development or commercialization of new products, or result in litigation or arbitration, which would be time consuming and expensive. Thus, there is no assurance that we will develop any new products or generate any revenues from these collaborative agreements.

## WE ARE SUBJECT TO AN INHERENT RISK OF PRODUCT LIABILITY

The development, manufacture, distribution and marketing of our products involve an inherent risk of product liability claims and associated adverse publicity. These claims may be made even with respect to those products that are manufactured in licensed and approved facilities or that otherwise possess regulatory approval for commercial sale. These claims could expose us to significant liabilities that could prevent or interfere with the development and marketing of our products. Product liability claims could require us to spend significant time and money in litigation or pay significant damages. Although we currently maintain liability insurance which we believe is adequate to cover the Company's potential exposure in this area, there can be no assurance that the coverage limits of our policies will be adequate. Such insurance is expensive, difficult to obtain and may not continue to be available on acceptable terms or at all.

## GOVERNMENT REGULATION AND THE NEED FOR REGULATORY APPROVAL MAY ADVERSELY AFFECT OUR BUSINESS

Regulatory approval required in various areas of our business may materially adversely affect our operations. The primary emphasis of these requirements is to assure the safety and effectiveness of our products. While the use of

the Inovoject® system is not subject to regulatory approval in the United States, it may require regulatory approval by foreign agencies. Also, research and development activities and the investigation, manufacture and sale of poultry health products are subject to regulatory approval in the United States by either the USDA or the United States Food & Drug Administration ("FDA") and state agencies, as well as by foreign agencies. Obtaining regulatory approval is a lengthy, costly and uncertain process. Approval by the USDA generally takes 1 to 3 years, while approval by the FDA may take 5 or more years. Various problems may arise during the regulatory approval process and may have an adverse impact on our operations. Changes in the policies of U.S. and foreign regulatory bodies could increase the time required to obtain regulatory approval for each new product. Delays in obtaining approval may materially adversely affect the marketing of, and the ability to receive revenues and royalties from, products developed by us. There is no assurance that any future products developed by us or by our collaborative partners will receive regulatory approval without lengthy delays, if at all. Even when approved, regulators may impose limitations on the uses for which the product may be marketed and may continue to review a product after approving it for marketing. Regulators may impose restrictions and sanctions, including banning the continued sale of the product, if they discover problems with the product or its manufacturer.

Pursuant to some of our licensing or joint development agreements, the licensees or joint developers bear the costs associated with the regulatory approval process for some products. We plan to continue to enter into these types of agreements in the future. If we cannot generate sufficient funds from operations or enter into licensing or joint development agreements to develop products, we may not have the financial resources to complete the regulatory approval process with respect to all or any of the products currently under development. We may need to obtain approval from appropriate regulators before we can sell our products in a particular jurisdiction.

Other regulations apply or may apply to research and manufacturing activities, including federal, state and local laws, regulations and recommendations relating to the following:

- safe working conditions;
- laboratory and manufacturing practices; and
- use and disposal of hazardous substances used in conjunction with research activities.

It is difficult to predict the extent to which these or other government regulations may adversely impact the production and marketing of our products.

## OUR INABILITY TO ATTRACT AND RETAIN KEY PERSONNEL COULD ADVERSELY AFFECT OUR BUSINESS

We must continue to attract and retain experienced and highly educated scientific and management personnel and advisors to be able to develop marketable products and maintain a competitive research and technological position. Competition for qualified employees among biotechnology companies is intense. There can be no assurance that we will be able to continue to attract and retain qualified staff. The departure of any key executive or our inability to recruit and retain key scientific or management personnel could have an adverse affect on our business, results of operations or financial condition. Our ability to replace key individuals may be difficult and may take an extended period of time because of the limited number of individuals in the biotechnology industry with the breadth of skills and experience required to develop and commercialize products successfully. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate such individuals. We have obtained insurance in the amount of $1,000,000 on the life of Randall L. Marcuson, our President and Chief Executive Officer, of which we are the sole beneficiary. This amount may not be sufficient to compensate us for the loss of his services.

## IF WE CANNOT CONTINUE TO PROVIDE TIMELY SUPPORT AND MAINTENANCE TO OUR CUSTOMERS, OUR BUSINESS MAY SUFFER

We are required to supply, support, and maintain large numbers of Inovoject® systems at our customers' hatcheries on a timely basis at a reasonable cost to us. There can be no assurance that we will be able to continue to provide these services on a timely or cost-effective basis. If we are unable to do so, our customers may reduce their use of our products, which could materially adversely affect our operating results.

## WE HAVE ANTI-TAKEOVER DEFENSES THAT COULD DISCOURAGE OR DELAY A TAKEOVER

Provisions of our certificate of incorporation and bylaws could have the effect of discouraging or delaying an acquisition of our company. For example, the Board of Directors has the authority to issue up to 15,000,000 shares of Preferred Stock in one or more series and to determine the designations, preferences and relative rights and qualifications, limitations or restrictions of the shares constituting any series of Preferred Stock, without any further vote or action by the shareholders. The issuance of Preferred Stock by the Board of Directors could affect the rights of the holders of Common Stock. For example, an issuance could result in a class of securities outstanding that would have preferences with respect to voting rights and dividends and in liquidation over the Common Stock, and could (upon conversion or otherwise) enjoy all of the rights applicable to Common Stock. The authority of the Board of Directors to issue Preferred Stock potentially could be used to discourage attempts by others to obtain control of us through merger, tender offer, proxy contest or otherwise by making these attempts more difficult to achieve or more costly. The Board of Directors may issue the Preferred Stock without shareholder approval and such Preferred Stock could have voting and conversion rights that could materially adversely affect the voting power of the holders of Common Stock. No agreements or understandings currently exist for the issuance of Preferred Stock, and the Board of Directors has no present intention to issue any Preferred Stock. The Board adopted a shareholder rights plan that could have the effect of discouraging a takeover of us. The rights plan, if triggered, would make it more difficult to acquire us by, among other things, allowing existing shareholders to acquire additional shares at a substantial discount, thus substantially inhibiting the ability of an interested party to obtain control of the Company.

## Corporate Information

### DIRECTORS

C. Daniel Blackshear
*President and Chief Executive Officer*
Carolina Turkeys

David L. Castaldi
*Former Chairman and Chief Executive Officer*
Cadent Medical Corporation

Peter J. Holzer
*Chairman of the Board Retired Executive Vice President*
The Chase Manhattan Bank, NA

Ganesh Kishore, Ph.D.
*Vice President of Technology, Agriculture and Nutrition*
Dupont Company

John E. Klein
*Chairman*
Bunge North America, Inc.

Randall L. Marcuson
*President and Chief Executive Officer*
Embrex, Inc.

### COMMITTEES

**Compensation Committee**
David L. Castaldi
Ganesh Kishore, Ph.D.
John E. Klein*

**Audit Committee**
C. Daniel Blackshear
Peter J. Holzer*
John E. Klein

**Nominations Committee**
C. Daniel Blackshear
David L. Castaldi
Peter Holzer*
Ganesh Kishore, Ph.D.

* Chairman

### OFFICERS

David M. Baines, Ph.D.
*Vice President, Global Sales*

Brian C. Hrudka
*Vice President, Latin America and Vice President, Global Marketing*

Randall L. Marcuson
*President and Chief Executive Officer*

Joseph P. O'Dowd
*Vice President, Global Product Development and Supply*

Catherine A. Ricks, Ph.D.
*Vice President, Research and Development*

Don T. Seaquist
*Vice President, Finance and Administration and Corporate Secretary*

### TRADEMARKS

Embrex®
Inovoject®
VNF®
Bursaplex®
Vaccine Saver®
Egg Remover®
Newplex®
Inovocox®
The In Ovo Company℠

### CORPORATE OFFICE

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NASDAQ Ticker Symbol: EMBX

### REGISTRAR AND TRANSFER AGENT

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Fax (252) 246-4890

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### CORPORATE COUNSEL

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### ANNUAL MEETING OF SHAREHOLDERS

The annual meeting of shareholders will be held at 9 a.m., May 20, 2004 at The North Carolina Biotechnology Center, 15 T.W. Alexander Drive, Research Triangle Park, NC 27709. Directions are available at www.ncbiotech.org.


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